PART ONE

Health Care Information

CHAPTER 1

Introduction to Health Care Information

LEARNING OBJECTIVES

- To be able to compare and contrast the various definitions of health care information.
- To be able to describe the major types of health care information (internal and external) that are captured or used or both in health care organizations.
- To be able to cite specific examples of the major types of health care information.
- To be able to understand the content and uses of patient records.
- To be able to follow a patient's or client's health information throughout a typical encounter or process.

Although it may seem self-evident, it is worth stating: *health care information is the reason we need health care information systems*. No study of information systems in health care would be complete without an examination of the data and information they are designed to support. The focus of this chapter will be on the data and information that are unique to health care, such as the clinical information created during patients' health care encounters, the administrative information related to those encounters, and the external information used to improve the clinical care and administrative functions associated with those encounters.

We begin the chapter with a brief discussion of some common definitions of health care information. Then we introduce the framework that will be used for exploring various types of health care information. The first major section of the chapter looks at data and information created internally by health care organizations, discussing this information at both the individual client level and the aggregate level. This section also examines some core processes involved in an inpatient and an ambulatory care clinical encounter to further explain how and when internal health care data and information originate and how they are used. The final section examines health care data and information created, at least in part, externally to the health care organization, and addresses both comparative and knowledge-based data and information.

TYPES OF HEALTH CARE INFORMATION

Different texts and articles define *health care information*, or *health information*, differently. Often it is the use or setting of the health information that drives the definition. For example, the government or an insurance company may have a certain definition of health care information, and the hospital, nursing home, or physician's office may have other definitions. In this book we are primarily interested in the *information generated or used by health care organizations*, such as hospitals, nursing homes, physicians' offices, and other ambulatory care settings. Of course, this same information may be used by governmental agencies or insurance companies as well.

Definitions of Health Care Information

Different definitions of "health information" and "health care information" have been developed by a variety of agencies and organizations. Some of the most well-known definitions of health information apply to identifiable patient information. These definitions ignore the vast amount of nonidentifiable information that is generated in the delivery of health care. This section examines and compares a few of the most well-known definitions of "health care information."

Health Insurance Portability and Accountability Act Definition

The Health Insurance Portability and Accountability Act (HIPAA), the federal legislation that includes provisions to protect patients' health information from unauthorized disclosure, defines *health information* as any information, whether oral or recorded in any form or medium, that—

> (A) is created or received by a health care provider, health plan, public health authority, employer, life insurer, school or university, or health care clearinghouse; and
>
> (B) relates to the past, present, or future physical or mental health or condition of an individual, the provision of health care to an individual, or the past, present, or future payment for the provision of health care to an individual.

HIPAA refers to this type of information as *protected health information*, or PHI. To meet the definition of PHI, information must first of all be *identifiable*, that is, it must have an individual patient perspective and the patient's identity must be known. HIPAA-defined PHI may exist outside a traditional health care institution and is therefore not an appropriate definition for an organizational view of information such as ours. HIPAA is certainly an important piece of legislation, and it has a direct impact on how health care organizations create and maintain health information (HIPAA is discussed further in Chapter Three). However, not all the information that must be managed in a health care organization is protected health information. Much of the information used by health care providers and executives is neither patient specific nor identifiable in the HIPAA sense.

National Health Information Technology Definitions

In an attempt to provide consensus definitions of key health care information terms, the National Alliance for Health Information Technology released a report "On Defining Key Health Information Technology Terms" in April 2008. Although the terms defined in this report are specific to health records, the definitions contain descriptions of the health information that is maintained by each type of record. The following are definitions of *electronic medical record, electronic health record*, and *personal health record*. Each of these definitions refers to patient-specific, identifiable health care information that would meet the HIPAA definition of PHI. (Although the alliance ceased to exist in 2009, these definitions continue to be recognized within the health care community.)

Electronic medical record—An electronic record of health-related information on an individual that can be created, gathered, managed, and consulted by authorized clinicians and staff within one healthcare organization.

Electronic health record—An electronic record of health-related information on an individual that conforms to nationally recognized interoperability standards and that can be created, managed, and consulted by authorized clinicians and staff across more than one healthcare organization.

Personal health record—An electronic record of health-related information on an individual that conforms to nationally recognized interoperability standards and that can be drawn from multiple sources while being managed, shared, and controlled by the individual [National Alliance for Health Information Technology, 2008].

The Joint Commission Definitions

The Joint Commission, the major accrediting agency for health care organizations in the United States, has adopted the HIPAA definition of protected health information as the definition of "health information" listed in their accreditation manual glossary of terms (The Joint Commission, 2011). Creating, maintaining, and managing quality health information is a significant factor in a health care organization achieving Joint Commission accreditation. The 2011 accreditation manual contains dozens of standards that are devoted to the creation and management of health information, including two specific chapters, Record of Care, Treatment, and Services (RC) and Information Management (IM). The RC chapter outlines specific standards governing the components of a complete medical record, while the IM chapter outlines standards for managing information as an important organizational resource.

Health Care Data Framework

Our framework for looking at data and information created, maintained, manipulated, stored, and used within health care organizations is shown in Figure 1.1. The first level of categorization divides data and information into two categories: *internal* and *external*.

Figure 1.1. Types of health care information framework

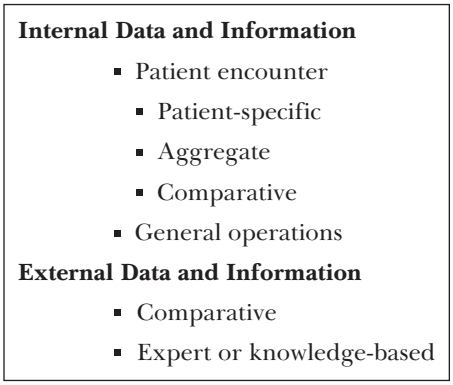


Table 1.1. Examples of types of patient encounter data information

	Primary Purpose	
Type	**Clinical**	**Administrative**
Patient-specific *(items generally included in the patient medical record are in italics)*	*Identification form or information* *Problem list* *Medication record* *History* *Physical* *Progress notes* *Consultations* *Physicians' orders* *Imaging and X-ray results* *Lab results* *Immunization record* *Operative report* *Pathology report* *Discharge summary* *Diagnoses codes* *Procedure codes*	*Identification form* *Consents* *Authorizations* *Preauthorization* *Scheduling* *Admission or registration* *Insurance eligibility* *Billing* *Diagnoses codes* *Procedure codes*
Aggregate	Disease indexes Specialized registers Outcomes data Statistical reports Trend analysis Ad hoc reports	Cost reports Claims denial analysis Staffing analysis Referral analysis Statistical reports Trend analysis Ad hoc reports

Within the broad category of data and information created *internally* by the health care organization, we will focus on clinical and administrative information directly related to the activities surrounding the *patient encounter*, both the individual encounter and the collective encounters. We break information related to the patient encounter into the subcategories of *patient-specific*, *aggregate*, and *comparative*. Our focus is on the clinical and administrative individual and aggregate health care information that is associated with a patient encounter. Table 1.1 lists the various types of data and information that fall into the patient encounter subcategories of patient-specific and aggregate. Information typically found in a patient medical record is shown in italics. (The comparative data and information subcategory is found in both the internal and external categories; we will discuss it when we discuss external data and information.)

The second major component of internal health care information in our framework is *general operations*. Data and information needed for the health care organization's general operations are not a focus of this text. Health care executives do, however, need to be concerned not only with information directly related to the patient encounter but also with information about the organization's general operations. Health care organizations are, after all, businesses that must have revenues exceeding costs to remain viable. The standard administrative activities of any viable organization also take place in health care settings. Health care executives interact with information and information systems in such areas as general accounting, financial planning, personnel administration, and facility planning on a regular if not daily basis. Our decision to focus on the information that is unique to health care and not a part of general business operations is not intended to diminish the importance of general operations but rather is an acknowledgment that a wealth of resources for general business information and information systems already exists.

In addition to using internally generated patient encounter and general operations data and information, health care organizations use information generated *externally* (Figure 1.1). *Comparative data*, as we will explain, combine internal and external data to aid organizations in evaluating their performance. The other major category of external information used in health care organizations is *expert* or *knowledge-based information*, which is generally collected or created by experts who are not part of the organization. Health care providers and executives use this type of information in decision making, both clinical and administrative. A classic example of knowledge-based clinical information is the information contained in a professional health care journal. Other examples are regional or national databases and informational web sites related to health or management issues.

INTERNAL DATA AND INFORMATION: PATIENT SPECIFIC—CLINICAL

The majority of clinical, patient-specific information created and used in health care organizations can be found in or has originated in patients' medical records. This section will introduce some basic components of the patient medical record. It will also examine an inpatient and an ambulatory care patient encounter to show how the patient medical record is typically created. All types of health care organizations—inpatient, outpatient, long-term care, and so forth—have patient medical records. These records may be in electronic format, paper format, or a combination of both formats but the purpose and basic content are similar regardless of record or organizational type.

Purpose of Patient Records

Health care organizations maintain medical records for several key purposes. As we move into the discussion of clinical information systems in subsequent chapters, it will be important to remember these purposes. These purposes remain constant regardless of the format or infrastructure supporting the records.

1. **Patient care.** Patient records provide the documented basis for planning patient care and treatment. This purpose is considered the number-one reason for maintaining patient records. Health care executives need to keep this primary purpose in mind when examining health care information systems. Too often other purposes, particularly billing and reimbursement, may seem to take precedence over patient care.
2. **Communication.** Patient records are an important means by which physicians, nurses, and others can communicate with one another about patient needs. The members of the health care team generally interact with patients at different times during the day, week, or even month. Information from the patient's record plays an important role in facilitating communication among providers across the continuum of care. The patient record may be the only means of communication between various providers. Patients also have a right to access their records and their engagement in their own care is often reflected in today's medical records.
3. **Legal documentation.** Patient records, because they describe and document care and treatment, can also become legal records. In the event of a lawsuit or other legal action involving patient care, the record becomes the primary evidence for what actually took place during the episode of care. An old but absolutely true adage about the legal importance of patient records says, "If it was not documented, it was not done."
4. **Billing and reimbursement.** Patient records provide the documentation patients and payers use to verify billed services. Insurance companies and other third-party payers insist on clear documentation to support any claims submitted. The federal programs Medicare and Medicaid have oversight and review processes in place that use patient records to confirm the accuracy of claims filed. Filing a claim for a service that is not clearly documented in the patient record could be construed as fraud.

5. **Research and quality management.** Patient records are used in many facilities for research purposes and for monitoring the quality of care provided. Patient records can serve as source documents from which information about certain diseases or procedures can be taken, for example. Although research is most prevalent in large academic medical centers, studies are conducted in other types of health care organizations as well.
6. **Population health.** Information from patient records is used to monitor population health, assess health status, measure utilization of services, track quality outcomes, and evaluate adherence to evidence-based practice guidelines. Health care payers and consumers are increasingly demanding to know the cost-effectiveness and efficacy of different treatment options and modalities.

The importance of maintaining complete and accurate patient records cannot be underestimated. They serve not only as a basis for planning patient care but also as the legal record documenting the care that was provided to patients by the organization. Patient medical records provide much of the source data for health care information that is generated within and across health care organizations. The data captured in a patient medical record become a permanent record of that patient's diagnoses, treatments, and response to treatments.

Content of Patient Records

The American Health Information Management Association (AHIMA) maintains the web site www.myPHR.com, which lists the following components as being common to most patient records, regardless of facility type or medical record system (electronic or paper based) (AHIMA, 2012). Medical record content is determined to a large extent by external requirements, standards, and regulations (discussed in Chapter Three). This is not an exhaustive list, but with our expanded definitions it provides a general overview of this content and of the person or persons responsible for the content. It reveals that the patient record is a repository for a variety of clinical data and information that is produced by many different individuals involved in the care of the patient.

- **Identification form.** Information found on the identification form (sometimes called a *face sheet* or *admission* or *discharge record*) originates at the time of registration or admission. The identification form is generally the first report or screen a user will encounter when

accessing a patient record. It lists at least the patient name, address, telephone number, insurance carrier, and policy number, as well as the patient's diagnoses and disposition at discharge. These diagnoses are recorded by the physicians and coded by administrative personnel. (Diagnosis coding is discussed later in this chapter.) The identification sheet is used as both a clinical and an administrative document. It provides a quick view of the diagnoses that required care during the encounter. The codes and other demographic information are used for reimbursement and planning purposes.

- **Problem list.** Patient records frequently contain a comprehensive problem list, which lists significant illnesses and operations the patient has experienced. This list is generally maintained over time. It is not specific to a single episode of care and may be maintained by the attending or primary care physician or collectively by all the health care providers involved in the patient's care.
- **Medication record.** Sometimes called a *medication administration record* (MAR), this record lists medicines prescribed for and subsequently administered to the patient. It often also lists any medication allergies the patient may have. Nursing personnel are generally responsible for documenting and maintaining medication information. In an inpatient setting, nurses are responsible for administering medications according to physicians' written or verbal orders.
- **History and physical.** The history component of this report describes any major illnesses and surgeries the patient has had, any significant family history of disease, patient health habits, and current medications. The information for the history is provided by the patient (or someone acting on his or her behalf) and is documented by the attending physician at the beginning of or immediately prior to an encounter or treatment episode. The physical component of this report states what the physician found when he or she performed a hands-on examination of the patient. The history and physical together document the initial assessment of the patient and provide the basis for diagnosis and subsequent treatment. They also provide a framework within which physicians and other care providers can document significant findings. Although obtaining the initial history and physical is a one-time activity during an episode of care, continued reassessment and documentation of that reassessment during the patient's course of treatment is critical. Results of reassessments are generally recorded in progress notes.

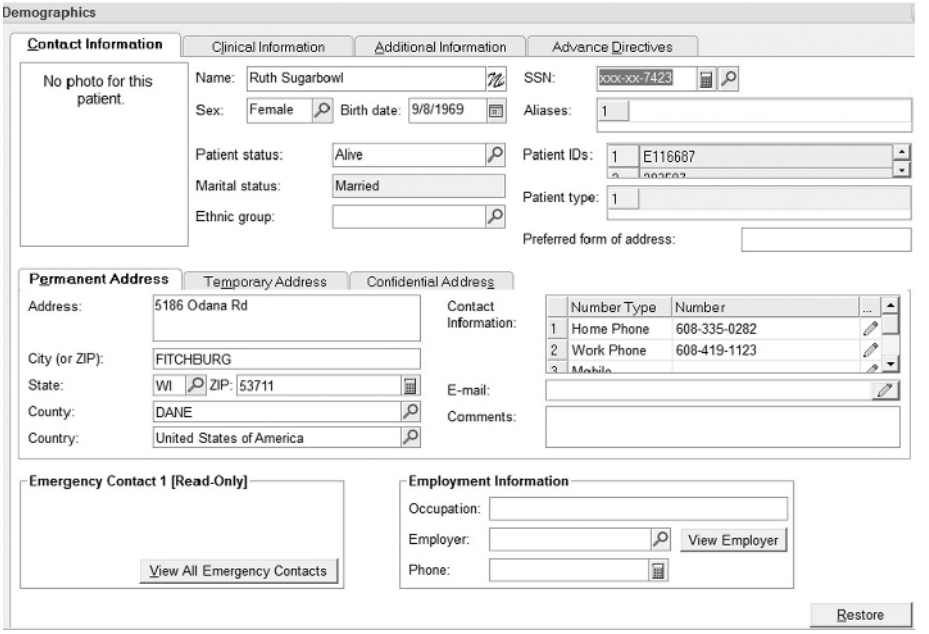
- **Progress notes.** Progress notes are made by the physicians, nurses, therapists, social workers, and other clinical staff caring for the patient. Each provider is responsible for the content of his or her notes. Progress notes should reflect the patient's response to treatment along with the provider's observations and plans for continued treatment. There are many formats for progress notes. In some organizations all care providers use the same note format; in others each provider type uses a customized format.
- **Consultation.** A consultation note or report records opinions about the patient's condition made by a health care provider other than the attending physician or primary care provider. Consultation reports may come from physicians and others inside or outside a particular health care organization, but copies are maintained as part of the patient record.
- **Physician's orders.** Physician's orders are a physician's directions, instructions, or prescriptions given to other members of the health care team regarding the patient's medications, tests, diets, treatments, and so forth. In the current U.S. health care system, procedures and treatments must be ordered by the appropriate licensed practitioner; in most cases this will be a physician.
- **Imaging and X-ray reports.** The radiologist is responsible for interpreting images produced through X-rays, mammograms, ultrasounds, scans, and the like and for documenting his or her interpretations or findings in the patient's medical record. These findings should be documented in a timely manner so they are available to the appropriate physician(s) to facilitate the appropriate treatment. The actual films or digital images are generally maintained in the radiology or imaging departments as hard copies or in a specialized computer system. These images are typically not considered part of the patient medical record, but like other reports, they are stored according to state laws and clinical practice guidelines and are important documentation of patient care.
- **Laboratory reports.** Laboratory reports contain the results of tests conducted on body fluids, cells, and tissues. For example, a medical lab might perform a throat culture, urinalysis, cholesterol level, or complete blood count. There are hundreds of specific lab tests that can be run by health care organizations or specialized labs. Lab personnel are responsible for documenting the lab results. Results of the lab work become part of the permanent patient record. However, lab results must also be available during treatment. Health care

providers rely on accurate lab results in making clinical decisions, so there is a need for timely reporting of lab results and a system for ensuring that physicians and other appropriate care providers receive the results. Physicians are responsible for documenting any findings and treatment plans based on the lab results.

- **Consent and authorization forms.** Copies of consents to admission, treatment, surgery, and release of information are an important component of the medical record and related to its use as a legal document. The practitioner who actually provides the treatment must obtain informed consent for the treatment. Patients must sign informed consent documents before treatment takes place. Forms authorizing release of information must also be signed by patients before any patient-specific health care information is released to parties not directly involved in the care of the patient.
- **Operative report.** Operative reports describe any surgery performed and list the names of surgeons and assistants. The surgeon is responsible for the operative report.
- **Pathology report.** Pathology reports describe tissue removed during any surgical procedure and the diagnosis based on examination of that tissue. The pathologist is responsible for the pathology report.
- **Discharge summary.** Each hospital medical record contains a discharge summary. The discharge summary summarizes the hospital stay, including the reason for admission, significant findings from tests, procedures performed, therapies provided, responses to treatments, condition at discharge, and instructions for medications, activity, diet, and follow-up care. The attending physician is responsible for documenting the discharge summary at the conclusion of the patient's stay in the hospital.

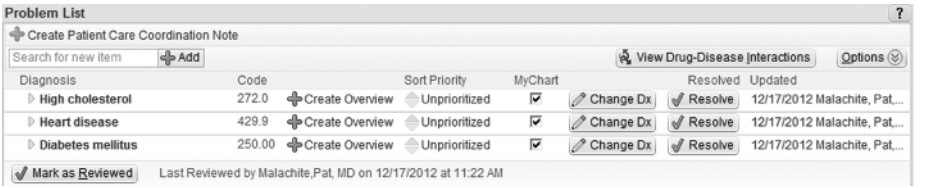
Figures 1.2 through 1.5 display screens from electronic health records. A patient record may contain some or all of the documentation just listed. Depending on the patient's illness or injury and the type of treatment facility, he or she may need specialized health care services. These services may require specific documentation. For example, long-term care facilities and behavioral health facilities have special documentation requirements. Our list is intended to introduce the common components of patient records, not to provide a comprehensive list of all possible components. As stated before, the patient record components listed here will exist whether the health care organization uses electronic records, paper records, or a combination of both.

Figure 1.2. Sample EHR information screen



Source: Medical University of South Carolina; Epic.

Figure 1.3. Sample EHR problem list



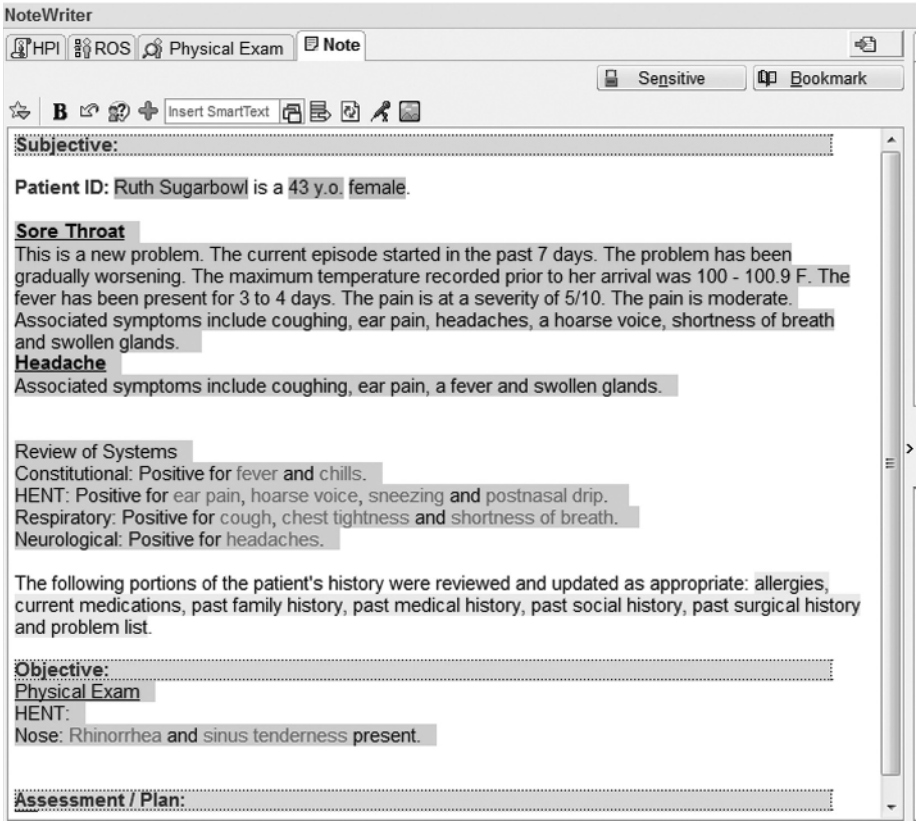
Source: Medical University of South Carolina; Epic.

Organization of Record Content

Information within patient medical records has traditionally been organized in a diary-like, chronological format. The record content is organized by filing like documents together chronologically. In this type of arrangement all nurses notes would be filed in a different section from the physician notes or lab reports, which would be filed in their own sections of the record. Within each record section the notes or reports are organized in chronological order. This type of record arrangement is sometimes referred to as "source-oriented" because the content is organized by the source of the information.

In the late 1960s, Dr. Lawrence Weed challenged the way records were organized. He introduced the concept of patient-oriented medical records

Figure 1.4. Sample EHR progress notes

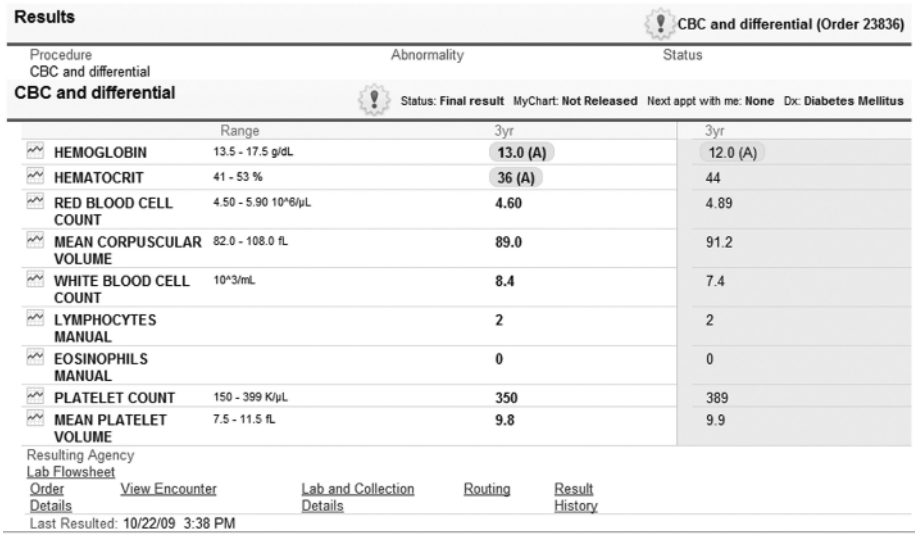


Source: Medical University of South Carolina; Epic.

(POMR). The POMR is created and organized around the patient's problems, not the source of the information. The goal of the POMR is to improve patient care through a more systematic way of documentation. Dr. Weed envisioned this system to improve communication and facilitate the continuity of care. The main components of the POMR are:

- The database, which includes information such as the patient's history, physical exam finding, and other initial findings. The database is intended to be very detailed with expanded social and family histories, for example.
- The problem list is the first document in the POMR. It is a list of all patient problems. Problems may be medical or social. Each is documented with the beginning date. As problems are resolved, date of resolution is recorded. No problem is actually removed from the problem list. This problem list becomes the index to the remainder of the record.

Figure 1.5. Sample EHR lab report



Results — CBC and differential (Order 23836)

Procedure: CBC and differential | Abnormality | Status

CBC and differential — Status: **Final result** MyChart: **Not Released** Next appt with me: **None** Dx: **Diabetes Mellitus**

	Range	3yr	3yr
HEMOGLOBIN	13.5 - 17.5 g/dL	13.0 (A)	12.0 (A)
HEMATOCRIT	41 - 53 %	36 (A)	44
RED BLOOD CELL COUNT	4.50 - 5.90 10^6/µL	4.60	4.89
MEAN CORPUSCULAR VOLUME	82.0 - 108.0 fL	89.0	91.2
WHITE BLOOD CELL COUNT	10^3/mL	8.4	7.4
LYMPHOCYTES MANUAL		2	2
EOSINOPHILS MANUAL		0	0
PLATELET COUNT	150 - 399 K/µL	350	389
MEAN PLATELET VOLUME	7.5 - 11.5 fL	9.8	9.9

Resulting Agency
Lab Flowsheet
Order Details | View Encounter | Lab and Collection Details | Routing | Result History
Last Resulted: 10/22/09 3:38 PM

Source: Medical University of South Carolina; Epic.

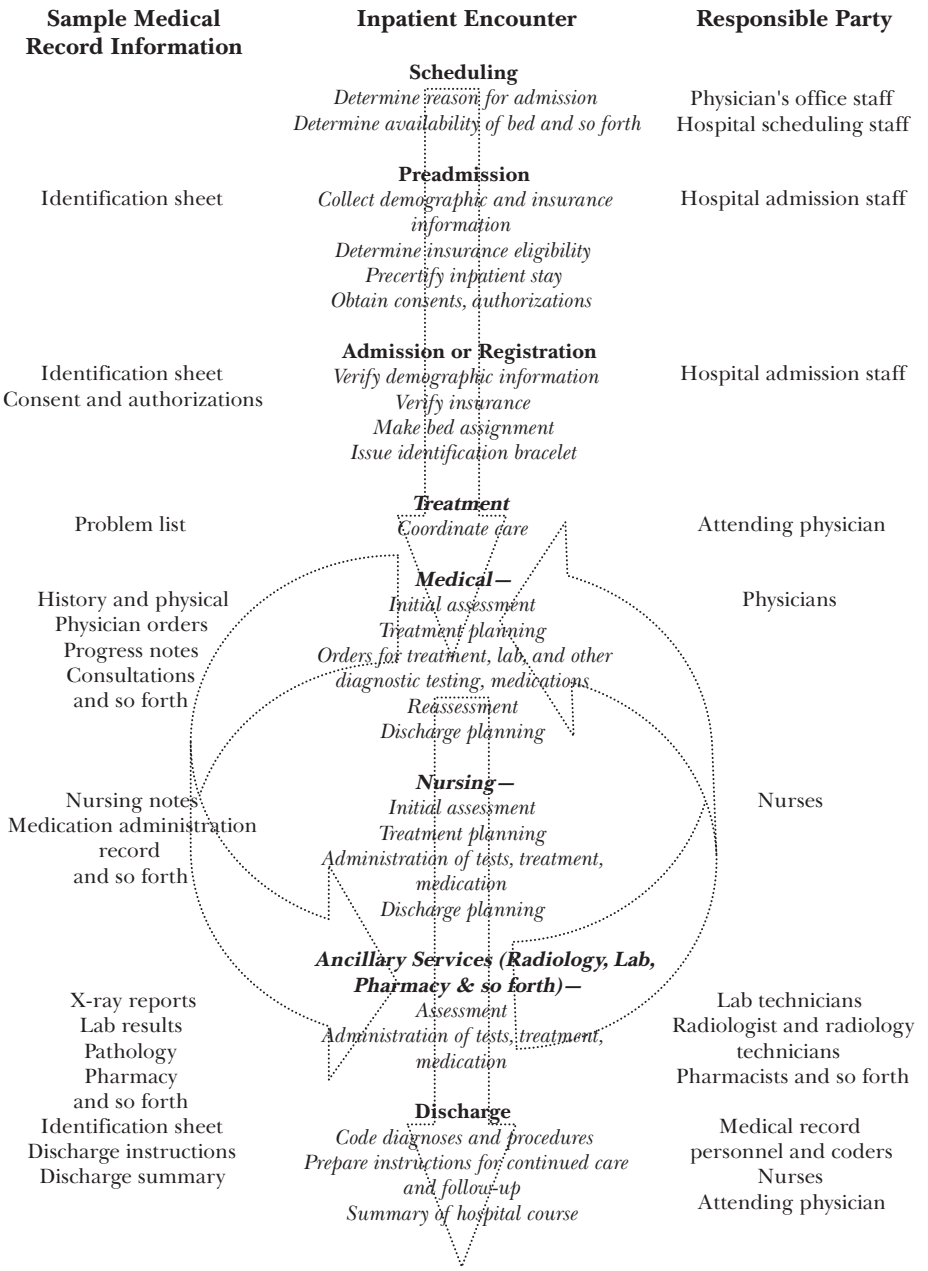
- The initial plan is derived from the problems identified in the initial problem list. All health care provider plans are integrated into the same location, organized by the problem.
- Notes are also integrated in the POMR and follow a prescribed format. Each note, whether written by a physician, nurse, or other health care provider, follows the same format, known as SOAP:
  - Subjective data
  - Objective data
  - Assessment of the patient's status
  - Plan

Although there are few examples of "pure" POMRs in use today, the problem list and the SOAP note are commonplace (Miller & O'Toole, 2003).

Overview of a Patient Encounter

Where do medical record data and information come from? How do they originate? In this section we will walk through an inpatient encounter and also take a brief look at a physician's office patient encounter. Along the way we will point out how medical record information is created and used. Figure 1.6 diagrams a reasonably typical nonsurgical inpatient admission. The middle

Figure 1.6. Inpatient encounter flow



column represents the basic patient flow in an inpatient episode of care. It shows some of the core activities and processes the patient will undergo during a hospital stay. The left-hand column lists some of the points along the patient flow process where basic medical record information is added to the medical record database or file. The right-hand column lists the hospital personnel who are generally responsible for a patient flow activity or specific medical record documentation or both. Using Figure 1.6 as a guide we will follow a patient, Marcus Low, through his admission to the hospital for radiation treatments.

CASE STUDY

Marcus Low's Admission

Mr. Low's admission to the hospital is scheduled by his oncologist, Dr. Good, who serves as the admitting and attending physician during Mr. Low's two-day hospital stay. This process involves the administrative staff in Dr. Good's office calling the Admissions Department of the hospital and arranging a time for Mr. Low to be admitted. The preadmission process involves the hospital corresponding or talking with Mr. Low and with Dr. Good's office to gather the demographic and insurance information that will be needed to file a claim with Mr. Low's insurance company. Generally, hospital personnel contact the patient's insurance company to precertify his or her hospital admission, and in this case the hospital checks that the insurance company agrees that Mr. Low's planned admission is medically necessary and will be approved for payment. The patient medical record is started during the preadmission phase. The Admissions Department must check whether Mr. Low has had a previous stay at the hospital and whether he has an existing medical record number or unique identifier. The *identification form* is started at this stage. Mr. Low's hospital has an electronic health record system, so the demographic information needed is put into the computer system.

On the scheduled day of admission, Mr. Low arrives at the hospital's Admissions Department. There he verifies his demographic and insurance information. He is issued an identification (ID) bracelet and escorted to his assigned room by the hospital staff. Bed assignment is an important activity for the Admissions Department. It involves a great deal of coordination among the Admissions Department, nursing staff, and housekeeping staff. Efficient patient flow within a hospital relies on this first step of bed assignment. Clean rooms with adequate staff need to be available not only for elective admissions like Mr.

Low's but also for emergency admissions. Because this hospital has an electronic health record, there is no paper chart to go to the nursing floor with Mr. Low, but the admissions staff verify that all pertinent information is recorded in the system. The admissions staff also have Mr. Low sign a general *consent to treatment* and the *authorization* that allows the hospital to share his health information with the insurance company.

Once on the nursing floor, Mr. Low receives a nursing assessment and a visit from the attending physician. The nursing assessment results in a nursing care plan for Mr. Low while he is in the hospital. Because Mr. Low saw Dr. Good in his office during the previous week, the *history and physical* is already stored in the electronic health record system. Dr. Good records his *orders* in the physician order entry component of the electronic medical record. The nursing staff respond to these orders by giving Mr. Low a mild sedative. The Radiology Department responds to these orders by preparing for Mr. Low's visit to that department later in the day. During his two-day stay Mr. Low receives several medications and three radiation treatments. He receives blood work to monitor his progress. All these treatments are made in response to orders given by Dr. Good and are recorded in the medical record, along with the *progress notes* from each provider. The medical record serves as a primary form of communication among all the providers of care. They check the electronic health record system regularly to look for new orders and to review the updated results of treatments and tests.

When Mr. Low is ready to be discharged, he is once again assessed by the nursing staff. A member of the nursing staff reviews his discharge orders from the physician and goes over instructions that Mr. Low should follow at home. Shortly after discharge, Dr. Good must dictate or record a *discharge summary* that outlines the course of treatment Mr. Low received. Once the record is flagged to indicate that Mr. Low has been discharged, the personnel in the Health Information Management Department assign codes to the diagnoses and procedures. These codes will be used by the Billing Department to file insurance claims.

When the Billing Department receives the final codes for the records, it will submit the appropriate claims to the insurance companies. It is the Billing Department, or Patient Accounting Department, that manages the patient revenue cycle that begins with scheduling and ends when payments are posted. This department works closely with third-party payers and patients in collecting reimbursement for services provided.

Even in this extremely brief outline of a two-day hospital stay, you can see that patient care and the reimbursement for that care involve many individuals who need access to timely and accurate patient information. The coordination of care is essential to quality, and this coordination relies on the availability of information. Other hospital stays are longer; some are emergency admissions; some involve surgery. These stays will need information additional to that discussed in this section. However, the basic components will be essentially the same as those just described.

An ambulatory care encounter is somewhat different from a hospital stay. Let's follow Mr. Low again. This time we will describe his follow-up office visit with Dr. Good two weeks after his discharge from the hospital. Figure 1.7 is an outline of the process that Mr. Low followed during his office visit and the individuals who were responsible for each step in the process.

CASE STUDY

Mr. Low's Physician's Office Visit

During his follow-up visit, Dr. Good and his professional staff will update Mr. Low's health history, conduct a focused physical exam, and draw blood for a laboratory test. As with the hospital encounter, Dr. Good also maintains a medical record to document the care provided during this visit, but his records are still mainly paper-based. He is planning to implement an electronic health record system within his practice in the next two years. Currently, however, there is no direct link between Dr. Good's and the hospital's medical record systems. Fortunately, Dr. Good can access the hospital's electronic health record system from his office. He can view all the lab results, radiology reports, and discharge summaries for his hospitalized patients. He chooses to print out these reports and file them in the patients' paper medical records. Each medical record in Dr. Good's office contains the general patient demographic and insurance information, an ongoing problem list, a summary of visits, and individual visit notes. These notes include entries by both the nursing staff and Dr. Good. The nursing staff record all their notes by hand. Dr. Good dictates his notes, which are subsequently transcribed by a professional medical transcriber. All phone calls and prescription information are also recorded in the record.

One significant difference between an ambulatory care visit, such as a physician's office visit, and a hospital stay is the scope of the episode of care.

Figure 1.7. Physician's office visit patient flow

Check-In *Verify appointment* *Update insurance information* *Update demographic information* *Pull medical record*	Front office staff
Move to Exam Room *Take vital signs* *Review reason for admission* *Document in medical record*	Nursing staff
Examination *Discussion of hospital stay* *Discussion of disease course and next steps*	Physician
Check out *Set next appointment* *Receive payment on bill*	Front office staff
Later *Dictate notes*	Physician
Code visit *File insurance*	Billing clerk

During an inpatient stay patients usually receive a course of treatment, with a definite admission point and discharge point. In an ambulatory care setting, particularly primary care physician visits, patients may have multiple problems and treatments that are ongoing. There may not be a definite beginning or end to any one course of treatment. There are likely to be fewer care providers interacting with the patient at any given ambulatory care visit. There may, however, be more consultations over time and a need to coordinate care across organizations. All these characteristics make the clinical information needs of the inpatient setting and the ambulatory care setting somewhat different, but in each setting, this information is equally important to the provision of high-quality care.

Health care information systems and health care processes are closely entwined with one another. Health care processes require the use of data and information and they also produce or create information. Care providers must communicate with one another and often need to share patient information across organizations. The information produced by any one health care process may in turn be used by others. A true web of information sharing is needed.

INTERNAL DATA AND INFORMATION: PATIENT SPECIFIC—ADMINISTRATIVE

As we have seen in the previous section, patient-specific clinical information is captured and stored as a part of the patient medical record. However, there is more to the story—health care organizations need to get paid for the

care they provide and to plan for the efficient provision of services to ensure that their operations remain viable. In this section we will examine individual patient data and information used specifically for administrative purposes. Health care organizations need data to effectively perform the tasks associated with the patient revenue cycle, tasks such as scheduling, precertification and insurance eligibility determination, billing, and payment verification. To determine what data are needed, we can look, first, at two standard billing documents, the UB-04 (CMS-1450) and the CMS-1500. In addition, we will discuss the concept of a uniform data set and introduce the Uniform Hospital Discharge Data Set, the Uniform Ambulatory Care Data Set, and the Minimum Data Set for long-term care.

Data Needed to Process Reimbursement Claims

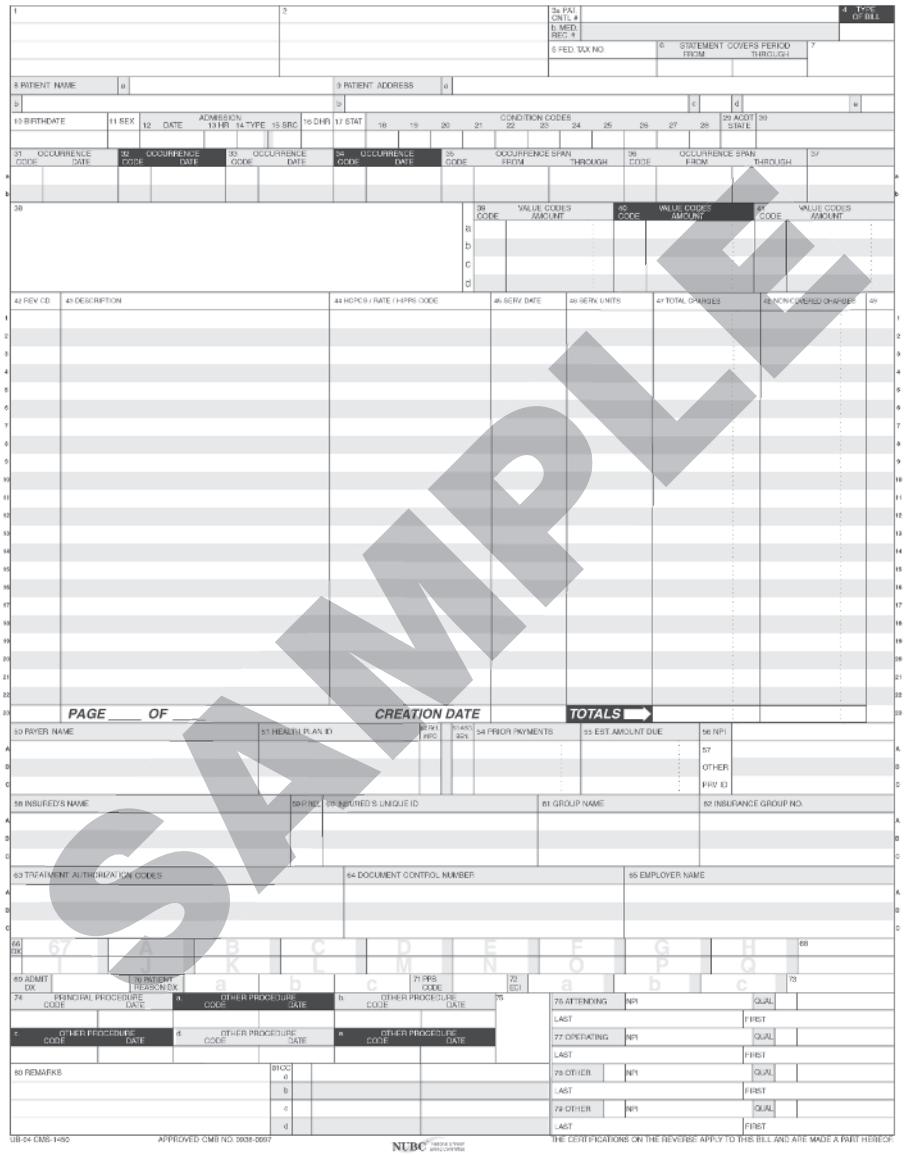
Generally, the health care organization's accounting or billing department is responsible for processing claims, an activity that includes verifying insurance coverage, billing third-party payers (private insurance companies, Medicare, or Medicaid), and processing the payments as they are received. Centers for Medicare and Medicaid Services (CMS) currently requires health care providers to submit claims electronically, unless the provider qualifies for a waiver. Although this section describes forms, the data requirements are the same whether an organization files electronically or with these forms under a waiver from the Administrative Simplification Compliance Act (ASCA) requirement for electronic submission of claims.

Depending on the type of service provided to the patient, one of two standard billing forms or data sets will be submitted to the third-party payer. The UB-04, or CMS-1450, is submitted for inpatient, hospital-based outpatient, home health care, and long-term care services. The CMS-1500 is submitted for health care provider services, such as those provided by a physician's office. It is also used for billing by some Medicaid state agencies.

UB-04

In 1975, the American Hospital Association (AHA) formed the National Uniform Billing Committee (NUBC, 1999), bringing the major national provider and payer organizations together for the purpose of developing a single billing form and standard data set that could be used for processing health care claims by institutions nationwide. The first *uniform bill* was the UB-82. It has since been modified and improved upon, resulting, first, in the UB-92 data set and now in the currently used UB-04 (see Exhibit 1.1). UB-04 is the de facto hospital and other institution claim standard. It is required by the federal government

Exhibit 1.1. Uniform bill: UB-04



(cont.)

Exhibit 1.1. (*Continued*)

UB-04 NOTICE: THE SUBMITTER OF THIS FORM UNDERSTANDS THAT MISREPRESENTATION OR FALSIFICATION OF ESSENTIAL INFORMATION AS REQUESTED BY THIS FORM, MAY SERVE AS THE BASIS FOR CIVIL MONETARTY PENALTIES AND ASSESSMENTS AND MAY UPON CONVICTION INCLUDE FINES AND/OR IMPRISONMENT UNDER FEDERAL AND/OR STATE LAW(S).

Submission of this claim constitutes certification that the billing information as shown on the face hereof is true, accurate and complete. That the submitter did not knowingly or recklessly disregard or misrepresent or conceal material facts. The following certifications or verifications apply where pertinent to this Bill:

1. If third party benefits are indicated, the appropriate assignments by the insured /beneficiary and signature of the patient or parent or a legal guardian covering authorization to release information are on file. Determinations as to the release of medical and financial information should be guided by the patient or the patient's legal representative.
2. If patient occupied a private room or required private nursing for medical necessity, any required certifications are on file.
3. Physician's certifications and re-certifications, if required by contract or Federal regulations, are on file.
4. For Religious Non-Medical facilities, verifications and if necessary re-certifications of the patient's need for services are on file.
5. Signature of patient or his representative on certifications, authorization to release information, and payment request, as required by Federal Law and Regulations (42 USC 1935f, 42 CFR 424.36, 10 USC 1071 through 1086, 32 CFR 199) and any other applicable contract regulations, is on file.
6. The provider of care submitter acknowledges that the bill is in conformance with the Civil Rights Act of 1964 as amended. Records adequately describing services will be maintained and necessary information will be furnished to such governmental agencies as required by applicable law.
7. For Medicare Purposes: If the patient has indicated that other health insurance or a state medical assistance agency will pay part of his/her medical expenses and he/she wants information about his/her claim released to them upon request, necessary authorization is on file. The patient's signature on the provider's request to bill Medicare medical and non-medical information, including employment status, and whether the person has employer group health insurance which is responsible to pay for the services for which this Medicare claim is made.
8. For Medicaid purposes: The submitter understands that because payment and satisfaction of this claim will be from Federal and State funds, any false statements, documents, or concealment of a material fact are subject to prosecution under applicable Federal or State Laws.
9. For TRICARE Purposes:
   (a) The information on the face of this claim is true, accurate and complete to the best of the submitter's knowledge and belief, and services were medically necessary and appropriate for the health of the patient;
   (b) The patient has represented that by a reported residential address outside a military medical treatment facility catchment area he or she does not live within the catchment area of a U.S. military medical treatment facility, or if the patient resides within a catchment area of such a facility, a copy of Non-Availability Statement (DD Form 1251) is on file, or the physician has certified to a medical emergency in any instance where a copy of a Non-Availability Statement is not on file;
   (c) The patient or the patient's parent or guardian has responded directly to the provider's request to identify all health insurance coverage, and that all such coverage is identified on the face of the claim except that coverage which is exclusively supplemental payments to TRICARE-determined benefits;
   (d) The amount billed to TRICARE has been billed after all such coverage have been billed and paid excluding Medicaid, and the amount billed to TRICARE is that remaining claimed against TRICARE benefits;
   (e) The beneficiary's cost share has not been waived by consent or failure to exercise generally accepted billing and collection efforts; and,
   (f) Any hospital-based physician under contract, the cost of whose services are allocated in the charges included in this bill, is not an employee or member of the Uniformed Services. For purposes of this certification, an employee of the Uniformed Services is an employee, appointed in civil service (refer to 5 USC 2105), including part-time or intermittent employees, but excluding contract surgeons or other personal service contracts. Similarly, member of the Uniformed Services does not apply to reserve members of the Uniformed Services not on active duty.
   (g) Based on 42 United States Code 1395cc(a)(1)(j) all providers participating in Medicare must also participate in TRICARE for inpatient hospital services provided pursuant to admissions to hospitals occurring on or after January 1, 1987; and
   (h) If TRICARE benefits are to be paid in a participating status, the submitter of this claim agrees to submit this claim to the appropriate TRICARE claims processor. The provider of care submitter also agrees to accept the TRICARE determined reasonable charge as the total charge for the medical services or supplies listed on the claim form. The provider of care will accept the TRICARE-determined reasonable charge even if it is less than the billed amount, and also agrees to accept the amount paid by TRICARE combined with the cost-share amount and deductible amount, if any, paid by or on behalf of the patient as full payment for the listed medical services or supplies. The provider of care submitter will not attempt to collect from the patient (or his or her parent or guardian) amounts over the TRICARE determined reasonable charge. TRICARE will make any benefits payable directly to the provider of care, if the provider of care is a participating provider.

SEE http://www.nubc.org/ FOR MORE INFORMATION ON UB-04 DATA ELEMENT AND PRINTING SPECIFICATIONS

and state governments in their role as third-party payers and has been adopted across the United States by private third-party payers as well. One important change implemented with the transition from the UB-92 to the UB-04 is the requirement that each claim include a valid National Provider Identifier (NPI) (Centers for Medicare and Medicaid [CMS], 2006). The NPI is a unique identification number for each HIPAA-covered health care provider. Covered health care providers and all health plans and health care clearinghouses use NPIs in the administrative and financial transactions adopted under HIPAA. The NPI

is a ten-position, "intelligence-free" numeric identifier, meaning that this ten-digit number does not carry any additional information about the health care provider to which it is assigned, such as the state in which the provider works or the provider's medical specialty (CMS, 2008).

CMS-1500

The National Uniform Claim Committee (NUCC, 2012) was created by the American Medical Association (AMA) to develop a standardized data set for the noninstitutional health care community to use in the submission of claims (much as the NUBC has done for institutional providers). Members of this committee represent key provider and payer organizations, with the AMA appointing the committee chair. The standardized claim form developed and overseen by NUCC is the CMS-1500. This claim form has been adopted by the federal government, and like the UB-04 for institutional care, has become the de facto standard for all types of noninstitutional provider claims, such as those for physician services (see Exhibit 1.2).

It is important to recognize that both the UB-04 and the CMS-1500 claim forms incorporate standardized data sets. Regardless of a health care organization's location or a patient's insurance coverage, the same data elements are collected. In many states UB-04 data and CMS-1500 data must be reported to a central state agency responsible for aggregating and analyzing the state's health data. At the federal level the Centers for Medicare and Medicaid Services (CMS) aggregates the data from these claims forms for analyzing national health care reimbursement, clinical, and population trends. Having uniform data sets means that data can be compared not only within organizations but within states and across the country.

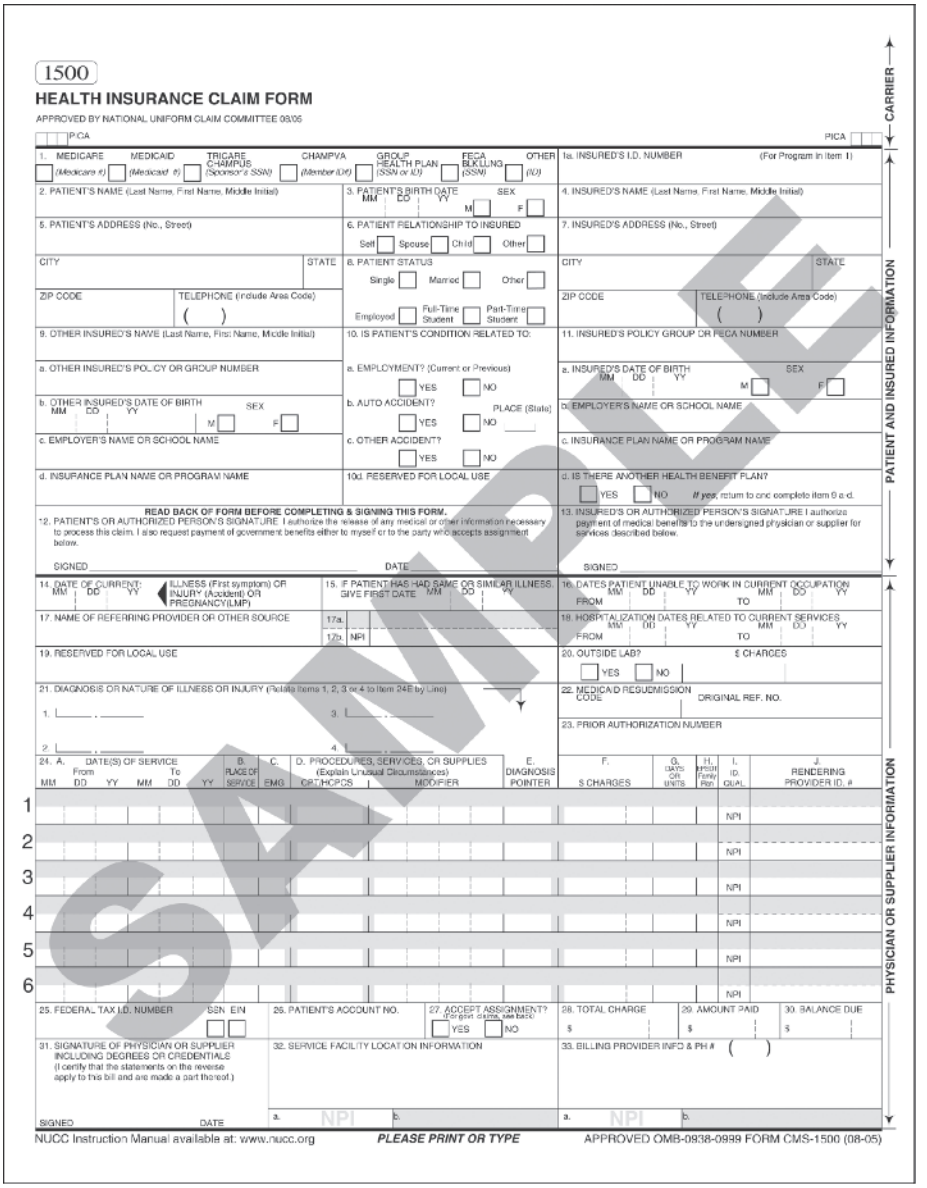
Other Uniform Data Sets

Other uniform data sets have been developed for use in the United States. Three examples are the Uniform Hospital Discharge Data Set (UHDDS), the Uniform Ambulatory Care Data Set (ACDS), and the Minimum Data Set (MDS) used for long-term care. These data sets share two purposes:

1. To identify the data elements that should be collected for each patient, and
2. To provide uniform definitions for common terms and data elements [LaTour, 2002, p. 123].

The UHDDS is the oldest uniform data set used in the United States. The earliest version was developed in 1969 by the National Center for Health

Exhibit 1.2. Claim form: CMS-1500



1500

HEALTH INSURANCE CLAIM FORM

APPROVED BY NATIONAL UNIFORM CLAIM COMMITTEE 08/05

PICA

1. MEDICARE (Medicare #) MEDICAID (Medicaid #) TRICARE CHAMPUS (Sponsor's SSN) CHAMPVA (Member ID#) GROUP HEALTH PLAN (SSN or ID) FECA BLKLUNG (SSN) OTHER (ID)

1a. INSURED'S I.D. NUMBER (For Program in Item 1)

2. PATIENT'S NAME (Last Name, First Name, Middle Initial)

3. PATIENT'S BIRTH DATE MM DD YY SEX M F

4. INSURED'S NAME (Last Name, First Name, Middle Initial)

5. PATIENT'S ADDRESS (No., Street)

6. PATIENT RELATIONSHIP TO INSURED Self Spouse Child Other

7. INSURED'S ADDRESS (No., Street)

CITY STATE

8. PATIENT STATUS Single Married Other Employed Full-Time Student Part-Time Student

CITY STATE

ZIP CODE TELEPHONE (Include Area Code) ( )

ZIP CODE TELEPHONE (Include Area Code) ( )

9. OTHER INSURED'S NAME (Last Name, First Name, Middle Initial)

10. IS PATIENT'S CONDITION RELATED TO:

11. INSURED'S POLICY GROUP OR FECA NUMBER

a. OTHER INSURED'S POLICY OR GROUP NUMBER

a. EMPLOYMENT? (Current or Previous) YES NO

a. INSURED'S DATE OF BIRTH MM DD YY SEX M F

b. OTHER INSURED'S DATE OF BIRTH MM DD YY SEX M F

b. AUTO ACCIDENT? PLACE (State) YES NO

b. EMPLOYER'S NAME OR SCHOOL NAME

c. EMPLOYER'S NAME OR SCHOOL NAME

c. OTHER ACCIDENT? YES NO

c. INSURANCE PLAN NAME OR PROGRAM NAME

d. INSURANCE PLAN NAME OR PROGRAM NAME

10d. RESERVED FOR LOCAL USE

d. IS THERE ANOTHER HEALTH BENEFIT PLAN? YES NO If yes, return to and complete item 9 a-d.

READ BACK OF FORM BEFORE COMPLETING & SIGNING THIS FORM.

12. PATIENT'S OR AUTHORIZED PERSON'S SIGNATURE I authorize the release of any medical or other information necessary to process this claim. I also request payment of government benefits either to myself or to the party who accepts assignment below.

SIGNED DATE

13. INSURED'S OR AUTHORIZED PERSON'S SIGNATURE I authorize payment of medical benefits to the undersigned physician or supplier for services described below.

SIGNED

14. DATE OF CURRENT: MM DD YY ILLNESS (First symptom) OR INJURY (Accident) OR PREGNANCY(LMP)

15. IF PATIENT HAS HAD SAME OR SIMILAR ILLNESS, GIVE FIRST DATE MM DD YY

16. DATES PATIENT UNABLE TO WORK IN CURRENT OCCUPATION MM DD YY FROM TO MM DD YY

17. NAME OF REFERRING PROVIDER OR OTHER SOURCE

17a.

17b. NPI

18. HOSPITALIZATION DATES RELATED TO CURRENT SERVICES MM DD YY FROM TO MM DD YY

19. RESERVED FOR LOCAL USE

20. OUTSIDE LAB? YES NO $ CHARGES

21. DIAGNOSIS OR NATURE OF ILLNESS OR INJURY (Relate Items 1, 2, 3 or 4 to Item 24E by Line)

1. 3.

2. 4.

22. MEDICAID RESUBMISSION CODE ORIGINAL REF. NO.

23. PRIOR AUTHORIZATION NUMBER

24. A. DATE(S) OF SERVICE From MM DD YY	To MM DD YY	B. PLACE OF SERVICE	C. EMG	D. PROCEDURES, SERVICES, OR SUPPLIES (Explain Unusual Circumstances) CPT/HCPCS	MODIFIER	E. DIAGNOSIS POINTER	F. $ CHARGES	G. DAYS OR UNITS	H. EPSDT Family Plan	I. ID. QUAL.	J. RENDERING PROVIDER ID. #
1										NPI	
2										NPI	
3										NPI	
4										NPI	
5										NPI	
6										NPI	

25. FEDERAL TAX I.D. NUMBER SSN EIN

26. PATIENT'S ACCOUNT NO.

27. ACCEPT ASSIGNMENT? (For govt. claims, see back) YES NO

28. TOTAL CHARGE $

29. AMOUNT PAID $

30. BALANCE DUE $

31. SIGNATURE OF PHYSICIAN OR SUPPLIER INCLUDING DEGREES OR CREDENTIALS (I certify that the statements on the reverse apply to this bill and are made a part thereof.)

SIGNED DATE

32. SERVICE FACILITY LOCATION INFORMATION

a. NPI b.

33. BILLING PROVIDER INFO & PH # ( )

a. NPI b.

NUCC Instruction Manual available at: www.nucc.org

PLEASE PRINT OR TYPE

APPROVED OMB-0938-0999 FORM CMS-1500 (08-05)

CARRIER

PATIENT AND INSURED INFORMATION

PHYSICIAN OR SUPPLIER INFORMATION

SAMPLE

Exhibit 1.2. (*Continued*)

BECAUSE THIS FORM IS USED BY VARIOUS GOVERNMENT AND PRIVATE HEALTH PROGRAMS, SEE SEPARATE INSTRUCTIONS ISSUED BY APPLICABLE PROGRAMS.

NOTICE: Any person who knowingly files a statement of claim containing any misrepresentation or any false, incomplete or misleading information may be guilty of a criminal act punishable under law and may be subject to civil penalties.

REFERS TO GOVERNMENT PROGRAMS ONLY

MEDICARE AND CHAMPUS PAYMENTS: A patient's signature requests that payment be made and authorizes release of any information necessary to process the claim and certifies that the information provided in Blocks 1 through 12 is true, accurate and complete. In the case of a Medicare claim, the patient's signature authorizes any entity to release to Medicare medical and nonmedical information, including employment status, and whether the person has employer group health insurance, liability, no-fault, worker's compensation or other insurance which is responsible to pay for the services for which the Medicare claim is made. See 42 CFR 411.24(a). If item 9 is completed, the patient's signature authorizes release of the information to the health plan or agency shown. In Medicare assigned or CHAMPUS participation cases, the physician agrees to accept the charge determination of the Medicare carrier or CHAMPUS fiscal intermediary as the full charge, and the patient is responsible only for the deductible, coinsurance and noncovered services. Coinsurance and the deductible are based upon the charge determination of the Medicare carrier or CHAMPUS fiscal intermediary if this is less than the charge submitted. CHAMPUS is not a health insurance program but makes payment for health benefits provided through certain affiliations with the Uniformed Services. Information on the patient's sponsor should be provided in those items captioned in "insured"; i.e., items 1a, 4, 6, 7, 9, and 11.

BLACK LUNG AND FECA CLAIMS

The provider agrees to accept the amount paid by the Government as payment in full. See Black Lung and FECA instructions regarding required procedure and diagnosis coding systems.

SIGNATURE OF PHYSICIAN OR SUPPLIER (MEDICARE, CHAMPUS, FECA AND BLACK LUNG)

I certify that the services shown on this form were medically indicated and necessary for the health of the patient and were personally furnished by me or were furnished incident to my professional service by my employee under my immediate personal supervision, except as otherwise expressly permitted by Medicare or CHAMPUS regulations.

For services to be considered as "incident" to a physician's professional service, 1) they must be rendered under the physician's immediate personal supervision by his/her employee, 2) they must be an integral, although incidental part of a covered physician's service, 3) they must be of kinds commonly furnished in physician's offices, and 4) the services of nonphysicians must be included on the physician's bills.

For CHAMPUS claims, I further certify that I (or any employee) who rendered services am not an active duty member of the Uniformed Services or a civilian employee of the United States Government or a contract employee of the United States Government, either civilian or military (refer to 5 USC 5536). For Black Lung claims, I further certify that the services performed were for a Black Lung-related disorder.

No Part B Medicare benefits may be paid unless this form is received as required by existing law and regulations (42 CFR 424.32).

NOTICE: Any one who misrepresents or falsifies essential information to receive payment from Federal funds requested by this form may upon conviction be subject to fine and imprisonment under applicable Federal laws.

NOTICE TO PATIENT ABOUT THE COLLECTION AND USE OF MEDICARE, CHAMPUS, FECA, AND BLACK LUNG INFORMATION
(PRIVACY ACT STATEMENT)

We are authorized by CMS, CHAMPUS and OWCP to ask you for information needed in the administration of the Medicare, CHAMPUS, FECA, and Black Lung programs. Authority to collect information is in section 205(a), 1862, 1872 and 1874 of the Social Security Act as amended, 42 CFR 411.24(a) and 424.5(a) (6), and 44 USC 3101;41 CFR 101 et seq and 10 USC 1079 and 1086; 5 USC 8101 et seq; and 30 USC 901 et seq; 38 USC 613; E.O. 9397.

The information we obtain to complete claims under these programs is used to identify you and to determine your eligibility. It is also used to decide if the services and supplies you received are covered by these programs and to insure that proper payment is made.

The information may also be given to other providers of services, carriers, intermediaries, medical review boards, health plans, and other organizations or Federal agencies, for the effective administration of Federal provisions that require other third parties payers to pay primary to Federal program, and as otherwise necessary to administer these programs. For example, it may be necessary to disclose information about the benefits you have used to a hospital or doctor. Additional disclosures are made through routine uses for information contained in systems of records.

FOR MEDICARE CLAIMS: See the notice modifying system No. 09-70-0501, titled, 'Carrier Medicare Claims Record,' published in the Federal Register, Vol. 55 No. 177, page 37549, Wed. Sept. 12, 1990, or as updated and republished.

FOR OWCP CLAIMS: Department of Labor, Privacy Act of 1974, "Republication of Notice of Systems of Records," Federal Register Vol. 55 No. 40, Wed Feb. 28, 1990. See ESA-5, ESA-6, ESA-12, ESA-13, ESA-30, or as updated and republished.

FOR CHAMPUS CLAIMS: PRINCIPLE PURPOSE(S): To evaluate eligibility for medical care provided by civilian sources and to issue payment upon establishment of eligibility and determination that the services/supplies received are authorized by law.

ROUTINE USE(S): Information from claims and related documents may be given to the Dept. of Veterans Affairs, the Dept. of Health and Human Services and/or the Dept. of Transportation consistent with their statutory administrative responsibilities under CHAMPUS/CHAMPVA; to the Dept. of Justice for representation of the Secretary of Defense in civil actions; to the Internal Revenue Service, private collection agencies, and consumer reporting agencies in connection with recoupment claims; and to Congressional Offices in response to inquiries made at the request of the person to whom a record pertains. Appropriate disclosures may be made to other federal, state, local, foreign government agencies, private business entities, and individual providers of care, on matters relating to entitlement, claims adjudication, fraud, program abuse, utilization review, quality assurance, peer review, program integrity, third-party liability, coordination of benefits, and civil and criminal litigation related to the operation of CHAMPUS.

DISCLOSURES: Voluntary; however, failure to provide information will result in delay in payment or may result in denial of claim. With the one exception discussed below, there are no penalties under these programs for refusing to supply information. However, failure to furnish information regarding the medical services rendered or the amount charged would prevent payment of claims under these programs. Failure to furnish any other information, such as name or claim number, would delay payment of the claim. Failure to provide medical information under FECA could be deemed an obstruction.

It is mandatory that you tell us if you know that another party is responsible for paying for your treatment. Section 1128B of the Social Security Act and 31 USC 3801-3812 provide penalties for withholding this information.

You should be aware that P.L. 100-503, the "Computer Matching and Privacy Protection Act of 1988", permits the government to verify information by way of computer matches.

MEDICAID PAYMENTS (PROVIDER CERTIFICATION)

I hereby agree to keep such records as are necessary to disclose fully the extent of services provided to individuals under the State's Title XIX plan and to furnish information regarding any payments claimed for providing such services as the State Agency or Dept. of Health and Human Services may request.

I further agree to accept, as payment in full, the amount paid by the Medicaid program for those claims submitted for payment under that program, with the exception of authorized deductible, coinsurance, co-payment or similar cost-sharing charge.

SIGNATURE OF PHYSICIAN (OR SUPPLIER): I certify that the services listed above were medically indicated and necessary to the health of this patient and were personally furnished by me or my employee under my personal direction.

NOTICE: This is to certify that the foregoing information is true, accurate and complete. I understand that payment and satisfaction of this claim will be from Federal and State funds, and that any false claims, statements, or documents, or concealment of a material fact, may be prosecuted under applicable Federal or State laws.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0938-0999. The time required to complete this information collection is estimated to average 10 minutes per response, including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collection. If you have any comments concerning the accuracy of the time estimate(s) or suggestions for improving this form, please write to: CMS, Attn: PRA Reports Clearance Officer, 7500 Security Boulevard, Baltimore, Maryland 21244-1850. This address is for comments and/or suggestions only. DO NOT MAIL COMPLETED CLAIM FORMS TO THIS ADDRESS.

Statistics. In 1974, the federal government adopted the UHDDS definitions as the standard for the Medicare and Medicaid programs. The UHDDS has been revised several times. The current version has the following data elements:

1. Personal identification
2. Sex
3. Race
4. Ethnicity
5. Residence
6. Hospital identification
7. Admission date
8. Discharge date
9. Attending physician
10. Operating physician
11. Diagnoses (principal and other)
12. Procedure and date
13. Disposition of patient
14. Expected payer (Dougherty, 2001, p. 72)

The ACDS was approved by the National Committee on Vital and Health Statistics in 1989. The goal of the ACDS is to improve the data collected in ambulatory and outpatient settings. The ACDS has not, however, been incorporated into federal rules or regulations. It remains a recommended rather than a required data set.

The MDS for long-term care is a federally mandated standard assessment tool that is used to collect demographic and clinical information about long-term care facility residents. It is an extensive data set with detailed data elements in twenty major categories. The MDS provides a structured way to organize resident information so that an effective care plan can be developed (LaTour, 2002).

INTERNAL DATA AND INFORMATION: PATIENT SPECIFIC—COMBINING CLINICAL AND ADMINISTRATIVE

As we have discussed in earlier sections of this chapter, diagnostic and procedural information is captured during the patient encounter to track clinical progress and to document care for reimbursement and other administrative purposes. This diagnostic and procedural information is initially captured in

narrative form through physicians' and other health care providers' documentation in the patient record. This documentation is subsequently translated into numerical codes. Coding facilitates the classification of diagnoses and procedures not only for reimbursement purposes but also for clinical research and comparative studies.

Two major coding systems are employed by health care providers today:

- ICD-9-CM (International Classification of Diseases, as modified for use in the United States), slated to be replaced by ICD-10 in 2014
- CPT (Current Procedural Terminology), published by the American Medical Association

Use of these systems is required by the federal government for reimbursement, and they are recognized by health care agencies both nationally and internationally.

On January 16, 2009, HHS published a final rule adopting ICD-10-CM (diagnoses codes) and ICD-10-PCS (procedure codes) to replace ICD-9-CM in HIPAA transactions, with the effective implementation date of October 1, 2013. However, the implementation of ICD-10 was delayed from October 1, 2013, to October 1, 2014, by final rule CMS-0040-F, issued on August 24, 2012.

In anticipation of the new system implementation, the discussion in this chapter focuses on the newer ICD-10 coding systems. The primary purpose of the ICD does not change from 9 to 10, but the structure is significantly different.

ICD-10

The U.S. ICD-10 classification system is derived from the International Classification of Diseases, Tenth Revision, which was developed by the World Health Organization to capture disease data. ICD-10-CM, like ICD-9-CM, will be used in the United States to code disease information. Procedure information will be coded using the ICD-10-PCS. Updates to the ICD-10-CM and PCS will be published each year. This publication is considered a federal government document whose contents may be used freely by others. However, multiple companies republish this government document in easier-to-use, annotated, formally copyrighted versions. The precursors to the current ICD system were developed to allow morbidity (illness) and mortality (death) statistics to be compared across nations. ICD-10-CM and PCS coding, like ICD-9-CM, however, has come to play a major role in reimbursement to hospitals. In 1983, ICD-9-CM began being used for determining the *diagnosis related group* (*DRG*) into which a patient is assigned. DRGs are the basis for

determining appropriate inpatient reimbursements for Medicare, Medicaid, and many other health care insurance beneficiaries. Accurate ICD coding has as a consequence become vital to accurate institutional reimbursement. Exhibits 1.3 and 1.4 are excerpts from the ICD-10-CM and PCS classification systems. They show the system in its text form, but large health care organizations generally use encoders, computer applications that facilitate accurate coding. Whether a book or text file or encoder is used, the classification system is the same.

The conversion from ICD-9-CM to ICD-10-CM and PCS is a tremendous undertaking for health care organizations. ICD-10 includes substantial increases

Exhibit 1.3. ICD 10-CM

Acute upper respiratory infections (JOO-J06)
Excludes1: chronic obstructive pulmonary disease with acute lower respiratory infection (J44.0) influenza virus with other respiratory manifestations (J09.X2, J10.1, J11.1)

JOO Acute nasopharyngitis [common cold]
Acute rhinitis
Coryza (acute)
Infective nasopharyngitis NOS
Infective rhinitis
Nasal catarrh, acute
Nasopharyngitis NOS

Excludes1: acute pharyngitis (J02.-)
acute sore throat NOS (J02.9)
pharyngitis NOS (J02.9)
rhinitis NOS (J31.0)
sore throat NOS (J02.9)

Excludes2: allergic rhinitis (J30.1-J30.9)
chronic pharyngitis (J31.2)
chronic rhinitis (J31.0)
chronic sore throat (J31.2)
nasopharyngitis, chronic (J31.1)
vasomotor rhinitis (J30.0)

Source: Centers for Medicare and Medicaid Services, 2012. Retrieved March 2012 from http://www.cdc.gov/nchs/icd/icd10cm.htm.

Exhibit 1.4. ICD 10-PCS

Section	**7**	Osteopathic
Body System	**W**	Anatomical Regions
Operation	**0**	Treatment: Manual treatment to eliminate or alleviate somatic dysfunction and related disorders

Body Region	Approach	Method	Qualifier
0 Head **1** Cervical **2** Thoracic **3** Lumbar **4** Sacrum **5** Pelvis **6** Lower Extremities **7** Upper Extremities **8** Rib Cage **9** Abdomen	**X** External	**0** Articulatory-Raising **1** Fascial Release **2** General Mobilization **3** High Velocity-Low Amplitude **4** Indirect **5** Low Velocity-High Amplitude **6** Lymphatic Pump **7** Muscle Energy-Isometric **8** Muscle Energy-Isotonic **9** Other Method	**Z** None

Source: Centers for Medicare and Medicaid Services, 2012. Retrieved March 2012 from http://www.cdc.gov/nchs/icd/icd10cm.htm.

in content and many structural changes. When the U.S. modification is released, all health care providers will be required to adjust their systems to handle the conversion.

CPT

The American Medical Association (AMA) publishes an updated Current Procedural Terminology each year. Unlike ICD-9-CM, CPT is copyrighted, with all rights to publication and distribution held by the AMA. CPT was first developed and published in 1966. The stated purpose for developing CPT was to provide a uniform language for describing medical and surgical services. In 1983, however, the government adopted CPT, in its entirety, as the major component (known as Level 1) of the Healthcare Common Procedure Coding System (HCPCS). Since then CPT has become the standard for physician's office, outpatient, and ambulatory care coding for reimbursement purposes. Exhibit 1.5 is a patient encounter form with examples of HCPCS/CPT codes.

Exhibit 1.5. Patient encounter form coding standards

Pediatric Associates P.A. 123 Children's Avenue, Anytown, USA

Office Visits

99211 Estab Pt—minimal
99212 Estab Pt—focused
99213 Estab Pt—expanded
99214 Estab Pt—detailed
99215 Estab Pt—high complexity

99201 New Pt—problem focused
99202 New Pt—expanded
99203 New Pt—detailed
99204 New Pt—moderate complexity
99205 New Pt—high complexity

99050 After Hours
99052 After Hours—after 10 pm
99054 After Hours—Sundays and Holidays

Outpatient Consult
99241 99242 99243 99244 99245

Preventive Medicine—New
99381 Prev Med 0–1 years
99382 Prev Med 1–4 years
99383 Prev Med 5–11 years
99384 Prev Med 12–17 years
99385 Prev Med 18–39 years

Preventive Medicine—Established
99391 Prev Med 0–1 years
99392 Prev Med 1–4 years
99393 Prev Med 5–11 years
99394 Prev Med 12–17 years
99395 Prev Med 18–39 years

99070 10 Arm Sling
99070 11 Sterile Dressing
99070 45 Cervical Cap

Immunizations, Injections, and Office Laboratory Services

90471 Adm of Vaccine 1
90472 Adm of Vaccine > 1
90648 HIB
90658 Influenza
90669 Prevnar
90701 DTP
90702 DT
90707 MMR
90713 Polio Injection
90720 DTP/HIB
90700 DTaP
90730 Hepatitis A
90733 Meningococcal
90744 Hepatitis B 0–11
90746 Hepatitis B 18+ years

81000 Urinalysis w/ micro
81002 Urinalysis w/o micro
82270 Hemoccult Stool
82948 Dextrostix
83655 Lead Level
84030 PKU
85018 Hemoglobin
87086 Urine Culture
87081 Throat Culture
87205 Gram Stain
87208 Ova Smear (pin worm)
87210 Wet Prep
87880 Rapid Strep

Diagnosis

Patient Name
No.
Date
Time
Address
DOB
Name of Insured ID
Insurance Company
Return Appointment _____

As coding has become intimately linked to reimbursement, directly determining the amount of money a health care organization can receive for a claim from insurers, the government has increased its scrutiny of coding practices. There are official guidelines for accurate coding, and health care facilities that do not adhere to these guidelines are liable to charges of fraudulent coding practices. In addition, the Office of Inspector General of the Department of Health and Human Services (HHS OIG) publishes compliance guidelines to facilitate health care organizations' adherence to ethical and legal coding practices. The OIG is responsible for (among other duties) investigating fraud involving government health insurance programs. More specific information about compliance guidelines can be found on the OIG web site (www.oig.hhs.gov) (HHS OIG, 2012).

INTERNAL DATA AND INFORMATION: AGGREGATE—CLINICAL

In the previous section we examined different sets of clinical and administrative data that are collected during or in the time closely surrounding the patient encounter. Patient records, uniform billing information, and discharge data sets are the main sources of the data that go into the literally hundreds of aggregate reports or queries that are developed and used by providers and executives in health care organizations. Think of these source data as one or more data repositories, with each data element available to health care providers and executives. What can these data tell you about the organization and the care provided to patients? How can you process these data into meaningful information? The number of aggregate reports that could be developed from patient records or patient accounting information is practically limitless, but there are some common categories of clinical, administrative, and combined reports that the health care executive will likely encounter. We will discuss a few of these in this and the following sections.

On the clinical side, disease indexes and specialized registers are often used.

Disease and Procedure Indexes

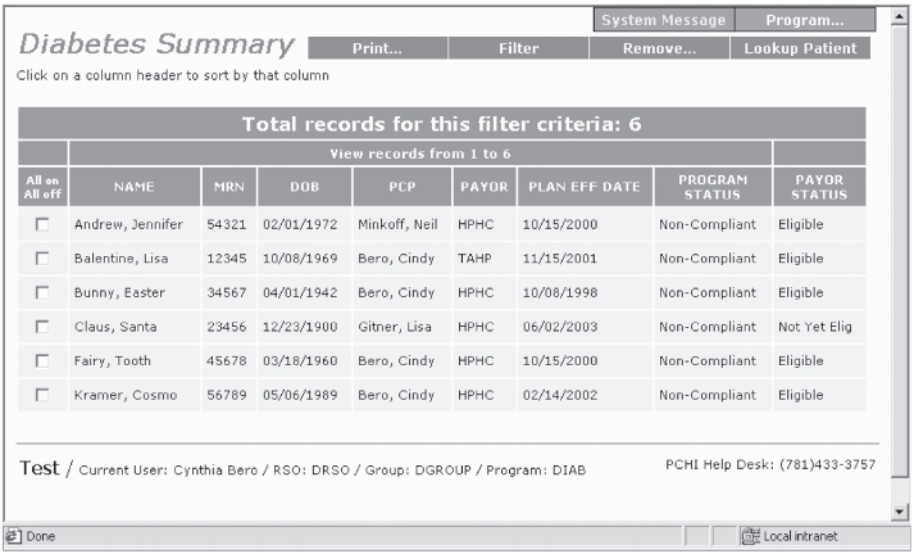
Health care organization management often wants to know summary information about a particular disease or treatment. Examples of questions that might be asked are: What is the most common diagnosis in the facility? What percentage of diabetes patients are African American? What is the most common procedure performed on patients admitted with gastritis (or heart attack or any other diagnosis)? Traditionally, such questions have been answered by looking in disease and procedure indexes. Prior to the widespread use of databases and computers, disease and procedure indexes were large card catalogues or books that kept track of the numbers of diseases treated and procedures occurring in a facility by disease and procedure ICD codes. Now that databases and computers are common, the disease and procedure index function is generally handled as a component of the patient medical record system or the registration and discharge system. The retrieval of information related to diseases and procedures is still based on ICD and CPT codes, but the queries are limitless. Users can search the disease and procedure database for general frequency statistics for any number of combinations of data. Figure 1.8 is an example of a screen resulting from a query for a list of diabetes patients.

Specialized Registers

Another type of aggregate information that has benefited tremendously from the use of computerized databases is the specialized register. Registers are lists that generally contain the names, and sometimes other identifying information, of patients seen in a particular area of the health care facility. A health facility might want an accounting of patients seen in the emergency department or operating room, for example. In general, a register allows data retrieval in a particular area of the organization. With the increased availability of large databases, many of these registers can be created on an ad hoc basis.

Trauma and tumor registries are specialized registries that often involve data collection beyond that done for the patient medical record and patient billing process. These registries may be found in facilities with high-level trauma or cancer centers. They are used to track information about patients over time and to collect detailed information for research purposes.

Figure 1.8. Sample diabetes query screen



Source: Partners HealthCare.

Many other types of aggregate clinical reports are used by health care providers and executives. The easy-to-use, ad hoc reporting that is available with databases today gives providers and executives access to any number of summary reports based on the data elements collected during the patient encounter.

INTERNAL DATA AND INFORMATION: AGGREGATE—ADMINISTRATIVE

Just as with clinical aggregate reports, a limitless number of reports can be created for administrative functions from today's databases and data repositories. Commonly used administrative aggregate reports include basic health care statistical reports, claims denial reports, and cost reports. (In keeping with our focus on information unique to health care, we will not discuss traditional income statements, cash flow statements, or other general accounting reports.) Two basic types are described in this section: Medicare cost reports and basic health care statistical reports.

Medicare Cost Reports

Medicare cost reports are filed annually by all hospitals, home health agencies, skilled nursing facilities, and hospices that accept Medicare or Medicaid. These

reports must be filed within a specified time after the end of the fiscal year and are subject to scrutiny via compliance audits. The cost report contains such provider information as facility characteristics, utilization data, costs and charges by cost center (in total and for Medicare), Medicare settlement data, and financial statement data. Preparation instructions and the actual forms can be found on the CMS web site (www.cms.gov). Medicare cost reports are used by CMS not only to determine portions of an individual facility's reimbursement but also to determine Medicare rate adjustments, cost limits, and various wage indexes.

Health Care Statistics

The categories of statistics that are routinely gathered for health care executives or others are

- **Census statistics.** These data reveal the number of patients present at any one time in a facility. Several commonly computed rates are based on these census data, including the average daily census and bed occupancy rates.
- **Discharge statistics.** This group of statistics is calculated from data accumulated when patients are discharged. Some commonly computed rates based on discharge statistics are average length of stay, death rates, autopsy rates, infection rates, and consultation rates.

General health care statistics are frequently used to describe the characteristics of the patients within an organization. They may also provide a basis for planning and monitoring patient services.

INTERNAL DATA AND INFORMATION: AGGREGATE—COMBINING CLINICAL AND ADMINISTRATIVE

Health care executives are often interested in aggregate reports that combine clinical and administrative data. Ad hoc statistical reports and trend analyses may draw from both clinical and administrative data sources, for example. These reports may be used for the purpose of improving customer service, quality of patient care, or overall operational efficiency. Examples of aggregate data that relate to customer service are the average time it takes to get an appointment at a clinic and the average referral volume by physician. Quality of care aggregate data take many forms, revealing such things as infection rates and unplanned returns to the operating room. Cost per case, average

reimbursement by DRG, and staffing levels by patient acuity are examples of aggregate data that could be used to improve efficiency. These examples represent only a few uses for combined aggregate data. Again, with today's computerized clinical and administrative databases, any number of ad hoc queries, statistical reports, and trend analyses should be readily available to health care executives. Health care executives need to know what source data are collected and must be able to trust in data accuracy. Executives should be creative in designing aggregate reports to meet their decision-making needs.

EXTERNAL DATA AND INFORMATION: COMPARATIVE

Comparative data and information, gathered internally and externally, are used for both clinical and administrative purposes by health care organizations.

Outcome Measures and Balanced Scorecards

Comparative data and information are often aligned with organizations' quality improvement efforts. For example, an organization might collect data on specific outcome measures and then use this information in a benchmarking process. *Outcome measures* are the measurable results of a process. This could be a clinical process, such as a particular treatment, or an administrative process, such as a claim filing. Outcome measures can be applied to individuals or groups. An example of a simple clinical outcome measure is the difference in prescribing practices among providers for patients with the same chronic disease. An example of an administrative outcome measure is the percentage of claims denied by Medicare during one month. Implicit in the idea of measuring outcomes is that they can be usefully compared over time or against a set standard. The process of comparing one or more outcome measures against a standard is called *benchmarking*. Outcome measures and benchmarking may be limited to internally set standards; however, frequently they are involved in comparisons with externally generated benchmarks or standards.

Balanced scorecards are another method for measuring performance in health care organizations. The concept of the balanced scorecard meets executives' need to design measurement systems aligned with their organization's strategy goals (Kelly, 2007). Balanced scorecard systems examine multiple measures, rather than the single set of measures common in traditional benchmarking. Suppose a health care organization uses "lowest-cost service in the region" as an outcome measure for benchmarking its performance against that of like facilities in the region. The organization does very well over time on this measure. However, you can see that it may be ignoring some other important performance indicators. What about patient satisfaction? Employee

morale? Patient health outcomes? Balanced scorecards employ multiple measures along several dimensions to ensure that the organization is performing well across the board. The *clinical value compass* is a similar method for measuring clinical process across multiple dimensions (Kelly, 2007).

Comparative Health Care Data Sets

Organizations may select from many publicly and privately available health care data sets for benchmarking. A few of the more commonly accessed data sets are listed in Exhibit 1.6 (along with web addresses). These data sets are divided into five categories: patient satisfaction, practice patterns, health plans, clinical indicators, and population measures. Many of the listed web sites provide examples of the data sets, along with detailed information about their origins and potential uses.

Patient Satisfaction

Patient satisfaction data generally come from survey data. The three organizations listed in Exhibit 1.6, NRC+Picker, Press Ganey, and the health care division of Gallup, provide extensive consulting services to health care organizations across the country. One of these services is to conduct patient satisfaction surveys. There are other private organizations that provide similar services, and some health care organizations undertake patient satisfaction surveys on their own. These private efforts have been significant, but did not facilitate a nationally available system for benchmarking hospital performance. In 2002, CMS partnered with the Agency for Healthcare Research and Quality (AHRQ) to develop the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS), "the first national, standardized, publicly reported survey of patient's perspectives of hospital care" (CMS, 2012). Since 2005, the government has created several financial incentives for hospitals to participate in HCAHPS and it has been widely adopted. Results from HCAHPS are reported through the CMS Hospital Compare program, which is discussed later in this chapter.

Practice Patterns

The Commonwealth Fund Quality Chartbook series and the Dartmouth Atlas of Health Care allow health care organizations to view practice patterns across the United States. The Dartmouth Atlas provides an online interactive tool that allows organizations to customize comparative reports based primarily on Medicare data (Figure 1.9).

Exhibit 1.6. Sources of comparative data for health care managers

Patient Satisfaction

NRC+Picker (National Research Corporation and the Picker Institute): nrcpicker.com

Press Ganey Associates: www.pressganey.com

The Gallup Organization: healthcare.gallup.com

Practice Patterns

Leatherman, S., and McCarthy, D. (2002). *Quality of Healthcare in the United States: A Chartbook.* New York: The Commonwealth Fund. http://www.commonwealthfund.org/publications/publications_show.htm?doc_id=221238

The Center for the Evaluative Clinical Sciences, Dartmouth Medical School. (2008). *The Dartmouth Atlas of Healthcare.* Chicago: American Hospital Publishing. www.dartmouthatlas.org

Health Plans

National Committee for Quality: www.ncqa.org

Clinical Indicators

Joint Commission on Accreditation of Healthcare Organizations

Quality Check: www.qualitycheck.org

Centers for Medicare and Medicaid Services Medicare Clinical Indicators

Hospital Compare: www.hospitalcompare.hhs.gov

Nursing Home Compare: http://www.medicare.gov/NHCompare

Home Health Compare: http://www.medicare.gov/HHCompare

Physician Focused Quality Initiative: http://www.cms.hhs.gov/pqri

Population Measures

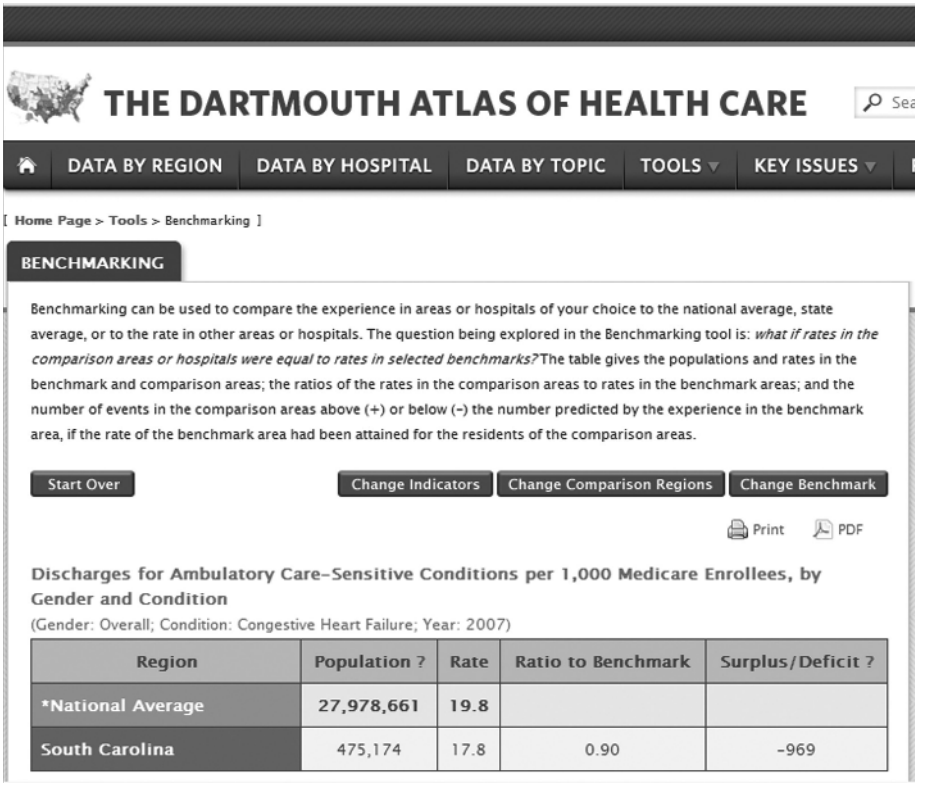
State and local health departments

Centers for Disease Control and Prevention, National Center of Health Statistics: www.cdc.gov/nchs

AHRQ—Health Care Innovations Exchange (including Quality and Disparities Reports): http://www.innovations.ahrq.gov

Source: Used with permission from *Applying Quality Management in Healthcare*, 2nd Edition, by Diane Kelly (Chicago: Health Administration Press, 2007), p. 185.

Figure 1.9. Example of Dartmouth Atlas interactive report



Source: Dartmouth Institute for Health Policy & Clinical Practice, 2012.

Health Plans

The mission of the National Committee for Quality Assurance (NCQA) is "to improve the quality of health care." NCQA's efforts are organized around two major activities: accreditation and performance measurement. (We will discuss the accreditation activity in Chapter Three.) To facilitate these activities NCQA developed the Health Plan Employer Data and Information Set (HEDIS) in the late 1980s. HEDIS currently consists of seventy-six measures across five domains of care and is used by more than 90 percent of America's health plans. A few of the health issues measured by HEDIS are (NCQA, 2012a):

- Asthma medication use
- Persistence of beta-blocker treatment after a heart attack
- Controlling high blood pressure

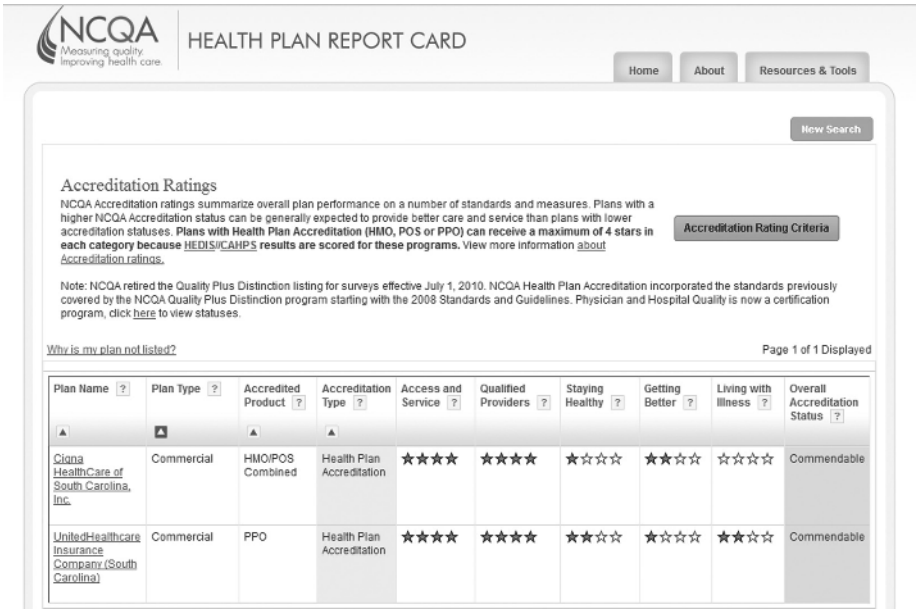
- Comprehensive diabetes care
- Breast cancer screening
- Antidepressant medication management
- Childhood and adolescent immunization status
- Advising smokers to quit

The NCQA web site offers an interactive tool for obtaining *report cards* on specific health plans that have undergone NCQA accreditation. Multiple health plans can be compared to each other and against national averages. The comparison of two South Carolina health plans in Figure 1.10 is an example of an NCQA report card (NCQA, 2012b).

Clinical Indicators

Both the Joint Commission and CMS are committed to the improvement of clinical outcomes. The Joint Commission's Quality Check has evolved since its introduction in 1994 to become a comprehensive guide to health care organizations in the United States. Visitors to www.qualitycheck.org can search for health care organizations by a variety of parameters, identify accreditation

Figure 1.10. Example of NCQA report card



Source: NCQA, 2012b.

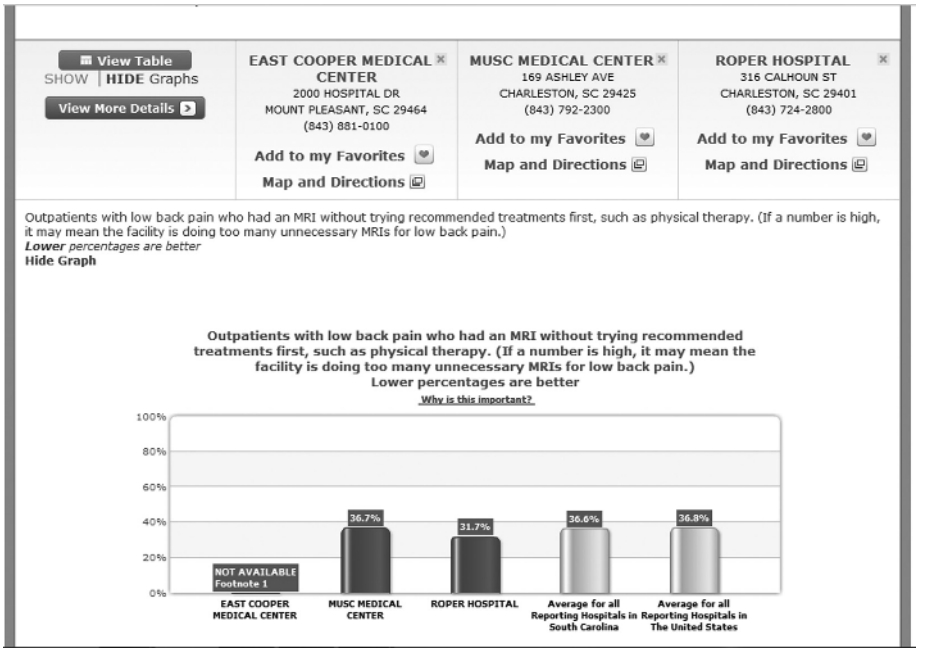
status, and download hospital performance measures. In addition, the Joint Commission–accredited organizations can get a summary of their performance measured in terms of the Joint Commission's National Patient Safety Goals and Quality Improvement Goals (The Joint Commission, 2012).

The CMS quality programs are aimed at hospitals, nursing homes, home care, and physicians' practices. The Hospital Compare web site (www .hospitalcompare.hhs.gov) and interactive comparison tool were developed in collaboration with other public and private organizational members of the Hospital Quality Alliance. Comparison reports for hospitals can be created based on location and on specific medical conditions or surgical procedures. The resulting reports provide information on process of care measures, outcome of care measures, use of medical imaging, surveys of patients' hospital experiences from HCAHPS, patient safety measures, and medical payment information (HHS, 2012).

Population Measures

Other comparative data sources that could be useful for the health care manager are those that provide population measures. Most state health

Figure 1.11. Example of hospital compare graphical report



Source: HHS, 2012.

departments collect statewide morbidity and mortality data. These data generally come from a variety of sources, including hospital and provider bills. At the national level both the Centers for Disease Control and Prevention (CDC) and the Agency for Healthcare Research and Quality (AHRQ) provide a wealth of population-based health care data.

EXTERNAL DATA AND INFORMATION: EXPERT OR KNOWLEDGE BASED

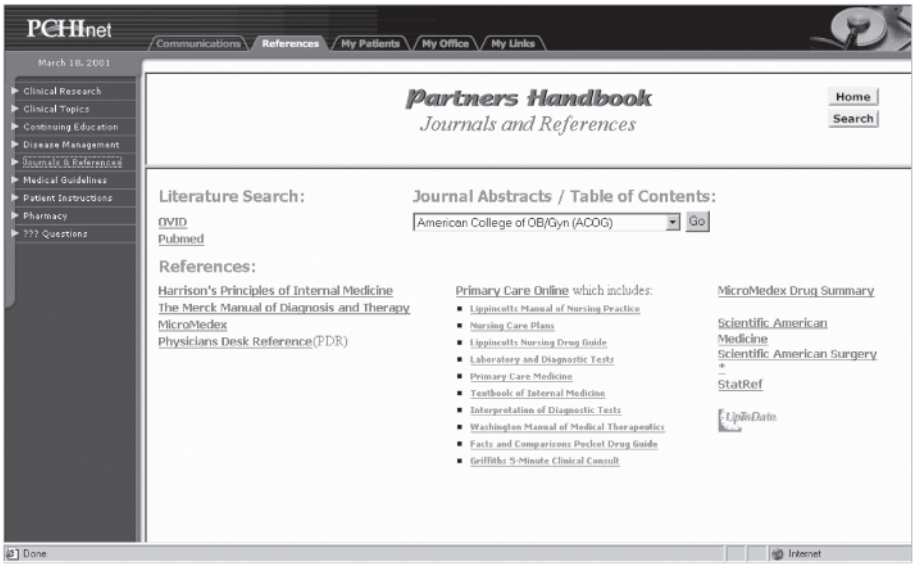
The Joint Commission accreditation manual (2011, p. GL-9) defines knowledge-based information as "A collection of stored facts, models, and information that can be used for ongoing staff development, for designing and redesigning processes, and for solving problems. . . . Knowledge-based information is found in the clinical, scientific, and management literature." Health care executives and health care providers rely on knowledge-based information to maintain their professional competence and to discover the latest techniques and procedures. The content of any professional journal falls into the category of knowledge-based information. Other providers of knowledge-based information are the many online health care and health care management references and resources. With the development of rule-based computer systems, the Internet, and push technologies, health care executives and providers are finding that they often have access to vast quantities of expert or knowledge-based information at the time they need it, even at the patient bedside. Most clinical and administrative professional organizations not only publish print journals but also maintain up-to-date web sites where members or other subscribers can get knowledge-based information. Several organizations also provide daily, weekly, or other periodic e-mail notifications of important events that are pushed onto subscribers' personal computers.

Knowledge-based information can also be incorporated into electronic medical records or health care organization web sites. Figure 1.12 is a sample of the knowledge-based information resources available through an electronic medical record interface.

SUMMARY

Without health care data and information, there would be no need for health care information systems. Health care information is a valuable asset in health care organizations, and it must be managed like other assets. To manage information effectively, health care executives should have an understanding of the sources and uses of health care data and information. In this chapter we introduced a framework for discussing types of health care information,

Figure 1.12. Sample electronic knowledge-based information resources



Source: Partners HealthCare.

looked at a wide range of internal data and information whose creation and use must be managed in health care organizations, and also discussed a few associated processes that are typically part of patient encounters. We examined not only patient-specific (individual) internal information but also aggregate information. We addressed both clinical and administrative data and information in our discussions. In addition, we examined several types of external data and information that are available for use by health care organizations, including comparative and knowledge-based data and information. Throughout, our view of data and information was organizational and the focus was on that information that is unique to health care.

KEY TERMS

Aggregate data and information
American Health Information Management Association (AHIMA)
American Hospital Association
American Medical Association (AMA)
Balanced scorecards
Benchmarking
Centers for Disease Control and Prevention (CDC)
Centers for Medicare and Medicaid
CMS-1500
Comparative data and information
Current Procedural Terminology (CPT)
Electronic health record

Electronic medical record
External data and information
Health care information
Health care statistics
Health information
Health Insurance Portability and Accountability Act (HIPAA)
Health Plan Employer Data and Information Set (HEDIS)
Hospital Compare
Internal data and information
International Classification of Diseases (ICD-10-CM; ICD-10-PCS)
The Joint Commission
Knowledge-based data and information
Minimum Data Set (MDS)
National Provider Identifier (NPI)
National Uniform Billing Committee
Office of the Inspector General (OIG)
Outcomes measures
Patient records
Patient-specific data and information
Personal health record
Protected health information
Quality Check
UB-04 (CMS-1450)
Uniform Ambulatory Care Data Set (ACDS)
Uniform Bill
Uniform Hospital Discharge Data Set (UHDDS)

LEARNING ACTIVITIES

1. Contact a health care facility (hospital, nursing home, physician's office, or other organization) to ask permission to view a sample of the health records they maintain. These records may be in paper or electronic form. Answer the following questions for each record:
   a. What is the primary reason (or condition) for which the patient was admitted to the hospital?
   b. How long has the patient had this condition?
   c. Did the patient have surgery during this admission? If so, what procedure(s) was (were) done?
   d. Did the patient experience any complications during this admission? If so, what were they?
   e. How does the physician's initial assessment of the patient compare with the nurse's initial assessment? Where in the record would you find this information?
   f. To where was the patient discharged?
   g. What were the patient's discharge orders or instructions? Where in the record should you find this information?
2. Make an appointment to meet with the business manager at a physician's office or health care clinic. Discuss the importance of ICD-10 coding or CPT coding (or both) for that office. Ask to view

the books or encoders that the office uses to assign diagnostic and procedure codes. After the visit, write a brief summary of your findings and impressions.

3. Visit www.oig.hhs.gov. What are the major responsibilities of the Office of Inspector General as they relate to coded health care data? What other responsibilities related to health care fraud and abuse does this office have?
4. List and briefly describe several types of aggregate health care reports that you believe would be commonly used by health care executives in a hospital or other health care setting.
5. Using the Internet sites identified in this chapter or found during your own searches, find a report card for one or more local hospitals. If you were trying to make a decision about which hospital to use for health care for yourself or for a family member, would you find this information useful? Why or why not?
6. Using Microsoft HealthVault (a free Internet-based service), create your own personal health record (PHR).

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