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**The Need For A National Integrated  
Electronic Health Record System**

By Linda Barney, Barney and Associates

The health care industry in the US is one of the largest in the world but it is complex and has an antiquated IT infrastructure in relation to digitization of data. Many of the hospitals and doctor offices across the nation do not have electronic health record (EHR) systems, so these medical groups still use paper records to track information. A number of software vendors sell EHR systems used to track patient information but most of these systems use proprietary formats and cannot easily transfer information that can be recognized by another EHR system.

In his article "Anytime, Anywhere Medical Records: The National Health Information Infrastructure"[1] published in spring 2004, William Hersh M.D. (Professor and Chair of the Department of Medical Informatics & Clinical Epidemiology in the School of Medicine at Oregon Health & Science University), describes how easy it was to communicate electronic information globally to colleagues in Portland when he was serving as a visiting professor in China at Peking Union Medical College & Hospital but how difficult it would be if anyone had to access his medical records. Hersh stated, "My experience in China contrasts starkly with the one I would have if I actually became acutely ill while on NW 23rd Street in Portland, Oregon and was rushed to nearby Good Samaritan Hospital. The clinicians there would know little about my existing medical problems, despite the fact that my regular physician had stored life-saving information in the OHSU clinical-information system just a few miles away."

**Developing an integrated health IT system**

Health information technology (health IT) is one of the major thrusts in an effort to provide comprehensive management of medical information and its secure exchange between health care consumers and providers. In May 2004, a **National Health Infrastructure Initiative (NHII)** was formed with the goal of providing an electronic health record for every American within the next decade. The vision for NHII is that it "will eventually transform the health care industry in general, just as information technology (IT) has transformed other industries in the past."

Every year since 2004, President George W. Bush has called for widespread use of health information technology (HIT) and for electronic health records (EHRs) to be in use for most Americans by 2014. In his State of the Union address on **January 31, 2006**, President Bush stated, "We will make wider use of electronic records and other health information technology to help control costs and reduce dangerous medical errors."

Mike Leavitt, US Secretary of Health and Human Services (HHS), has developed a **Strategic Framework** that defines these goals of the HHS health IT initiative: informing clinicians, interconnecting them, personalizing care, and thus improving population health. Leavitt defines the goal to "link all health records through an interoperable system that protects privacy as it connects patients, providers and payers, resulting in fewer medical mistakes, less hassle, lower costs and better health." However, as Dr. Hersh stated in an editorial in the prestigious Journal of the American Medical Association (JAMA) in October 2004, there are a number of barriers to implementation of a national EHR system. These include the challenge of developing a

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common standard for EHR systems as well as the cost and technical issues in implementing an electronic health record system, especially for smaller organizations and medical clinics.

#### **Electronic health record standards**

Progress is being made in developing standards for electronic health record systems throughout the US and globally. Various accreditation groups are working toward the development of electronic health records (EHR) standards that will allow electronic health records systems to be developed using an approved standard.

#### **HL7 electronic health records standard**

A health IT standards group called **Health Level Seven** (HL7) released a new, more comprehensive standard for electronic health records on Feb. 21, 2007. The standard is the first that specifies functional requirements for electronic health record systems to win approval from the American National Standards Institute, a key standard-setting body.

The HL7 standard includes 1,000 conformance criteria across 130 functions, including medication history, problem lists, orders, clinical decision support, as well as privacy and security. Linda Fischetti, EHR Technical Committee co-chair, stated, "This new standard is a 'superset' of functions that enables a standardized description and common understanding of functions, which is necessary when you're working across care settings." HL7 recently announced it will be jointly publishing a set of data standards for the RIM (**Reference Information Model**) with the ISO (International Organization for Standardization) in an effort to have the HL7 standards adopted on a global basis.

#### **Certification Commission for Health Care Information Technology (CCHIT)**

In September 2004, the **Certification Commission for Healthcare Information Technology** (CCHIT) was created as a voluntary, private-sector organization to certify health IT (HIT) products. Companies voluntarily submit their products for testing by CCHIT to guarantee that they meet standards defined for electronic health record systems. As of January 2007, CCHIT has certified 55 electronic health record products as meeting CCHIT standards and have given these companies a CCHIT certification.

CCHIT has an Oregon tie-in. It is chaired by **Dr. Mark Leavitt**, who practiced internal medicine for 10 years, but – frustrated by the lack of information management tools – founded and led MedicalLogic (a pioneering ambulatory EHR and health IT company). "The rapid acceptance of certification in the marketplace has far exceeded our expectations. Electronic health record companies have stepped up to the plate, ensuring that their products meet CCHIT criteria and actively promoting certification as a mark of excellence. The benefits of certification will increase as we continue to raise the standards for functionality, interoperability and security," stated Dr. Mark Leavitt.

#### **Oregon's involvement in health IT initiatives and EHR development**

Oregon is actively working on ways to improve medical care and the health IT infrastructure in the state. A variety of organizations, government committees, hospitals, medical clinics, and businesses represented by software, telecommunications and hardware companies are evaluating how to develop an effective health IT infrastructure in Oregon. A report on "Electronic Health Records & Data Connectivity" [2] in March 2005 reported, "The efficiencies in the health care system gained by adoption of electronic health records and health information exchange would improve the competitiveness of Oregon's economy. Rapidly increasing health care costs create burdens on business, increasing their costs and narrowing their margins. By aggressively pursuing health information technology and achieving the gains denoted above, the State of Oregon can reduce this burden on business, making Oregon more attractive for future investors. Since multiple other states are already engaged in this process, Oregon stands to benefit from their example by carefully examining their work and avoiding their costly mistakes. The time to act is now."

Under the leadership of Dr. Hersh, OHSU has one of the largest medical informatics educational programs in the world. The program's

over 100 graduates come from a variety of backgrounds, from medicine to IT, and work in a diverse array of settings – including hospitals, companies, and academia. The program is available online, providing convenience to students who work and/or cannot relocate to Oregon.

Another Oregon initiative comes from Congressman David Wu (D – 1<sup>st</sup> District). He introduced legislation in 2006 to fund research and education in Health IT. Now, as chair of the Science and Technology Subcommittee on Technology and Innovation, he has reintroduced the legislation this year.

In future issues, the SAO will provide an in-depth look at how Oregon medical facilities are working with businesses, organizations, and the government to evaluate and implement some of the health IT and electronic health records goals described in this article.

[1] "Anytime, Anywhere Medical Records: The National Health Information Infrastructure (NHII)" by William Hersh, M.D., FORUM, Oregon's Future, Spring 2004.

[2] "Report to the 73<sup>rd</sup> Oregon Legislative Assembly: Electronic Health Records & Data Connectivity", March 2005, Prepared by the Electronic Health Records & Data Connectivity Subcommittee and Reviewed by the Oregon Health Policy Commission.

#### **About the Author**

Linda Barney is the founder and owner of Barney and Associates, a technical and marketing writing firm. Founded in 1990, Barney and Associates specializes in technical writing, documentation, online help, web content and training. Barney and Associates also provides a wide range of marketing writing services including creating media articles, white papers, data sheets, solution briefs, case studies and reviewer's guides. Contact Linda at [linda@barneyassoc.com](mailto:linda@barneyassoc.com).