ELECTRONIC HEALTH RECORDS AND PERSONAL HEALTH RECORDS

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OBJECTIVES: *To provide an overview of electronic personal health information technology.*

DATA SOURCES: *Peer reviewed research studies, review articles, and web resources.*

CONCLUSION: *As technology develops and electronic health records become more common, patients and clinicians are working toward a safer, more personal form of health care delivery.*

IMPLICATIONS FOR NURSING PRACTICE: *Improving access and input to personal health information is still in its infancy, but with government funding, development of patient health records will continue to grow. Patients are the consumers of health care and are witness to the paradigm shift of access to health information and changes in information communication technology (ICT). For the oncology nurse, the transformation of health care and ICT will require nurses to educate patients and family members on available online resources for self management and health promotion.*

KEY WORDS: *Electronic health records, personal health records, information, communication technology*

THE era of health information technology has developed rapidly and continues to advance in the United States (US). Technological solutions have been implemented to enhance consumer access to electronic health records (EHRs) and personal health records (PHRs). This article provides an overview of the EHR and the PHR and relevant consumer tools for health, wellness, and cancer symptom management. The terms EHR, PHR, and electronic

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medical record are often used interchangeably in the literature and for the purposes of this article; the terms are defined in Table 1.[1-6]

ELECTRONIC HEALTH RECORDS–2004 TO TODAY

The Institute of Medicine's recommendations for care redesign, published in the seminal 2001 report, "Crossing the Quality Chasm," were catalysts for informing changes required to ensure quality health care in the new century.[7] Tenets of care redesign included providing tailored care for patients, recognizing the patient as the source of control of care, sharing knowledge, decision-making based on current evidence, transparency in care, and clinician cooperation. Subsequently in 2004, the US government focused efforts on building a national health information technology strategy beginning with the appointment of the country's first Health Information Technology Coordinator, David Brailer and establishment of the Office of the National Coordinator for Health Information Technology (ONC). At this time, the strategic goals for adoption of the EHR were presented to the public, with the primary goal of the ONC to ensure availability of EHRs to the majority of Americans by 2014.[8] This was a lofty goal, as existing models of health care information services were fragmented; information has been traditionally exchanged via paper documentation. Inherent flaws of paper documentation include redundancy, incomplete documentation, and lack of a standardized terminology.[9] Organizations with EHR capabilities are frequently limited in their ability to share data with outside providers and organizations. The siloed nature of health information technology and associated data within organizations are in part related to the way in which information systems emerged in the US. The federal government and some large academic medical centers built their own systems; such as the Department of Veteran Affairs,[10] the Mayo Clinic,[11] and Partners Healthcare.[12] Other organizations purchased EHR products developed by vendors. The top five EHR vendors based on the number of installations in the US in 2009 were Meditech, Cerner, McKesson, Siemens, and CPSI.[13] Until recently, few incentives existed for EHR developers to build systems to facilitate interoperability and data exchange with patients,

care providers, and health organization. Moreover, few systems were designed with the intent of promoting patient access to information or patient participation in their care. Efficient data exchange is key to achieving better outcomes and realizing cost effective care delivery. The ability to share patient information in a timely manner impacts how clinical decisions are made, minimizes duplication of procedures, promotes consumer education, and improves population-based care.[14]

In 2009, the American Recovery and Reinvestment Act (ARRA) allocated an estimated $27 billion over 10 years toward supporting the development of a nationwide infrastructure for the adoption of EHRs.[8] For organizations and providers to receive ARRA funding, the Center for Medicare and Medicaid Services created an incentive program for providers and organizations to work toward "meaningful use" initiatives; that is, to implement and adopt systems that support the improvement of quality, safety, and effectiveness of care.[15] Over the next 6 years, organizations and providers will have the opportunity via federally funded initiatives to implement specific functions within the EHR to support meaningful use. National standards for EHRs are one of the essential building blocks for health care reform and an important component of creating an infrastructure that supports efficient exchange of information between providers and health care organizations. Some examples of meaningful use objectives include: the ability to maintain an active medication list, the ability to send reminders to patients for preventative and follow-up care, and the ability to send reportable laboratory data to public health agencies[16] Proposed objectives for later stages of meaningful use include ongoing updates to a patient plan of care and self-management plan. Buntin et al[17] from the ONC published a meta-analysis in 2011, concluding that the majority of health IT innovation studies resulted in positive outcomes for institutions and consumers; some beneficial outcomes include improved patient satisfaction, effectiveness of care, and efficiency of care. However, based on this study[17] there continues to be mixed results in provider satisfaction. Yet, the quest to increase adoption of comprehensive EHRs has encountered barriers.

Only 1.5% of 2,952 US hospitals surveyed in 2008 (excluding the Veterans Health Administration) reported having comprehensive EHR systems; only 7.6% of hospitals reported having a basic