

HIT/eHealth/Informatics Workforce – Where we are in the US

William Hersh, MD

Professor and Chair

Department of Medical Informatics & Clinical Epidemiology

Oregon Health & Science University

Portland, OR, USA

Email: hersh@ohsu.edu

Web: www.billhersh.info

Blog: informaticsprofessor.blogspot.com

HIT/eHealth/Informatics Workforce

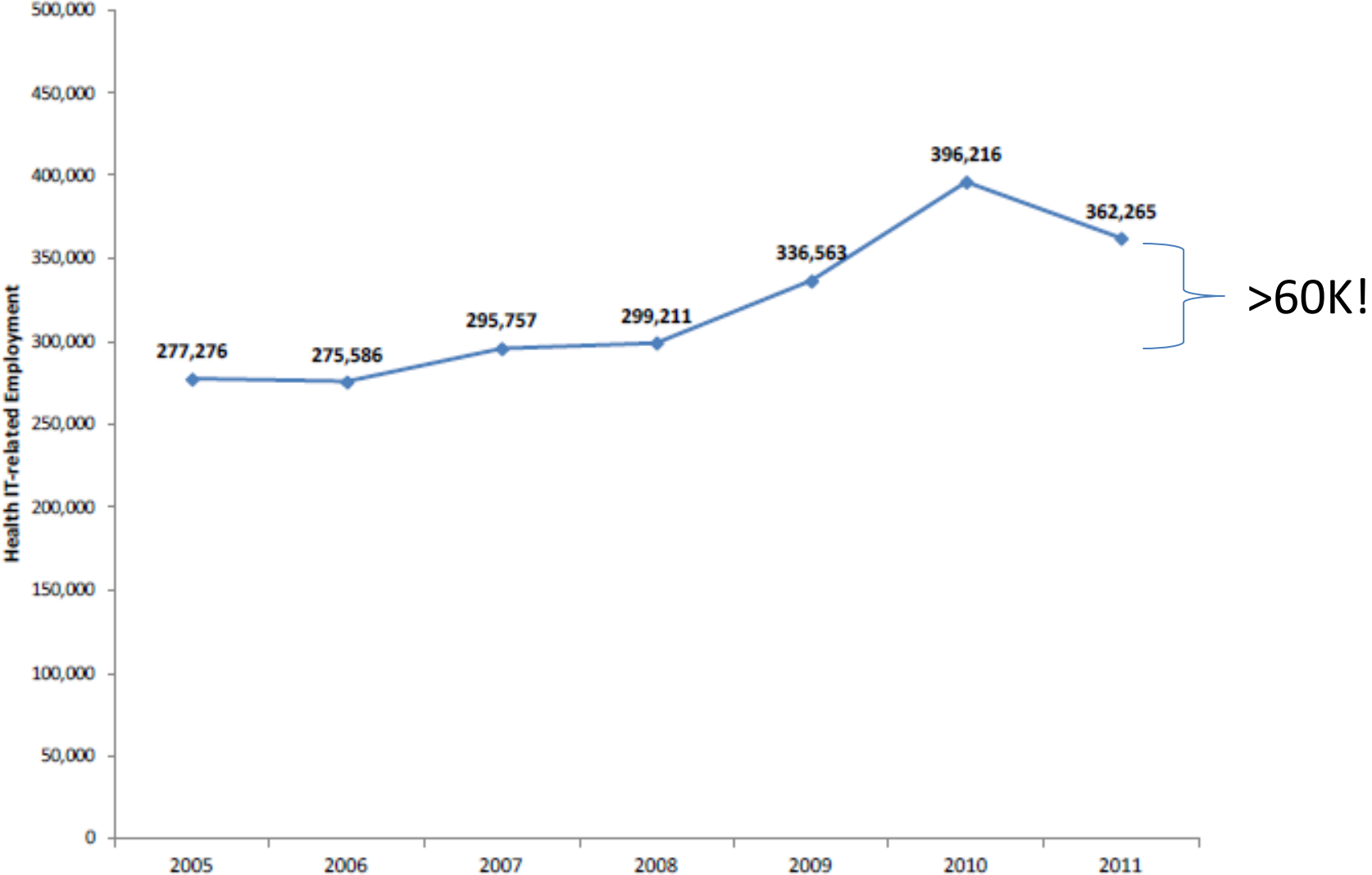
– Where we are in the US

- Known needs and shortages
- “Tribes”
- Programs
- Content
- Certification
- Future directions

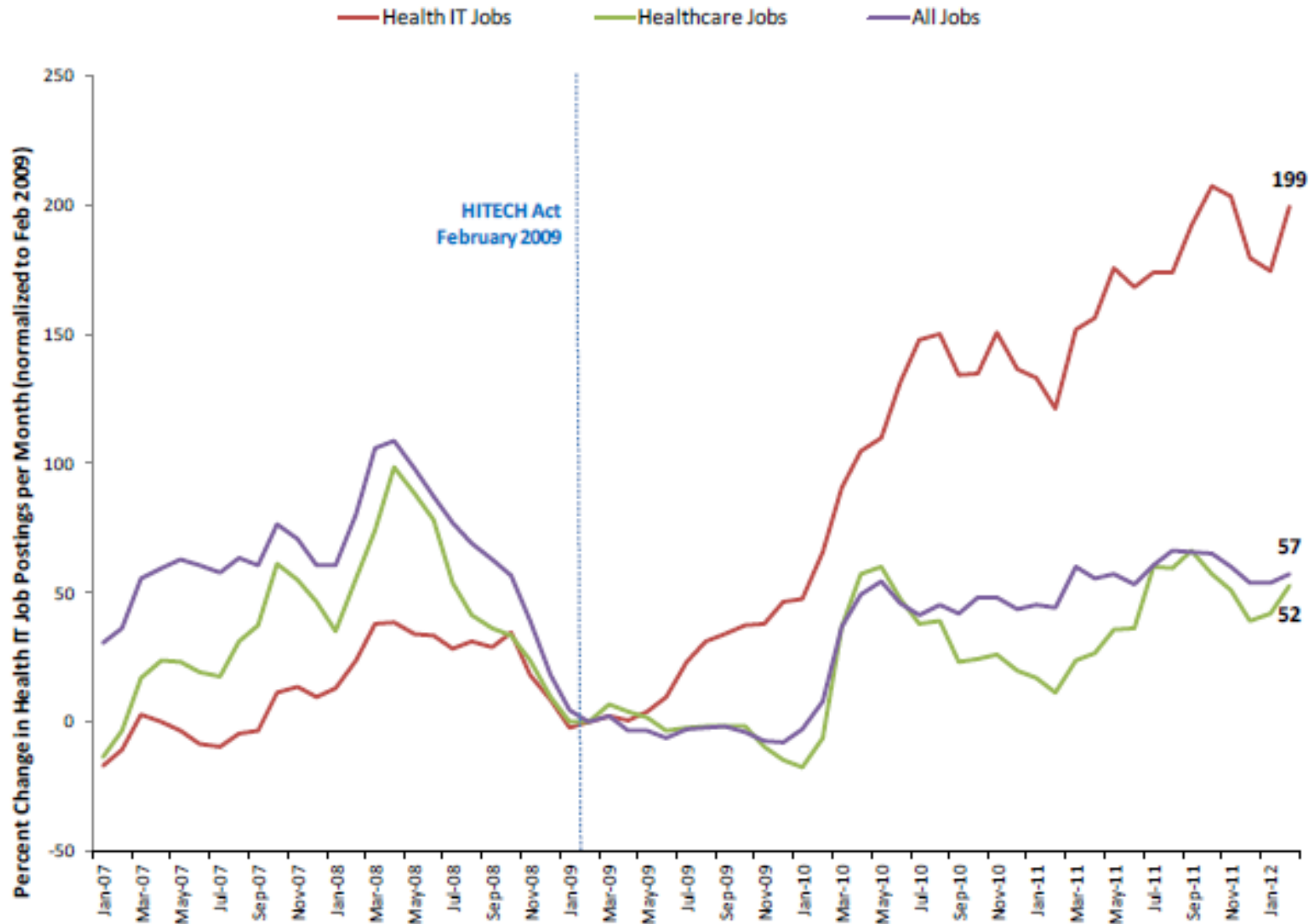
Known needs and shortages – the problem is real

- Analysis of HIMSS Analytics Database™ estimated need of 41,000 additional HIT professionals as we moved to more advanced clinical systems (Hersh, 2008)
- ONC increased estimate of need to 50,000, leading to Workforce Development Program being part of HITECH Program (Hersh, 2012)
- Actual numbers hired have been even higher (Furukawa, 2012) – see next slide
- Despite growth of jobs and number trained, shortfalls persist (CHIME, 2012)

HIT employment growth from Bureau of Labor Statistics (Furukawa, 2012)



Percent change in online health IT job postings per month (Furukawa, 2012)



Demand still persists for experienced health IT staff (CHIME, 2012)

- 71% said IT staff shortages could jeopardize an enterprise IT project, while 58% said they would definitely or possibly affect meeting meaningful use criteria for incentive funding
- 85% also expressed concerns about being able to retain current staff
- 67% were aware of the ONC workforce programs, with 12% of those respondents reporting that they had hired graduates from them
 - Education produces for the future; these CIOs need help now
- Skills most often in demand
 - Clinical software implementation and support staff (e.g., EHR, CPOE) – 74%
 - Infrastructure staff – 47%
 - Business software implementation and support staff – 45%

The “tribes” of HIT workforce – overlapping but distinct

- Informatics – based in universities, educational programs usually at graduate level, likely to be affiliated with AMIA
- Health information management (HIM) – based in colleges, educational programs mostly at associate and baccalaureate levels (leading to RHIT and RHIA certifications respectively), likely to be affiliated with AHIMA
- Community colleges – arising out of ONC programs, some alignment with HIM, especially at the RHIT level

Programs for study in informatics

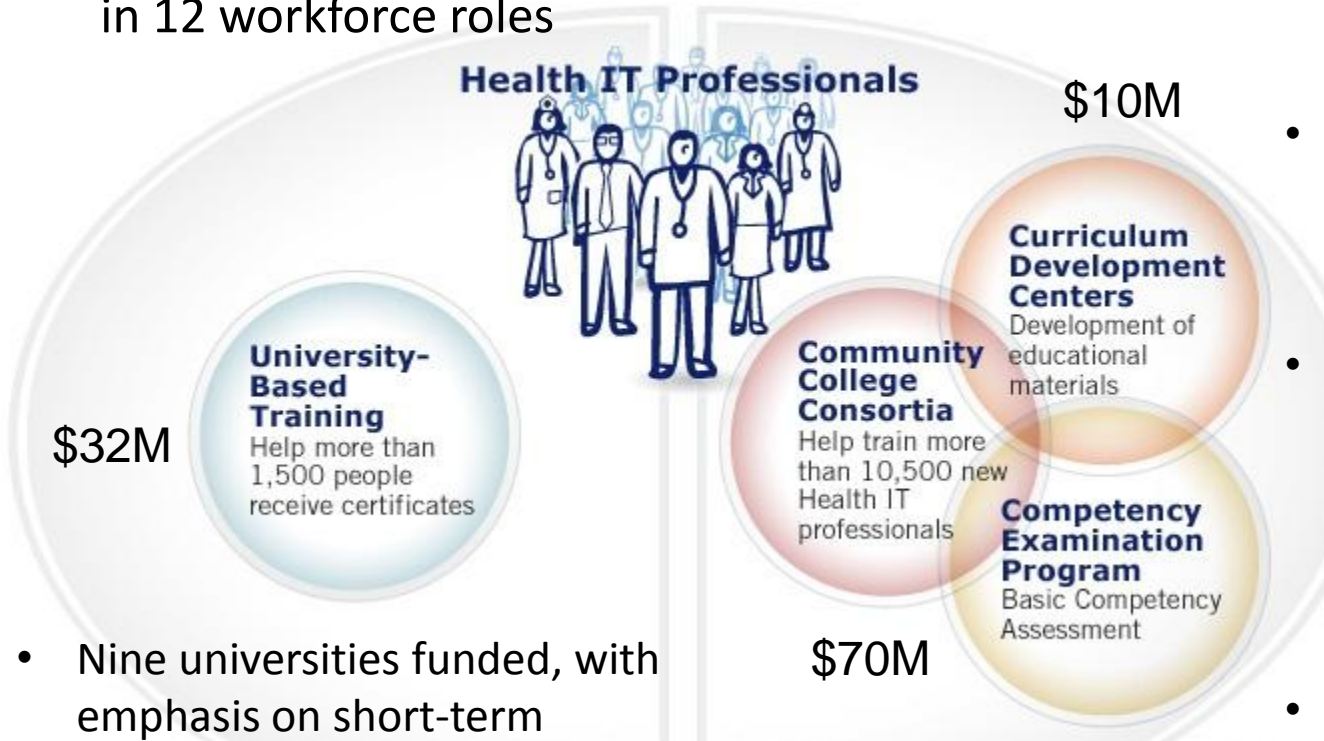
- Educational programs at growing number of institutions
 - <http://www.amia.org/education/programs-and-courses>
- Historically most education at graduate level
 - Informatics is inherently multidisciplinary and there is no single job description or career pathway
- Informatics problems and solutions are global in nature
 - Efforts in Europe (UKCHIP – www.ukchip.org), Africa (Tierney, 2010; Hersh, 2010), South America (Otero, 2010), and elsewhere
 - Leadership by IMIA Working Group on Education (“recommendations” – Mantas, 2010)

Experience of the OHSU program (<http://www.ohsu.edu/informatics/>)

- Graduate level programs at Certificate, Master's, and PhD levels (Hersh, 2007)
 - “Building block” approach allows courses to be carried forward to higher levels
- Two “populations” of students
 - “First-career” students more likely to be full-time, on-campus, and from variety of backgrounds
 - “Career-changing” students likely to be part-time, distance, mostly (though not exclusively) from healthcare professions
- Many of latter group prefer “a la carte” learning
 - This has led to the successful 10x10 (“ten by ten”) program that began as OHSU-AMIA partnership (Hersh, 2007; Feldman, 2008)
 - Overview and access to demo: <http://www.billhersh.info/10x10.html>
 - Significant minority of these adult learners do not complete a program but still use knowledge and skills gained

ONC Workforce Development Program

Investment of \$118M based on estimated need for 51,000 professionals in 12 workforce roles



- Nine universities funded, with emphasis on short-term training using distance learning
- OHSU funded to enroll trainees in existing programs

- Five universities funded to develop curricula for community college programs
- OHSU funded to develop curricula and to serve as National Training & Dissemination Center (NTDC)
- Curriculum available at www.onc-ntdc.info

Curriculum Development Centers Program

- Five universities to collaboratively develop (with community college partners) HIT curricula for 20 components (courses)
 - Oregon Health & Science University (OHSU)
 - Columbia University
 - Johns Hopkins University
 - Duke University
 - University of Alabama Birmingham
- One of the five centers (OHSU) additionally funded as National Training and Dissemination Center
- Version 2 of curriculum delivered to community colleges in May, 2011, with release to all institutions of higher education in July, 2011
 - Can be downloaded from www.onc-ntdc.info
- Version 3 in production and slated for delivery in March, 2012

Components of the ONC HIT curriculum

1. Introduction to Health Care and Public Health in the U.S.
2. The Culture of Health Care
3. Terminology in Health Care and Public Health Settings
4. Introduction to Information and Computer Science
5. History of Health Information Technology in the U.S.
6. Health Management Information Systems
7. Working with Health IT Systems
8. Installation and Maintenance of Health IT Systems
9. Networking and Health Information Exchange
10. Fundamentals of Health Workflow Process Analysis & Redesign
11. Configuring EHRs
12. Quality Improvement
13. Public Health IT
14. Special Topics Course on Vendor-Specific Systems
15. Usability and Human Factors
16. Professionalism/Customer Service in the Health Environment
17. Working in Teams
18. Planning, Management and Leadership for Health IT
19. Introduction to Project Management
20. Training and Instructional Design

(Lab components using VA VistA EHR)

Another outcome of project: VistA for Education

Vista CPRS in use by: Doctor,One (BROKERSERVER)

File Edit View Tools Help

EIGHT.PATIENT Visit Not Selected Primary Care Team Unassigned

666-00-0008 Apr 07,1935 (75) Provider: DOCTOR.ONE

Flag VistaWeb Postings
Remote Data CAD

Active Problems	Allergies / Adverse Reactions	Postings
Headache Hypertension Hyperlipidemia Acute Myocardial Infarction, Unspecified Site, Episode Of Care Unspecified Chronic Systolic Heart Failure Diabetes Mellitus Type II Or Unspecified	Penicillin Chocolate	Allergies Crisis Note May 21,2000 Advance Directive Completed May 16,2007 Advance Directive Oct 18,2000 Advance Directive Oct 18,2000

Active Medications	Clinical Reminders	Due Date
Metoprolol Tartrate 50mg Tab Active	Depression Screening	DUE NOW
Simvastatin 40mg Tab Active	PC Nutritional Screening	DUE NOW
Non-VA Aspirin 81mg Ec Tab Active	Diabetes - Urinalysis	DUE NOW
	Influenza Vaccine	DUE NOW
	Pneumococcal vaccine (Pneumovax)	DUE NOW

Recent Lab Results	Vitals	Appointments/Visits/Admissions
No Orders Found.	T 98.5 F Mar 05,2010 09:00(36.9 C) P 74 Mar 05,2010 09:00 R 22 Aug 31,2009 10:00 BP 134/81 Mar 05,2010 09:00 HT 70 in Aug 31,2009 10:01 (177.8 cm) WT 178 lb Mar 05,2010 09:00(80.7 kg) PN 1 Mar 05,2010 09:00 POX 98 Dec 01,2009 08:53 BMI 25.59 Mar 05,2010 09:00	Aug 26,10 21:19 Cardiology Action Required Aug 12,10 08:00 General Medicine Action Required Aug 11,10 08:00 General Medicine Action Required Aug 10,10 08:00 General Medicine Action Required Aug 09,10 08:00 General Medicine Action Required

Cover Sheet Problems Meds Orders Notes Consults Surgery D/C Summ Labs Reports

Certifications

- Community colleges
 - RHIT
 - ONC competency exams
- HIM
 - RHIT and RHIA
 - Master's level in HIM and health informatics
- Informatics
 - Clinical informatics physician subspecialty – professional recognition for growing number of physicians who “practice” clinical informatics, exemplified by the Chief Medical Informatics Officer (CMIO) (Shortliffe, 2011)
 - Other certifications likely to emerge for non-physician clinical informaticians at doctoral and master's levels

Future directions for US and Europe

- Short-term
 - Alignment of program levels, certifications, curricula – mapping terminology across continents
 - Exchanges of credentials – someone trained on one continent can be credentialed on the other
- Long-term
 - Standardization of competencies, curricular content, credentials