Evolving HIM Careers
Seven Roles for the Future

A publication of the American Health Information Management Association
Evolving HIM Careers

Seven Roles for the Future

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MANAGEMENT ASSOCIATION
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Introduction

In 1996, the American Health Information Management Association’s Board of Directors took on an ambitious project: looking into the future and envisioning health information management practice in the next millennium. Vision 2006 was built on the work that previous leaders of the association had performed in defining the effects that changes in technology and healthcare delivery would have on the management of medical records in the future. With the 1991 change in the association’s name from the American Medical Record Association to the American Health Information Management Association, a vision of a new profession was born. This recognition of the need to change from a focus on acute care medical record practice to a focus on integrated care health information practice along the complete continuum of care was pivotal. It left most of us, however, with the question, “Exactly what does a health information manager do?”

To answer that question and to continue to build a definition of the profession, the association undertook the Vision 2006 initiative in 1996. (The first chapter in this report discusses the basis of Vision 2006 in more detail.) One of the first tasks identified by the Board of Directors was defining health information management roles and skills for future practice. After the board’s strategic planning session in January 1996, seven new roles were brought forward for discussion in the association through team talks, state updates, and meetings of the House of Delegates. The seven roles were generally well received, but it was noted that they lacked sufficient clarity to be useful in further professional development.

Beginning in February 1997, the work to clarify the roles and skills was undertaken by a series of volunteer task forces. The members of the task forces were selected on the basis of their interest and experience in working on the leading edge of the profession. The participants on the seven task forces are listed in the Acknowledgments.

The purpose of this book is to bring the association’s members up-to-date on the work of the seven volunteer task forces. Although almost everyone in the association has heard about Vision 2006, this book provides a comprehensive resource that explains the background behind the task forces’ work and provides details about the outcomes.

Contents of This Book

To understand Vision 2006, one must place it in the context of the current and future healthcare environment. The second chapter of this book outlines the ongoing changes in the healthcare environment and generally describes the future employment opportunities for health information management professionals that are likely to grow out of these changes.
In looking toward the future, it is equally important to start from a solid understanding of the current reality. An assessment of the current status of the health information management profession is provided in the third chapter of this book, which analyzes data from the 1999 survey of American Health Information Management Association members. Chapter 3 also provides a primer on the process of self-assessment that can be used by individual professionals to complete their own personal and professional profiles in preparation for further professional development and career opportunities. The subsequent chapters in this report discuss the individual Vision 2006 roles. The information provided includes materials based on the work of the seven volunteer task forces.

Chapters 4 through 10 provide detailed information on the other five roles, on which development is complete or almost complete. Each of these chapters is organized into two main parts. The first part explores the factors in the healthcare delivery system and health information management practice that have created the need for the role and how the role meets those needs. A model scenario is provided in each chapter to give the reader an idea of what a typical day would be like for a health information management professional working in that role some time in the future.

The second main part of each chapter offers an analysis of the skills and knowledge needed to perform the role effectively. The skills were chosen and analyzed by the individual groups of volunteers working on each role. For each skill, the volunteers assessed the level of competency required to perform the role effectively and assigned a number based on the following scale: 1 = awareness (introductory recall and recognition); 2 = literacy (knowledge of framework and content); 3 = concept (comprehension, translation, extrapolation, and interpretation of meaning); 4 = detailed understanding (appropriate application of knowledge in a structured and controlled context); 5 = skilled use (application using analysis, synthesis, and evaluation in new situations). The skill and knowledge analyses may be useful as the foundation for personal skill assessment and professional development planning for health information management professionals who are interested in preparing themselves to take on similar roles in the future.

A Work in Progress

Although the work of the seven task forces is now complete, Vision 2006 will always be a work in progress. The project is less about the profession in the year 2006 than it is about the profession in the foreseeable future. As a professional association, the American Health Information Management Association is committed to forecasting and shaping the future of health information management. And just as important, the association is committed to preparing its members for success in the years to come.

The work of each of the task forces to clarify and define the roles was kept separate deliberately. Although all of the teams followed the same general process and produced the same types of outcomes, the teams did not seek out content information from each other or coordinate their efforts. As a result, some of the functions of the roles as they are described in this report overlap. These overlaps may well be a natural consequence of defining various roles within one profession. For example, by comparison, if the skills of physicians practicing in different specialties were listed in detail, many of the tasks the specialists perform and the skills they use to perform the tasks would be the same. That overlap in skill is what makes them all physicians; specialization is what makes their roles distinct.
Next Steps

Now that the task forces have completed their initial definition and skill assessment work, a second critical phase will begin. The seven roles will be compared and contrasted with each other. In the end, the result may be that there are seven roles, or nine, or five.

After the roles are understood at this level of clarity, it may become obvious that one or more critical roles were missed entirely. The association then would need to envision additional roles and commission additional task forces.

The association’s final step will be to further test the relevancy of the roles in the healthcare marketplace. Market research is being planned to evaluate the accuracy of the association’s predictions for the profession and to determine the size and nature of the employment market for health information management professionals in the future.

Even when the market research is complete, the work of Vision 2006 will not be finished. Unpredicted shifts in the healthcare market may occur; current regulations may be revised and/or new regulations passed by state and federal governments. Advances in medical or information technology may demand changes in the practice of health information management. Any unanticipated changes in the healthcare environment would require that the association reexamine the relevancy of the roles as finally envisioned.

Like its individual members, the American Health Information Management Association must engage in lifelong learning by continually assessing the current state of the profession, scanning the external environment, evaluating opportunities, and recognizing threats. In the future, Vision 2006 will be replaced by similar projects that direct the energies of the association and its members and collectively keep the profession moving forward toward its future.

Sandra Fuller, MA, RRA
Vice-President, Practice Leadership
August 1999
Acknowledgments

The staff at the American Health Information Management Association would like to acknowledge the contributions and commitment of the members of the Vision 2006 volunteer task forces.

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Chapter 1

Vision 2006

In 1996, the American Health Information Management Association’s House of Delegates adopted Vision 2006 as a statement of its strategy for moving the health information management profession into the future:

Resolved, That the American Health Information Management Association and its component organizations and members adopt Vision 2006 in order to ensure that the HIM profession continues to play a key role in ensuring quality healthcare through quality information.

On the strength of that resolution and because of the need for definitive action, the association’s 1997 board of directors designed Vision 2006 as a foundation for strategic change. The board also refined the association’s values, vision, and mission statements to bring them into alignment with Vision 2006:

Values

The American Health Information Management Association:

- Respects all members whom we serve, and all individuals with whom we work and collaborate.
- Delivers high-quality services and products.
- Promotes the public’s right to private and high-quality health information.
- Embraces a code of ethical health information management practice.
- Advances the importance of health information to improve healthcare.

Vision

The American Health Information Management Association will set the standard and be the recognized leader in health information management practice, education, certification, research, and advocacy.

Mission

As the membership organization of health information management professionals, the American Health Information Management Association fosters the professional development of its members through education, certification, and lifelong learning. These commitments promote quality health information for the benefit of the public, the healthcare consumers, providers, and other users of clinical data.
The board then studied emerging health information management roles and sought external confirmation of the soundness of Vision 2006.

As part of ongoing strategic planning, all of the association’s programs are being evaluated to determine how well they contribute to meeting the goals of Vision 2006:

- Health information management is recognized as a profession with a unique domain and defined knowledge and skill set.
- Health information management practice is well grounded in standards of practice supported by applied research.
- Career paths are clearly defined and accessible to members who engage in lifelong learning.
- American Health Information Management Association credentials greatly help health information management professionals secure jobs and advance in their careers.
- Members in diverse roles cite the American Health Information Management Association and its component organizations as their chief sources of highly valued professional information and research.
- The American Health Information Management Association influences policy, regulation, and standards affecting healthcare information.

To help accomplish these goals, new model curricula for educational programs in health information technology and health information administration have already been created, and a new master’s program curriculum is currently being developed.

In 1997, a series of strategic options was developed by the association to identify ways through which to advance education, certification, and professional development. The association’s board of directors met in December 1997 to develop an action plan to move Vision 2006 to the next phase. Of the numerous options considered, eight items were selected to make up the action plan for the first phase of implementation:

1. Encourage establishment of HIM “track” programs at the baccalaureate level.
2. Encourage establishment of programs and tracks for HIM education at the master’s level.
3. Require an associate’s degree to take the ART exam by 2002.
4. Design standardized coding curriculum and study roles for coding professionals in the future.
5. Investigate allowing current ARTs with baccalaureate or postbaccalaureate degrees the opportunity to write for the RRA exam.
6. Evaluate names and positioning of AHIMA credentials.
7. Design alternative models for maintenance of certification.
8. Develop the criteria and guidelines for advanced standing.

These eight action items are comprehensive, and their ultimate goal is to advance the health information management profession.
This Book

This book summarizes the Health Information Management Association’s recent efforts to encourage active professional development among its members and to fulfill the third goal of Vision 2006: clearly defining accessible career paths for members engaged in lifelong learning. Ultimately, however, every member must take responsibility for his or her own professional growth and future achievements. The success of the association in this area will depend on the success of its members.

Professional development for health information management professionals involves three basic steps:

1. Assessing the current healthcare environment, outlining trends for the foreseeable future, and envisioning future professional roles
2. Assessing the current skill and knowledge base of the profession
3. Comparing the current skills and knowledge base of each individual practitioner to those that are likely to be needed in the future and creating a unique lifelong plan for learning the needed skills and gaining the required knowledge

The Vision 2006 work on envisioning future health information management roles is meant to help members complete the first step, as is Chapter 2 of this book, which summarizes current and future trends in the healthcare environment. (The roles are discussed later in this chapter and in detail in chapters 4 through 10.) Chapter 3 of this report provides information on the characteristics of the current membership of the association. Lifelong learning, self-assessment, and career planning—the activities performed by individual practitioners as the third step of professional development—are discussed in chapter 3.

From Medical Records Administration to Health Information Management

Vision 2006 is a continuation of Vision 2000, which in 1991 predicted the change from traditional medical record administration to health information management as the future direction of the profession. Based on the sweeping changes set in motion by the development of healthcare applications for computers and by nationwide changes in the healthcare delivery system, Vision 2000 described how health information management practice would evolve in the 1990s. However, Vision 2000 left members with one question, “Exactly what does a health information manager do?” Vision 2006 answers that question.

In their exploration of future roles for health information management professionals, the American Health Information Management Association’s board members, volunteers, and staff compared traditional practice with the “reinvented” practice predicted by Vision 2006. Traditional practice has been department based. Within a healthcare facility, a health information department has existed with various functional roles arranged in a hierarchy within the department. “New” practice will be information based, and it will be structured to meet the needs of the organization rather than its needs as a department within an organization.

Traditional practice has been based on physical records, files filled with paper forms and documents. Although some information based on current health records may be electronically stored and manipulated, most health information management functions today are built around
the existence of a physical record. New practice will be based on data management: item definition, data modeling, database administration, and data auditing and monitoring. These processes do not depend on the existence of physical records and thus broaden the scope of practice within healthcare.

The aggregation and display of data have been large parts of traditional health information management practice. In the future, these data-handling practices will be transitioned to electronic searches of a wide range of data sources. The sources will include clinical data repositories. In addition, data warehouses will provide access to knowledge sources such as practice standards, trended utilization data, and outcomes databases and allow data manipulation through the use of statistical analysis and data modeling techniques.

Traditional practice also has relied on forms design and record assembly processes. Future health information management practice will rely on the creation of logical data views. It will also rely on the continual reengineering of data flow as demand for data grows and shifts. Application development in cooperation with the end users of data and with information system vendors will require the input of health information management professionals who are able to translate users’ needs into systematic solutions. Health information management practice will also include ongoing application support.

Health information management practice has always emphasized the confidentiality of health records and the controlled release of health information. The importance of confidentiality and controlled release of information will only grow in the future with the transition to electronic security, audit, and control programs. Health information management practice will include performing risk assessments and instituting prevention and control measures in the area of security.

From Traditional Roles to Future Opportunities

As health information management practice evolves from its traditional base and aligns itself with changes in the healthcare delivery system and information technology, exciting career opportunities will emerge. Vision 2006 defines seven roles for the future:

- The **health information manager for integrated systems** is responsible for the organizationwide direction of health information management functions. The role may be a line or staff management position. It includes working with the chief information executive and information system users to advance systems, methods, and applications support and to improve data quality, access, confidentiality, security, and usability. (This role is discussed in more detail in chapter 4.)

- The **clinical data specialist** concentrates on data management functions in a variety of applications including clinical coding, outcomes management, specialty registries, and research databases. (This role is discussed in more detail in chapter 5.)

- The **patient information coordinator** is a new service role that helps consumers manage their personal health information, including personal health histories and release of information; it also helps them to understand managed care services and access to health information resources. (This role is discussed in more detail in chapter 6.)

- The **data quality manager** is responsible for data management functions that involve formalized continuous quality improvement activities for data integrity throughout the organization, beginning with the data dictionary and policy
development, as well as data quality monitoring and audits. (This role is discussed in more detail in chapter 7.)

- The **information security manager** is responsible for managing the security of electronically maintained information, including promulgation of security requirements, policies and privilege systems, and performance auditing. (This role is discussed in more detail in chapter 8.)

- The role of **data resource administrator** represents the next generation of records and data management and uses technological tools such as the computer-based patient record, data repositories, and data warehouses to meet current and future care needs across the continuum, provide access to the needed information, and ensure long-term data integrity and access. (This role is discussed in more detail in chapter 9.)

- The **research specialist** ensures the quality of data and information generated through clinical investigations and other research projects. The **decision support specialist** provides clinicians and senior managers with information for decision making and strategy development. Both specialists use a variety of analytical tools. (These roles are discussed in more detail in chapter 10.)

The diagram below illustrates the interrelationships among the roles:
Like the details of any long-range vision, these seven roles are still evolving, and the more we learn about them, the clearer they will become. Groups of volunteers working with members of the association’s professional practice staff began work in February 1997 to refine the envisioned roles, which originally grew out of a board of directors’ strategic planning session in January 1996. The work on five of the roles was completed in June 1999.

These seven roles do not represent the entire spectrum of emerging professional opportunities in healthcare information management. The roles are scaleable and flexible and in real organizations may overlap or extend beyond what has been envisioned. They exist independent of specific organizations and specific positions. They are intended to build on the current training and skills of health information management professionals. In addition, they are supported by the newly revised model educational curricula. Above all, they are meant to be achievable.

Members of the association are already moving into jobs with some of the characteristics of these emerging roles. A study conducted in 1997 by Donald Mon, Karen Patena, and Shaheen Khan investigated various factors affecting career trends for health information management professionals. The study concluded that “to compete in the marketplace in the next 5 to 10 years, HIM professionals must change their roles and responsibilities” and that “the results [of the study] clearly show that HIM professionals are [currently] migrating toward [the] roles described in Vision 2006.” Personal profiles of association members who have already taken on the Vision 2006 roles are presented regularly in the Journal of the American Health Information Management Association and the association’s product newsletter Keeping Pace.

From Strategic Vision to Lifelong Learning

As in other healthcare professions, the dramatic changes going on in healthcare will precipitate changes in the professional roles of health information managers. (Chapter 2 of this report discusses current and future trends in healthcare.) To ensure that health information management remains a dynamic, relevant profession, the American Health Information Management Association has committed itself to creating pathways that will show its members how to remain viable participants in a changing marketplace and prepare themselves to take on new and evolving roles. An integral part of the association’s commitment is developing a plan to help its members progress in their own professional development.

Vision 2006, however, must be more than an association initiative if it is to have lasting impact. It must also be a personal initiative for individual health information management professionals. The foundation of meaningful career planning and development now and in the future is lifelong learning, the subject of the third chapter of this report.

Conclusion

Vision 2006 is a strategic blueprint of the changes the health information management profession must undergo over the next decade to ensure that current and future health information management professionals are positioned to take advantage of the new career opportunities on the horizon. Change is always difficult, and it is easy to experience the “forces of change” as negative and destructive because they often seem out of control. But change brings transformation, and its forces can be felt as positive and creative when they are looked upon as an evolution toward a new way of being.
The future of health information management is bright with opportunity. The American Health Information Management Association hopes that its members will accept change as a creative challenge and become agents and leaders of change during the transition to computer-based health record systems. Through Vision 2006, the association is working to support its members during this exciting and demanding era for the profession.

**Bibliography and References**


Chapter 2

1999 Environmental Assessment

Professional development planning for individuals is like strategic planning for organizations in many ways. The first step in both processes is performing an environmental assessment to determine what forces are at work and which direction change is likely to take in the foreseeable future. Armed with that information, an individual or an organization is prepared to take on the critical task of self-assessment (called internal assessment in organizations) and then strategic action planning for the future.

Assessing the current and future healthcare environment is a very difficult task, given the rapid and uneven pace of change in the field. A healthcare trend that is evident in one part of the United States may be almost irrelevant in another region. One example is the uneven market penetration of health maintenance organizations, which in the mid-1990s was heavy in Minneapolis but almost nonexistent in New York City.

Although analysts and futurists acknowledge the unpredictability of the evolving American healthcare system, all agree that change is inevitable and that it may even accelerate over the next decades. Consider some of their current observations:

- Growth in Medicare managed care will increase as a result of the Balanced Budget Act of 1997.
- Behavioral health managed care will reduce demand for acute psychiatric services by more than 50 percent in the next 5 years.
- In 1994, participation in capitated plans was expected to rise to 50 percent by 2000, but in 1999 it is expected that the implementation of capitated plans will be slower than earlier predictions.
- The Balanced Budget Act of 1997 will escalate reduction in fee-for-service reimbursement.
- Reduced fee-for-service reimbursement, increased managed care, and intensified fraud and abuse scrutiny will escalate erosion in profits for providers.
- The number of hospitals in the United States may eventually be reduced from 6,500 to 2,500.
- By the year 2000, integrated healthcare delivery systems will be common in the United States.
- The present maelstrom in the American healthcare market will last for some time.
• Hospital cost cutting will continue and even escalate.
• The Medicare Trust Fund will be bankrupt sometime in the early 21st century.

Determining the personal relevance of such industry predictions may feel overwhelming unless they are put in the context of the broader driving forces behind such changes.

The Forces of Change

Complex forces are driving healthcare evolution, and the most powerful force is dissatisfaction with the existing system. Between 1945 and 1985, the healthcare delivery system in the United States was relatively stable, and change for the most part meant the development of new treatment modalities—advances in pharmacology, surgical technique and anesthesia, diagnostic technology, and life-support systems. Ironically, these life-saving medical advances have had unanticipated social and economic consequences—overutilization of healthcare services, increasing demand, uneven access, and cost inflation. To address these problems, new “forces” have appeared on the scene over the past 15 years. As medical advances have continued unabated and demand for services has continued to increase, new and complex reimbursement methods and managed care delivery systems have predicated widespread and often uncomfortable changes in the way healthcare is provided and paid for. These market forces will not go away any time soon and are likely to continue to affect consumers, employers, federal and state governments, and providers for the foreseeable future.

Other influences outside the healthcare market are also bringing change. The revolution in communication and information technology that has been dramatically reshaping business and industry worldwide is now being felt in healthcare. Consumers expect more and better products in all areas of their lives. And even the nature of work is changing as developments in management philosophy and communication technology make command–control structures obsolete and virtual workplaces a reality.

In the future, perhaps for the next 20 years, five main forces, or trends, are likely to drive change in healthcare and, consequently, in health information management. These trends are:

1. The continued growth of managed care
2. The accelerated development of integrated healthcare delivery systems
3. The movement toward capitated reimbursement systems
4. The focus on patient- and community-centered care
5. The acquisition of sophisticated information systems and the gradual implementation of the computer-based patient record

These trends are complex and interdependent. For example, the acquisition of information systems is being driven as much by the competitive forces resulting from managed care as it is by the need to integrate services along the continuum of care. Integrated healthcare delivery systems are being built in anticipation of future capitated reimbursement systems as well as in response to the current needs of patients and communities. And the full implementation of computer-based health record systems is a prerequisite for future success in all of the other four areas.
The Effects of Change on Health Information Management

The emergence in the late 1980s of managed care in its various forms—health maintenance organizations, point-of-service plans, preferred provider organizations, and newer forms still in evolution—was a reaction to the public’s and government’s perceived need to control escalating healthcare costs and at the same time improve the quality of care being provided. In essence, the goal of managed care is to achieve improved value for the dollars invested in healthcare. The most noticeable effect of managed care has been and will continue to be significantly decreased levels of utilization, particularly in acute care hospital services.

Traditionally, health information management professionals have worked primarily in hospital settings, and still today over half of the American Health Information Management Association’s members work in acute care hospitals. But in the coming years, services that were traditionally provided in hospitals will continue to migrate to outpatient settings, and the number of acute care beds needed—and so the number of hospitals—will decline as a consequence. Health information management jobs, like the healthcare services they support, will move from hospitals to various outpatient and subacute care settings. In addition, the functions of health information management will change as data analysis becomes more critical and clinical data in combination with financial data are used to predict and model the healthcare services needed.

Integrated healthcare delivery systems, or networks, came onto the healthcare scene in the early 1990s in reaction to the Clinton Administration’s healthcare reform efforts and increasing competition among providers for managed care contracts. Through formal and informal alliances and partnerships and outright mergers and acquisitions, acute care hospitals, long-term care facilities, outpatient services, physicians’ practices, and other healthcare providers all along the continuum of care are joining forces to consolidate services, facilities, and resources. What this means for health information management practice is, again, the need to gain a wider perspective beyond the traditional acute care focus. Health records for patients in integrated healthcare systems include information from a variety of outpatient and inpatient providers and must be made available at a number of separate facilities.

As mentioned earlier, part of the impetus behind the development of integrated delivery systems has been the anticipated movement toward capitated reimbursement systems. This movement, however, has developed much more slowly than originally anticipated, and there is some question today whether a totally capitated delivery system is feasible or even desirable.

Basically, capitation means that healthcare providers take on the risk-sharing role of insurers. They agree to accept a set payment for each enrollee who is covered under a capitated agreement. Then the providers are responsible for providing and/or paying for all of the healthcare services that the enrollees require over the duration of the agreement. The provider may be an integrated delivery system, a primary care physician or physicians’ group, or some type of specialty provider. (For example, a psychiatric clinic might enter into a capitated agreement to provide behavioral health services to an employer’s employees for a set rate per employee.)

The assumption behind this type of reimbursement is that the majority of enrollees (covered “lives”) will use few or no services. Obviously, providers need to have extremely accurate demographic, utilization, and health information on the local population and what it is likely to cost to provide services before the providers can reasonably enter into such agreements. That is where health information management professionals are being called upon to provide strategic information based on very sophisticated data collection and analysis systems.
The users of healthcare services—patients and their communities—like other consumers in the late twentieth century, are demanding better value and more personalization and choice in the products they purchase. The focus on patient- and community-centered care has primarily affected hospitals, which have taken on the challenge of helping to build healthier communities. To meet the demands for care customized to meet the special needs of individual patients and local communities, hospital-based services must be coordinated with the services provided in other care settings. For example, the patient-centered care provided to an open-heart surgery patient would concentrate on his or her needs and the needs of his or her family from the time the illness was first suspected, through surgery and rehabilitation, until the patient was ready to resume his or her regular activities, and then for the rest of his or her life as regular follow-up care was provided. For health information management, patient-centered care means that a longitudinal health record must be made available to providers along the continuum.

Consumers of healthcare services may not always be able to assess the technical quality of the care they receive, but they do understand its human quality. In organizations that have adopted community- and patient-centered care as their mission, health information professionals may be asked to play nontraditional roles to help patients and their families understand the care they receive.

The fifth trend behind current and future changes in healthcare has the most potential impact for health information management practice and health information management professionals. Healthcare providers currently spend billions of dollars annually on information system technology, and investments will continue to increase over the next decade as organizations gradually implement computer-based health record systems. In a very real sense, access to accurate, reliable, and relevant information will be the determining factor in survival for many healthcare organizations, given that profitability under managed care and capitated reimbursement will not be possible without such information. To meet the needs of patients, their families, and their communities, healthcare organizations will also have to know exactly what those needs are, and that knowledge depends on accurate demographic and utilization data as well as sophisticated statistical analyses. In the future as today, the continuity of clinical care will depend on the ready availability of complete and accurate health records. Integrated healthcare services provided in a full range of delivery settings will be made possible by computerized record systems.

The differences between traditional health information management practices and practices emerging in anticipation of the full implementation of the computer-based health record are summarized in the following table (more information was provided in chapter 1):

<table>
<thead>
<tr>
<th>Traditional HIM</th>
<th>Vision 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department based</td>
<td>Information based</td>
</tr>
<tr>
<td>Physical records</td>
<td>Data item definition</td>
</tr>
<tr>
<td></td>
<td>Data modeling</td>
</tr>
<tr>
<td></td>
<td>Data administration</td>
</tr>
<tr>
<td></td>
<td>Data auditing</td>
</tr>
<tr>
<td>Aggregation and display of data</td>
<td>Electronic searches</td>
</tr>
<tr>
<td></td>
<td>Shared knowledge sources</td>
</tr>
<tr>
<td></td>
<td>Statistical and modeling techniques</td>
</tr>
<tr>
<td>Forms and records design</td>
<td>Logical data views</td>
</tr>
<tr>
<td></td>
<td>Data flow and reengineering</td>
</tr>
<tr>
<td></td>
<td>Application development</td>
</tr>
<tr>
<td></td>
<td>Application support</td>
</tr>
<tr>
<td>Confidentiality and release of</td>
<td>Security, audit, and control programs</td>
</tr>
<tr>
<td>information</td>
<td>Risk assessment and analysis</td>
</tr>
<tr>
<td></td>
<td>Prevention and control measures</td>
</tr>
</tbody>
</table>
As the table shows, the full implementation of computer-based health record systems will significantly change or eliminate some of the traditional roles of health information management professionals. At the same time, however, it will create a number of new and challenging roles as health information management functions are integrated with health information system functions.

For example, most coding will be performed at the patient’s bedside by caregivers using automatic encoders built into the computer-based health record. The traditional function of coding, therefore, will gradually change from a manual process to an information systems-driven process. Health information management professionals, however, will continue to play an important role in coding. They will verify the accuracy of coded data in various databases and specialty registries and act as coding consultants to the rest of the organization.

Similarly, traditional abstracting and reporting functions will evolve into a strategic decision support role. Records management will evolve into a resource management role that uses technologically sophisticated tools such as data repositories and warehouses. Quality management will concentrate on maintaining data integrity through the use of computer-based monitoring systems and continuous quality improvement techniques. Confidentiality will be as great a concern as ever, and one evolving role will focus on the challenge of maintaining security and accessibility in complex information systems. Transcription services, on the other hand, may become obsolete when voice recognition systems replace dictation.

Working environments will also change. Health information management professionals may work in centralized health information management departments in the corporate offices of large, integrated delivery systems, or they may work alone or in small groups at individual facilities or physicians’ offices. Many health information management professionals may even work from home-based offices. Reporting relationships are also likely to change, with flexible teams replacing dedicated work groups working under a functional supervisor.

The full implementation of the computer-based record will also affect the role of the health information management director, as will the development of large, integrated delivery systems. Most significant, perhaps, will be the evolving partnership between the director of health information management services and the director of information services. With the integration and consolidation of the two areas, these two executive roles will assume parallel leadership positions in organizational structures. Both will play a central role in defining the vision and direction of computer-based health record systems and in setting policies and procedures.

In addition, the director of health information management will continue to have vital responsibilities in the ongoing education of users, in the promulgation and enforcement of policies and procedures, and in the development and management of work processes. The areas of confidentiality and access will remain central concerns. Leadership and communication skills will be more important than ever in complex healthcare organizations that provide a full range of healthcare services in a wide variety of care settings.

Conclusion

In healthcare, as in every other area of life in the twenty-first century, change will be a constant. Access to reliable and relevant information will be the key to dealing effectively with the forces of change in both professional careers and personal lives. To be ready for the future, health information management professionals need to step back and look at their current situations and then map out their individual paths to the future.
Bibliography and References


Chapter 3

Lifelong Learning

Advances in technology, changes in worldwide business practices, and developments in international relations have made living in the modern world a continuous learning experience. For professionals working in the rapidly changing healthcare marketplace, the need for lifelong learning is especially evident, but healthcare is not unique. President Clinton has called for all Americans to become lifelong learners to keep the nation economically competitive worldwide.

Lifelong learning is the ability to use the experiences accumulated over a lifetime to build the knowledge and skills needed to achieve one’s current and future goals. What one hears, sees, reads, studies, becomes proficient at, understands emotionally, knows objectively, and feels intuitively are the building blocks of experience. Lifelong learning forms the basis for technical skills and interpersonal relationships, professional competency and creative originality. Contrary to what a book author once claimed, one cannot learn everything one needs to know about life in kindergarten.

Lifelong learning is fundamental to personal and professional development. One must be able to learn as much from failure as from success, and that ability to learn from experience is based on meaningful reflection. Just describing past or recent events in one’s life leads to increased self-understanding. And a dedicated, purposeful assessment of one’s skills, abilities, and values can lead to professional advancement as well as personal satisfaction.

A Self-Assessment of the Health Information Management Profession

The term self-assessment has its linguistic roots in the Latin word assidere, which means “to sit beside oneself.” Self-assessment can be thought of as a conversation with oneself to identify one’s skills, abilities, values, desires, and life plans. The result of thoughtful self-assessment is a portrait of an individual (or a group of individuals or an organization) at a particular place and time. Looking at a current portrait of the health information management profession may be a helpful starting point for practitioners about to begin the process of self-assessment and professional development.

The profile of the American Health Information Management Association’s membership in general reflects the current status of health information management as a profession. According to 1999 membership data, there are over 37,700 members of the association, including associate, student, and corporate members. Of individual members, 54 percent have an ART credential, 32 percent an RRA, and 2 percent a CCS only. Thirty-nine percent of the
association’s members hold a bachelor’s degree, 36 percent an associate’s degree, 8 percent a master’s degree, and 17 percent less than an associate’s degree. A small number of members (less than 1 percent) hold doctoral degrees.

The membership can be divided into six general segments:

- Senior managers (administrators, assistant administrators, chief executive officers, chief operating officers, vice-presidents, assistant vice-presidents, chief financial officers, and chief information officers)
- Managers (department directors, assistant directors, and department managers)
- Supervisors (coordinators, team leaders lead workers, and supervisors)
- Technicians (coders, clerks, analysts, and transcriptionists)
- Consultants (management services advisors and technical services vendors)
- Educators (teachers in health information technology and administration programs and in other settings)

Current job title data show that 29 percent of members with the RRA credential hold the title of director, while 17 percent list themselves as managers, 14 percent have supervisory roles, 10 percent are consultants, 10 percent are technicians, and 3 percent are educators. Among members with the ART credential, 36 percent are health information management technicians, with coders making up 23 percent of this group. Seventeen percent are directors, 15 percent are supervisors, 13 percent are managers, and 4 percent are consultants.

The number of members working in hospitals has declined from 72 percent in 1988 to 56 percent in 1999. However, the small change in this figure over the past year may be an early indicator that the move out of hospitals is leveling. Other members are working in medical group practices, long-term care facilities, mental health facilities, managed care organizations, ambulatory care centers, home healthcare agencies, and a wide range of other work settings that represent emerging opportunities for HIM professionals.

Salaries ranges vary widely among different work settings and geographical locations. Salary data indicate that the average annual salary of directors and consultants is approximately $70,000; that of managers and coordinators is approximately $50,000; and that of coders and supervisors is approximately $30,000.

The Process of Self-Assessment

Self-assessment is the foundation of professional development planning. It provides the information on an individual’s current skills and knowledge base that is needed for planning future learning experiences. At the same time, it yields the information on an individual’s interests and values that forms the basis for making future career choices. When examined as an element of formal career planning undertaken with the help of a career counselor or advisor who uses standardized psychological assessment instruments, self-assessment can also generate detailed profiles of one’s career interests and learning style. Informal professional development planning based on personal reflection, however, can be just as effective as formal planning when the individual is committed to setting aside the time and energy the process requires. As a side benefit, the process of self-assessment enhances one’s commitment to lifelong learning and self-accountability.

Self-assessment is like any other skill to be learned. It requires practice. And what needs to be practiced is deliberate and critical reflection on one’s beliefs, ideas, values, and actions as
well as one’s professional skills and knowledge. “Critical” in this context suggests an active search for connections and meaning in ideas and events beyond the obvious. It calls for “out-of-the-box thinking” and looking creatively at the familiar.

The following three-step process to provide practice and build skill in self-assessment may be helpful:

1. Start by setting aside the time for reflection and finding a place conducive to quiet thought. Think about the things in life that are most important to you, and then ask yourself why they are important. Keep asking why, why, why until you feel that you have found the most basic thing that defines importance to you.

2. Next, work on more complex self-examinations. Perhaps think about your interpersonal relationships at home or at work, and ask yourself what have you learned from those experiences and what you would do differently if you had them to do over again.

3. Finally, after a period of practice, assume ownership of the self-assessment process and customize it to fulfill your personal style of reflection, whether it is asking yourself specific questions and writing down your replies, making notes in a notebook as thoughts occur to you, recording your thoughts with a tape recorder, or just quietly recalling recent events and reinterpreting their meaning. At this point, think about what your ultimate career goals are or what you would like to be doing 5 or 10 years from now. Remember to keep asking yourself why, why, why until you understand what you really want most out of your career. Is it security, retirement income, prestige, personal fulfillment, or something else entirely?

Meaningful self-assessment requires examining both what one does well (one’s skills and abilities) and what one enjoys doing (one’s interests, values, and motivations). The following questions provide a place to start:

- “What did I do well today at work [or yesterday or in college or on my last job …]?”
- “How do I know that I did that thing well?”
- “What problems did I encounter this week at home [or yesterday or last week or at work …]?”
- “What have I done to respond to those problems?”
- “How do I feel now about those problems? Do I feel that I resolved them, or does something still trouble me about the situation?”
- “What have I done [today or …] that has not turned out very well?”
- “What was my reaction to that shortcoming?”
- “What motivates me to get up and go to work every morning?”
- “When was the last time I found myself having to make a moral decision [or having to criticize a coworker or family member or …]?”
- “How did I deal with the interpersonal conflict inherent in that situation?”

The next layer of self-assessment involves looking at how one makes such self-judgments. Raising one’s awareness of the criteria one uses to assess skills and personal shortcomings can
be helpful: “Am I so self-critical that I underestimate my abilities, or am I complacent about my shortcomings?” Asking some of the following types of questions may be useful:

- “Have I set any goals for myself recently?”
- “How well did I monitor my progress toward achieving those goals?”
- “Which recent interpersonal encounters did I find most rewarding?”
- “What interpersonal skills did I use?”
- “Did I communicate my thoughts and feelings so that the other person understood me clearly?”

Similar questions about health information management skills and knowledge can be asked to arrive at a professional self-portrait. For example:

- “How proficient am I in using the new project planning software?”
- “How well do I understand the technical requirements for data dictionaries?”
- “How up to date is my knowledge of the federal laws on information systems?”
- “How effective are my employee-coaching skills?”

A common mistake in self-assessment performed as an element of career planning is focusing solely on the specific requirements of a profession, such as academic degrees and professional certifications. Certainly, the specialized skills required in health information management practice, such as coding and managing health record content, are critical to success. But being proficient at the functional skills related to the process of work—organization, analysis, communication, decision making, and other skills applicable to all professional fields—is just as important, as are adaptive skills. Adaptive skills are the basis of effectiveness and productivity and include persistence, self-confidence, thoroughness, patience, flexibility, and time management. A critical look at these types of skills can also be a very revealing part of self-assessment that suggests areas for skill acquisition and improvement.

As an earlier chapter in this report noted, self-assessment is just one step in creating a professional development plan. The health information management professional also needs to gather information on current and future working environments and the employment opportunities likely to be available in the future as well as information on the skills and knowledge that will be needed to perform those roles. (This information is available in the other chapters of this report.) By comparing the skills and knowledge required to perform future professional roles with the skills and knowledge identified through self-assessment, health information professionals will be able to determine the elements missing from their own skill and knowledge base. The steps to gain the missing knowledge and skills make up his or her own unique action plan for professional development.

### The Process of Professional Development Planning

In 1997, the American Health Information Management Association’s Committee on Professional Development conducted a study to help prepare the association’s members for the future. The study emphasized the importance of lifelong learning and listed the following principles of professional development:
1. Members should develop a keen awareness of the healthcare industry and healthcare industry trends.

2. Members should acknowledge that the personal attributes and professional skill sets required by employers in the future will change and that health information management professionals should prepare themselves for those changes.

3. Members should take responsibility for their own personal development and make a commitment to ongoing education and professional development.

4. Members should help other members achieve Vision 2006 goals.

5. Members should embrace a holistic approach to professional development that fosters a balance between professional and personal responsibilities.

To carry out the advice in the committee’s first principle, health information management professionals need look no further than their own doorsteps to find information about trends in the healthcare industry. Questions to ask include the following:

- “What is the mission of the organization at which I currently work?”
- “What are my organization’s future plans and its current challenges?”
- “Have we begun the transition to a computer-based health record system?”
- “What changes in the reimbursement system have been made in the past five years?”
- “Has there been a pattern of change over the years I have worked for the organization?”

Reading local newspapers can reveal a lot of information on healthcare trends in local communities and regions. National healthcare business magazines such as *Hospitals and Health Networks* and *Modern Healthcare* are usually available in hospital and community libraries. They are an excellent source of up-to-date information on developments in healthcare, as are the news reports on medicine aired by national television magazines and published by weekly news and business magazines such as *Business Week* and *Time*. *The Wall Street Journal* regularly reports on healthcare business developments.

The various publications provided to members by the American Health Information Management Association regularly distribute articles detailing the seven roles envisioned for the future according to Vision 2006. This information will help members apply the second principle of professional development. Individual members, however, need to determine how their own individual roles may change in the future. As noted in the preceding section of this chapter, they should prepare self-assessments of their current skills and compare them to the skills likely to be needed for future roles.

The most important factor in successfully acting on the third principle, that members should accept responsibility for their own professional development, is motivation. Informal educational opportunities are available almost anywhere, in the business aisle of the local bookstore, in the lunchroom where colleagues meet to discuss their new responsibilities, even on the Internet with its special-interest chat groups. Seeking and accepting new job responsibilities is an active way to gain new skills, as is participation on interdisciplinary volunteer committees. Formal education is another avenue that can be explored for professional development when members have the time and resources to pursue advanced degrees. And continuing education activities can prove invaluable when they are carefully selected to have relevance to an individual’s professional development plan.
Chapter 3

The fourth principle asks that members help members. Networking with other health information management professionals is a wonderful way to garner career information and make lifelong personal as well as professional connections at the same time. Volunteering to work with local, state, and professional associations also can be extremely rewarding and informative.

Finally, the Committee on Professional Development recommended that members adopt a holistic approach to professional development. No one solution can work for every member of the association, and professional development should be considered in the context of each individual’s values, interests, talents, and personal commitments. Looking at an example of the outcome of professional development planning may help to clarify the process.

Scenario: A Professional Development Plan for a Coding Supervisor

My name is Leslie Johnson, and I am the supervisor of clinical coding at a medium-size community hospital in a suburb of a large Midwestern city. The hospital where I work is being purchased by a large, integrated healthcare delivery system headquartered in the city. A few weeks ago, representatives from the system that is acquiring our hospital gave the staff a presentation about the changes that the merger will bring. I also did some research into what has happened to other area hospitals that have been acquired by the same system, and I decided that I will need to gain additional skills to prepare myself for future changes in my work situation.

After I read the information on the future of healthcare and health information management provided by the American Health Information Management Association, I decided that the new role of clinical data specialist is the one that interests me most and the one for which I already have most of the qualifications. I have a bachelor’s degree in health information management, an RRA, and a CCS certification. With almost 10 years of coding experience, I am confident of my technical abilities, but I am not as sure about my managerial skills. In my current job, which I have been in for a little more than 3 years, I supervise three other coders and give input into budgeting and policies, but I have not had much experience in working with people beyond the department or dealing with issues broader than coding. Although I have good basic computer skills, my knowledge of more technical areas such as programming is very thin, and I know that I need to build those skills.

Through my self-assessment, I identified several other skill areas that need development to meet the performance requirements listed in the skill and knowledge analysis for the role of clinical data specialist. I also took into consideration the need to expand my technical skill base beyond acute care because I understand the ramifications of working in a large, integrated healthcare system from reading about the new role envisioned for health information managers in integrated systems. My self-assessment also helped me to recognize some general work areas I could improve on: time management especially and public speaking, which has always been difficult for me.

At first I considered going back to school full-time for a master’s in health information management or maybe a master’s in business administration. But after talking with my husband, I realized that we would not be able to afford the cost of classes if I were not working full-time. We recently purchased a house, and we still have several years of payments left on my husband’s college loans. That is why I decided to look for alternative ways to build my skills. I was surprised to discover how many managerial classes the hospital offers through its education department, and I am lucky that there is a major university nearby that offers summer and night-school classes. If all of my plans work out as scheduled, by the end of next
year, I should be able to demonstrate skills in all of the areas needed to perform the clinical data specialist’s role. In the meantime, I will also keep my eye out for employment opportunities at my hospital and at other area healthcare facilities that would allow me to broaden my technical and managerial experience, especially in the areas of health information systems and integrated care.

[Leslie’s professional development plan begins on p. 23.]

Conclusion

In a recent message to the members of the American Health Information Management Association, Merida Johns, past-president of the association, emphasized the importance of lifelong learning and honest self-assessment:

> The success of our Association and [the] continued viability of our profession rest on the success of every one of our members. Successful associations are built upon each member taking responsibility for his or her own professional growth or achievement. Successful organizations are built upon a culture of trust and respect among members. They are built upon making honest assessments and courageous decisions. They are built upon working together for the good of the whole…. We must choose not only to do things right, but to do the right things. Let us not be afraid to throw open the door and let our future in.

Whether the future lies in the seven roles predicted by the association or in some other direction, the key to success in the future will be lifelong learning based on conscious reflection and career planning.

Bibliography and References


## Sample Professional Development Plan

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Planned Activity</th>
<th>Target Completion Date</th>
<th>Actual Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coding</td>
<td>• Complete self-study course on coding for physicians’ offices&lt;br&gt;• Take certification exam&lt;br&gt;• Learn new ICD-10 classification system</td>
<td>9/30/98</td>
<td>9/30/98 12/30/99</td>
</tr>
<tr>
<td>Abstraction of data</td>
<td>• Learn any new processes and procedures required by the new corporate offices</td>
<td></td>
<td>To be determined</td>
</tr>
<tr>
<td>Research studies</td>
<td>• Research whether courses on medical research are offered at the university&lt;br&gt;• Take courses if available; if not, find books on subject</td>
<td>7/30/98</td>
<td>To be determined</td>
</tr>
<tr>
<td>Outcomes management</td>
<td>• Take refresher course offered at university through night school next spring</td>
<td>4/30/99</td>
<td></td>
</tr>
<tr>
<td>Audit and validation</td>
<td>• Take an eight-week sabbatical next summer to attend computer programming courses at the local technical university&lt;br&gt;• Ask manager whether department can provide ongoing computer skills training</td>
<td>8/30/99</td>
<td>7/30/98</td>
</tr>
<tr>
<td>Forms design</td>
<td>Same as above</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer application</td>
<td>Same as above</td>
<td></td>
<td></td>
</tr>
<tr>
<td>packages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet and remote access</td>
<td>No action necessary; already have the skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data sources review</td>
<td>• Learn any new processes and procedures required by the new corporate offices</td>
<td></td>
<td>To be determined</td>
</tr>
<tr>
<td>Statistical applications</td>
<td>• Research new statistical applications software on the market&lt;br&gt;• Take training courses or learn on my own</td>
<td>8/30/98</td>
<td>To be determined</td>
</tr>
<tr>
<td>software</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reimbursement applications</td>
<td>• Learn any new processes and procedures required by the new corporate offices</td>
<td></td>
<td>To be determined</td>
</tr>
<tr>
<td>software</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presentations</td>
<td>• No action necessary; already know the software (maybe ask manager to let me practice putting together presentations for the department so that I can have samples to show)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project management</td>
<td>• Take course on using project management software provided quarterly by the education department&lt;br&gt;• Explore whether the university or some other area college offers a course on project management&lt;br&gt;• Take course late next year if available; otherwise, buy a book on the subject</td>
<td>3/30/99</td>
<td>7/30/98 12/30/99</td>
</tr>
</tbody>
</table>

(continued on next page)
<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Planned Activity</th>
<th>Target Completion Date</th>
<th>Actual Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software specification development</td>
<td>• Same as other computer training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy and procedure development</td>
<td>• No action necessary; currently help manager with procedure documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketing of self and HIM profession</td>
<td>• No action necessary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negotiation skills</td>
<td>• Take one-day course offered by education department</td>
<td>3/30/99</td>
<td></td>
</tr>
<tr>
<td>Networking skills</td>
<td>• Volunteer for committee work with local HIM association</td>
<td>9/30/98</td>
<td></td>
</tr>
<tr>
<td>Communication skills</td>
<td>• Take course on public speaking provided by education department</td>
<td>9/30/98</td>
<td></td>
</tr>
<tr>
<td>Additional professional development activities</td>
<td>• Ask manager to give me additional management responsibilities</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• If possible, participate on the hospital’s electronic record planning team</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Go on site visits to other facilities, especially ambulatory care and long-term care</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Monitor position openings in hospital and with other facilities in the new integrated system</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Monitor employment listings on AHIMA’s website</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Look through every <em>Keeping Pace</em> to find relevant new publications available from the AHIMA</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Attend local and video/audio seminars to keep up-to-date on HIM topics</td>
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</tbody>
</table>
Chapter 4

Health Information Manager for Integrated Systems

The healthcare delivery system in the United States has undergone significant change over the past 15 years and will likely continue to evolve for the foreseeable future. Trends in service delivery and reimbursement emerge and then are gradually subsumed or replaced by more recent trends. The rate of change varies in intensity and timing by geographic region, with rapid developments in some parts of the country at the same time other regions remain virtually unaffected. One trend in healthcare delivery, however, seems more universal than the others: the gradual disappearance of fragmented, fee-based services and the ongoing development of integrated, patient-centered services. Many integrated systems (also called integrated networks) provide healthcare services along the entire continuum of care, and some even provide wellness care with the goal of preventing illness as well as treating it. This emphasis represents a radical departure from previous acute care-focused delivery systems.

In this context, integration means the combination of multiple parts into a single whole as healthcare providers from various disciplines and healthcare facilities offering various levels of care join together to provide an expanded range of services. Integration, however, is not an either/or process. Integrated healthcare organizations range along a continuum of development, with minimal interdependence and total interdependence at the two extremes.

At the low extreme fall horizontally integrated facilities that have some pooled interdependencies; for example, two hospitals providing similar services in the same geographic area may agree to combine a specific service (say, obstetrics) and provide that service only at one of the facilities. The administrative functions of the two facilities remain separate.

At the high extreme are vertically integrated facilities that provide “seamless” care to their patients and share most administrative functions, including health information management. In other words, organizations may be said to be vertically integrated when coordinated services are provided by one multifacility enterprise under a single administration. A large, integrated healthcare delivery network is an example of a vertically integrated organization.

In general, mergers and acquisitions result in vertically integrated systems. Horizontally integrated healthcare organizations are created through a series of affiliations, partnerships, and contracts for service. For example, an acute care hospital, a rehabilitation hospital, a long-term care facility, and a home care program might merge to form one vertically integrated healthcare system capable of providing services to a stroke patient from the time he becomes ill until the time he is ready to resume normal activities. Alternatively, the same stroke patient might
receive coordinated services from a horizontally integrated delivery system that includes an acute care hospital and a rehabilitation hospital. The facilities in this system maintain a common health information network and an interconnected case management system that make it possible for the patient, along with his health record, to move smoothly from facility to facility as his treatment and condition require. (Compare integrated systems to traditional fee-for-service delivery systems that require patients and their families to manage their own care and to sort out confusing recommendations—and bills—from diverse providers and facilities.)

Many types of healthcare organizations are being affected by the trend toward integrated systems, not just acute care hospitals, for-profit organizations, and large, multifacility chains. For-profit organizations may merge with not-for-profit organizations, and for-profit organizations may partner with other for-profits. Integrated systems tend to be organized locally, but some large, for-profit systems have facilities throughout the United States.

Traditionally, health information management professionals worked in hospitals, and their practice was concentrated in acute care settings. As integrated systems have become more prevalent, however, it has become common for managers to oversee health information functions in more than one facility or in more than one care setting. Although the long-term effects of integration remain uncertain, a new role for health information managers is evolving to meet the demands of this challenging healthcare environment—that of the health information manager for integrated systems.

**Functions and Accountabilities**

Health information professionals who take on the role of information manager in an integrated delivery system face unique challenges that require an understanding of the entire healthcare continuum, proven managerial skills, and a strong foundation in health information management. (See the sample position description on the next page.) It is crucial that they recognize the big picture—aspects of healthcare delivery from the physician’s office, to the acute care hospital, to the long-term care center, to the occupational health clinic, and beyond. Dealing with changes in legislation and accreditation standards, interpreting requirements for reimbursement, monitoring developments in classification systems, and tracking advances in computer technology, all require a grasp of healthcare systems and influences far beyond the walls of one facility or setting.

Depending on the size and organizational structure of the integrated system, the health information manager may report in at the enterprise, or system, level or at the facility level. At the system level, he or she may report to the system’s chief information officer, chief operating officer, or another senior executive. His or her official title might be Health Information Director, Director of Health Information Services, Health Information Manager, Corporate Health Information Manager, or Corporate Health Information Director. If the manager works at one of the facilities in the system, his or her title may be Health Information Department Director, Manager of Health Information Services, or another similar title. At the facility level, he or she may report to the facility’s chief information officer or another executive administrator.
**Sample Position Description**

**Position Title:**  Health Information Manager (or Director)

**Immediate Superior:**  Chief Information Officer or Other Senior Executive of the Network

**General Purpose:**  The Health Information Manager is responsible for coordinating health information management services across the multifacility integrated healthcare system

**Responsibilities:**

- Working as a line manager, directs the health information management functions of all the facilities in the healthcare system
- Develops and deploys health information management systems as part of the healthcare system’s overall information system plan
- Monitors health information management systems and sets the healthcare system’s standards for data quality and ethical practice
- Participates in the development of health information management policies and procedures on release of information, confidentiality, information security, information storage and retrieval, and record retention
- Documents and enforces the healthcare system’s health information management policies and procedures
- Provides education and training to the healthcare system’s employees in areas relevant to health information management policies and procedures
- Supports and facilitates clinical, administrative, and external data use functions
- Monitors local, national, and international trends in healthcare delivery
- Monitors changes in legislation and accreditation standards that affect health information management
- Serves as an internal consultant on health information management issues including release of information, confidentiality, information security, information storage and retrieval, and record retention as well as authorship and authentication of health record documentation, standardization of medical vocabularies, and use of classification systems
- Performs and reports research on topics related to health information management
- Forecasts the healthcare system’s future technical and information needs
- Coordinates specialty databases

**Qualifications:**

- Master’s degree in health information management or a related field
- Certification as an RRA
- Experience in administrative and staff management
- Experience in project management
- Knowledge of information systems and healthcare applications as well as database applications and report writing software
Integrated systems and facilities can be organized in a number of different functional structures. The AHIMA task force that explored the role of the HIM professional in integrated systems outlined seven composite models of organizational structures for integrated systems.

In one type of organizational structure, the HIM professional serves as a project specialist. In the following diagram, for example, the boxes represent separate ongoing projects for which the health information manager would be responsible.

**Project Specialist Organizational Model**

In the entrepreneurial model, the HIM professional’s daily work is represented as one or more ongoing tasks or projects, and employees are considered business partners. The HIM professional in this type of environment would be encouraged to apply entrepreneurial skills, assume ownership of assigned projects, and take business risks.

**Entrepreneurial Organizational Model**

In the entrepreneurial model, the HIM professional’s daily work is represented as one or more ongoing tasks or projects, and employees are considered business partners. The HIM professional in this type of environment would be encouraged to apply entrepreneurial skills, assume ownership of assigned projects, and take business risks.
In the organizational model based on business units, the HIM professional works in a customer-focused, team-centered environment. In this type of environment, traditional hierarchical chains of command and spans of control are broken down or eliminated. As the following diagram illustrates, employees are encouraged to work in teams and to focus on customer-centered goals.

**Business Units (Circular) Organizational Model**
In the traditional organizational model, represented below, the HIM department is structured around a span of control. This type of organizational structure is effective in enterprises that focus on a hierarchical chain of command and delegated authority.

**Traditional Organizational Model**

![Traditional Organizational Model Diagram]

**Point of Service Organizational Model**

![Point of Service Organizational Model Diagram]

The point of service organizational model structures the HIM department around the services the department provides to its customers. This type of organizational structure is effective in enterprises that focus on their deliverables (that is, their services and products).
The HIM professional working in an integrated network structured according to a healthcare market model deals with healthcare services provided within a defined geographic business market. The HIM professional in this type of environment is encouraged to view operations from a global, or enterprisewide, point of view rather than from a viewpoint focused on an individual facility or a specific product or service.

**Healthcare Market Organizational Model**

The internal consultant organizational model represents an HIM role built on the concept that health information management is woven into the fabric of the enterprise. The management of information is integral to every operational area. The HIM professional in this type of environment plays the role of advisor.

No matter what organizational model they work under or what their official titles are, to perform effectively, health information managers in integrated systems must be proficient in the design and use of computer systems. They must be experienced in people and project management, as well as being experts in health information management with broad experience. A health information management professional who has managed health record processes in a variety of settings and who holds an advanced degree in health information management would make an ideal candidate for a management position in an integrated system.
In a horizontally integrated healthcare delivery system, each facility has its own fully staffed department of health information management and its own health information system. Because incompatible information systems represent one of the biggest obstacles to successful integration, often the most important role health information managers from facilities in a horizontally integrated system play is working closely with chief information officers and other executives to redevelop the various systems into an interlinked system capable of sharing clinical and operational data. For example, interfacility teams might be formed to develop health information policies and procedures for the affiliated organizations and to plan for future technical improvements in their information systems. Any number of cooperative arrangements are possible for healthcare organizations that join loosely integrated systems, and the roles health information managers might play are just as numerous.

However, most industry observers of the trend toward integration of healthcare services believe that loosely (or horizontally) integrated systems may actually add layers of expensive bureaucracy and additional staff rather than streamline services and management for cost efficiency and quality. For this reason, the rest of this discussion will assume that successful integrated systems in the future will be fully (or vertically) integrated.

As noted earlier, in a vertically integrated healthcare delivery system, the manager of health information services may work at either the facility level or the enterprise level. The manager working at the facility level is responsible for health information activities at only one facility, but the facility might offer a number of integrated services at various levels of care. For example, an acute care hospital might operate a wholly owned home care program, a hospice care program, an outpatient clinic, and/or a hospital-based outpatient oncology center. All of these services would share a common health information system and require coordinated health information management services. Similarly, a health information manager might work at a large, freestanding ambulatory care center affiliated with an integrated multifacility system. The manager of such a facility would be responsible for implementing the system’s health information policies and procedures and maintaining his or her facility’s link to the system’s central information system.

Health information managers at the enterprise level direct and/or coordinate health information management functions at all of an integrated healthcare system’s facilities. Depending on the organizational structure of the system, a manager may act as a line manager, as a staff manager, or as a line manager in some instances and a staff manager in others. For example, it would not be unusual for the manager to provide direction to one group of employees (say, the system’s centralized coding staff) and consultation and management support services to another group (say, the practice managers of the physicians’ group practices affiliated with the system). In any case, the manager’s role includes working with the system’s chief information officer and systems users to advance information systems and methods of application support. Improving data quality, access, privacy, security, and usability also fall under the health information manager’s responsibilities. Because the needs of each facility and practice setting are unique, the health information manager working at the enterprise level must adapt a flexible approach to setting systemwide policies and procedures. To accomplish this difficult task, he or she needs to be especially proficient in managing group decision making and building consensus among diverse individuals.

Management issues within integrated systems are complex. The health information manager working in an integrated system must be a troubleshooter and a problem solver. And above all, he or she must be a leader. Skills in negotiation, meeting facilitation, motivation, envisioning, networking, and change management are critical to successful leadership, as are personal flexibility, adaptability, and respect for diversity.

The ability to manage projects as well as people requires solid planning skills and an understanding of the implications of projects for the entire system. Project managers evaluate
concepts, design action plans and timetables, and lead the way to process and service improvements.

The health information manager in an integrated system monitors changes in federal and state regulations and accreditation standards that may affect health information management across a wide spectrum of healthcare settings, including long-term care and behavioral health, both of which have unique requirements. Working with other health information specialists, the manager also tracks new developments in communication and information technology to ensure that the system’s health information system continues to meet the current and future needs of a wide variety of healthcare professionals, service providers, analysts, and administrators.

Information security, confidentiality, release of information, data capture for a uniform data set, and data cleanup are just a few of the areas health information managers in integrated delivery systems must tackle. Managing for coding consistency in the use of numerous classification systems across disparate care settings is a constant challenge. Development and maintenance of the master patient index (or corporate person index) for the whole system is another major area of responsibility.

In integrated delivery systems, effective training in information management and health record processes is probably the most critical element of success. Not only information management staff, but every person who handles patient information or accesses the health information system throughout the entire system must consistently follow systemwide policies and procedures on confidentiality, access, release of information, and security. With so many people to train, the health information manager will be challenged to come up with new and cost-effective ways to achieve training goals. Training via videoconferencing and on-line classrooms are just two of the newer methods that might be used. Regular medical staff meetings, employee orientations, and one-on-one training are needed to keep everyone in the system up-to-date with changes in computer systems and information policies.

Scenario: A Day in the Life of a Health Information Manager in an Integrated Healthcare System

My job is with First Health Corporation, an integrated healthcare system that offers a full range of services in a large metropolitan area. I am responsible for the coordination of health information management functions across our multifacility system, which includes a teaching hospital affiliated with a nearby university medical school, several community hospitals, two long-term care facilities, a freestanding hospice center, a home health program, and numerous physicians’ practices and ambulatory diagnostic centers. Overall, I am responsible for overseeing about 170 health information management professionals, including 14 RRA-level department managers working at individual facilities. My office is in the system’s corporate headquarters not far from University Hospital.

I am a health information management professional with a baccalaureate degree in health information administration and a master’s degree in business administration. My background includes more than 10 years of management experience as the director of a health information department in a large tertiary care hospital. Since I received my MBA 6 years ago, I have focused on business process reengineering and technology. My job title is Health Information Director, and I report directly to the system’s chief operating officer.

On my way to work this morning, I used my cellular telephone to respond to e-mail and voice mail messages from yesterday afternoon, when I was away at a staff meeting at one of our suburban community hospitals. My day today starts with a meeting with the system’s chief financial officer. She is planning the acquisition of a small community hospital and its
affiliated group practice in a rural area about 90 miles south of the city. The CFO has asked me to evaluate how difficult it will be to integrate the patient demographic and clinical information systems from the new acquisitions under the enterprise’s information standards. This morning we will discuss the contents of my report, which is to be completed by the end of the month. The information I provide will be critical to decision making on the pricing contracts for the acquisitions.

After my meeting with the CFO, I am scheduled to have a telephone conference with a representative of a smart card program. My goal is to determine whether the vendor’s program fulfills the enterprise’s “fitness for use” criteria.

Next, I plan to attend a meeting of the clinical standards committee. The discussion will center on the requirements of an elder care center recently acquired by the system.

Then, I will lead the regular meeting of the data quality improvement team, of which I am the chair. The agenda this week includes a review of the audit results for the new enrollee registration system. Because the audit identified some consistent problems, a brainstorming session on the revision of processes is slotted for the second 30 minutes of the meeting.

After lunch, I will attend a meeting of representatives from local healthcare organizations participating in the metropolitan area’s community health information network. The group is responsible for setting standards for electronic data interchange. The topic will be the CHIN’s request to expand the patient-specific database to include confidential clinical data, a change that is meeting with substantial resistance from the participating organizations’ clinical staffs.

When I get back to my office in mid-afternoon, I plan to catch the Daily Healthcare News on the Internet. I often download stories for more information. I also plan to send an e-mail inquiry to the national health information system chat line to ask for information on the experience of other CHIN participants and the networking of confidential patient data.

My next task will be to finalize the outline and slides for a series of presentations I will be making next week to all of the enterprise’s employees. The subject is the ethical handling of confidential healthcare information in the ambulatory setting.

After that task is done, I plan to download data files to my PC so that I will be ready to start tomorrow on a face validity review of the network’s quarterly outcomes data. When my review is complete, I will release the information to the JCAHO, payer clients, and the news media.

Before I call in to an AHIMA task force videoconference to review the questions for the advanced health information management certification examination, I will check on my children via my interactive videoconferencing setup and remind them to do their homework. After the AHIMA videoconference, the rest of the day will be spent returning calls and answering e-mail. On my way out of the building, I plan to stop and review the prototype for a new interactive patient education terminal that is set up in the lobby.

Conclusion

Health information management in an integrated system environment demands a whole new set of technical and managerial skills. And the role demands a willingness to commit oneself to lifelong learning and professional growth. Information and communications technology will never stop changing. Cures for diseases will be found and new diseases will emerge. Delivery settings will move from hospitals, to outpatient clinics, to physicians’ offices. With the advent of telemedicine, geography will even become less relevant.

In the future, the role of the health information manager may carry even broader responsibility. To keep up, professionals will need to rely on professional journals, continuing education, seminars and distance learning programs, and on-line resources. Active membership in professional associations such as the American Health Information Management Association
and the Healthcare Information and Management Systems Society will allow health information managers in integrated systems to benchmark best practices with other professionals and to keep pace with developments in professional standards. Peer networking will be more important than ever before as the healthcare industry evolves and demands concomitant changes in health information management.

**Bibliography and References**


## Skill and Knowledge Analysis

### Healthcare Delivery Systems

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Various healthcare delivery settings and systems (for example, acute care,</td>
<td>5—Skilled use</td>
<td>• Ability to articulate a detailed knowledge of all types of healthcare delivery settings and systems</td>
</tr>
<tr>
<td>outpatient care, home care, hospice care, subacute care, clinical care</td>
<td></td>
<td>• Clear understanding of the positive and negative aspects of each delivery setting or system</td>
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<td>in physicians’ offices, occupational healthcare, and managed care)</td>
<td></td>
<td>• Ability to articulate a detailed model of each delivery setting or system</td>
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<tr>
<td></td>
<td></td>
<td>• Ability to identify and explain the benefits of each delivery setting or system</td>
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<td></td>
<td></td>
<td>• Clear understanding of the effects of external forces on delivery settings and systems and ability to recommend proactive responses</td>
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<tr>
<td></td>
<td></td>
<td>• Knowledge of health information-related issues within and among healthcare delivery settings and systems</td>
</tr>
<tr>
<td>Reimbursement</td>
<td>5—Skilled use</td>
<td>• Clear understanding of the reimbursement process within the enterprise</td>
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<tr>
<td></td>
<td></td>
<td>• Ability to recommend documentation needed to support reimbursement</td>
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<td></td>
<td></td>
<td>• Ability to articulate a detailed knowledge of the principles of payer mix</td>
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<td></td>
<td></td>
<td>• Clear understanding of the implications of the enterprise’s payer mix</td>
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<td></td>
<td></td>
<td>• Ability to articulate a detailed understanding of various reimbursement models (prospective payment, capitation, per diem, APGs, APR-APGs)</td>
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<td></td>
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<td>• Ability to communicate with payers and other managers to resolve reimbursement issues</td>
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<tr>
<td></td>
<td></td>
<td>• Ability to interpret reimbursement reports and to recommend proactive responses to any problems identified</td>
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<tr>
<td>Emerging issues</td>
<td>4—Detailed</td>
<td>• Ability to identify and articulate a detailed knowledge of healthcare industry trends</td>
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<tr>
<td>understanding</td>
<td></td>
<td>• Expertise in tracking and interpreting changes in state and federal laws</td>
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<tr>
<td></td>
<td></td>
<td>• Ability to initiate appropriate responses to emerging issues</td>
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<tr>
<td></td>
<td></td>
<td>• Command of how impending legislation will affect the enterprise</td>
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<tr>
<td></td>
<td></td>
<td>• Ability to articulate a detailed knowledge of external forces that could affect organizational and departmental planning</td>
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## People Management

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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</table>
| Staffing                 | 5—Skilled use | • Ability to identify appropriate skill set for staff  
• Expertise in recruitment of individuals who match the desired skill set  
• Working knowledge of interviewing skills  
• Mastery of staff retention and turnover issues  
• Ability to apply workable solutions to staff discipline and termination issues  
• Expertise in staffing policy and procedure development  
• Proficiency in the human resources policies of the enterprise  
• Working knowledge of labor laws  
• Working knowledge of job recruitment and hiring software applications |
| Performance evaluation   | 5—Skilled use | • Expertise in the development of valid job descriptions  
• Ability to develop measurable performance standards  
• Expertise in regular employee performance evaluations  
• Skill in the use of employee productivity measures  
• Proficiency in the creation of policies and procedures that support staff development  
• Command of the employee promotion process  
• Ability to develop staff reward and recognition systems |
| Training                 | 5—Skilled use | • Adeptness in the design of policies and procedures on training  
• Mastery of employee-coaching skills  
• Expertise in employee counseling  
• Proficiency in the design of education strategies for employees |
| Interaction skills       | 5—Skilled use | • Command of negotiation skills  
• Ability to initiate steps toward gaining consensus  
• Ability to interact with a variety of staff members and external customers  
• Proficiency in written and verbal communication |

## Compliance

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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| Accreditation standards  | 5—Skilled use | • Expertise in managing compliance with applicable accreditation standards  
• Ability to evaluate current practice against standards  
• Ability to initiate policy and procedure revisions to comply with standards  
• Awareness of changes in standards  
• Ability to act as a resource on standards to others in the enterprise  
• Expertise in the interpretation of standards  
• Ability to recognize and distinguish among applicable standard groups (JCAHO, HCFA, NCQA)  
• Ability to access resources and references on the standards |

(continued on next page)
### Compliance (Continued)

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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<tbody>
<tr>
<td>Relevant state and federal laws</td>
<td>5—Skilled use</td>
<td>• Ability to recognize applicable state and federal laws</td>
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<td></td>
<td>• Ability to understand the impact of changing laws on current practice</td>
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<td></td>
<td></td>
<td>• Proficiency in development of policy and procedure revisions to comply with current law</td>
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<tr>
<td></td>
<td></td>
<td>• Awareness of changes in state and federal laws</td>
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<td></td>
<td></td>
<td>• Ability to keep upper management informed when necessary</td>
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### Project Management

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<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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</thead>
<tbody>
<tr>
<td>Planning</td>
<td>5—Skilled use</td>
<td>• Expertise in the selection of project participants</td>
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<td></td>
<td></td>
<td>• Ability to define the scope of the project</td>
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<td></td>
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<td>• Ability to outline expected outcomes</td>
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<td>• Mastery of the ability to identify, schedule, and sequence the steps in a project</td>
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<td></td>
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<td>• Ability to communicate project expectations</td>
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<td>• Skill in motivating staff throughout the project</td>
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<td></td>
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<td>• Ability to identify new business opportunities</td>
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<td></td>
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<td>• Proficiency in monitoring project costs</td>
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<td></td>
<td></td>
<td>• Ability to manage project revisions</td>
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<td></td>
<td></td>
<td>• Expertise in delivering a project on time and within budget</td>
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<td></td>
<td></td>
<td>• Expertise in the reworking of processes</td>
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<tr>
<td></td>
<td></td>
<td>• Skill in adding structure to projects</td>
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<tr>
<td>Project management tool set</td>
<td>5—Skilled use</td>
<td>• Proficiency with project management software applications</td>
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<tr>
<td></td>
<td></td>
<td>• Expertise in the development and use of Gantt charts</td>
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<td></td>
<td></td>
<td>• Skill in the development of flowcharts</td>
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<tr>
<td></td>
<td></td>
<td>• Mastery in the design and use of storyboards</td>
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<td></td>
<td></td>
<td>• Proficient use of cause-and-effect diagrams</td>
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<tr>
<td></td>
<td></td>
<td>• Ability to develop and use PERT network charts</td>
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### Personal Effectiveness Skills

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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</thead>
</table>
| Leadership                  | 5—Skilled use | • Ability to assess outcomes and to assume responsibility by utilizing risk-taking skills  
• Command of negotiation skills  
• Ability to be flexible, adaptable, and open to other options and change  
• Mastery of appropriate application of assertive and aggressive personality traits  
• Command of facilitation skills  
• Mastery of self-discipline, self-motivation, and acceptance of responsibility  
• Application of analytical skills needed to keep situations in perspective  
• Mastery of an understanding of when to lead and when to follow  
• Acceptance of diversity  
• Command of interaction skills for collaborating and partnering with peers  
• Command of networking skills for collaboration and partnering with peers  
• Proficiency with human resources skill set  
• Ability to identify positive attributes in associates and to capitalize on them  
• Ability to accept new challenges  
• Ability to support an environment that creates new opportunities  
• Ability to construct a foundation and process that supports change  
• Ability to incorporate change initiatives into daily operations  
• Ability to articulate the enterprise’s vision |

### Health Information Management

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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| Release of information, confidentiality, and information security | 5—Skilled use | • Ability to articulate a detailed knowledge of applicable state and federal laws and regulations  
• Ability to articulate a detailed knowledge of applicable standards and principles  
• Proficiency in the initiation of policies and procedures to comply with current laws, regulations, and standards  
• Adeptness in interpreting and communicating appropriate responses to laws, regulations, and standards  
• Ability to write the enterprise’s policy on the release of information  
• Knowledge of health information management release of information resources  
• Mastery of release of information, confidentiality, and information security principles and applications |
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<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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</table>
| Legal issues                                   | 5—Skilled use                 | • Ability to initiate policies and procedures that comply with current state and federal laws  
• Mastery of resources on laws, regulations, and legal issues that affect health information management  
• Ability to work with legal counsel to develop opinions on how to achieve expected outcomes of laws, regulations, and legal issues that affect health information management  
• Knowledge of the application of laws, regulations, and legal issues in the current and emerging healthcare environment  
• Expertise in applying the intent of laws, regulations, and legal issues across the healthcare continuum (that is, inpatient, outpatient, long-term care, and subacute settings) |
| Information storage and retrieval systems and retention guidelines | 4—Detailed understanding      | • Knowledge of various filing and storage methodologies  
• Ability to apply process improvement techniques in evaluations of technology and methodology  
• Ability to serve as a resource to other members of the organization on the subjects of information storage and retrieval systems and retention guidelines  
• Proficiency in the application of filing and storage system concepts to the current and emerging healthcare environment  
• Ability to initiate policies and procedures that comply with current state and federal laws |
| Authorship and authentication                  | 5—Skilled use                 | • Ability to initiate policies and procedures that comply with current state and federal laws  
• Ability to serve as a resource to other members of the organization on the subject of authentication and authorship  
• Expertise in the application of authentication and authorship concepts to current and emerging environments |
| Medical vocabularies                           | 4—Detailed understanding      | • Ability to articulate a detailed knowledge of the issues and effects of medical vocabularies on data quality  
• Command of the attributes of an effective standardized medical vocabulary  
• Ability to evaluate current medical vocabularies in use in the enterprise  
• Ability to develop an action plan for establishing a standardized medical vocabulary  
• Ability to serve as a resource to other members of the enterprise on the subject of medical vocabulary development  
• Expertise in the application of medical vocabulary concepts in the current and emerging healthcare environment |
| Classification systems                         | 4—Detailed understanding      | • Ability to articulate a detailed knowledge of the issues and effects of classification systems on the enterprise  
• Ability to evaluate the current classification systems in use in the enterprise  
• Ability to serve as a resource to other members of the organization on the subject of classification systems  
• Ability to identify opportunities to improve standardization of classification systems and participation in corrective action as required |
<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research tool/protocol</td>
<td>5—Skilled use</td>
<td>• Ability to select and establish a common vocabulary in a database&lt;br&gt;• Ability to create a data dictionary&lt;br&gt;• Ability to perform a focus study to determine the scope of research&lt;br&gt;• Mastery of benchmarking concepts&lt;br&gt;• Mastery of best practice concepts&lt;br&gt;• Knowledge of resources on research guidelines&lt;br&gt;• Expertise in the application of research concepts to the current and emerging healthcare environment</td>
</tr>
<tr>
<td>Research study</td>
<td>5—Skilled use</td>
<td>• Ability to perform a literature search&lt;br&gt;• Expertise in using the Internet as a research tool&lt;br&gt;• Proficiency in the design of survey tools&lt;br&gt;• Ability to prepare a report using an ad hoc report writing application&lt;br&gt;• Ability to design a data collection tool</td>
</tr>
<tr>
<td>Presentation of study</td>
<td>5—Skilled use</td>
<td>• Ability to analyze the data from a research study&lt;br&gt;• Ability to prepare and deliver a presentation of study results to various audiences&lt;br&gt;• Proficiency in the selection of presentation tools for diverse audiences&lt;br&gt;• Ability to prepare a written report of study results&lt;br&gt;• Ability to prepare an executive summary of a study&lt;br&gt;• Expertise in publishing the findings of a study&lt;br&gt;• Demonstrated competence in data analysis and presentation to decision makers</td>
</tr>
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</table>

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<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information systems tool set</td>
<td>4—Detailed understanding</td>
<td>• Proficiency in basic computing and information management sufficient to be conversant on the subject&lt;br&gt;• Command of major computer hardware and software concepts&lt;br&gt;• Ability to describe and discuss the basic components and functions of computers&lt;br&gt;• Ability to access databases&lt;br&gt;• Experience with systems for communication (electronic mail, Internet)&lt;br&gt;• Experience with data storage, retrieval, and database management systems&lt;br&gt;• Experience with statistical computing&lt;br&gt;• Experience with reimbursement-related medical information systems&lt;br&gt;• Experience with automated billing systems&lt;br&gt;• Knowledge of decision support systems&lt;br&gt;• Ability to perform techniques to verify data accuracy, integrity, and quality&lt;br&gt;• Knowledge of and experience with health information management-related applications (transcription, dictation, deficiency tracking, chart locator, abstraction, encoder, registration, master patient index, registries, clinical data repository, and quality management)&lt;br&gt;• Familiarity with enterprisewide applications and integration</td>
</tr>
<tr>
<td>Information system design</td>
<td>4—Detailed understanding</td>
<td>• Ability to evaluate computer systems&lt;br&gt;• Ability to identify the information needs within the work environment and to select appropriate solutions&lt;br&gt;• Proficiency in systems analysis&lt;br&gt;• Knowledge of major social, ethical, legal, and organizational issues related to computerized information systems&lt;br&gt;• Mastery of the ability to forecast technical and information needs&lt;br&gt;• Knowledge of healthcare clinical databases&lt;br&gt;• Ability to evaluate effective solutions</td>
</tr>
<tr>
<td>Information system technology</td>
<td>3—Concept</td>
<td>• Ability to recognize and distinguish among applicable standards (HL7, ASTM, X12)</td>
</tr>
</tbody>
</table>

* Competency levels: 1 = awareness (introductory recall and recognition); 2 = literacy (knowledge of framework and content); 3 = concept (comprehension, translation, extrapolation, and interpretation of meaning); 4 = detailed understanding (appropriate application of knowledge in a structured and controlled context); 5 = skilled use (application using analysis, synthesis, and evaluation in new situations).
Chapter 5
Clinical Data Specialist

Computer-based health records, electronic data-handling systems, and standardized clinical terminologies are being developed and implemented in healthcare organizations across the United States. Universal adoption of automated health information systems is all but certain some time during the next decade. From that point on, the key to success (and perhaps even survival) for healthcare organizations of all kinds will be ready access to accurate, uniform clinical data. Eventually, detailed, reliable, and comparable clinical data will make possible real and lasting improvements in quality of care, treatment outcomes, and cost control. And the healthcare organizations that offer the best outcomes, highest quality, and lowest cost will be the most successful providers in their communities.

Once automated systems for collecting comparable and accurate data have been proven and become widely used, data will drive decision making in every facet of healthcare. Data will be the basis of practice standards and clinical protocols. They will underlie negotiations among payers and providers. They may even influence consumers choosing physicians and committees granting professional privileges.

The clinical data specialist will play an important role in ensuring the availability and relevance of this invaluable resource as well as in converting data into truly useful information. In some cutting-edge healthcare enterprises, clinical data specialists have already begun to take on this role as they mine data from diverse information sources and internal databases. Now and in the future, they will occupy an ideal vantage point to know what data exists, where to find it, and how to interpret it.

Clinical data management and coding have been parts of health information management since the beginning of the profession. The role of the clinical data specialist has evolved along with changes in the health care delivery system, most notably in the early 1980s when the prospective payment system was instituted for Medicare payments. As other payers have moved to reimbursement systems based on diagnosis-related groups, accurate and timely clinical coding has come to the forefront of health information management. This trend will continue, even broaden, in the future, and the role of the clinical data specialist will continue to evolve along with it.

Functions and Accountabilities

As now, the number of clinical data specialists employed in the future healthcare organization will depend on the size and structure of the organization. The coding specialist working today in an acute care hospital most likely reports to a supervisor in the health information
management department. In integrated delivery systems, clinical data and coding specialists often work in centralized health information management departments and report to the director of health information management. Many already find themselves working in nontraditional environments such as insurance companies, health maintenance organizations, pharmaceutical companies, and consulting firms and in nontraditional healthcare settings such as ambulatory surgery centers, physicians’ offices and clinics, and home health agencies. In the future, as information management functions are combined and reorganized, clinical data specialists will report in at a number of levels within healthcare organizations. Official titles will depend on the professional’s level of responsibility. The specialists will work in an even wider variety of settings, including:

- Integrated healthcare delivery systems
- Long-term care facilities
- Ambulatory surgery facilities
- Rehabilitation facilities
- Physicians’ offices and clinics
- Subacute care facilities
- Acute care hospitals
- Specialty hospitals
- Home health agencies
- Disease registries
- Insurance companies
- Managed care organizations
- Pharmaceutical companies
- Medical device companies
- Computer technology companies
- Software vendors
- Government agencies
- Colleges and other educational institutions
- Consulting firms
- Professional review organizations
- Professional societies and associations

To perform effectively, the clinical data specialist working in an organization or integrated system with a totally automated health information system will continue to need professional skills in information management and expertise in using the classification systems that are relevant to the type of services the facility provides. In addition, he or she will need to understand current reimbursement methodologies and basic statistics. (See the sample job description on the next page.)
A requirement for proficiency in the use of the healthcare applications of computers will be a given, especially a full understanding of the flow of information in automated health record systems. He or she should also be able to apply the principles of clinical research and follow the steps in the development of clinical protocols. To work on materials for administrative decision making, the clinical data specialist will need a working knowledge of the local and national healthcare markets and marketing fundamentals. When training is to be a part of his or her position’s functions, an understanding of adult learning techniques will be required. Managers will always need human resource management skills as well as budgeting and planning fundamentals.

Sample Job Description

Position Title: Clinical Data Specialist

Immediate Supervisor: Director of Health Information Management

General Purpose: The Clinical Data Specialist is a member of the data management team responsible for ensuring the accuracy and completeness of clinical coding; validating the information in the databases for outcomes management and specialty registries; and performing clinical research across the entire integrated healthcare system

Responsibilities:
- Designing and using audit tools to monitor the accuracy of clinical coding
- Monitoring compliance with policies and procedures relevant to clinical data management and making suggestions for improvements
- Interpreting data for reimbursement applications
- Validating data for various disease registries
- Validating data for the outcomes management program
- Preparing utilization analyses
- Preparing patient demographic reports
- Preparing provider profiles
- Collecting and analyzing data for special clinical research projects

Qualifications:
- Baccalaureate degree in health information management or a related field
- Certification as an RRA or ART
- Certification as a CCS and CCS-P
- Knowledge of database applications, spreadsheet design
- Knowledge of report writing software
Futurists observing the changes in health information management functions predict that in the future most clinical coding will be performed at the point of care. Computer-based health record systems will generate ICD-10-CM, ICD-10-PCS, and other classification codes on the basis of the electronic documentation entered by healthcare providers at the bedside. The systems will be designed to automatically query providers for more information when inadequate or inconsistent information is entered.

The role of the coder will evolve from coding and abstracting health records to auditing codes in various repositories and registries. Using encoders and other electronic tools, the coder will validate the codes generated at the point of care by reviewing the electronic data and suggesting clarifications, revisions, and additional information as necessary to fully describe each episode of care.

The clinical data specialist’s role in converting data into information for decision making will continue to expand. He or she will analyze clinical data, interpret the information gleaned from the data, and then display and present data in ways that are useful to decision makers throughout the organization. The information digested from health records in the future will be used, as it is today, in both clinical and operational applications, for example:

<table>
<thead>
<tr>
<th>Clinical Applications</th>
<th>Operational Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Case management</td>
<td>• Accreditation</td>
</tr>
<tr>
<td>• Case-mix analysis</td>
<td>• Regulatory compliance</td>
</tr>
<tr>
<td>• Clinical decision support</td>
<td>• Education and training</td>
</tr>
<tr>
<td>• Clinical protocol development</td>
<td>• External reporting</td>
</tr>
<tr>
<td>• Outcomes analysis</td>
<td>• Financial analysis</td>
</tr>
<tr>
<td>• Practice pattern analysis</td>
<td>• Reimbursement</td>
</tr>
<tr>
<td>• Quality improvement</td>
<td>• Medical staff credentialing</td>
</tr>
<tr>
<td>• Registries</td>
<td>• Marketing</td>
</tr>
<tr>
<td>• Clinical research</td>
<td>• Utilization management</td>
</tr>
<tr>
<td>• Clinical research</td>
<td>• Strategic planning</td>
</tr>
</tbody>
</table>

Clinical data specialists may also be assigned any or all of the following responsibilities, depending on the type of organization they work in and their level of authority:

- Managing nonprovider coding staff
- Designing and using audit tools to monitor coding accuracy
- Developing, monitoring, and revising policies and procedures relevant to clinical data management
- Interpreting data for reimbursement applications
- Identifying the organization’s information needs, defining data elements, and determining data collection methodologies
- Providing training to clinical staff in data-entry techniques and other aspects of clinical data collection
- Providing orientation and training to new employees
- Managing the preparation of disease registries
• Overseeing the outcomes management program
• Using clinical data to analyze utilization patterns
• Using clinical data to prepare patient demographic reports
• Using clinical data to prepare provider profiles
• Using clinical data to analyze the efficacy of clinical protocols
• Collecting and analyzing data in support of organizational strategic planning
• Collecting and analyzing data for special research projects

For example, a clinical data specialist working in a psychiatric hospital might be responsible for using clinical protocols and practice guidelines to document the outcomes management program. He or she would review and update clinical databases and assist clinicians by updating problem lists and following up on referrals. In addition, he or she might generate utilization reviews and prepare patient and provider profiles. In another type of setting, a large, university medical center, a clinical data specialist might be assigned to the cardiovascular and critical care units, where he or she would use an encoder to revise, clarify, and add coded data in the automated health record system.

Scenario: A Day in the Life of a Clinical Data Specialist

My job is with a family practice clinic located in a residential suburb of a city on the West Coast. The clinic is a partnership of 32 physicians specializing in family practice, internal medicine, and pediatrics. The staff includes 8 nurse practitioners, 15 registered nurses, 10 medical assistants, 3 phlebotomists, a dietician, a practice manager, and several receptionists and billing clerks. The clinic is affiliated with a nearby community hospital, which is part of a large, integrated network that serves the northern part of the state.

I am the only health information management professional working here. When I go on vacation or when there is an especially heavy caseload to handle, the clinic uses a health information service to take over some of my responsibilities. My baccalaureate degree is in health information management, and I hold RRA and CCS-P certification from the American Health Information Management Association. Before coming to work at the clinic last year, I worked for two and a half years in an outpatient clinic of the teaching hospital at the university where I received my degree.

My title is Clinical Data Manager. I am responsible for validating the clinical data used for patient care and financial management at the clinic. Physicians and other members of the clinical team enter data directly into the patients’ computer-based health records during or shortly after clinic appointments, telephone encounters, and hospital rounds. The clinicians are required to follow standard clinical terminology and the data dictionary provided by the corporate system’s information services department to describe services, symptoms, history, diagnoses, and procedures. Ancillary data such as laboratory results and consulting reports are transmitted directly into patients’ records by service providers, who send encrypted reports via the Internet or the corporate system’s Intranet. The clinic’s health record system then automatically classifies the data and provides appropriate diagnostic and procedural codes. I will spend this morning, like most mornings, reviewing the portions of the health records that were updated yesterday to make sure that the data entered are accurate and complete and that the codes assigned by the automatic encoder are correct.
After lunch, I am scheduled to meet with Dr. Harris, the clinic’s medical director, to discuss the reports I prepared from the past month’s clinical data. One report includes graphics that show our patients’ utilization pattern for the month compared to the month before and the same month last year. Another report uses a pie chart to indicate the month’s case mix. My third report analyzes outcomes data by physician. Dr. Harris will use my reports as the basis for his presentation at next week’s medical staff meeting and in his own monthly report to our parent hospital’s chief of staff.

At 2 o’clock, I plan to offer some informal refresher training on data-entry techniques to one of our newer physicians, who is having trouble adjusting to our computer system. An orientation class for new employees is scheduled at 2:30. I will walk the employees through an on-line training program I developed to simulate the use of data elements in our health record system.

The last thing on my calendar today is a meeting with two systems analysts from corporate headquarters. The agenda includes a discussion of the timetable for updating the clinic’s coded data tables for the new fiscal year. We will also go over some minor changes in the data dictionary. I will answer telephone messages and e-mail questions before I go home tonight. If there is time, I will send out a staff memo on the reasons for the data dictionary changes.

Conclusion

The era of information-based decision making in healthcare has already begun. Maintaining the quality and availability of accurate, comparable, and reliable data and understanding how to turn huge amounts of undigested data into meaningful information will continue to require the skills and experience of health information management professionals. Today’s clinical data specialists, like their colleagues in the past, face the intriguing challenge of changing along with the healthcare system.

A blue ribbon committee on the future of clinical coding is scheduled to convene during the fall of 1998. The committee will be made up of health information management practitioners and representatives of the federal government, the cooperating parities, information system developers, major payer groups, and vocabulary development groups. An outcomes report will be released during the spring of 1998.

Bibliography and References


# Skill and Knowledge Analysis

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coding</td>
<td>4—Detailed</td>
<td>• Understanding of, and ability to use, current clinical coding systems relevant to the organization: ICD-9-CM, CPT, DSM-IV, SNOMED, ICD-O</td>
</tr>
<tr>
<td></td>
<td>understanding</td>
<td></td>
</tr>
<tr>
<td>Abstraction of data</td>
<td>5—Skilled use</td>
<td>• Ability to gather clinical data from primary data sources</td>
</tr>
<tr>
<td>Research studies</td>
<td>4—Detailed</td>
<td>• Understanding of the elements required for research and outcomes</td>
</tr>
<tr>
<td></td>
<td>understanding</td>
<td>• Ability to participate in the design of studies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ability to promote adherence to confidentiality standards in research studies</td>
</tr>
<tr>
<td>Outcomes management</td>
<td>4—Detailed</td>
<td>• Ability to collect, analyze, and interpret medical information for quality, accuracy, and so forth</td>
</tr>
<tr>
<td></td>
<td>understanding</td>
<td>• Ability to establish goals and parameter outcomes to be analyzed</td>
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<tr>
<td></td>
<td></td>
<td>• Ability to design specifications for study around outcomes</td>
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<tr>
<td></td>
<td></td>
<td>• Ability to review data and identify patterns, trends, and so on</td>
</tr>
<tr>
<td>Audit and validation</td>
<td>5—Skilled use</td>
<td>• Ability to design audit tools</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ability to perform quality audits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ability to identify the problems and issues suggested by audits</td>
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<tr>
<td></td>
<td></td>
<td>• Ability to implement strategies to resolve issues</td>
</tr>
<tr>
<td>Forms design</td>
<td>4—Detailed</td>
<td>• Ability to create useful forms for managing data</td>
</tr>
<tr>
<td></td>
<td>understanding</td>
<td>• Understanding of the flow of the data to be captured on the form</td>
</tr>
<tr>
<td>Computer application packages</td>
<td>5—Skilled use</td>
<td>• Ability to create attractive, high-quality documents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ability to integrate information from other sources into documents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ability to transmit documents electronically</td>
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<tr>
<td></td>
<td></td>
<td>• Proficiency in word processing and spreadsheet applications</td>
</tr>
<tr>
<td>Internet and remote access</td>
<td>3—Concept</td>
<td>• Ability to communicate electronically both internally and externally</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ability to obtain data from the Internet and other remote sites</td>
</tr>
<tr>
<td>Data source review</td>
<td>4—Detailed</td>
<td>• Ability to identify clinical data and where it is warehoused</td>
</tr>
<tr>
<td></td>
<td>understanding</td>
<td></td>
</tr>
<tr>
<td>Statistical applications software</td>
<td>4—Detailed</td>
<td>• Ability to select statistical applications appropriate to the data to be captured</td>
</tr>
<tr>
<td></td>
<td>understanding</td>
<td>• Familiarity with the statistical software used in the organization</td>
</tr>
<tr>
<td>Reimbursement applications software</td>
<td>4—Detailed</td>
<td>• Ability to use and interpret data from reimbursement software applications such as DRG groupers, case-mix programs, APGs, and so forth</td>
</tr>
<tr>
<td>Skill Area</td>
<td>Level*</td>
<td>Demonstrated By</td>
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</table>
| Presentations                      | 4—Detailed        | • Ability to choose appropriate software package and create high-quality presentation materials using appropriate software for training, education, and presentation of clinical data and statistical information  
                                 | understanding     | • Ability to analyze audience to determine appropriate presentation style and data to be presented                                           |
| Project management                 | 4—Detailed        | • Ability to identify project participants  
                                 | understanding     | • Ability to identify steps and sequence of steps within the project  
                                 |                    | • Ability to construct the project timeline  
                                 |                    | • Ability to identify and manage project costs  
                                 |                    | • Ability to manage task and timeline revisions  
                                 |                    | • Understanding of budget categories and cost structures                                          |
| Software specification development | 4—Detailed        | • Ability to identify the data to be collected in a computer application  
                                 | understanding     | • Ability to communicate needs to computer programmers  
                                 |                    | • Ability to develop technical specifications for programming  
                                 |                    | • Ability to understand specific data elements and their values                               |
| Policy and procedure development   | 5—Skilled use     | • Ability to create and revise clear policies and procedures  
                                 |                    | • Ability to determine and identify areas in which policies and procedures are needed  
                                 |                    | • Ability to present main issues for decision making                                           |
| Marketing of self and HIM profession | 5—Skilled use | • Ability to identify where skills fit within the organization  
                                 |                    | • Ability to demonstrate skills and knowledge base  
                                 |                    | • Ability to recognize cultural barriers within the current organization                       |
| Negotiation skills                 | 5—Skilled use     | • Ability to identify the concerns of the participants  
                                 |                    | • Ability to clarify essential outcomes  
                                 |                    | • Ability to demonstrate flexibility in approach  
                                 |                    | • Ability to recognize cultural barriers within the organization                               |
| Networking skills                  | 5—Skilled use     | • Ability to use other contacts for problem resolution  
                                 |                    | • Ability to identify peers who could assist in projects  
                                 |                    | • Ability to locate information through other sources                                            |
| Communication skills               | 5—Skilled use     | • Ability to communicate to others at all levels of the organization  
                                 |                    | • Ability to produce clear and appropriate written and verbal communications  
                                 |                    | • Ability to act as a liaison between parties within the organization or on the organization’s behalf |

* Competency levels: 1 = awareness (introductory recall and recognition); 2 = literacy (knowledge of framework and content); 3 = concept (comprehension, translation, extrapolation, and interpretation of meaning); 4 = detailed understanding (appropriate application of knowledge in a structured and controlled context); 5 = skilled use (application using analysis, synthesis, and evaluation in new situations).
Chapter 6

Patient Information Coordinator

Along with revolutionary changes in healthcare delivery and reimbursement systems over the past 15 years have come related changes in the philosophy of healthcare. Not long ago, healthcare in the United States focused almost exclusively on the treatment of diseases and injuries, and fragmented health services often emphasized the needs of the provider over the well-being of the patient. Today, healthcare is moving toward a philosophy based on maintaining wellness and on providing patient-centered care organized along a seamless continuum of services. In large part, the impetus behind this change in philosophy has been widespread dissatisfaction among the users of healthcare services. Over the past two decades, consumers have come to expect and demand better quality, value, and choice in all of the products and services they purchase. And healthcare is no exception.

The trend toward integrated healthcare delivery systems is a reflection of this changing philosophy and increased expectation of quality and value. The ultimate goal of integrated systems (or networks) will be to provide coordinated services that range from wellness programs, to ambulatory care services, to acute care services, to hospice services. The needs of the patient will come first, and greater emphasis will be placed on communication between patient and provider.

Growing enrollments in managed care organizations over the past two decades are also a factor in the emergence of this new service role for health information management professionals. The patient information coordinator will work directly with patients to help them to understand managed healthcare services.

The coordinator may help individual patients by:

- Ensuring the timely transfer of patient information among healthcare providers in diverse settings along the continuum
- Showing patients how to manage their personal health histories
- Explaining who has access to health information and for what purposes
- Explaining how managed care works
- Showing patients how to access computer-based information resources
Functions and Accountabilities

Experienced professionals in health information management who decide to take on the role of patient information coordinator will face a different set of challenges. Customer service will be the primary focus of the position, and as such, patient information coordinators, to be successful and satisfied in their new roles, will need be able to empathize with customers from all segments of their community as well as being able to work effectively with the healthcare professionals they are accustomed to seeing as colleagues.

Although the HIM skills and knowledge they gained in release of information processes and confidentiality protection will be vital to patient information coordinators, equally important are skills in public speaking, training, and written and electronic communications. To assist customers as they navigate complex healthcare and reimbursement systems, patient information coordinators also will need a detailed understanding of the principles of healthcare reimbursement systems.

Patient information coordinators will also need to be able to think analytically and manage their time effectively. They will be required to work with computerized data abstracting systems and sophisticated computer networks that often go beyond their own organizations to community health information networks and internet applications.

Complex financial and business management skills will become critical. Like other service managers, patient information coordinators will be responsible for projecting revenue and expenses for their services, preparing and maintaining budgets, and performing short- and long-term strategic planning. They will also need to learn how to design, write, and defend effective business plans to implement the strategic directions they choose to follow.

Advanced negotiation skills will be needed to handle customer service problems and devise creative approaches that allow customers, caregivers, and other parties (such as insurance representatives) to find win–win solutions to shared problems. Some customer service problems might require that the patient information coordinator become a champion for change within his or her organization, which is not always a comfortable position.

Policy administration and staff management will also occupy a significant portion of the patient information coordinator’s time. And the need to balance legal and organizational requirements against the legitimate requests of individual patients and their caregivers or families will be a continuing challenge.

In many ways, the functions and responsibilities of patient information coordinators will represent a new kind of work for HIM professionals. For health information managers in more traditional roles, patients are statistics: names and diagnoses and outcomes known only as entries in health records to be reviewed, coded, abstracted, and filed. The challenge for those who choose the new role of patient information coordinator will be to become part of a caregiving team that has direct contact with patients and their families and so a direct impact on the customer’s healthcare experience.
Sample Job Description

Position Title:  Patient Information Coordinator

Immediate Supervisor:  Director of Health Information Services

General Purpose: The Patient Information Coordinator is responsible for fostering high levels of customer service in coordinating all information provided to customers and their families and caregivers and ensuring that they receive appropriate, timely, and accurate health information about the services provided by caregivers, financial services, social services, and other medical and legal entities

Responsibilities:

• Handling all requests and inquiries for patient information; dispersing the information with accountability to all regulatory entities and according to the facility’s policies and procedures
• Coordinating patient information through all caregivers, insurance companies, billing departments, and patients according to all of the facility’s policies and procedures
• Maintaining information flow according to the facility’s established guidelines
• Meeting one-on-one with patients to facilitate the coordination of their health information with the facility and with their insurance companies or other payers
• Maintaining the confidentiality of all patient, client, and facility information at all times, both while on and off duty
• Performing quality reviews according to the quality improvement policies and procedures to ensure patient satisfaction; reporting these results quarterly to the director of health information services
• Demonstrating a complete understanding of the release of information process, including guidelines in training manuals, regulatory manuals, and facility policies and procedures as they relate to patient care information and billing information
• Keeping current with ongoing or new legislative issues related to the release of information
• Working with the IS department to incorporate new technologies
• Planning and maintaining a budget
• Communicating effectively at all levels, internally and externally, within the organization and expressing ideas and information clearly and concisely, in verbal and written form
• Presenting educational seminars
• Actively contributing to the morale and teamwork of the staff and facility and always presenting a positive attitude and patient-minded vision, with patient satisfaction as the continuing goal

Qualifications:

• BS in health information management
• Certification as RRA or ART
• Extensive healthcare and management experience
• Excellent communication skills, both written and verbal
• Ability to work with a variety of customers, patients, lawyers, and other healthcare providers in a diplomatic fashion
Scenario: A Day in the Life of a Patient
Information Coordinator

My job is with an integrated healthcare delivery system that provides capitated healthcare services to more than 150,000 people in a large metropolitan area of New England. For a flat monthly fee paid by their employers, participants in the plan receive all of the healthcare services they need from providers employed by, or under contract with, our system.

I am an accredited record technician, and I received my associate’s degree from a local community college several years ago. I was chosen for my position because of my knowledge of medical terminology and disease processes and because I understand what information goes into a health record and how it is used. To pay my way through college, I worked as a clerk in the admitting department of a local hospital, and so I am experienced in working with patients.

I am responsible for educating members about the health plan and the information that is maintained in their health records. Most of my day today will be spent talking with members newly enrolled in our health plan. From a list provided by enrollment services, I made appointments with new members to discuss their health histories and make sure that we have all of the information we need to complete their health records. Some people prefer to talk with me on the telephone, and others come into the office, sometimes bringing a family member with them.

When I talk with new members, I help them to complete a computer-generated medical and social profile questionnaire. I also make sure that we have all of the information needed for the financial processing of their enrollment forms and that the information is accurate and has been verified by their employers. In addition, I explain the rules and procedures of the health plan and provide brochures describing all of the resources available to new members.

From information gathered during the new member’s initial work-up with the primary care team, I prepare a healthcare smart card. I check the accuracy of the card with the member and explain that it will be updated yearly unless a substantial medical change before then requires an earlier change. Then I describe what information will be contained in his or her health record and who will have access to it.

I provide other services to members as well. Any time they wish, they may make an appointment with me to review their health records. They can also request copies of their records through me. I can also show them how to maintain their own medical history by using the AHIMA’s personal health history software. If they wish, plan members may ask me to help them develop questions for their healthcare providers about current or future health issues. I can also answer questions about continuity of services.

For the first hour each morning, I monitor daily appointment schedules in the clinics to make sure that records are available for the members in my division. Because some of the historical records are available only in paper form, I make sure that the medical team the member is scheduled to see knows how to access supplemental paper records when necessary.

When members in my division need information on specific treatments and services, I work with social services and the medical librarian to find information resources for them. Materials in various media and a number of languages are available to meet the patients’ needs. Some days, I also field calls from employees and local residents who have questions about confidentiality issues and the right to access health information.

Conclusion

Although direct patient contact is not entirely new to health information management professionals, assuming a service role may require dedicated customer service training. Often,
the first meaningful encounter between patients or their families and representatives of a healthcare organization occurs during a time of family crisis brought on by illness. Even during noncrisis situations, understanding complex benefit information can be frustrating. The role of patient information coordinator should prove both challenging and rewarding to health information professionals who decide to take their careers in this direction.
## Skill and Knowledge Analysis

### Health Information Management

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
</tr>
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</table>
| Release of information and confidentiality control | 5—Skilled use        | • Mastery of release of information and confidentiality principles and applications  
• Ability to articulate a detailed knowledge of applicable state and federal laws and regulations  
• Ability to write policy regarding release of information  
• Adeptness in interpreting and communicating appropriate responses to laws, regulation, and standards  
• Familiarity and experience with release of information resources |
| Data source review                              | 5—Skilled use        | • Ability to identify clinical data and where it is warehoused  
• Ability to retrieve clinical and financial data quickly and efficiently  
• Ability to serve as a resource to other members of the organization on the subject  
• Ability to direct inquiries as needed to the correct data source |
| Abstraction of data                             | 5—Skilled use        | • Ability to gather clinical data from primary data sources |

### Communications

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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</thead>
<tbody>
<tr>
<td>Public speaking</td>
<td>4—Detailed understanding</td>
<td>• Ability to speak on pertinent topics in various settings</td>
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</tbody>
</table>
| Communication skills | 5—Skilled use                  | • Ability to communicate to others at all levels of the organization  
• Ability to communicate with patients, their families, and representatives  
• Ability to produce clear and appropriate written and verbal communication |
| Customer service | 5—Skilled use                    | • Ability to relate to the customer  
• Ability to identify the member segments of the community  
• Ability to identify the needs of the community |
| Negotiation      | 4—Detailed understanding         | • Ability to identify the concerns of the participants  
• Ability to clarify essential outcomes  
• Ability to demonstrate flexibility in approach  
• Ability to recognize cultural barriers within the organization |
| Training/education | 5—Skilled use               | • Ability to identify audience groups for training  
• Ability to assess the educational needs of the audience  
• Ability to develop the content and delivery of the educational material  
• Ability to assess the effectiveness of the training provided |
## Management

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<th>Skill Area</th>
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<th>Demonstrated By</th>
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| Business management         | 4—Detailed       | • Ability to design a business plan  
                                 | understanding                  | • Ability to plan for business strategies |
| Financial management        | 4—Detailed       | • Ability to develop a budget plan  
                                 | understanding                  | • Ability to identify project costs |
| Healthcare finance concepts | 4—Detailed       | • Understanding of reimbursement methods  
                                 | understanding                  | • Ability to think analytically |
| Policy administration      | 4—Detailed       | • Ability to create and revise clear policies and procedures  
                                 | understanding                  | • Ability to determine and identify areas in which policies and procedures are needed  
                                 |                          | • Ability to present main issues for decision making |
| Trouble shooting            | 4—Detailed       | • Ability to work proactively to ensure favorable outcomes  
                                 | understanding                  | • Ability to incorporate change  
                                 |                          | • Ability to plan strategically |

## Computer Skills

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<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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</table>
| Computer applications       | 5—Skilled use    | • Ability to create attractive, high-quality documents  
                                 |                          | • Ability to integrate information from other sources into documents  
                                 |                          | • Ability to transmit documents electronically  
                                 |                          | • Proficiency in word processing and spreadsheet applications |
| Internet applications       | 5—Skilled use    | • Ability to communicate electronically  
                                 |                          | • Ability to obtain data from the Internet and other remote sites |

* Competency levels: 1 = awareness (introductory recall and recognition); 2 = literacy (knowledge of framework and content); 3 = concept (comprehension, translation, extrapolation, and interpretation of meaning); 4 = detailed understanding (appropriate application of knowledge in a structured and controlled context); 5 = skilled use (application using analysis, synthesis, and evaluation in new situations).
Health data and information are becoming major forces behind clinical decision making in addition to operational and strategic planning. Now and in the foreseeable future, healthcare organizations are likely to continue investing heavily in computer software and hardware just to remain competitive in a constantly changing business environment. Computer systems, however, can only be as good as the people who design and use them, and data quality can only be as good as the people who manage it. Investments in technology call for concomitant investments in human capital.

Data quality management involves overseeing the processes that lead to the outcome of high-quality data. Managing data quality is not new to health information management professionals. Long before the introduction of computer-based health records and electronic databases, health information management professionals were collecting and classifying health information; analyzing the information collected and writing reports; storing the information and making sure that it was available to those who needed it, when they needed it. Part of what is new is the medium: computer documents instead of paper forms and data repositories in place of filing cabinets. But the real news is the tremendous growth in the demand for information of all kinds, which extends far beyond the traditional limitations of health information management.

New technical skills are needed to manage quality in this age of sophisticated electronic information systems, and the need for advanced computer skills may require specialization in the evolving role of data quality manager. But data quality management will continue to be a critical component of health information management and will remain a core competency for anyone working in the field. Ultimately, everyone in the healthcare organization who collects, records, or uses health data is responsible for maintaining its quality, just as everyone is responsible for maintaining its confidentiality and security. But like the information security manager, the data quality manager takes on the specific responsibility of using technical mechanisms as well as interpersonal management skills to monitor compliance with the organization’s policies and procedures and address shortcomings as they are identified. And like the information security officer, the data quality manager works as a consultant to the organization’s staff to set up processes and provide advice that head off problems before they occur.
Functions and Accountabilities

Depending on the structure of the organization as well as its size, the responsibilities of the data quality manager may be fulfilled by an individual health information management professional or by a team of professionals. (See the sample position description below.)

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**Sample Position Description**

**Position Title:** Director, Data Quality Management

**Immediate Superior:** Vice-President, Quality

**General Purpose:** The Director of Data Quality Management is responsible for developing, implementing, and maintaining a data quality management (compliance) plan for coding and reimbursement, health records and documentation, and quality data in all divisions of the organization.

**Responsibilities:**

- Assessing current compliance activities, identifying areas of high risk, and evaluating risk factors in coding and documentation practices.
- Developing, implementing, and maintaining a standardized, organizationwide quality data management (compliance) plan and program to ensure compliance with external regulatory and accreditation requirements; ensure consistency of quality data for the organization’s internal data needs; and identify, investigate, and prevent violations.
- Developing, implementing, and maintaining standardized, organizationwide policies and procedures to monitor the success of the quality data management plan; review areas of risk; investigate identified issues; report data analyses; and take appropriate steps to correct violations.
- Establishing, implementing, and maintaining a formalized review process for compliance, including a formal review (audit) process.
- Optimizing receipt of high-quality data from parent and contract hospitals by active participation and leadership in quality monitoring and improvement efforts.
- In partnership with appropriate personnel, developing and implementing standardized, organizationwide coding guidelines and documentation requirements and developing and implementing training and educational programs for physicians and coders.
- Providing consulting services in the area of data quality management to individuals, special projects, and executive and clinical departments throughout the organization.

**Qualifications:**

- Bachelor’s degree in health information management or a related field and at least 10 years of professional experience, 5 of which are in data quality; or a master’s degree or its equivalent and at least 7 years of experience in a clinical, operational, or data quality improvement function.
- Credentialed as an RRA or an ART and a CCS.
- Experience in operational management.
- Experience in project management.
- Knowledge of health information systems and database management.
- Knowledge of applied statistics, process analysis, and outcomes analysis.
The individual or team may report to the director of the health information management department, the director of quality assurance, or the director of the information services department at the facility level, or to the chief information officer, the vice-president for quality, or the director of health information management at the enterprise level. The data quality manager’s official title depends on his or her reporting relationships and place in the organizational structure, and his or her title may well be something other than Data Quality Manager.

To perform effectively, the data quality manager must be skilled in the use of applied statistics, data quality and integrity measurement techniques, and database management tools. He or she should have a thorough understanding of healthcare finance, outcomes analysis, continuous quality improvement, and process analysis as well as experience in operational management, project management, and research and benchmarking project design. Well-developed leadership, communication, and interpersonal skills are critical to success in this role. An experienced health information management professional who is proficient in computer systems and applications and continuous quality improvement techniques would make an ideal candidate for this position.

The evolving role of data quality manager concentrates on continuous quality improvement activities that ensure the integrity of health data throughout the healthcare organization or integrated healthcare system. The data quality manager’s major responsibilities may include any or all of the following:

- Participating in the development of the organization’s or enterprise’s information plan and data quality management policies and procedures
- Monitoring compliance with the organization’s or enterprise’s data quality management policies and procedures
- Coordinating the collection of data for the organization’s or enterprise’s clinical or combined clinical-operational databases
- Maintaining the organization’s or enterprise’s data dictionary
- Maintaining the quality of the data in the organization’s or enterprise’s data warehouse
- Performing regular quality reviews and addressing any shortcomings identified through continuous quality improvement activities
- Providing staff training in data quality management policies and procedures
- Providing consulting services in the area of data quality management to individuals, special projects, and departments throughout the healthcare facility or enterprise

Effective data quality management ensures the integrity of data in all of its iterations. Coordinating data quality management efforts is the dedicated role of the data quality manager. To facilitate and promote this role and to improve data quality management processes in healthcare organizations, the American Health Information Management Association has developed a data quality management model (described in detail in a practice brief published in the June 1998 issue of the Journal of the American Health Information Management Association). According to the model, there are four functional domains in data quality management:

- Application (the purpose for which the data are being collected)
- Collection (the process by which data elements are identified)
• Analysis (the process by which data are translated into information)
• Warehousing (the processes and systems through which data and data journals are archived)

Within each functional domain, data integrity is evidenced by the following characteristics:

• Accuracy (data items have the correct values and are valid)
• Accessibility (data items are easy to obtain and legal to collect)
• Comprehensiveness (every required data item is collected)
• Consistency (the values of the data are reliable across all applications)
• Currency (the data are up-to-date)
• Definition (clear definitions are provided, and every data element has a clear meaning and acceptable values)
• Granularity (the attributes and values of the data are defined at the appropriate level of detail)
• Precision (data values are large enough to support the application or process)
• Relevancy (the data are meaningful to the process or application)
• Timeliness (the age of the data is appropriate to the application or process)

The data quality manager plays a pivotal role in executing each of the functional domains and in maintaining each of the characteristics of data integrity. Let us consider the activities of a data quality manager in coordinating a special research project as an example of how valuable investing human capital in this role can be.

Data quality managers are frequently charged with designing data collection systems for research or benchmarking projects and various other data applications. Data quality managers understand that how the data are to be used should determine how they are collected. (Common data applications in healthcare contexts include decision making in the areas of business planning, operations, patient care, and clinical research.) Experienced data quality managers also understand that it is best to collect only as many data as will be used in the final application. Ultimately, the data collected will be transformed into useful information through careful analysis, and collecting too much data can make collection and analysis processes less effective, needlessly time-consuming, and expensive.

Once they understand the application for which the data are to be collected, data quality managers determine which data sources and which collection methods are most appropriate. Abstracted data may be collected from health records and reports as well as from other database sources of information such as utilization databases. The data manager’s unique expertise lies in his or her knowledge of where to look for and find relevant data.

When data quality managers determine that additional information beyond what is available in internal and external databases is needed to fulfill the purpose of a specific study, they design customized instruments for data collection. One commonly used data collection instrument is the questionnaire, which may be administered in writing or during a personal interview. Responses to questionnaires may be collected on forms printed on paper or accessed via computer screen. No matter what the source of the data to be collected, however, data quality managers always keep in mind the characteristics of data integrity, especially accuracy,
Data Quality Manager

validity, and reliability, and carefully define each data element and establish each data value before the study begins.

After the sources of data have been determined and the collection instruments have been developed, data quality managers perform pilot tests and provide extensive training to participants before going on to full collection efforts. A pilot test might be performed by doing sample interviews with a questionnaire or completing the data collection form on a series of sample cases. Any revisions suggested by the pilot test can then be made before training is provided to the individuals who will actually administer the instruments. Training in the processes for standardized data collection is provided by a data quality manager.

Data quality managers then use project management software to track the study’s status and progress, and they carefully document the data collection process. Written documentation includes data definitions, changes resulting from pilot-testing, improvements made during implementation, and other significant information.

The data quality manager is also responsible for coordinating and reporting the analysis of the data resulting from the study. Statistical analysis, comparative analysis, cause-and-effect correlation, and trend assessment are common data analysis techniques. Classification systems such as ICD-9-CM codes and translation systems such as encoders can also be used to compare data.

Finally, the data quality manager ensures that the data collected and analyzed for the study are added to the data warehouse. Through the warehousing process, the results of the study can be shared with other groups or individuals in the organization interested in using the data for similar applications.

As noted earlier, managing the quality of the data stored in the data warehouse for the healthcare organization’s or integrated system’s clinical data repositories is one of the most important functions of the data quality manager. In large organizations, a dedicated data resource administrator may oversee data warehousing functions. Managing the data warehouse includes the following processes:

- Reviewing error reports
- Maintaining the inventory of available data
- Developing and maintaining data dictionaries
- Tracking changes over time in dictionary definitions and data elements
- Archiving data collection documentation
- Gatekeeping appropriate access to data

Another key responsibility of the data quality manager is to work with other stakeholders in the organization or integrated system to develop an overall information management plan and specific data quality management policies and procedures. A separate committee may be established to handle this task, or policy setting in this area may be assigned to an existing committee such as the health record committee or to an interdisciplinary management team.

The data quality manager then plays an active role in monitoring compliance with policies and procedures and addressing problems as they are identified through regular data quality reviews and continuous quality improvement activities. He or she pays special attention to the ways data enter the system, the timeliness of data collection, and the accuracy of the data collected.

Effective and ongoing staff training is critical to successful data quality management, and the data quality manager may play an educational role in many organizations. He or she also is likely to be called on as the resident expert on data quality management to provide
consulting services to individuals, special projects, and departments within the organization or integrated system.

Scenario: A Day in the Life of a Data Quality Manager

My job is with an integrated healthcare delivery system based in a medium-sized city in southern Minnesota. The system provides ambulatory, acute, subacute, and home care services to a number of rural and urban communities throughout the Midwest and Plains states. The system’s Minnesota home base includes two community hospitals, several physician’s group practices, a subacute care facility on the campus of the larger community hospital, and a separate home care service. The integrated system is wholly owned and operated by a Catholic religious order.

Several years ago, the system established a central database so that accurate clinical information could be made readily available to healthcare providers and patients across the multifacility interstate system. Information from the database is also used by corporate administrators and managers for outcomes analysis, management decision making, and strategic planning.

I am one of two health information management professionals on the data quality control team of the system’s centralized health information management department. My title is Data Quality Coordinator. I was chosen for my position because I have a comprehensive understanding of the healthcare delivery system after having worked in healthcare facilities for more than 15 years. I have proven skills in the management of databases and the measurement of data integrity. My experience in managing and training health information management staff has also allowed me to practice continuous quality improvement methods and develop excellent communication and organizational skills, which I use daily in my interactions with coworkers throughout the system. I hold a baccalaureate degree in health information management and have taken numerous computer science and statistics courses to build my technical data management proficiency.

The data quality control team is responsible for establishing the system’s policies on maintaining the data dictionary and specific procedures for identifying data requirements and developing logical data models. These functions are critical to ensuring the usability of the system’s central data repository.

I am also responsible for analyzing data and performing quality checks and reviews on data samples and patient populations to ensure that the data are accurate, reliable, and useful to users and that they are collected according to the system’s data definitions and guidelines. My colleague and I on the data quality control team develop the criteria used to measure the level of data quality and apply statistical quality control techniques to assess variability in data quality.

Today, I will attend an all-day startup meeting on a data-modeling project for the three trauma centers in our system, which provide the only trauma services available for large areas of three predominantly rural states. Through a series of letters and telephone calls, I worked with the directors of the trauma centers to select a project team and prepare an agenda for today’s meeting. The team consists of an emergency medicine physician or surgeon from each of the centers, at least one nurse or nurse practitioner from each of the centers, and the business manager from each of the centers. The team also includes a technical database specialist from the integrated system’s information services department.

I will act as the group’s team leader and facilitator and as such will prepare outcomes notes for this meeting and subsequent meetings of the group over the next three months. The goal of our project is to identify the data needed to provide efficient and effective services at the three facilities. At the end of the project, I will also draft the summary report for review by
the group. When everyone is satisfied with the draft, we will submit a final report to the system’s chief information officer for approval. Ultimately, the report will serve as the basis for a logical data model for the system’s current and future trauma services.

To develop the data model, I will use a specialized software application to graph a schematic. The application will also help me to develop and catalog the definition of each data element. Once the data model has been approved, I will also provide training and education on its use to all of the employees and physicians at the three trauma centers. The training will emphasize data definitions, data collection, and data reliability.

My colleague and I on the data quality control team share the responsibility for providing similar leadership and consulting services to every group planning information system upgrades and changes throughout the delivery system. We are particularly proud of the feedback we have received after training sessions. Results of data quality reviews have also proved the incalculable value of careful planning and educational follow-up.

Tomorrow, I plan to meet with the database specialist to discuss further details of the data model for the trauma centers. I will also work with the corporate director of health information management, to whom I report, to plan the agenda for the data quality improvement team, which she heads. Other tasks on my to-do list for the week include:

- Reviewing the interface specifications for the new registration-pharmacy system interface
- Analyzing the report of data verification among the database of record, the master data repository, and the data view system
- Working with the performance improvement team on designing data collection for patient assessment activities
- Preparing a report on demographic trends for the oncology department to help them with expansion planning

**Conclusion**

Applying the PLAN-DO-CHECK-ACT cycle central to most systems of continuous quality improvement to the responsibilities of the data quality manager may help to clarify the role. The data quality manager:

- Works with other key stakeholders to establish the goals and objectives of the overall information plan and develop data quality management policies and procedures (PLANS)
- Coordinates compliance with data quality management policies and procedures (DOES)
- Monitors outcomes against established goals and objectives for information quality (CHECKS)
- Takes appropriate action to address the findings of evaluation activities (ACTS)

In fulfilling all of these responsibilities, the data quality manager ensures the integrity and overall quality of the data produced throughout the healthcare organization or integrated healthcare delivery system. This role, successfully performed, will be integral to improving the
quality of the care provided and ensuring value for the dollars spent in future healthcare organizations.

**Bibliography and References**


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<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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<tbody>
<tr>
<td>Applied statistics</td>
<td>4—Detailed understanding</td>
<td>• Ability to recognize current and future trends</td>
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<td></td>
<td></td>
<td>• Ability to use statistical software applications</td>
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<td></td>
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<td>• Ability to investigate, problem solve, and ask the “right” questions</td>
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<td>• Ability to transform data into information and present the information effectively</td>
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<td>• Ability to use data creatively in problem solving</td>
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<tr>
<td>Measurement of data quality and integrity</td>
<td>5—Skilled use</td>
<td>• Ability to ensure data quality and integrity characteristics</td>
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<tr>
<td>Database management</td>
<td>5—Skilled use</td>
<td>• Ability to standardize processes</td>
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<td></td>
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<td>• Ability to establish data definitions</td>
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<td>• Ability to manage data inventory</td>
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<td>Healthcare finance concepts</td>
<td>4—Detailed understanding</td>
<td>• Ability to think analytically</td>
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<tr>
<td>Leadership</td>
<td>4—Detailed understanding</td>
<td>• Ability to foster and maintain diverse working relationships</td>
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<td>• Ability to manage relationships with clinicians, diverse coworkers and teams, financial staff, and administrative staff</td>
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<td>• Ability to communicate in writing, verbally, and on an interpersonal level</td>
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<td>• Ability to conduct group presentations</td>
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<td>• Ability to manage multiple priorities</td>
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<td>• Ability to use influence to achieve positive results</td>
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<td>• Ability to demonstrate facilitation skills</td>
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<td>• Ability to demonstrate knowledge transfer skills</td>
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<td>• Ability to provide training and education</td>
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<td>• Ability to facilitate expertise</td>
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<td>Outcomes analysis</td>
<td>5—Skilled use</td>
<td>• Ability to think analytically</td>
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<td>• Ability to demonstrate knowledge transfer skills</td>
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<td>• Ability to analyze data</td>
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<td>• Ability to use success indicators</td>
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<td>Process analysis</td>
<td>4—Detailed understanding</td>
<td>• Ability to select appropriate team members</td>
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<td>• Ability to identify the roles and expertise needed</td>
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<td>• Ability to use continuous quality improvement techniques</td>
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<td>• Ability to demonstrate a knowledge of relationships among applications and problems, people, and available data</td>
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<td>Project management</td>
<td>4—Detailed understanding</td>
<td>• Ability to manage multiple projects</td>
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<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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</table>
| Project design           | 5—Skilled use   | • Ability to research and benchmark the project design process  
• Ability to act as a data consultant  
• Ability to design data collection instruments  
• Ability to standardize processes  
• Ability to investigate, problem solve, and ask the “right” questions  
• Ability to demonstrate a knowledge of relationships among applications and problems, people, and available data  
• Ability to demonstrate a knowledge of data sources |
| Operations management    | 4—Detailed understanding | • Ability to manage operations  
• Ability to demonstrate a comprehensive understanding of the healthcare delivery system  
• Ability to demonstrate a knowledge of data sets and classification and coding systems for each care setting  
• Ability to demonstrate a knowledge of accreditation, licensing, and regulatory requirements for multiple disciplines  
• Ability to demonstrate a knowledge of external data requirements |
| Personal effectiveness   | 5—Skilled use   | • Ability to maintain and foster diverse working relationships  
• Ability to manage relationships by relating to clinicians, diverse teams and others, finance, and administration  
• Ability to communicate in writing, verbally, and on the interpersonal level  
• Ability to conduct group presentations  
• Ability to use influence to achieve positive results  
• Ability to demonstrate facilitation skills  
• Ability to take the initiative to make things better  
• Ability to lead by example  
• Ability to demonstrate lifelong learning and to take responsibility for own professional development  
• Ability to take advantage of opportunities to grow the business  
• Ability to recognize differences in learning and social styles and to provide processes to meet those needs  
• Ability to model creativity |

* Competency levels: 1 = awareness (introductory recall and recognition); 2 = literacy (knowledge of framework and content); 3 = concept (comprehension, translation, extrapolation, and interpretation of meaning); 4 = detailed understanding (appropriate application of knowledge in a structured and controlled context); 5 = skilled use (application using analysis, synthesis, and evaluation in new situations).
Chapter 8
Information Security Manager

Healthcare applications of communications and information technology will continue to expand and evolve over the next decade. Rapid communication and easy access to accurate healthcare information promise to significantly improve the quality and lower the cost of healthcare services, but at what price to patient privacy and data security? Protecting the confidentiality of patient-identifiable information, long a primary concern of medical and health information management professionals alike, has never been a higher priority. To address this concern, healthcare organizations are instituting strong, organization-wide information security programs and looking to a new member of the management team, the information security manager, to make sure that the programs are carried out effectively. The draft version of the Health Insurance Portability and Accountability Act (HIPAA) actually mandates that healthcare organizations employ a designated information security manager.

Functions and Accountabilities

Depending on the structure of the healthcare organization and on the size and complexity of its information system, the information security manager’s position may be part-time or full-time. He or she may report to the chief information officer, the director of health information management, or another senior executive. His or her official title might be Information Security Manager, Information Security Officer, or any similar title that reflects the position’s place in the organization’s structure. To perform effectively, he or she needs a thorough understanding of the organization’s health record and confidentiality policies as well as a working knowledge of information system architecture and technical security options. An experienced health information management professional who has managed access and release of information systems and is familiar with the legislation, regulations, and external standards that govern confidentiality and security would be an ideal candidate for the position.

The role of the information security manager is still evolving, but its primary goals are (1) to protect the confidentiality and integrity of information and (2) to maintain the technical mechanisms of legitimate access to it. As the sample position description on p. 73 shows, the information security manager’s responsibilities typically include the following:

- Documenting and implementing the information security policies set by a cross-functional management team
- Monitoring compliance with information security policies
Chapter 8

- Maintaining the technical security components of the information system
- Providing information security training to everyone who has access to the organization’s information system and confidential information
- Performing information security risk assessments
- Preparing the disaster recovery and business continuity plans for the organization’s clinical and operational information systems

Developing the healthcare organization’s information security program and setting security policies requires the participation and support of stakeholders from across the organization, especially top managers and physician leaders. In many healthcare organizations, a crossfunctional committee called the information security committee is responsible for the information security program. In other organizations, responsibility for information security policy making may be assigned to the health record committee or another management team. In addition to the information security manager, the committee responsible for information security usually includes the following participants:

- The director of the health information management department
- The director of the information systems department or the chief information officer
- The director of the risk management department and/or the organization’s counsel
- The director of the human resources department
- Key representatives from the patient care areas, including members of the medical staff
- Key representatives from the radiology department, laboratory, and other diagnostic services
- Other key users of healthcare and operational data

The information security manager supports the committee by acting as a staff resource who gathers information, prepares reports, and drafts policy statements. He or she may also chair the committee in some organizations. At the least, he or she provides informal leadership and contributes ideas and raises issues for the committee to consider.

The information security committee establishes policies and procedures in the following areas:

- Access to information
- Confidentiality of information
- Physical security of information
- Disaster recovery and business continuity planning
- Security audit systems
- Information security and confidentiality training

The information security manager is then responsible for documenting and implementing the policies and monitoring organizationwide compliance.
Sample Position Description

Position Title: Information Security Manager

Immediate Superior: Director of Health Information Management, Chief Information Officer, or Other Senior Executive

General Purpose: The Information Security Manager serves as the process owner for all ongoing activities related to the availability, integrity, and confidentiality of patient, provider, employee, and business information in compliance with the healthcare organization’s information security policies and procedures.

Responsibilities:

- Documents the information security policies and procedures instituted by the organization’s Information Security Committee.
- Implements the organization’s information security policies and procedures.
- Coordinates the activities of the Information Security Committee.
- Provides direct information security training to all employees, contractors, alliances, and other third parties.
- Monitors compliance with the organization’s information security policies and procedures among employees, contractors, alliances, and other third parties and refers problems to appropriate department managers or administrators.
- Monitors internal control systems to ensure that appropriate information access levels and security clearances are maintained.
- Performs information security risk assessments and serves as the internal auditor for information security processes.
- Prepares the organization’s disaster recovery and business continuity plans for information systems.
- Serves as an internal information security consultant to the organization.
- Monitors advancements in information security technologies.
- Monitors changes in legislation and accreditation standards that affect information security.
- Initiates, facilitates, and promotes activities to foster information security awareness within the organization.
- Serves as the information security liaison for users of clinical, administrative, and behavioral systems.
- Reviews all system-related information security plans throughout the organization’s network and acts as a liaison to the Information Systems Department.

Qualifications:

- Baccalaureate degree in health information management or a related field.
- Certification as an RRA or an ART.
- Experience in project management and change management.
- Knowledge of information security and access technologies.
- Knowledge of database applications, spreadsheet design, and report writing software.
An effective information security program is characterized by several key features:

- It protects all of the organization’s data, information networks, and operational systems from unauthorized access, modification, destruction, and loss.
- It fosters the confidence of patients and staff in the organization’s ability to provide a respectful workplace and patient care environment.
- It minimizes the organization’s exposure to liability claims and financial loss.
- It ensures compliance with established information security industry standards, federal and state legislation, and accreditation standards.
- It promotes the credibility of the organization as a member of its community and as a partner in the healthcare delivery system.
- It positions the organization as a leader in information security.

The information security program through the oversight of the information security manager also ensures the confidentiality, integrity, reliability, accessibility, accuracy, and durability of patient-identifiable data as well as information on the organization’s operations, employees, and medical staff.

To keep the security program up-to-date, it is also the information security manager’s responsibility to monitor changes in federal and state regulations and accreditation standards that may affect information security and make recommendations to the committee on the need for policy changes. Applicable statutes include the following:

- Federal and state laws pertaining to the protection of healthcare information
- Federal regulatory requirements
- State licensure and regulatory requirements
- Laws protecting the public health
- State computer crime laws
- State business practice laws

Several of the Joint Commission on Accreditation of Healthcare Organizations’ standards and scoring guidelines specifically address information security. The information security manager monitors yearly changes in the Joint Commission’s publications and *Comprehensive Accreditation Manual*.

It is also important that the information security officer follow changes in information industry standards. The following organizations publish information security standards:

- American Health Information Management Association
- Computer-Based Patient Record Institute
- Information Systems Security Association
- National Institute of Standards and Technology, Computer Security Division
- National Computer Security Association
The information security manager continually tracks new developments in rapidly changing information technologies. Improvements in technical security tools in the following areas are particularly relevant:

- Authentication
- Access control
- Audit logs
- Physical security
- Linkage control
- Software discipline
- Backup and disaster recovery
- System self-assessment

The orientation, training, and ongoing education of the organization’s data users may be provided directly by the information security manager. Users include contractors and other outside parties who have access to the organization’s information system in addition to members of the organization’s medical staff, clinical staff, administration, and support staff. Students and volunteers also receive thorough security training. The information security manager creates varied training materials applicable to the many different functions of users. He or she also maintains educational materials to keep them current with changes in the organization’s policies, federal and state regulations, information industry and accreditation standards, and ongoing developments in information technologies.

One of the most important functions of the information security manager is to monitor access to all of the electronically maintained information in the organization, not just computer-based patient records and other healthcare information. Employment records, financial reports, payroll records, outcomes data, even e-mail could be the subject of unauthorized access and so need protection. The security manager regularly reviews audit reports to identify potential breaches of security and reports possible internal breaches to the appropriate manager or administrator. According to a 1997 National Research Council report on protecting electronic healthcare information, security breaches are most likely to come from the following sources:

- Insiders who make innocent mistakes and cause accidental disclosures
- Insiders who abuse access privileges
- Insiders who knowingly access information for spite or profit
- Unauthorized physical intruders
- Vengeful employees and outsiders who mount attacks to access unauthorized information, damage systems, and disrupt operations

To maintain security, the information security manager sets protocols for creating locks and barriers to internal access within the information system. He or she also maintains the firewall (a series of routers, computers, and software that stands between the internal network and the Internet) that protects internal systems from unauthorized access through the Internet. He or she sets passwords for individual users and adds or deletes users on the system as individuals join or leave the organization or change job responsibilities.
Conducting risk assessments for the information system and information security program as a whole is another function of the information security manager. As part of data collection and analysis, the manager considers the following components of risk:

- Asset valuation
- Consequence assessment
- Threat identification
- Safeguard analysis
- Vulnerability analysis
- Likelihood assessment

Analysis of these factors allows the information security manager to set priorities for improving the security components of the information system and reduce potential threats to the system.

Patient-identifiable data and healthcare information must be available to providers at all times, even during times of natural disaster such as floods and emergency situations such as fires. It is critical that the information security program include provisions for regular backup of information system data and software. The healthcare organization must also have a disaster plan for ensuring access to health records during emergencies and for conducting recovery activities to salvage health records and operational data and systems damaged by fire, flood, or other destructive events. In many healthcare organizations, the information security manager is responsible for creating and maintaining disaster recovery and business continuity plans in the area of information systems.

Finally, the information security manager acts as an internal consultant to all areas of the organization. Providing expertise and advice on the security components of the information system and emerging information technologies is a daily activity.

Scenario: A Day in the Life of an Information Security Manager

My job is with a large healthcare system. The system includes a tertiary care hospital, three affiliated community hospitals, a wholly owned long-term care facility, ten offsite group practices, a freestanding emergency medicine facility, a managed care plan, and seven diagnostic centers.

I am a health information management professional. My title is Information Security Officer. I was chosen for my position because of my expertise in information management and my understanding of the levels of confidentiality maintained within the system. I recognize the crucial distinction between the “need to know” and the “right to know.” My experience in health information management has also given me a broad-based understanding of the various types of information generated by the diverse care settings within the system.

I began my day today with a review of the exception report that indicates potential security breaches over the past 24 hours. Fortunately, there were none. Then I authorized the e-mail delivery of the daily audit report to department managers.

My first meeting this morning will be with my manager, Mr. Johns, who is the system’s chief information officer or CIO. A new physician practice is being added to the system, and Mr. Johns will be briefing me on the details of the acquisition. Later in the day, I will meet
with the practice manager of the new group to work out the details on the practice’s access to the systemwide information system. Security procedures will be a large part of the discussion.

After my meeting with Mr. Johns, I will go to the Human Resources Department, as I do almost every Monday morning, to deliver my part of the orientation program for new employees. My subject will be confidentiality, security, and access to the information system. I will describe the systemwide security plan, spell out the different types of information stored in the system, and list the types of information made available to employees on the basis of the roles they play in the organization. I will emphasize that they must never share information with unauthorized coworkers or their family and friends and that they should not reveal their passwords to anyone. I will carefully explain the audit system and how access to confidential information is tracked by the computer system. Then I will remind them that it is every employee’s responsibility to protect the confidentiality of the information they access and that any breach of that confidentiality will result in disciplinary action, which might include termination and/or prosecution. I will use the example of a nurse discussing patient information with a coworker as a breach of confidentiality.

My next stop will be the cardiac intensive care unit, where a new cardiac monitoring system is being planned. I will work with the nurses and a health information manager to establish the information to be stored in the system. We will also decide who will have access to the information and how changes will be made. The system will store patient-specific monitoring information for each patient in the unit.

After lunch, I plan to start developing the security specifications for the cardiac monitoring system. The specs will include cost estimates for the related security features. The cost will influence which system we choose to install.

In preparation for my visit to the new group practice later in the afternoon, I will go over the e-mail I received this morning from the Human Resources Department that lists the employees in the practice along with their job titles under the system’s classification system. The e-mail also indicates that all of the employees have cleared background security checks. With this information, I will be able to assign appropriate passwords and access levels to the practice’s employees.

Around 3 o’clock, I will drive to the new practice group’s offices to meet with the practice manager. She will verify the employees’ names and titles on my list, and we will set a date for orientation and training at the end of the week. The individual passwords will be distributed to the practice’s employees during the training session.

On the way home in my car, I will check my voice messages for the afternoon. I’ve been waiting to hear from the system’s lawyer, Ms. Holloway. She promised to provide me with a list of the questions that will be asked during my deposition regarding the system’s audit policy for incident reports.

Tomorrow, I will spend my day performing risk analysis to diagnose any potential weaknesses in the healthcare system’s information security processes. Ongoing risk analysis is a key component of our business continuity plan, which ensures that the data stored in our information system will be accessible even during emergencies and natural disasters.

**Conclusion**

The security of health information systems and the confidentiality of health records constitute topics high on the public’s healthcare agenda. Information industry standards are being developed and state and federal legislation is being discussed in efforts to ensure that personal privacy is protected. Ultimately, however, it is the responsibility of every healthcare provider and every healthcare professional to respect and guard the rights of patients. The evolving role of the information security manager is dedicated to taking on that responsibility.
Bibliography and References


Hanken, Mary Alice. 1996. E-mail security. *Journal of the American Health Information Management Association* 67(10):40–42.


Skill and Knowledge Analysis

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<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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<tbody>
<tr>
<td>Authentication</td>
<td>4—Detailed understanding</td>
<td>• Understanding of the organization’s current authentication system</td>
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<td>• Ability to evaluate the risks involved in the current authentication system</td>
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<td>• Understanding of when it is appropriate to recommend strengthening the</td>
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<td>authentication system</td>
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<td>• Ability to mediate issues of required authentication versus ease of use</td>
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<td>Encryption</td>
<td>3—Concept</td>
<td>• Understanding of the use and purpose of encryption</td>
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<td>• Ability to develop a security classification system for determining which</td>
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<td>information requires encryption</td>
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<td>• Understanding of when to recommend encryption to address data transmission</td>
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<td>Risk assessment</td>
<td>5—Skilled use</td>
<td>• Ability to perform risk assessments for information security policies,</td>
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<td>education and training, and disaster preparedness</td>
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<td>• Ability to coordinate external risk audits</td>
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<td>Business continuity planning</td>
<td>4—Detailed understanding</td>
<td>• Ability to design business continuity plans</td>
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<td>• Ability to perform continuity risk assessment</td>
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<td>• Ability to provide consultation to other system administrators on their risks</td>
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<td></td>
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<td>and continuity planning</td>
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<tr>
<td>Network design</td>
<td>3—Concept</td>
<td>• Understanding of the information security risks relevant to network design</td>
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<td>• Ability to make recommendations on improving information security through</td>
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<td>effective network design</td>
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<td></td>
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<td>• Understanding of the issues related to network performance and access</td>
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<td>versus information security</td>
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<td>Information security audit</td>
<td>5—Skilled use</td>
<td>• Ability to design information security audit reports</td>
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<td>• Ability to perform regular information security audits</td>
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<td>• Ability to identify suspicious or troublesome transactions and develop</td>
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<td>appropriate responses</td>
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<td>• Ability to implement communications strategies and work with managers to</td>
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<td></td>
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<td>resolve issues</td>
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### Health Information Management

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<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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</table>
| Relevant state and federal laws   | 5—Skilled use | • Ability to interpret applicable state and federal laws  
• Understanding of the impact of changing laws on current practice  
• Ability to initiate revisions in the organization’s policies and procedures to comply with current laws  
• Ability to stay current on legislative changes |
| Accreditation standards           | 5—Skilled use | • Ability to interpret applicable accreditation standards  
• Ability to evaluate current practice against standards  
• Ability to initiate revisions of the organization’s policies and procedures to comply with standards  
• Ability to stay current on changes in accreditation standards  
• Ability to act as a resource on standards to other system administrators |
| Information flow                  | 3—Concept | • Broad understanding of which classes of users use which types of information  
• Ability to provide consultation services on what information is available |
| Care delivery process             | 3—Concept | • Understanding of which class of data is available in each system  
• Ability to maintain a general understanding of the use of data for each access control group  
• Understanding of the time requirements for system access |

### Information Systems

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<th>Skill Area</th>
<th>Level*</th>
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| Word processing software   | 4—Detailed understanding | • Ability to create attractive, high-quality documents  
• Ability to transmit documents electronically  
• Ability to integrate information from other sources into documents |
<p>| Database applications      | 4—Detailed understanding | • Ability to create useful databases on information security outcomes, access control groups, and application-specific information security measures |
| Spreadsheet design         | 4—Detailed understanding | • Ability to create spreadsheets to manage statistical information |
| Presentations              | 4—Detailed understanding | • Ability to create attractive, high-quality presentation materials for orientation, training, and information security meetings by using appropriate software |
| Database administration    | 2—Literacy | • Understanding of the concepts involved in database administration in order to provide consultation on the information security requirements for database architecture |</p>
<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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</table>
| Computer information security laws | 5—Skilled use               | • Ability to interpret applicable state and federal laws  
• Understanding of the impact of changing laws on current practice  
• Ability to initiate revisions in the organization’s policies and procedures to comply with current laws  
• Ability to stay current on changes to applicable laws |
| Information security technologies | 2—Literacy                  | • Understanding of current information security technologies  
• Ability to provide consultation on the vision for the future of information security technologies |

### Project Management

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<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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</table>
| Project management | 5—Skilled use               | • Ability to identify project participants  
• Ability to identify the steps and time sequence in a project  
• Ability to construct and control the project timeline  
• Ability to identify and manage project costs  
• Ability to manage revisions in project tasks and timelines |
| Budget planning | 4—Detailed understanding    | • Ability to develop a budget plan and attain consensus on the plan  
• Understanding of budget categories and cost structures  
• Ability to prepare and monitor a project budget |
| Cost justification | 4—Detailed understanding   | • Ability to define project cost items  
• Ability to clearly articulate the costs and benefits of project tasks and timelines  
• Ability to identify any potential revenues from a project |
| Prioritization  | 4—Detailed understanding    | • Ability to identify planned outcomes  
• Understanding of which issues are in the critical path  
• Appreciation of the relative value of individual tasks  
• Ability to practice effective time management techniques |
| Change management | 5—Skilled use               | • Understanding of the operational, technical, and behavioral impact of change  
• Ability to identify barriers to change  
• Ability to facilitate process reengineering  
• Ability to evaluate prechange and postchange effectiveness |
| Personal or idea marketing | 3—Concept                  | • Ability to identify the concerns of the audience  
• Ability to clarify essential outcomes  
• Ability to adapt to external timelines  
• Ability to recognize the cultural barriers within an organization |

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## General Skills

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<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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<tbody>
<tr>
<td>Training and education</td>
<td>5—Skilled use</td>
<td>• Ability to identify audience groups for training</td>
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<td>• Ability to assess the educational needs of the audience</td>
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<td>• Ability to develop the content and delivery of the educational material to match the needs of the audience</td>
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<td>• Ability to assess the effectiveness of the training provided</td>
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<td>Policy development</td>
<td>5—Skilled use</td>
<td>• Ability to identify and commission appropriate policy-setting groups</td>
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<td>• Ability to identify sample policy formats</td>
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<td>• Ability to identify main issues for decision making</td>
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<td>• Ability to articulate external requirements that affect policy making</td>
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<td>• Ability to articulate the group’s policy statements</td>
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<td>• Ability to write clear policies</td>
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<td>Brochures</td>
<td>4—Detailed</td>
<td>• Ability to identify effective uses of printed brochures</td>
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<td>understanding</td>
<td>• Ability to clarify the objective and the audience for a brochure</td>
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<td>• Ability to write clearly and to present materials in an effective and attractive format</td>
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<td>Technical specifications</td>
<td>4—Detailed</td>
<td>• Ability to write technical specifications for information security requirements in request-for-proposal documents</td>
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<tr>
<td></td>
<td>understanding</td>
<td>• Ability to write technical specifications for system analysts and programmers to follow</td>
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<tr>
<td>Presentations</td>
<td>4—Detailed</td>
<td>• Ability to identify audience-specific objectives for presentations</td>
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<td>understanding</td>
<td>• Ability to develop appropriate visual aids</td>
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<td>• Ability to provide confident, clear delivery</td>
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<td>• Ability to follow up on questions and issues appropriately</td>
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<td>Negotiation</td>
<td>4—Detailed</td>
<td>• Ability to identify the concerns of the participants</td>
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<td>understanding</td>
<td>• Ability to clarify essential outcomes</td>
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<td>• Ability to be flexible in approach</td>
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<td>• Ability to recognize the cultural barriers in an organization</td>
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## Personal Characteristics

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<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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<tr>
<td>Flexibility</td>
<td>Not applicable</td>
<td>• Ability to recognize multiple approaches to reaching desired outcomes</td>
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<td>• Ability to listen and consider the needs of others in coming to a decision or finding a solution</td>
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<td>Commitment to continuous learning</td>
<td>Not applicable</td>
<td>• Reading of current literature</td>
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<td>• Attendance at relevant training</td>
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<td></td>
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<td>• Awareness of issues and opportunities</td>
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<td>• Ability to develop a personal learning plan</td>
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<td>Skill Area</td>
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<td>Demonstrated By</td>
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<tr>
<td>Part of an established professional network</td>
<td>Not applicable</td>
<td>• Ability to develop and maintain contacts in related fields</td>
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<td>• Ability to use a professional network to stay up-to-date on issues, current practice, and potential solutions to common problems</td>
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<td>Conceptual thinking</td>
<td>Not applicable</td>
<td>• Ability to recognize the big picture</td>
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<td>• Ability to recognize the benefits and risks involved in any plan</td>
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<td>• Ability to entertain multiple solutions to a problem before making a decision</td>
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<td>• Ability to learn from past failures</td>
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* Competency levels: 1 = awareness (introductory recall and recognition); 2 = literacy (knowledge of framework and content); 3 = concept (comprehension, translation, extrapolation, and interpretation of meaning); 4 = detailed understanding (appropriate application of knowledge in a structured and controlled context); 5 = skilled use (application using analysis, synthesis, and evaluation in new situations).
Information systems are playing a critical role in the evolution of healthcare in the United States. Improvements in quality and cost, emphasis on patient and community needs, collaboration among providers, and continuity of care all depend on the development of innovative health information systems. The days when a healthcare organization’s information services department could be concerned only with business management processes are gone. To be successful in a changing healthcare environment, current and future information systems and services must be integrated fully into the organization’s operations.

The data collected, stored, and reported in health information systems constitute the organization’s second-most valuable resource. The data, however, can only be as good as the people (the organization’s most valuable resource) who understand how the data can be used to achieve meaningful improvements in service and value. Health information management professionals understand how data and information are used in healthcare operations, particularly in health record management, utilization management, and case management. With this vital knowledge, a new role is opening for them as partners for information technology professionals, who in general lack an in-depth understanding of the flow of healthcare data. This evolving role is that of the data resource administrator.

Data resource administrators represent the next generation of health record and information managers. Using technical tools such as computer-based health record systems, data repositories, and data warehouses, they ensure that the organization’s information systems meet the needs of those who provide and manage patient services along the continuum of care and that the organization’s data resources are secure, accessible, accurate, and reliable.

**Functions and Accountabilities**

The responsibilities of the data resource administrator are determined by the size and structure of the healthcare organization and the complexity of its information systems. He or she may report to the chief information officer, the director of information services, the director of health information management, the chief information management officer, or the chief knowledge officer. His or her official title may be Data Resource Administrator, Data Resource Manager, Document Administrator, Document Manager, Health Database Administrator, or one of many other titles determined by his or her level of responsibility and place in the organizational structure. The data resource administrator may report in to either the health information management department or the information services department, but the partnership between the health information management professional and the information
technology professional is the central feature of the role no matter where the position fits structurally.

To perform effectively, the data resource administrator needs a thorough understanding of the organization’s health record system and its confidentiality, access, release of information, and security policies. Almost as important, he or she needs a working knowledge of the technical aspects of health information systems, database management and design, spreadsheet design, and information technology. In most organizations, the data resource administrator works in partnership with information technology professionals and more or less strictly plays the role of administrator rather than technical manager. In small organizations or facilities within a larger integrated system, however, the data resource administrator may perform technical functions as well as administrative functions. In any case, a health information professional with computer skills gained through coursework or direct experience would be an ideal candidate for the position. Knowledge of database management, database design, and computer networks would be especially important.

The data resource administrator may work with the information services department of an individual facility or with the centralized information services department of an integrated delivery system. In either case, the organization that values the role of the data resource administrator will be one that has fully implemented a computer-based health record system or is in the process of implementing one. The organization is also likely to be vertically integrated. Integrated healthcare organizations need integrated health information systems in order to:

- Coordinate patient services across varied care settings
- Track access to computer-based health records across varied care settings
- Link out-based operations such as physicians’ offices to the host system
- Provide access to specialized databases
- Support knowledge-based decision making
- Participate in community and enterprise health information networks

The role of the data resource administrator is still evolving, but its primary goals are (1) to provide leadership for data resource management functions and (2) to ensure that the organization’s data are secure, accessible, accurate, and reliable for business and patient care uses. As the sample position description on page 88 shows, the data resource administrator’s primary responsibilities include the following:

- Working with legal services, health information management, and other departments to develop and maintain the organization’s data resource management policies and procedures
- Monitoring compliance with the organization’s data resource management policies and procedures
- Working with data analysts and database managers from the information services department to develop and manage the organization’s data repository and data warehouse
- Working with data quality managers and other health information management professionals to ensure the quality of the organization’s health information
• Developing and maintaining the organization’s data sets, data dictionary, data standards, and data model
• Working with legal services, health information management, information security, and information services staff to develop access and release of information policies and procedures
• Forecasting the organization’s future information system requirements
• Participating in the planning and negotiation of acquisitions of new information system software and hardware
• Managing the functions, staff, and budget of the data resource department
• Performing strategic planning activities for the data resource department and participating in strategic planning for the organization
• Assessing the training needs among the organization’s data users and coordinating training activities
• Monitoring advancements in information technology and health information management
• Monitoring changes in laws, regulations, and accreditation standards as they apply to data resource management

The primary tool for data resource management in the near future will be the computer-based health record. Eventually, CPR systems will allow the collection of clinical data in real time at the patient’s bedside. Data input into the health information system will be processed automatically to support patient care operations and business activities. But until all of the technical components of the CPR have been fully developed and tested and become widely available on the market, most healthcare organizations have adopted a stepwise approach to adopting electronic record systems in support of the healthcare process.

In this approach, information and data from existing computer systems and new applications are combined to form a data repository that uses standard database management software. The data in the databases making up the repository can be updated, retrieved, transferred to other databases, stored, or deleted as necessary.

The data resource administrator works with data analysts and database managers skilled in the technical aspects of database management to develop and manage the processes through which data are funneled into the data repository and accessed by the organization’s clinical and administrative staff as their job functions make necessary. The data resource administrator also works with technical professionals to develop and manage the organization’s data warehouse. Data from the data repository are fed via a system interface into the data warehouse, along with information from other data sources in the organization, such as reimbursement databases, department databases, and executive information systems.

The data repository and the data warehouse have different characteristics based on the primary functions of each. The main function of the data repository is transactional; that is, it makes information available for patient care operations and supports the documentation of clinical services. The main function of the data warehouse is historical; that is, it makes information available for planning, research, and business development activities and supports the analysis and reporting of large volumes of information.
Sample Job Description

Position Title: Data Resource Administrator

Immediate Supervisor: Director of Information Services

General Purpose: The Data Resource Administrator provides overall leadership for data resource management in the organization and is responsible for developing, communicating, and monitoring data resource management policies and procedures to ensure that the organization’s data are secure, accessible, accurate, and reliable for business and patient care uses.

Responsibilities:

• Works with health information management, legal services, and other departments to develop and maintain the organization’s data resource management policies and procedures.
• Monitors compliance with the organization’s data resource management policies and procedures.
• Works with data analysts and database managers from the information services department to develop and manage the organization’s data repository and data warehouse.
• Works with data quality managers and other health information management professionals to ensure the quality of the organization’s health information.
• Develops and maintains the organization’s data sets, data dictionary, data standards, and data model.
• Works with health information management, legal services, information security, and information services staff to develop access and release of information policies and procedures.
• Forecasts the organization’s future information system requirements.
• Participates in the planning and negotiation of acquisitions of new information system software and hardware.
• Manages the functions, staff, and budget of the data resource department.
• Performs strategic planning activities for the data resource department and participates in strategic planning for the organization.
• Assesses training needs among data users and coordinates training activities.
• Monitors advancements in information technology and health information management.
• Monitors changes in laws, regulations, and accreditation standards as they apply to data resource management.

Qualifications:

• Baccalaureate degree in health information management or a related field; advanced degree or coursework in computer science desirable.
• Certification as an RRA.
• Knowledge of health information systems, database management and design, spreadsheet design, and computer technology.
Information from the laboratory, the radiology department, the pharmacy, and other areas is fed into the data repository via an interface engine. Other clinical information is fed in as scanned images of paper documents. Still other information is entered directly into the database through various software applications. The clinical data in the repository consist of the following elements:

- Text and numbers: for example, operative reports and patient histories (text); CPT codes and vital signs (numbers)
- Multimedia images: for example, radiology films, scanned documents, drawings, and echocardiograms
- Voice: for example, stored dictation

It is the data resource administrator’s responsibility to set the data standards for the information to be entered into the repository so that the information is presented in an integrated format that is useful to all users, not just the data originators. He or she may also be responsible for the development and maintenance of the organization’s standard data sets, data model, and data dictionary. Alternatively, he or she may participate on an interdisciplinary team responsible for those activities.

Standardization is especially important for information gleaned from the data repository and made available in the data warehouse, because information in the data warehouse is accessed through structured queries. The data warehouse includes decision support software and other systems for on-line analysis and modeling. Programs for external reporting may also be built into the data warehouse. In addition to data from the clinical data repository, the data warehouse is fed information from other databases in the organization, such as materials management and utilization review. Information on clinical trials may also be made accessible.

The main differences between a data repository and a data warehouse include the following:

- The information available in the data repository is used for operational and tactical management; the information in the data warehouse is used for tactical and strategic management.
- The information in the data repository can be updated; the information in the data warehouse cannot be updated although new data are added periodically.
- The model for the data repository is based on encounter data; the model for the data warehouse is based on patient data.
- Timing for the data repository is near-real time; timing for the data warehouse is date stamped.
- Normalization of data repository data reduces redundancy of information for a faster response; normalization of data warehouse data deliberately allows redundancy for better query performance.
- The data repository is structured; the data warehouse is semistructured or unstructured.
- On-line transactional processing (or OLTP) is possible in the data repository; on-line analytical processing (or OLAP) is possible in the data warehouse.
• The data repository allows flexible archiving of data; the data warehouse is designed for long-term retention of information.

• The data repository focuses on the information needed in the care of individual patients; the data warehouse focuses on the information needed in the management of the enterprise.

In addition to setting and monitoring policies and procedures for the repository and warehouse functions, the data resource administrator may participate on the interdisciplinary team responsible for setting the organization’s policies on access and release of information as well as information system security. To do this effectively, he or she monitors changes in laws, regulations, and accreditation standards as they apply to information systems and data resource management. He or she also monitors advancements in information technology, especially new developments in software applications for computer-based health record systems. The knowledge gained is useful for forecasting the organization’s future information system needs as well as for policy setting.

 Depending on the organization, staff management may also be a function of the data resource administrator. He or she might lead a self-managed team of data resource administrators or manage support staff. In many organizations, the administrator manages the staff responsible for scanning documents into databases.

 Training is probably one of the most critical success factors in organizations moving toward computer-based health record systems. The data resource administrator may directly provide training to current staff and new employees in some organizations. In others, training may be provided by a dedicated training and education department on the basis of needs assessments performed by the data resource administrator.

Scenario: A Day in the Life of a Data Resource Administrator

My job is with a large, regional medical center on the Gulf Coast. The medical center comprises a 425-bed tertiary hospital, 50 outpatient clinics, an on-campus trauma center, and a hospital-based home health program.

I am a health information management professional. After I received my RRA designation after graduating from a university in a nearby state, I obtained a master’s degree in computer science from the technical college within the same university. This preparation qualified me for my current job, which I started five months ago. My title is Document Manager. I report directly to the chief information officer of the medical center, but I also have a line management relationship with the director of health information management, who has proved to be a mentor for me in the area of health record management, especially on security and access issues.

My day today began with a long telephone conversation with my contact at the Gulf Coast Regional Data Center. The medical center is working toward a complete implementation of a computer-based patient record system sometime next year (that is why they created my position and hired me), and we are just one of a number of healthcare organizations in 10 states that store patient data with the Regional Data Center. As our first step in implementing a CPR system, we have begun developing an electronic imaging system to store the unit health record. My contact at the Regional Data Center gave me a lot of helpful advice this morning on how to work with users to establish the process for electronically transferring our data, multimedia images, and documents to the center. He suggested that the first thing I should do is establish document formats, indexing schemes, and specifications for the transfer of data. I
manage on-site scanning and indexing of paper documents now, but my objective is to scan as few documents as possible.

The imaging system is interfaced with the medical center’s scheduling system. Hard copies of the summary health records for patients scheduled to visit a clinic are printed the evening before the appointment. An interface with the inpatient and emergency patient registration systems ensures that records are available immediately after a patient registers. Access priorities have been implemented to control user access to the system according to a set of predefined access criteria. These procedures are preparing us for conversion to the CPR system, and all of this work has been accomplished since I started at the medical center.

Later today, I need to make sure that the video and document view stations in the oncology department were installed yesterday as scheduled. I coordinate the installation of equipment as each location in the medical center comes on-line. I also plan to look at yesterday’s report from the electronic audit system to determine whether there were any inappropriate attempts to access the data repository. If there were, I will talk with the information security manager to make sure that appropriate steps are being taken to correct the problem.

This afternoon I am scheduled to take part in new employee orientation. My part will take about 60 minutes. Before the meeting ends, I will make sure that each of the new users is scheduled for adequate training on how to use the data repository and data warehouse and is given appropriate access authorization.

At 4 o’clock today, other members of the data resource team and I, along with my manager and several people from the health information department, will meet with the document manager from the Regional Data Center. She works with the data center’s technical information systems coordinator to facilitate both wireless and optical information transmissions. She is a member of the data center’s corporate executive team and is involved in planning, marketing, and quality standard setting for the national transmission standards followed by all of the regional data centers.

The purpose of the meeting is to provide us with information on how the Regional Data Center performs quality control on images and on the timeliness and completeness of transferred data, images, and documents. We will also learn more about how the data center manages backup processing and requests for database release to payers, state agencies, accrediting organizations, and researchers. We know from previous meetings that the data center uses protocols that have been developed in collaboration with the information manager at each of the organizations that receives information. We also know that the Regional Data Center’s capabilities include special handling for high-security documents and other media controlled by statute and for special requests from researchers, academics, and providers.

After the meeting, I will answer my telephone messages and e-mail. Then, I will attend an evening seminar on reengineering in healthcare organizations.

**Conclusion**

Today and in the future, healthcare organizations are becoming increasingly dependent on meaningful information and collective knowledge. The data administrator’s role will continue to be enriched as full implementation of computer-based health record systems is accomplished and information-based decision making in all areas of healthcare becomes a reality.
Bibliography and References


## Skill and Knowledge Analysis

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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| Forecasting of future information system requirements | 5—Skilled use | • Ability to analyze the organization’s strategic direction and frame future system requirements around it  
• Ability to analyze future human resource, hardware, software, and training needs for the organization to guarantee successful completion of projects and ongoing operational viability  |
| Development of requests for information and requests for proposals | 3—Concept       | • Ability to create complete requests for information and requests for proposals for new computer hardware, software, and system acquisitions  
• Ability to define and communicate users’ requirements for the system  
• Ability to rank users’ requirements (as mandatory, high priority, et cetera)  |
| Contract negotiation                           | 3—Concept       | • Understanding of the organization’s process for contract negotiation  
• Ability to work with legal services to develop a contract that guarantees delivery of a viable information system and minimizes the organization’s level of risk  
• Ability to negotiate the best terms, price, et cetera  |
| Budget preparation                             | 5—Skilled use   | • Knowledge of basic financial tools (for example, spreadsheets)  
• Knowledge of the budgeting principles, techniques, and formats used by the organization  
• Ability to prepare a budget for the data resource department that meets the organization’s criteria as set by the chief executive officer, chief financial officer, and governing body  |
| Strategic planning for data resource department | 5—Skilled use   | • Ability to develop the mission statement, strategic plan, and critical success factors for the data resource department  
• Ability to evaluate the data resource department’s strengths, weaknesses, opportunities, and threats (SWOT) within the context of the organization’s strategic plan  |
| Strategic planning for the organization        | 5—Skilled use   | • Ability to participate in the development of the organization’s mission statement, strategic plan, and critical factors in the area of data resource administration  |
| Data modeling                                  | 5—Skilled use   | • Ability to conduct interactive modeling sessions with users to determine and prioritize data requirements  
• Ability to work with users to design data sets  
• Ability to flow-chart processes and data sets  
• Ability to develop and customize a data model according to the business drivers of the organization and to optimize performance  
• Ability to define the data owner (steward) for each data element  |

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<th>Skill Area</th>
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| Data set development                                                      | 5—Skilled use   | • Ability to perform cost-benefit analysis for specific system applications  
• Ability to establish and prioritize common data sets on the basis of users’ processes and applications  
• Ability to map data sets back to the organization’s strategic direction  
• Ability to incorporate standard data sets (UHDDS, NCVHS 42 Core Data Elements, ASTM 1384, HEDIS, and HL7, for example) into the organization’s data set  
• Ability to analyze and prioritize the value of each data set on the basis of potential utilization by decision makers  
• Ability to create a database inventory of all existing applications and the data they contain |
| Maintenance of knowledge base on changing healthcare information needs     | 5—Skilled use   | • Knowledge of changing healthcare information needs gained through attendance at major healthcare conferences  
• Knowledge of changing healthcare information needs gained through reading health information management and information systems trade journals, books, and other relevant publications  
• Ability to write about and discuss changing healthcare information needs with other healthcare users and peers |
| Maintenance of knowledge base on improvements in relational database management systems and object database management systems | 4—Detailed understanding | • Understanding of database software and applications on the market  
• Understanding of the differences among, and the capabilities of, current relational database management systems and object database management systems tools on the market |
| Hardware and software acquisitions                                        | 5—Skilled use   | • Ability to forecast hardware and software acquisition needs through maintaining an ongoing three-year capital budget  
• Ability to develop and implement a prioritized purchasing plan for hardware and software acquisitions |
| Data management strategy development                                       | 5—Skilled use   | • Ability to develop a charter that includes the purpose and principles of data management for the organization  
• Ability to formulate the structure and resources required to realize the purpose and maintain the principles |
| Release of information                                                    | 5—Skilled use   | • Knowledge of the organization’s requirements for maintaining organizationwide data security  
• Knowledge of, and ability to manage compliance with, pertinent federal and state laws, rules, and policies related to the release of information from data repositories and warehouses  
• Ability to develop source and time tables for routine release of data  
• Ability to reconcile data releases to eliminate data redundancy |
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<tr>
<th>Skill Area</th>
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<tr>
<td>Development of data standards</td>
<td>4 or 5—Detailed understanding or skilled use</td>
<td>• Ability to establish data standards to position the organization for data sharing</td>
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<tr>
<td></td>
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<td>• Ability to develop a metadata repository structure in which business rules define responsibility for maintaining the integrity of each data element within it</td>
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<td></td>
<td></td>
<td>• Ability to work with a group of stakeholders to define levels of security for each data set</td>
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<td></td>
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<td>• Ability to incorporate national and regional data standards into database development to allow future data exchange</td>
</tr>
<tr>
<td>Development of data dictionary and query library</td>
<td>4 or 5—Detailed understanding or skilled use</td>
<td>• Ability to reconcile current data definitions in existing dictionaries</td>
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<td></td>
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<td>• Ability to assign the organization’s definition for each data element</td>
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<td>• Ability to assess the data dictionaries for applications to be purchased in the future</td>
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<td>• Ability to work with users to determine optimal standard queries and create a library that makes the queries accessible to others in the organization</td>
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<td>Coordination of edits and tables with changes in data definitions or differences in data definitions across systems</td>
<td>4 or 5—Detailed understanding or skilled use</td>
<td>• Ability to work with data analysts and users to define data requirements</td>
</tr>
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<td></td>
<td></td>
<td>• Ability to work with vendors and information system staff to implement requirements</td>
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<tr>
<td>Feeder system data management</td>
<td>4 or 5—Detailed understanding or skilled use</td>
<td>• Ability to determine the best source system for each data set</td>
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<td></td>
<td>• Ability to assign data stewardship for source data</td>
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<td>• Ability to establish procedures for reconciliation of information transferred from feeder systems into the host system</td>
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<td>• Ability to define the data owner for each data element</td>
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<tr>
<td>Administration of workflow</td>
<td>4—Detailed understanding</td>
<td>• Ability to work with users to determine optimal workflow for data collection, storage, and reporting</td>
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<td></td>
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<td>• Ability to manage and administer the workflow within target applications</td>
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<td>• Ability to design and process improvements before system implementation and monitor ongoing improvement opportunities</td>
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<td>• Ability to determine appropriate cyclicity of data</td>
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<tr>
<td>Forms design</td>
<td>4—Detailed understanding</td>
<td>• Ability to work with users to determine the best format for data-entry screens and reports</td>
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<td></td>
<td></td>
<td>• Ability to assist in the development of form content and structure that maximizes efficiencies within electronic systems</td>
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<td></td>
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<td>• Broad understanding of data-mining techniques so that users can be referred to the appropriate resource when necessary</td>
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<tr>
<td>Normalization</td>
<td>4—Detailed understanding</td>
<td>• Understanding of concept and process of normalization</td>
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<tr>
<td></td>
<td></td>
<td>• Ability to review an entity relationship diagram and determine the level of normalization of the entities within it</td>
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<tr>
<td></td>
<td></td>
<td>• Ability to discuss relationships among entities with users and technical professionals and determine appropriate levels of normalization-denormalization.</td>
</tr>
<tr>
<td>Skill Area</td>
<td>Level*</td>
<td>Demonstrated By</td>
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</tr>
</tbody>
</table>
| Development of physical data model           | 4—Detailed understanding| • Ability to interpret the volume of data and the frequency of access to the data  
• Ability to work with data warehouse designers to design, and perform quality assurance on, the physical data model |
| Management of data acquisition and deletion  | 5—Skilled use           | • Ability to determine optimal sources for new data as new data requirements emerge  
• Ability to regularly monitor the cost of data acquisition versus the value of the data and the fit of the data with the organization’s strategic direction  
• Ability to consolidate unnecessary data acquisition points and eliminate acquisition of data elements no longer needed  
• Ability to update metadata tables with the dates data collection starts or ceases  
• Ability to work with users to facilitate the acquisition of data needed to fulfill users’ requirements  
• Ability to maintain up-to-date knowledge of outside sources of data |
| Process reengineering                        | 5—Skilled use           | • Ability to work with clinical and administrative staff to gain consensus on ideal collection points, requirements for data integrity, data standards, efficient screen formats, et cetera  
• Ability to reengineer staff processes and redesign the physical environment to accommodate ideal data collection |
| Development of access criteria and assessment of risk | 5—Skilled use     | • Ability to develop screening criteria that determine necessary access for users to clinical, financial, human resources, and administrative data  
• Ability to review periodic reports on data access to identify security breaches  
• Ability to plan and implement security and access precautions when risks are identified or newer techniques become available |
| Development and maintenance of data warehouse | 5—Skilled use           | • Ability to work with information services and users to develop user-friendly front-end applications for the data warehouse  
• Ability to record entities, the tables that constitute the database in metadata tables  
• Ability to record in metatables the dates, schedules for routine updates, scope, and definitions of data to be archived or purged  
• Ability to record the relationships that join the entities and the nature of those joins  
• Ability to record the location of database dictionaries and to document the update process  
• Ability to manage edits, additions, and deletions to the database  
• Ability to document database sources and methods of data feeds and conversions  
• Ability to work with users to determine the correctness of data fed into the data warehouse  
• Ability to establish ongoing edits  
• Ability to determine the format and level of detail in which values will be stored |
<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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</table>
| Quantitative analysis            | 3—Concept      | • Understanding of qualitative analysis techniques adequate to structure data for users  
                                |                               | • Ability to display easily comprehensible presentations to give users a clear idea of what techniques are available to use the resources of the data warehouse  
                                |                               | • Ability to demonstrate data management techniques and the range and depth of data available  
                                |                               | • Ability to walk users through exercises to develop presentations specific to their areas of responsibility |
| Policy and procedure development | 5—Skilled use   | • Ability to develop and maintain information management policies applicable to data repository and data warehouse functions  
                                |                               | • Ability to develop and maintain policies and procedures on access to data and information systems  
                                |                               | • Ability to develop and maintain policies and procedures on the retention, destruction, and archiving of data  
                                |                               | • Ability to develop and maintain policies and procedures on system backup  
                                |                               | • Ability to work with legal services to develop and maintain policies and procedures on data sharing among databases internal and external to the organization  
                                |                               | • Ability to work with legal services, human resources, and other parts of the organization to develop and maintain policies and procedures |
| Legal, regulatory, and administrative requirements | 5—Skilled use | • Knowledge of national and regional regulatory initiatives relevant to health information systems  
                                |                               | • Knowledge of administrative requirements governing health information systems  
                                |                               | • Ability to implement compliance programs |
| Human resource management        | 4—Detailed understanding | • Ability to perform routine hiring, evaluation, and performance management for data resource administration team  
                                |                               | • Ability to motivate staff toward advancement in professional or technical fields |
| Administration of record completion process | 4—Detailed understanding | • Ability to administer record completion process to keep operations current  
                                |                               | • Ability to use appropriate measurement techniques and reporting methods to track production in the record completion process |

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<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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<tbody>
<tr>
<td>Training</td>
<td>4—Detailed understanding</td>
<td>• Ability to develop a list of the user competencies required to navigate the database &lt;/br&gt;• Ability to educate users on granularity and scope of access; the number of tables that can be concurrently accessed and joined; methods to create and use queries that do not damage system performance; and the frequency, content, and detail of reports that can be generated and received &lt;/br&gt;• Ability to train data analysts to work with users on data-entry, querying, and reporting skills &lt;/br&gt;• Ability to continually monitor the training needs of users and ensure that training is provided on how to access and query the database &lt;/br&gt;• Ability to create an inventory of users, their competencies, and the coursework they have taken to increase their proficiency in the use of the database</td>
</tr>
<tr>
<td>Relationship management</td>
<td>4—Detailed understanding</td>
<td>• Ability to establish a liaison network or team meeting of data owners, data collectors, and data users to enhance working relationships &lt;/br&gt;• Ability to provide orientation to data owners, data collectors, and data users to improve mutual understanding of roles and needs</td>
</tr>
</tbody>
</table>

* Competency levels: 1 = awareness (introductory recall and recognition); 2 = literacy (knowledge of framework and content); 3 = concept (comprehension, translation, extrapolation, and interpretation of meaning); 4 = detailed understanding (appropriate application of knowledge in a structured and controlled context); 5 = skilled use (application using analysis, synthesis, and evaluation in new situations).
Chapter 10

Research and Decision Support Specialists

The evolution of healthcare in the United States is being driven by information from many diverse sources. With a long history of collecting, analyzing, and reporting health information, health information management professionals are poised to step into a new role in research and decision support. Who else in the healthcare organization knows better what information is available, where it can be found, and what it means?

Computer-based technology has given the healthcare industry unprecedented opportunities to capture data for more effective patient care, strategic and operational planning, utilization management, and financial decision making. Unfortunately, many healthcare organizations have invested heavily in computer software and hardware and in costly data collection efforts only to find that their organizations lacked the skilled staff needed to interpret the data appropriately and accurately. To avoid this pitfall, healthcare organizations should not invest solely in the technology that derives the information; they should also invest in the professionals who have the skills to analyze and report the data. The need for research and decision support specialists (or analysts) is growing, and many HIM professionals are preparing themselves to take on these evolving roles in healthcare management.

Functions and Responsibilities

Research specialists and decision support specialists use similar statistical tools and data analysis expertise to develop and manipulate healthcare-related information. The skills and knowledge base required to fulfill these comparable roles are very similar. (See the skill and knowledge analysis at the end of this chapter). The areas of application, however, are dissimilar.

The research specialist concentrates on making contributions to the creation of new data and knowledge through performing data quality analyses. He or she works with scientific and medical investigators on sophisticated analysis projects such as clinical trials and outcomes research.

The decision support specialist analyzes existing data and information in support of strategic planning and operational improvements on the organizational level. He or she works with senior healthcare administrators and provides the background information they use to make executive-level decisions. (Sample position descriptions are provided on pp. 104–5.)
Although the individuals who currently fill data analysis roles within healthcare organizations come from diverse educational and professional backgrounds, these specialists (now and in the future) need a basic set of skills and knowledge to succeed:

- Critical thinking skills
- Computer software application skills, particularly statistical software packages such as SAS and SPSS
- Database management skills
- Communication skills
- Organizational skills
- A basic knowledge of medicine and medical terminology as well as patient care processes
- The ability and willingness to work as a member of a team as well as a project leader
- A sincere commitment to customer service

In addition to these basic skills, the research specialists need a working knowledge of the principles of research, including how study protocols and research hypotheses are developed. Decision support specialists also need an in-depth understanding of the healthcare industry, including how reimbursement systems function.

More advanced skills are often learned on the job, for example:

- Data analysis skills such as determining whether data are logical and recognizing the limitations of data
- Project design skills such as defining data elements; developing and validating surveys, questionnaires, and collection instruments; modeling data; and applying relational database concepts
- Reporting skills such as translating statistical data into information that is accessible to end-users

Today, owing to the proliferation of healthcare databases and the growing demand for healthcare data as well the as the shortage of information technology professionals, HIM professionals who possess or can acquire this basic skill and knowledge set will be qualified to accept new challenges in research and analysis outside of traditional health information management areas.

The functions and responsibilities of research and decision support specialists are as diverse as the organizations and departments they work in. The following sample job descriptions list the primary responsibilities of two positions. The first describes a position that fulfills the general function of ensuring the quality of an organization’s data collection, coordination, and analysis processes. The second describes a position that supports corporate-level executive decision making.

Professionals currently working in research and decision support positions in healthcare organizations have a variety of official titles. For example:
Research and Decision Support Specialist

- Data coordination specialist
- Data coordination analyst
- Health information analyst
- Nosologist
- Senior applications analyst
- Epidemiologist
- Decision support analyst
- Director of clinical value measurement

They work in many different types of healthcare-related organizations, including:

- Integrated delivery systems
- Prison healthcare systems
- Physician practices
- Health maintenance organizations
- Hospitals, clinics, and other clinical settings
- Pharmaceutical companies
- Biomedical equipment companies
- Medical research institutions
- Medical and professional associations
- Government agencies
- Software vendors
- Consulting firms
- Accreditation agencies
- Employer groups
- Insurance companies
- Managed care organizations

Research and decision support specialists work with a wide variety of healthcare professionals in many areas of clinical operations and administration. Research specialists collaborate with physicians and other clinical professionals, health information management professionals, statisticians, pharmacists, and epidemiologists. Special projects might include clinical drug trials, site studies, medical effectiveness studies, and disease morbidity and mortality analyses. Decision support specialists work on administrative and operational projects in clinical services, medical affairs, quality assurance and improvement, case management, and utilization management. Decision support specialists work with decision
support software products and clinical health record software packages. They serve on special committees in such diverse areas as Y2K compliance and clinical path maintenance.

Research and decision support specialists come to their roles with experience and training in a number of areas related to health information management. Examples of typical backgrounds include the following:

- Health records management
- Quality assurance
- Hospital coding
- Health information management consulting
- Cancer registries
- Drug research
- Health information management education
- Case management

Although some employers look for candidates with doctoral or medical degrees or backgrounds in epidemiology or public health when they recruit for data analysis positions, there are no standard educational requirements beyond the minimum requirement of a bachelor’s degree in a health-, business-, or computer-related field. Many research and decision support specialists start with a basic skill set and then acquire the additional skills and knowledge they need on the job. No matter what experience, knowledge, and skills an individual brings to these data analysis roles, however, this fast-paced work will require a commitment to lifelong learning as advancements in medicine and technology make existing skills obsolete.

**Scenario: A Day in the Life of a Research Specialist**

My job is with a large, integrated healthcare system. The system includes a university-affiliated teaching hospital, several community hospitals, and a number of ambulatory facilities and physicians’ practices.

I hold a baccalaureate degree in health information administration and a master’s degree in health science research. I was chosen for my position because of my experience with several university hospitals and my interest in health science research. I am skilled in the use of a variety of decision support systems and statistical and simulation software packages.

I am responsible for performing administrative decision support for the senior management team of our integrated system. My work entails retrieving data from numerous administrative and clinical databases within our organization as well as from proprietary and nonproprietary databases available through outside sources. To access data, I use a structured query language and then download the data onto my own custom databases. Then I manipulate and analyze the data by using statistical software such as SPSS and SAS and use the results to determine significant variances and trends or to make predictions based on computer simulations.

Currently, I am working on three projects:

- Reviewing the financial feasibility of designating one unit of the university hospital as a ventilator rehabilitation unit
• Comparing and analyzing patterns of utilization and staffing for the emergency departments in our three community hospitals

• Analyzing outcomes data from our system’s current asthma treatment program

Most of the day today will be spent preparing a presentation on the final results of the ventilator study I have been working on. The chief financial officer will use the presentation materials I prepare at next week’s meeting of the system’s board of directors. The presentation is to include charts comparing utilization and financial data from University Hospital to similar benchmarking data from other hospitals that have dedicated ventilator rehabilitation units.

If I have time this morning, I also plan to download data from the systemwide clinical data repository and the human resources database so that I can begin work on the emergency department study tomorrow. Once I have integrated all the data from the three hospitals, I will use simulation software to arrive at recommendations on appropriate staffing levels.

A meeting of the clinical effectiveness team is scheduled for 3 o’clock today. We will begin our work on the acute asthma project by discussing the report I sent out last week on the variables that appear to significantly affect patient outcomes. To prepare the report, I accessed the clinical data repository and used a statistical package to identify variables and to determine possible relationships among them. The goal of the project is to identify the reasons behind the variability and to come up with suggestions for follow-up action.

Conclusion

Access to accurate and statistically relevant information is changing the way decisions are made in healthcare organizations of all kinds and sizes. The responsibilities of research and decision support specialists extend from analyzing data on administrative issues to assisting physicians and medical scientists in cutting-edge clinical research. The work of the health information management professionals who decide to take on these data analysis roles will be varied and exciting.

Bibliography and References


Sample Position Description: Research Data Analyst

Position Title: Research Data Analyst

Immediate Superior: Department Director

General Purpose: The Research Data Analyst ensures the quality of data collection, coordination, and analysis for clinical research projects

Responsibilities:

- Verifies, examines, and corrects data
- Ensures that clinical data are quality assured, consistent, and relevant to project’s and the organization’s goals
- Ensures the integrity of the data and the safe and proper management of study parameters
- Maintains expert knowledge of relevant FDA guidelines and other regulatory procedures
- Monitors protocol at study sites
- Retrieve data from numerous clinical databases within the organization as well as from proprietary and nonproprietary databases available through outside sources
- Uses structured query language and downloads data into the organization’s custom databases for review and analysis
- Manipulates and analyzes data by using statistical software, such as SPSS and SAS, and identifies and determines significant variances and trends for quality control
- Reviews proposed research design to ensure that the data collected are adequate to meet the project’s goals
- Prepares periodic progress and monitoring reports on study recruitment, data collection, and data quality
- Participates in team meetings
- Prepares and provides overviews, demonstrations, and presentations to wide variety of audiences

Qualifications:

- Master’s degree in health science or related field
- Baccalaureate degree in health information management, business, or closely related area
- Experience in health science and administration
- Certification as RRA preferable
Sample Position Description: Decision Support Specialist

Position Title: Decision Support Analyst

Immediate Superior: Director, Decision Support

General Purpose: The Decision Support Analyst coordinates data and research for senior managers at the corporate level of the integrated system

Responsibilities:

• Participating and assisting in the design of a comprehensive program to lend support and analysis to management
• Performing scientific and technical planning, direction, and analysis of selected surveillance systems used by management
• Investigating existing national data and performing descriptive and analytic studies using statistical techniques
• Providing ongoing data analysis to entity decision makers that is relevant to the healthcare market and assisting in problem solving, solution development, decision making, and strategic planning
• Recommending focus and direction of resources toward management goals
• Preparing and providing decision support overviews, demonstrations, and presentations to a wide variety of audiences
• Serving as technical expert advisor and consultant to collaborating organizations in the area of management goals

Qualifications:

• Bachelor’s degree in health information management, business, healthcare, or information systems technology
• Certification as RRA or ART
• Understanding of healthcare delivery systems and health science administration
# Skill and Knowledge Analysis

## Data Analysis

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer basics</td>
<td>5—Skilled use</td>
<td>• Command of statistical software applications (for example, SPSS)</td>
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<tr>
<td></td>
<td></td>
<td>• Command of computer programming language (for example, SQL and SAS)</td>
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<td></td>
<td></td>
<td>• Ability to use spreadsheet applications</td>
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<tr>
<td>Diagnostic skills</td>
<td>4—Detailed</td>
<td>• Ability to determine whether data is logical</td>
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<tr>
<td></td>
<td>understanding</td>
<td>• Ability to dig for meaningful information</td>
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<td></td>
<td></td>
<td>• Ability to act as a data diagnostician</td>
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<td></td>
<td></td>
<td>• Ability to determine efficacy of data</td>
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<td></td>
<td></td>
<td>• Knowledge of uses of data</td>
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<td></td>
<td></td>
<td>• Knowledge of the limitations of data</td>
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<td></td>
<td></td>
<td>• Knowledge of problem-solving techniques</td>
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<td>Statistical skills</td>
<td>5—Skilled use</td>
<td>• Ability to choose and apply appropriate statistical formulas</td>
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<tr>
<td></td>
<td></td>
<td>• Knowledge of basic epidemiology</td>
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<tr>
<td>Visioning</td>
<td>4—Detailed</td>
<td>• Ability to “see the big picture”</td>
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<tr>
<td></td>
<td>understanding</td>
<td>• Ability to see beyond the department level</td>
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<td>• Ability to envision for research analysis work</td>
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## Leadership

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<tr>
<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication/</td>
<td>4—Detailed</td>
<td>• Ability to facilitate communication between the IS staff and the medical/clinical staff</td>
</tr>
<tr>
<td>clarification</td>
<td>understanding</td>
<td>• Ability to provide analysis of medical issues</td>
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<td></td>
<td></td>
<td>• Ability to help clinicians understand research processes and resulting data</td>
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<td></td>
<td></td>
<td>• Credibility</td>
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<tr>
<td>Initiative</td>
<td>4—Detailed</td>
<td>• Ability to learn new things</td>
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<td></td>
<td>understanding</td>
<td>• Commitment to lifelong learning</td>
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<td></td>
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<td>• Willingness to take risks</td>
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<td></td>
<td></td>
<td>• Self-motivation</td>
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<tr>
<td>Personal effectiveness</td>
<td>4—Detailed</td>
<td>• Customer awareness</td>
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<tr>
<td></td>
<td>understanding</td>
<td>• Ability to develop and maintain relationships</td>
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<td></td>
<td></td>
<td>• Ability to interact effectively with others</td>
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<td></td>
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<td>• Political tact</td>
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## Project Design

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<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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</table>
| Collection   | 4—Detailed understanding | • Ability to develop a data dictionary and define data elements  
• Ability to develop surveys, questionnaires, and collection instruments and collection processes  
• Understanding of data elements and ability to maintain them  
• Ability to conduct quality assurance and control reviews  
• Ability to teach data collection techniques  
• Understanding of validation procedures for surveys, questionnaires, and other data collection instruments |
| Design       | 4—Detailed understanding | • Ability to conceptualize integrated systems  
• Ability to model data  
• Knowledge of research design parameters  
• Understanding of medical terminology and processes  
• Understanding research processes  
• Understanding of relational database concepts  
• Ability to clearly express the purpose of the project or information request  
• Understanding of the needs of the audience or customer |
| Research     | 4—Detailed understanding | • Ability to develop research protocols  
• Ability to develop research hypotheses |

## Report Preparation

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<th>Skill Area</th>
<th>Level*</th>
<th>Demonstrated By</th>
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</table>
| Application| 5—Skilled use           | • Ability to apply data logically to the process of patient care  
• Ability to apply data  
• Ability to translate data and statistics for the customer  
• Ability to forecast results  
• Ability to create explanatory scenarios and provide answers, alternatives, and other considerations to the customer  
• Commitment to supporting improved patient care |
| Networking | 4—Detailed understanding | • Ability to become an active member of professional groups  
• Understanding of the healthcare industry |
| Presentation| 5—Skilled use           | • Knowledge and understanding of audience—public, customers, data users—and focus on their needs  
• Ability to present and display of data clearly  
• Ability to write effective reports  
• Understanding of the impact of information |

* Competency levels: 1 = awareness (introductory recall and recognition); 2 = literacy (knowledge of framework and content); 3 = concept (comprehension, translation, extrapolation, and interpretation of meaning); 4 = detailed understanding (appropriate application of knowledge in a structured and controlled context); 5 = skilled use (application using analysis, synthesis, and evaluation in new situations).
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