

EMR Historical Perspective

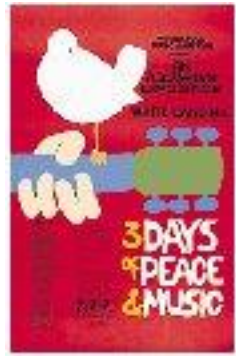
‘Back to the Future’



"Appropriate places for (refuse) are becoming scarcer year by year, and the question as to some other method of disposal...must soon confront us. Already the inhabitants in proximity to the public dumps are beginning to complain." - Health Officer's report, Washington, D.C.

Year: 1889

Chronology of Technology / EMR's 1960's and 1970's



- 1967 First Described in Medical Literature by Lawrence L. Weed
- 1967 HELP (Health Evaluation through Logical Processing) System
Latter Day Saints Hospital , Utah - Expanded to 10 **Intermountain Hospitals** by 1990
- 1968 MHTS (Multiphasic Health Testing System) – **Kaiser Permanente**
COSTAR (Computer Stored Ambulatory Records) – **Massachusetts General Hospital**
- 1969 - 1982 Problem Oriented Medical Record (SOAP Notes) - Lawrence L.Weed
POMR – Paper & Electronic
- 1973 **Regenstrief** EMR (Indiana) – still in use today!
- 1976 University of Vermont's PROMIS system (Weed and Shultz) – Hypertext Based & Touch Screen

Skills Required: Mainframe Programming, 'Dumb' Terminals, Line Printers, Touch Screen Technology, Hypertext, Punch Cards, Telex / Teletype, Batch Processing

Chronology of Technology / EMR's 1980's and 1990's

- 1981 Introduction of the Microcomputer – **IBM PC's**, MS-DOS, Lotus 1-2-3
- 1983 **MS Windows**
- 1990 10-baseT **TCP / IP** Networking – Ethernet Standard
- 1983 **LAN** Broadband Networking
- 1980 - 1991 Development of the '**World Wide Web**' – Early access in 1982 (ARPANET)
- 1990 - 1995 **3GL and 4GL** Development – Client Server
- LAN's & WAN's, Some **CHIN's** formed (Community Health Information Networks)
- **GUI's** make EMR's much more user friendly
- 1987 - **HL7** Standards Committee Formed
- Relational Data Models
- Several EMR Vendors – Inpatient & Ambulatory, Features lacking such as document imaging/scanning, voice recognition, mobile applications, PACS integration



Skills Required: 3GL & 4GL Programming, Network Engineering, Windows, PC Support, Database Administration, Interface Development, SQL Report Writing User Documentation & Training, Structured Design & Programming

Chronology of Technology / EMR's 1990's and 2000's

- 1993 – Windows **NT**
- 1996 – 1998 Commercialization of the WWW
- 1996 – **HIPAA** (Health Insurance Portability and Accountability Act)
- 1997 802.11 Wireless Networking Standard – we are **mobile!**
- 1999 – 2001 The 'Dot-bomb' bust & **Y2K**
- Web based architectures – Object Oriented Programming & **HL7 Version 3** (XML based)
- **Interoperability** Standards Advance & Healthcare Informatics is prevalent
- 2000 – 2011 ASP Services, Cloud Computing
- Virtualization – Servers, Desktops, Applications (**SAAS**), Service vendors (FDB, SureScripts)
- 2005 Many EMR Vendors, Some **RHIO's** Formed & Failed, Competition is Fierce
- 2009 – **HITECH Act** (ARRA) – NHIN, HITSP, Local & State **HIE's**, CNO's, **REC's**, EMR by 2014!
- 2010 Broadband is everywhere... **3G, 4G Wireless**, Voice Recognition, Storage is a commodity, Still some proprietary vendors



Skills Required: Web design / development, Clinical Workflow, Integration & Interoperability Skills, Negotiation & Collaboration, Informatics, Clinical Processes, Standards Development

Grant provides \$45M for HIT training skills

May 03, 2011 | Healthcare IT News Staff
U.S. Secretary of Labor Hilda Solis

WASHINGTON – Approximately \$240 million in newly launched federal grants have been made available for job training programs, including those in **health IT**.

The Department of Labor will conduct a webinar Wednesday to share information about grant program. Jane Oates, assistant secretary, Employment and Training Administration, Department of Labor, will highlight occupations and sectors and discuss the importance of **growing America's skilled workforce**.

The grants, which were **announced May 2** by U.S. Secretary of Labor Hilda Solis, are being made available through the H-1B Technical Skills Training Grants program competition. Grants will be awarded **to help workers update current job skills or acquire new skills so they can enter career pathways that lead to higher-paying jobs, including positions in information technology**. The Department of Labor expects to fund 75-100 grants.

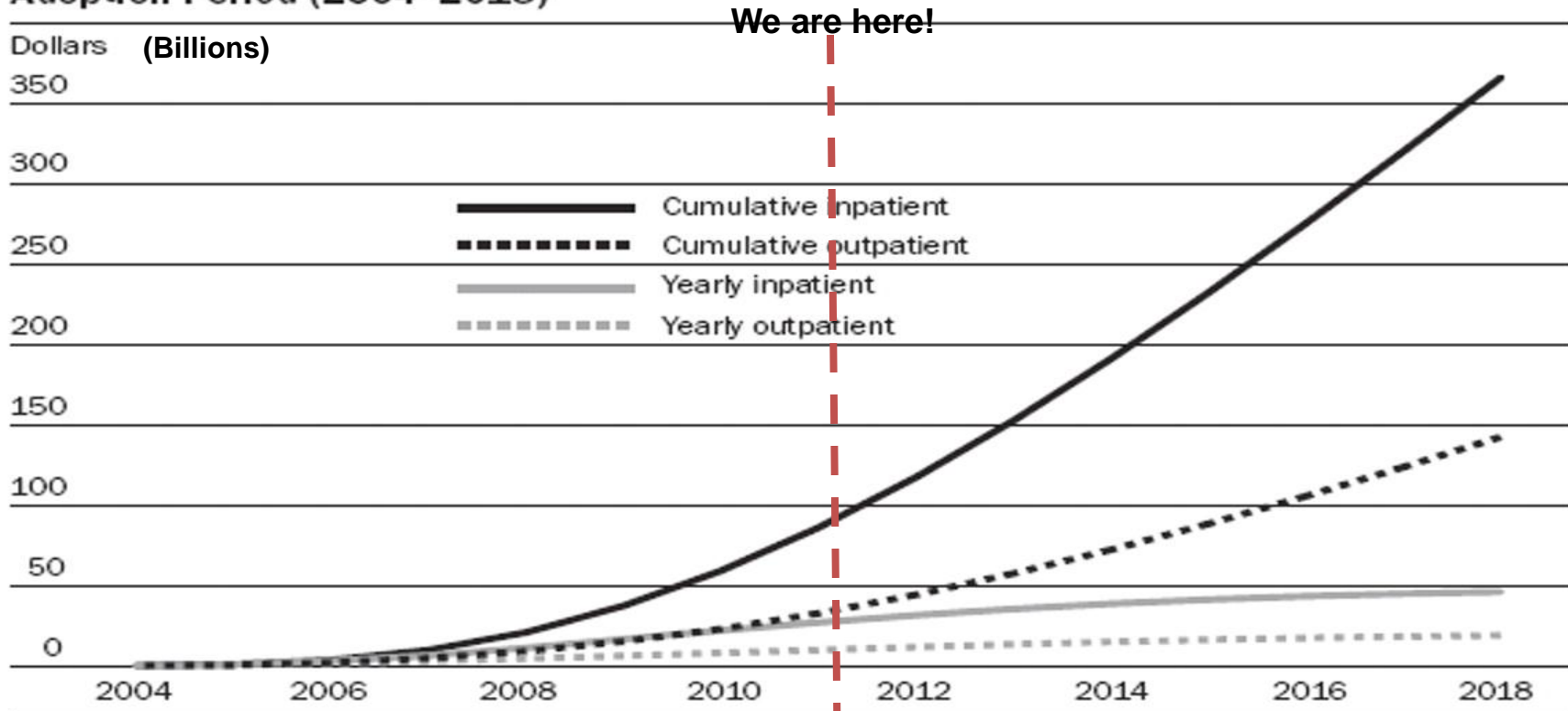
"With the dynamic nature of information technology, it's critical for our industry to make available to the nation's workforce opportunities for ongoing training and certification in the IT skills that will keep us competitive," said Todd Thibodeaux, president and chief executive officer, CompTIA, who participated in Monday's announcement with Solis. "These grants will help many companies – small, medium and large – address their need for skilled technology workers during these challenging economic times," he said.

The Department of Labor intends to award two types of training grants: those that provide **on-the-job training to all participants and those that use other training strategies**. At least \$150 million will be awarded to grantees that provide on-the-job training. The department also intends to award at least **\$45 million to applicants proposing to provide training for occupations in the healthcare industry** and at least \$60 million to applicants that serve long-term unemployed individuals.

According to the grant application said: "The health care industry has grown rapidly and is projected to grow in the future due to advances in medical knowledge and the increased need for medical services required by an aging population. **Of the 20 fastest growing occupations, half are within the health care industry**. The absence of sufficient numbers of qualified workers in this diverse sector threatens the quality and availability of medical care, and the economic stability and growth potential of local communities in rural, urban, and suburban areas. Moreover, the **growing complexity of health care delivery will require workers to continuously upgrade their skills.**"

EXHIBIT 6

Net Potential Savings (Efficiency Benefits Over Adoption Costs) For Hospital And Physician Electronic Medical Record (EMR) Systems Adoption During A Fifteen-Year Adoption Period (2004–2018)



SOURCE: F. Girosi et al., *Extrapolating Evidence of Health Information Technology Savings and Costs* (Santa Monica, Calif.: RAND, 2005), sec. 4.2.3.

Richard Hillestad, James Bigelow, Anthony Bower, Federico Girosi, Robin Meili, Richard Scoville, and Roger Taylor, *Can Electronic Medical Record Systems Transform Health Care? Potential Health Benefits, Savings, And Costs*, Health Affairs, Vol 24, Issue 5, 1103-1117