

## **GLOSSARY OF HEALTH INFORMATION TECHNOLOGY TERMS**

**3G (Third-Generation) Network:** Advanced cellular network supporting data transfer speeds from 144kbps to 2Mbps (theoretically). Cellular carriers hope to use 3G service to deliver advanced features such as Web browsing and streaming video.

**802.11b:** A wireless networking standard ratified by the IEEE in late 1999 and supported by the largest wireless local area network (WLAN) vendors. Also known as Wi-Fi.

**Access Point:** Radio-based device that provides users of wireless devices with access to a local area network (LAN).

**AHIC (American Health Information Community):** Also known as "the Community") formed to help advance efforts to reach the president's call for most Americans to have electronic health records by 2014. See [www.hhs.gov/healthit/ahic.html](http://www.hhs.gov/healthit/ahic.html)

**AHIMA (American Health Information Management System):** A community of professionals engaged in health information management, providing support to members and strengthening the industry and profession. See [www.ahima.org](http://www.ahima.org)

**AMIA (American Medical Informatics Association):** The first professional group to issue guidelines for physician-patient e-mail.

**AMR (Ambulatory Medical Record):** A computer system for storing, managing, and retrieving electronic patient health information in the outpatient setting. In the inpatient setting, it is often referred to as an electronic medical record (EMR).

**ANSI (American National Standards Institute):** The U.S. standards organization that establishes procedures for the development and coordination of voluntary American National Standards.

**Architecture:** This term refers to the structure of an information system and how its pieces communicate and work together. Also see client/server and tiered architecture.

**ASP (Application Service Provider):** A business that deploys, hosts, and manages access to software applications for multiple parties from a central facility. The ASP charges a subscription fee to users of the applications, which are delivered over the Internet or other public or private networks.

**ASTM International (American Society for Testing and Materials):** Was formed over a century ago, when a forward-thinking group of engineers and scientists got together to address frequent rail breaks in the burgeoning railroad industry. Total, standards developed at ASTM are the work of over 30,000 ASTM members. These technical experts represent producers, users, consumers, government and academia from over

100 countries. Participation in ASTM International is open to all with a material interest, anywhere in the world. <http://www.astm.org>

**Bandwidth:** A measure of how much information can be transmitted at once through a communication medium, such as a telephone line, fiber-optic cable, or radio frequency.

**Beaming:** Transfer of data or software programs between devices, such as PDAs, personal computers and printers, using either infrared or radio-wave transmission.

**Bioinformatics:** The science of developing and using computer databases and algorithms to hasten and improve biological—and pharmaceutical—research.

**Biometric Authentication:** Technology that identifies a person through recognition of unique physical characteristics, such as retina or iris patterns, face shape, voice patterns or fingerprints.

**Bluetooth:** A protocol designed for short-range wireless communication or networking among a variety of devices. Somewhat similar to, but distinct from, 802.11b.

**Broadband:** A medium that can carry multiple signals, or channels of information, at the same time without interference. Broadband Internet connections enable high-resolution videoconferencing and other applications that require rapid, synchronous exchange of data.

**Browser:** A software program that interprets documents written in HTML, the primary programming language of the Web. A browser such as Netscape Navigator or Microsoft Explorer is required to experience the photos, video, and sound elements on a Web page and assists in quick, easy travel around the Web.

**C+/C++:** C is an established programming language found in many operating systems, including UNIX. C++, a daughter program based on objects, is quickly becoming a favored programming language as object-oriented technology gains popularity. Also see Java.

**CCHIT (Certification Commission for Healthcare Information Technology):** A voluntary, private-sector organization launched in 2004 to certify health information technology (HIT) products such as electronic health records and the networks over which they interoperate. See [www.cchit.org](http://www.cchit.org)

**CCR (Continuity of Care Record):** A standard specification being developed jointly by ASTM International, the Massachusetts Medical Society (MMS), the Health Information Management and Systems Society (HIMSS), the American Academy of Family Physicians (AAFP), and the American Academy of Pediatrics. It is intended to foster and improve continuity of patient care, to reduce medical errors, and to assure at least a minimum standard of health information transportability when a patient is referred or transferred to, or is otherwise seen by, another provider. The origins of the CCR stem

from a Massachusetts Department of Public Health, three-page, NCR paper-based Patient Care Referral Form that has been in widespread use for many years in Massachusetts, and from other minimal data sets both electronic and paper-based. The CCR is being developed and enhanced in response to the need to organize a set of basic patient information consisting of the most relevant and timely facts about a patient's condition. Briefly, these include diagnoses, recent procedures, allergies, medications, recent care provided, as well as recommendations for future care (care plan) and the reason for referral or transfer. The CCR will be created by a healthcare provider/clinician at the end of an encounter, or at the end of an episode of care, such as a hospital or rehabilitation stay. <http://www.massmed.org/pages/ccrfaq.asp>

**CDS (Clinical Decision Support):** Clinical decision support systems (CDSS) assist the physician in applying new information to patient care and help to prevent medical errors and improve patient safety. Many of these systems include computer-based programs that analyze information entered by the physician.

**CDA (Clinical Document Architecture):** Provides an exchange model for clinical documents and brings the industry closer to the realization of an electronic medical record.

**CHI (Consolidated Health Informatics) Initiative:** One of the 24 Presidential eGovernment initiatives with the goal of adopting vocabulary and messaging standards to facilitate communication of clinical information across the federal health enterprise. CHI now falls under FHA.

**CIS (Clinical Information System):** An Electronic Health record that is a clinical repository of patient data. The term CIS is sometimes used interchangeably with EMR. Typically covers:

- Pathology and radiology order entry and results reporting;
- Medication prescribing, supply and administration;
- Clinical work lists;
- Problem lists;
- Clinical notes; and
- Decision support.

**Client:** In a computer network, a workstation that retrieves information from a server.

**Client/server:** A network system in which a dedicated computer (server) handles some data storage and processing tasks for applications used on personal computers or workstations (clients), which tap the server's shared files and processing power as needed. Also see distributed computing.

**CPOE (Computerized Provider Order Entry):** A computer application that allows a physician's orders for diagnostic and treatment services (such as medications, laboratory, and other tests) to be entered electronically instead of being recorded on

order sheets or prescription pads. The computer compares the order against standards for dosing, checks for allergies or interactions with other medications, and warns the physician about potential problems.

**CRM (Customer Relationship Management):** Information systems and software that enable an organization to manage customers in an organized way with the objective of building better customer relationships.

**Data:** Information.

**Data Dictionary:** A list that describes the specifications and locations of all data contained in a system.

**Data Entry:** The transcription of information from the original source into a machine-readable form. Although keyboard entry is the most familiar, other fast-growing methods include scanners and speech recognition.

**Data Mining:** Analyzing information in a database using tools that look for trends or anomalies without knowledge of the data's meaning. Mining a clinical database may produce new insights on outcomes, alternate treatments, or effects of treatment on different races and genders.

**Data Repository:** A database acting as an information storage facility. Although often used synonymously with data warehouse, a repository does not have the analysis or querying capabilities of a warehouse.

**Data Synchronization/Data Syncing:** The process of sending updates between a mobile computing device and a personal computer or application server in order to keep both sets of files synchronized. Sometimes called "hot syncing." Sometimes spelled "synch."

**Data Warehouse:** A large database that stores information like a data repository but goes a step further, allowing users to access data to perform research-oriented analysis.

**Database:** An aggregation of records or other data that is updateable. Databases are used to manage and archive large amounts of information. Also see relational database.

**Database Server:** A computer that stores data centrally for network users. It often uses client/server software to distribute the processing of data among itself and other workstations on the network.

**Decision Support Application:** A computer program that analyzes data and presents the information so that clinicians can make medical decisions more easily. Typical tasks of a decision support system include data storage, data analysis, predictive modeling, and risk-adjusted comparison of actual outcomes with predicted outcomes.

**Detailing:** The practice by which pharmaceutical representatives market drugs to physicians. Some pharmas are turning to the Internet to perform detailing, with the ultimate goals of reduced cost and increased effectiveness. See e-detailing.

**Digital Certificate:** An electronic “certificate” (actually a unique number) that establishes a user’s identity when conducting business or other “secure” transactions on a network such as the Internet. See also electronic certificate.

**Digital Divide:** A phrase coined to describe the gap between people who have access to modern information technology, particularly computers and the Internet, and those who lack such access--or the skills to exploit it.

**Disease Management:** A coordinated and proactive approach to managing care and support for patients with chronic illnesses such as diabetes, congestive heart failure, asthma, HIV/AIDS, and cancer. See also e-disease management.

**Distributed Computing:** A system in which computational and storage tasks are distributed among multiple computers rather than being performed exclusively by a central computer. Often used to overcome the limitations of a single computer or to exploit the unused computing power of a group of computers. Client/server systems are one type of distributed computing. See also P2P.

**DSL (Digital Subscriber Line):** A technology for delivering high-bandwidth Internet service over ordinary copper telephone lines.

**DSS (Decision-Support System):** Computer tools or applications to assist physicians in clinical decisions by providing evidence-based knowledge in the context of patient specific data. Examples include drug interaction alerts at the time medication is prescribed and reminders for specific guideline-based interventions during the care of patients with chronic disease. Information should be presented in a patient-centric view of individual care and also in a population or aggregate view to support population management and quality improvement.

**E-commerce:** Transactions, such as buying and selling of goods, conducted via the Internet or other network.

**E-counseling:** Psychological therapy conducted over the Internet, via e-mail, text chats, videoconferencing or other online communication methods. See also e-therapy.

**EDC (Electronic Data Capture):** The use of electronic technology to gather and collect data, esp. in the context of clinical trials. Allows data to be aggregated, sorted, shared, and searched more easily than paper-based records. May be Web-based, use handheld computers, etc.

**E-detailing:** The use of the Internet and related technologies to perform detailing—educational/sales presentations traditionally made by pharmaceutical sales reps to clinicians to promote prescribing of a company’s drugs.

**EDI (Electronic Data Interchange):** A direct exchange of data between two computers via the Internet or other network, using shared data formats and standards.

**E-disease Management:** The use of Web-based technology in support of disease management to provide patient-clinician communication, patient access to information, and patient self-management. See also disease management.

**E-encounter:** A type of physician-patient electronic communication that is a two-way exchange of clinical information revolving around a particular clinical question or problem specific to the patient. It may be initiated by either the patient or the caregiver.

**EHR (Electronic Health Record):** A real time patient health record with access to evidence-based decision support tools that can be used to aid clinicians in decision making. An EHR is a medical record or any other information relating to the past, present or future physical and mental health, or condition of a patient which resides in computers which capture, transmit, receive, store, retrieve, link, and manipulate multimedia data for the primary purpose of providing health care and health-related services. The EHR can also support the collection of data for uses other than clinical care, such as billing, quality management, outcome reporting, and public health disease surveillance and reporting. EHR records include patient demographics, progress notes, SOAP notes, problems, medications, vital signs, past medical history, immunizations, laboratory data and radiology reports.

**Electronic Certificate:** A unique number that establishes a user’s identity when conducting business or other “secure” transactions on a network such as the Internet. See also digital certificate.

**EMR (Electronic Medical Record):** A computer-based patient medical record. An EMR facilitates access of patient data by clinical staff at any given location; accurate and complete claims processing by insurance companies; building automated checks for drug and allergy interactions; clinical notes; prescriptions; scheduling; sending to and viewing by labs; The term has become expanded to include systems which keep track of other relevant medical information. The practice management system is the medical office functions which support and surround the electronic medical record.

**Encryption:** Translation of data into a code in order to keep the information secure from anyone but the intended recipient.

**Enterprise Architecture:** A strategic resource that aligns business and technology, leverages shared assets, builds internal and external partnerships, and optimizes the value of information technology services.

**Enterprise-Wide Network:** A network in which all computers in the various facilities of an organization (e.g. a health care system) are connected.

**ePrescribing / eRx:** Computer technology in which physicians use handheld or personal computer devices to review drug and formulary coverage and transmit prescriptions to a printer, EMR or pharmacy. ePrescribing software can be integrated with existing clinical information systems to allow access to patient-specific information to screen for drug interactions and allergies.

**E-procurement:** Procurement (i.e. ordering, payment, etc.) of goods and services via the Internet.

**E-therapy:** Psychological therapy conducted over the Internet--via e-mail, text chats, videoconferencing or other online communication methods. See also e-counseling.

**Ethernet:** Probably the most commonly used standard for local area network (LAN) architecture. It supports data transfer rates of up to 10 megabits per second, although newer systems, called Fast Ethernet and Gigabit Ethernet, support transfer rates of 100 Mbps and 1 gigabit (1,000 megabits) per second, respectively.

**Extranet:** An intranet that allows specified levels of access to authorized, external users.

**Fat Client:** In a client/server system, a client that performs most of the necessary data processing itself, rather than relying on the server.

**FCC** (Federal Communications Commission): The federal agency charged with regulating interstate and international communications by radio, television, wire, satellite and cable. The FCC's jurisdiction covers the 50 states, the District of Columbia, and U.S. possessions.

**File Server:** A computer dedicated to managing the flow of information among networked computers and used as a storage location for data and applications shared by network users.

**Firewall:** A security device situated between a private network and outside networks like the Internet. The firewall screens all information that attempts to en

**GPS** (Global Positioning System): A collection of satellites that continuously transmit their positions, allowing GPS receivers to pinpoint their own geographic positions by triangulation. Used in navigation, vehicle location and similar technologies.

**GUI** (Graphical User Interface): An interface that allows a person to operate a software program using visual images (called icons), drop-down menu choices, and tool bars, rather than complex keystrokes and text commands. The most common manipulating device is a mouse.

**Formulary:** A list of medications (both generic and brand names) that are covered by a specific health insurance plan or pharmacy benefit manager (PBM), used to encourage utilization of more cost-effective drugs. Hospitals sometimes use formularies of their own, for the same reason.

**HAN** (Health Action Network): Communication system used by the CDC to exchange disease information with state and local health departments.

**Handheld:** A portable computer that is small enough to hold in one's hand. Used to refer to a variety of devices ranging from personal data assistants, such as Palm and Visor models, to more powerful devices that offer many of the capabilities of desktop or laptop computers. Handhelds are used in clinical practice for such tasks as ordering prescriptions, accessing patients' medical records and documenting patient encounters.

**HIE** (Health Information Exchange): The movement of healthcare information electronically across organizations within a region or community. HIE provides the capability to electronically move clinical information between disparate healthcare information systems while maintaining the meaning of the information being exchanged. The goal of HIE is to facilitate access to and retrieval of clinical data to provide safe, timely, efficient, effective, equitable, patient-centered care.

**HIPAA** (Health Insurance Portability and Accountability Act of 1996): A federal law intended to improve the portability of health insurance and simplify health care administration. HIPAA sets standards for electronic transmission of claims-related information and for ensuring the security and privacy of all individually identifiable health information.

**HIT** (Health Information Technology): The application of information processing involving both computer hardware and software that deals with the storage, retrieval, sharing, and use of health care information, data, and knowledge for communication and decision making.

**HITSP** (Health Information Technology Standards Panel): With the American National Standards Institute (ANSI), this organization of 18 independent entities serves as a cooperative partnership between the public and private sectors for the purpose of achieving a widely accepted and useful set of standards specifically to enable and support widespread interoperability among healthcare software applications, as they will interact in a local, regional and national health information network for the United States. See [www.ansi.org/standards\\_activities/standards\\_boards\\_panels/hisb/hitsp.aspx](http://www.ansi.org/standards_activities/standards_boards_panels/hisb/hitsp.aspx)

**HL7** (Health Level Seven): One of several accredited standards (specifications or protocols) established by ANSI (American National Standards Institute) for clinical and administrative data. Systems which are HL7 'compliant' improve the ability for interoperability and exchange of electronic data.

**Home Monitoring:** Use of physiologic monitors to assess patient status in the home. In some cases, results can be transmitted electronically to a case manager or physician.

**Host:** A computer that acts as a source of information or provides functionality for multiple terminals, peripherals, and/or users.

**HTML (Hypertext Markup Language):** The basic programming language for sites on the World Wide Web. This “skeleton” of code surrounds blocks of text and/or images and contains all the necessary commands and display instructions. A Web browser program is needed to interpret HTML and depict it as a graphical display on a computer screen.

**HTTP (Hypertext Transfer Protocol):** A language protocol used in communication among Web sites. When http appears as part of a Web site URL, it indicates to Web browsers, “HTML spoken here.”

**ICD-9 (International Classification of Disease- 9th Revision):** International disease classification system developed by the World Health Organization (WHO) that provides a detailed description of known diseases and injuries. The classification system is used worldwide for morbidity and mortality statistics, reimbursement systems and automated decision support in medicine.

**IEEE (Institute of Electrical and Electronics Engineering):** A professional association that develops and promotes standards. The IEEE 802 standards are focused on communication protocols for wireless local area networks (WLANs).

**Informatics or Information Science:** The study of information. It is often, though not exclusively, studied as a branch of Computer Science and Information Technology (IT) and is related to database, ontology and software engineering. Informatics is primarily concerned with the structure, creation, management, storage, retrieval, dissemination and transfer of information. Informatics also includes studying the application of information in organizations, on its usage and the interaction between people, organizations and information systems.

**Internet:** A publicly accessible, global network connecting millions of computers. The Internet carries data for applications such as e-mail, instant messaging and teleconferencing, in addition to the billions of documents and images that make up the World Wide Web. Although the terms Internet and Web are often used interchangeably, they are not synonymous. See also World Wide Web.

**Interoperability – Compatibility:** The ability of software and hardware on multiple pieces of equipment made by different companies or manufacturers to communicate and work together.

**Intranet:** An internal network that looks and acts like the World Wide Web. Intranets allow companies to take advantage of Web-based technology and create a private means of sharing data and applications among their networked users.

**ISP** (Internet Service Provider): A company that provides users with access to the Internet and the World Wide Web. Users connect to the ISP through ordinary telephone lines (dial-up connections) or through faster connections such as DSL, cable or fiber-optic lines. Although some ISPs charge by the hour, most offer monthly or yearly rates.

**Java:** A platform-independent, object-oriented programming language developed by Sun Microsystems and modeled on the programming language C++. Java applets--miniature applications designed to run within another program--now are popular features of Web sites.

**Laboratory Information System:** Electronic Medical Records are repositories of patient data either entered directly or interfaced from external applications. One such application is a Laboratory Information System (LIS) that is typically used by hospital pathology departments to record activity in the department. Typical modules include:

- Pathology request and specimen registration;
- Request and specimen management;
- Result reporting;
- Blood bank; and
- Management reporting.

Electronic Medical Records typically integrate with Laboratory Information Systems by:

- Creating and storing pathology request details in the Electronic Health Record then sending them via HL7 to the Laboratory Information System;
- Storing pathology request details in the Electronic Health Record sent via HL7 from the Laboratory Information System;
- Storing pathology specimen collection details in the Electronic Health Record;
- Storing pathology results in the Electronic Health Record sent via HL7 from the Laboratory Information System; and
- Storing blood product requests then sending them via HL7 to the Laboratory Information System, storing production allocation in the Electronic Health Record sent via HL7 from the Laboratory Information. Recording blood product administration in the Electronic Health Record.

Pathology investigations generated from the LIS may be initially stored in an intermediate EMR and then sent to an EHR as part of an EHR extract such as a discharge summary.

**LAN** (Local Area Network): A network consisting of computers that are located in relatively close physical proximity to each other and are connected by wire cables, fiber optic lines, or other physical means. See also WLAN.

**Leapfrog Group**: A group of Fortune 500 companies and other large health care purchasers founded with the goal of leveraging employer purchasing power to initiate improvements in the safety and value of U.S. health care. Leapfrog advocates the implementation of CPOE, as part of its larger patient-safety initiative.

**Legacy System**: An existing IT system or application, often built around a mainframe computer, which generally has been in place for a long time and represents a significant investment. Compatibility with legacy systems is often a major issue when considering new applications.

**LHII**: Local Health Information Infrastructure is a term used synonymously with RHIO. LHII was originally termed by the Office of the National Coordinator of Health Information Technology (ONCHIT) to describe the regional efforts that will eventually be linked together to form NHII.(National Health Information Infrastructure).

**MPI** (Master Patient Index): A database program that collects a patient's various hospital identification numbers, e.g. from the blood lab, radiology department, and admissions, and keeps them under a single, enterprise-wide identification number.

**NAHIT** (The National Alliance for Health Information Technology): Also known as "the Alliance" is a partnership of leaders from all healthcare sectors working to advance the adoption and implementation of healthcare information technology to achieve improvements in patient safety, quality and efficiency. See [www.nahit.org](http://www.nahit.org)

**NEDSS** (National Electronic Disease Surveillance System): The CDC's electronic network for disease reporting that links the agency with state public health departments.

**Network**: A general term for terminals, processors, and devices linked either by cable or wireless technology. Peripherals, applications and data can be shared by network users.

**NHII** (National Health Information Infrastructure): Is often used synonymously with NHIN. NHII came before NHIN and is an acronym that encompasses all of the necessary components needed to make EHRs interoperable. NHIN, as the name suggests, refers to both the physical and national network needed for interoperability to occur

**NHIN** (National Health Information Network): Describes the technologies, standards, laws, policies, programs and practices that enable health information to be shared among health decision makers, including consumers and patients, to promote improvements in health and healthcare. The development of a vision for the NHIN

began more than a decade ago with publication of an Institute of Medicine report, “The Computer-Based Patient Record.” The path to a national network of healthcare information is through the successful establishment of RHIO.

**NIST** (National Institute of Standards and Technology): Founded in 1901, NIST is a non-regulatory federal agency within the U.S. Commerce Department’s Technology Administration, promoting U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology. See [www.nist.gov](http://www.nist.gov)

**Normalization:** The process of redefining clinical data based on predefined rules. The values are redefined based on a specific formula or technique.

**NPI** (National Provider Identifier): The Health Insurance Portability and Accountability Act (HIPAA) of 1996 requires the adoption of a standard unique identifier for health care providers. The NPI Final Rule issued January 23, 2004 adopted the NPI as this standard. The NPI is a 10-digit, intelligence free numeric identifier (10 digit number). Intelligence free means that the numbers do not carry information about health care providers, such as the state in which they practice or their provider type or specialization. The NPI will replace health care provider identifiers in use today in HIPAA standard transactions. Those numbers include Medicare legacy IDs (UPIN, OSCAR, PIN, and National Supplier Clearinghouse or NSC). The provider’s NPI will not change and will remain with the provider regardless of job or location changes. See: <http://aspe.hhs.gov/admsimp/faqnpi.htm>

**ONC** (Office of the National Coordinator): Is a government agency (part of HHS) that oversees and encourages the development of a national, interoperable (compatible) health information technology system to improve the quality and efficiency of health care. See [www.hhs.gov/healthit/](http://www.hhs.gov/healthit/)

**ONCHIT** (Office of the National Coordinator for Health Information Technology): The US Department of Health and Human Services office, established in 2004, to provide leadership for the development and nationwide implementation of an interoperable health information infrastructure.

**Open source:** Software in which the source code is available to users, who can read and modify the code.

**PAS:** An Electronic Medical Record may include a PAS or be interfaced to a PAS via HL7. A PAS is an application responsible for recording and reporting administrative details of a patient’s encounter in a hospital. The patient administration system typically covers modules for:

- Patient master index (PMI);
- Inpatient management;
- Outpatient Management;
- Emergency management;

- Theatre management;
- Surgery waiting list management;
- Medical records tracking;
- Medical records coding;
- Inpatient billing; and
- Reporting.

Episode details generated from the PAS may be initially stored in an intermediate EMR and then sent to an EHR as part of an EHR extract such as a discharge summary.

**Patient Record Locator:** The electronic means by which patient files are located to assist patients and clinicians to find test results, medical history, prescription data, and other health information. A record locator would act as a secure health information search tool.

**P2P (Peer-to-Peer):** 1. A network structure in which the computers share processing and storage tasks as equivalent members of the network. Different from a client/server network, in which computers are assigned specific roles. 2. A general term for popular file-sharing systems like gnutella, in which there is no central repository of files. Instead, files can be stored on—and retrieved from—any user’s computer. See also distributed computing.

**PDA (Personal Data Assistant):** A handheld computer that offers relatively limited functionality and computing power. Often used primarily as organizers, but some PDAs offer wireless e-mail and Internet access. Increasingly used in clinical practice for applications such as taking patient notes and ordering prescriptions.

**PHIT (Personal Health Information Technology):** PHIT enables the documentation of an individual's complete, lifelong health and medical history into a private, secure and standardized format that he or she owns and controls, but yet is accessible to legitimate providers day or night from any location.

**PHR (Personal Health Record):** An electronic application through which individuals can maintain and manage their health information (and that of others for whom they are authorized) in a private, secure, and confidential environment.

**Pharmacy Information Management System:** Electronic Medical Records are repositories of patient data either entered directly or interfaced from external applications. One such application is a Pharmacy Information Management System (PIMS) that is typically used by hospital pharmacy departments to record activity in the department. Typical modules include:

- Script registration;
- Dispensing;
- Clinical decision support including interaction checking;
- Inventory control including imprest management; and

- Management reporting.

Electronic Health Records typically integrate with Pharmacy Information Management Systems by:

- Creating and storing medication order (script) details and current medications in the Electronic Health Record then sending them via HL7 to the Pharmacy Information Management System;
- Storing dispensed medication details in the Electronic Health Record sent via HL7 from the Pharmacy Information Management System; and
- Storing drug administration details then sending them via HL7 to the Pharmacy Information Management System.

Dispensed medications generated from the Pharmacy Information Management System may be initially stored in an intermediate EMR and then sent to an EHR as part of an EHR extract such the current medication list in a discharge summary.

**PKI (Public Key Infrastructure):** A system that uses electronic certificates and various authorities (servers that validate certificates, registrations, etc.) to authenticate each entity in an online transaction.

**Portal:** A Web site that offers a range of resources, such as e-mail, chat boards, search engines, content and online shopping.

**Practice Management System (PMR):** That portion of the medical office record which contains financial, demographic and non-medical information about patients.

**RHIO (A Regional Health Information Organization):** Is a multi-stakeholder organization that enables the exchange and use of health information, in a secure manner, for the purpose of promoting the improvement of health quality, safety and efficiency. Officials from the U.S. Department of Health and Human Services (HHS) see RHIOs as the building blocks for the National Health Information Network (NHIN). When complete the NHIN will provide universal access to electronic health records.

**Radiology Information System:** Electronic Medical Records are repositories of patient data either entered directly or interfaced from external applications. One such application is a Radiology Information System (RIS) that is typically used by hospital radiology departments to record activity in the department. Typical modules include:

- Radiology request registration;
- Appointment scheduling;
- Exam management;
- Exam reporting;
- PACS integration; and

- Management reporting.

Electronic Medical Records typically integrate with Radiology Information Systems by:

- Creating and storing radiology request details in the Electronic Health Record then sending them via HL7 to the Radiology Information System;
- Storing radiology request details in the Electronic Health Record sent via HL7 from the Radiology Information System;
- Storing radiology exam results in the Electronic Health Record sent via HL7 from the Radiology Information System; and
- Storing radiology exam image information in the Electronic Health Record sent via DICOM from the PACS.

Radiology investigations generated from the RIS may be initially stored in an intermediate EMR and then sent to an EHR as part of an EHR extract such as a discharge summary.

**Relational Database:** A database in which all information is arranged in tables containing predefined fields. Changing a field in one record automatically changes the same field in all related records, allowing for easy global database management. Using SQL, reports and comparisons can be generated by selecting fields of interest from the original database.

**RFID (Radio Frequency Identification):** Technology that uses tiny chips and antennas to track products and store product information.

**Scalability:** The ability to add users and increase the capabilities of an application without having to making significant changes to the application software or the system on which it runs.

**SDO (Standards Development Organization):** An organization that develops standards to provide stability and consistency for a product or service in hopes of lowering costs and maintaining or improving quality.

**Server:** A networked computer that manages a specific set of network resources. A server may manage network traffic or peripheral use, store files, or run applications for users at other computers on the network.

**Service Level Agreement:** A contract between a service provider and a user that specifies the level of service expected during a contract term. Service level agreements determine how performance will be measured and, in the event of underperformance, how the penalties will be calculated and paid.

**Smart Card:** An electronic device about the size of a credit card that contains electronic memory and, increasingly, an embedded microchip. The cards are used to store data-- in a health care context, this is often personal health information. The data can be accessed using a smart card reader: a device into which the card is inserted. Smart cards are not the same as magnetic stripe cards, such as most credit cards; smart cards typically can store more information.

**Sniffer:** A program that monitors and analyzes the flow of information on a network, searching for bottlenecks and problems. Network managers use sniffer programs to monitor traffic flow and keep data moving efficiently. A sniffer can also be used legitimately or illegitimately to capture data transmitted over a network.

**SQL (Structured Query Language):** A standard command language used to interact with a database.

**Standards** – Though there are few standards for modern day EMR systems as a whole, there are many standards relating to specific aspects of EHRs/EMRs. These include:

- ASTM CCR -- American Society for Testing and Materials (Non profit), Continuity of Care Record - a patient health summary standard based upon XML, the CCR can be created, read and interpreted by various EHR or EMR systems, allowing easy interoperability between otherwise disparate entities.;
- ANSI X12 (also known as EDI – Electronic Data Interchange) – This is a standard format used for transmitting business data, developed by the Data Interchange Standards Association. The parties who exchange EDI transmissions are referred to as trading partners. Data that is transmitted often includes what would usually be contained in a typical business document or form;
- CEN – The European Committee for Standardization, founded in 1961 by the national standard bodies in the European Economic Community. It develops technical standards for many different business domains, including health care;
- CEN EN13606 - A standard being developed by the CEN workgroup TC 251 on HER Communications. The workgroup is focused on developing standard that include requirements on health information structure to support clinical and administrative procedures, technical methods to support interoperable systems as well as requirements regarding safety, security and quality;
- DICOM (Digital Imaging and Communications in Medicine) - a heavily used standard for representing and communicating radiology images and reporting;
- HL7 -- Health Level 7 – An ANSI standard for healthcare specific data exchange between computer applications. HL7 messages are used for interchange between hospital and physician record systems and between EMR systems and practice management systems; HL7 Clinical Document Architecture (CDA)

documents are used to communicate documents such as physician notes and other material;

- ISO TC215 -- The International Organization for Standardization (ISO) is an international standard-setting body composed of representatives from national standards bodies. Founded on February 23, 1947, the organization produces world-wide industrial and commercial standards, including standardization in the field of health information and Health Information and Communications Technology (HICT) to achieve compatibility and interoperability between independent systems. Also, to ensure compatibility of data for comparative statistical purposes (e.g. classifications), and to reduce duplication of effort and redundancies. ISO is not an acronym; it comes from the Greek word isos, meaning "equal";
- Canada Health Infoway -- mandated to accelerate the development and adoption of electronic health information systems in Canada;
- OpenEHR - public specifications and implementations for EHR systems and communication, based on a complete separation of software and clinical models;
- OpenEHR Foundation -- a not for profit foundation supporting the open research, development, and implementation of EHRs. Its specifications are based on a combination of 15 years of research into EHRs and new paradigms designed to be the basis of a medico-legally sound, distributed, versioned EHR infrastructure. openEHR also develops and publishes EHR specifications and open source EHR implementations, which are currently being used in Australia and parts of Europe;
- HIMSS -- Healthcare Information and Management Systems Society -- is the healthcare industry's membership organization exclusively focused on providing leadership for the optimal use of healthcare information technology and management systems for the betterment of human health. Founded as a non profit in 1961 with offices in Chicago, Washington D.C., and other locations across the country, HIMSS represents approximately 17,000 individual members and some 275 member corporations that employ more than 1 million people. HIMSS frames and leads healthcare public policy and industry practices through its advocacy, educational and professional development initiatives designed to promote information and management systems' contributions to ensuring quality patient care; and
- XML -- Extensible Markup Language is a general-purpose markup language for creating special-purpose markup languages, capable of describing many different kinds of data. Its primary purpose is to facilitate the sharing of data across different systems, particularly systems connected via the Internet. Languages based on XML (for example, Geography Markup Language (GML), Physical Markup Language (PML) are defined in a formal way, allowing

programs to modify and validate documents in these languages without prior knowledge of their form.

**Subscription-Based Model:** A business model based on a monthly fee charged for the use of equipment, software, services or content, or some combination of those. Used by many vendors, such as providers of e-prescribing systems. See also transaction-based model.

**Supply Chain Management:** Coordinating the movement of goods, from the initial customer order to final delivery of products. Includes management of raw materials, supply, production and distribution, taking into account quality, cost, customer satisfaction and production speed. The Internet is frequently touted as a tool for improving the efficiency of supply chain management.

**T1, T3, T4:** Types of transmission lines in the T-carrier telecommunications system that are often used to provide Internet access to larger organizations. T1 lines can transmit about 1.5 Mbps of data. A T3 line contains 28 T1 lines together and can transmit about 45 times the data of a single T1, enough for full-motion video. Six T3 lines make one T4 line, capable of transmitting about 274 Mbps.

**Tablet Computer:** A flat-panel laptop that uses a stylus pen or touch-screen, rather than a keyboard, for entry of data and commands.

**Telehealth:** The use of telecommunications and information technology to deliver health services and transmit health information over distance. Sometimes called telemedicine.

**Telemedicine:** The use of telecommunications and information technology to deliver health services and transmit health information over distance. Sometimes called telehealth.

**Teleradiology:** A form of telemedicine that involves electronic transmission of radiographic patient images and consultative text.

**Thin Client:** In a client/server system, a client with little processing or data storage capability that primarily relies on a central server to perform those functions.

**Total Cost of Ownership:** A long-term view of all costs associated with a specific technology investment. Costs include that of acquiring, installing, using, maintaining, changing, and disposing of a technology during its useful life.

**Transaction-Based Model:** A business model based on service fees charged for each transaction conducted using the vendor's equipment, software, services or network. Used by some e-health vendors, including providers of e-prescribing systems. See also subscription-based model.

**UI** (User Interface): The part of an application that allows the user to access the application and manipulate its functionality. It can include menus, forms, command buttons, etc.

**URAC** (American Accreditation HealthCare Commission): A not-for-profit organization that performs quality accreditation for the managed care industry. URAC also launched a Web site accreditation program in 2001 to establish quality standards for health sites on the Internet, and an Information Technology Advisory Committee to address other quality issues related to health care information technology.

**URL** (Uniform Resource Locator): A Web address. Each Web page has a unique URL.

**VPN** (Virtual Private Network): A network that uses public connections, such as the Internet, to link users but relies on encryption and other security measures to ensure that only authorized users can access the network.

**WAN** (Wide Area Network): A computer network that covers a large physical area. A WAN usually consists of multiple local area networks (LANs).

**WAP** (Wireless Application Protocol): A proposed standard for delivering content to mobile wireless devices such as cellular phones and handhelds.

**Web Master**: The person responsible for operating/maintaining a particular Web site or Web page.

**Web Server**: A networked computer that stores and transmits documents and other data to Web browsers via HTTP, an Internet data transfer protocol.

**Web Site**: A group of related files, including text, graphics, and hypertext links, on the World Wide Web. Accessed by typing its URL, a site usually includes layers of supporting pages as well as a home page.

**Web-Enabled**: Refers to software applications that can be used directly through the Web. Web-enabled applications are often used to collect information from, or make functionality available to, geographically dispersed users (e.g. disease surveillance systems).

**WEP** (Wired Equivalent Privacy): A security protocol for wireless local area networks (WLANs) using the 802.11b standard.

**Wi-Fi**: Another name for 802.11b, a wireless networking standard ratified by the IEEE in late 1999 and supported by the largest wireless local area network (WLAN) vendors. Wi-Fi is short for wireless fidelity.

**Wireless Internet**: Wireless mobile computing that uses the Internet as part of the underlying network communication infrastructure. Sometimes called wireless Web.

**Wireless LAN Adapter:** Component attached to or integrated into a handheld device that transmits data wirelessly between the device and a local area network (LAN) access point.

**WLAN** (Wireless Local Area Network): A LAN that uses radio frequency technology to transmit data over relatively short distances. It can replace or extend a wired LAN.

**WML** (Wireless Markup Language): Web development language that allows Web sites to format content to fit the small screens and limited storage and processing capabilities of mobile devices.

**World Wide Web:** An international group of databases within the Internet containing billions of documents that are formatted in HTML and link to other documents and files. Although the terms Internet and Web are often used interchangeably, they are not synonymous. See also Internet.

**WVHIN** – West Virginia Health Information Network: Governor Joe Manchin signed legislation creating the West Virginia Health Information Network (WVHIN) into law on March 22, 2006. Senate Bill 170 created WVHIN to promote the design, implementation, operation and maintenance of a fully interoperable statewide network to facilitate public and private use of health care information in the state. The WVHIN is under the oversight of the West Virginia Health Care Authority. The WVHIN will support a variety of electronic clinical transactions, including disease management, preventive medicine alerts, and prescription drug tracking. The WVHIN will be managed and operated by a 17-member Board of Directors representing the state's medical schools, medical associations and other health care providers.