

Recent Developments in Biomedical and Health Informatics Education in the USA

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Overview of talk

- Health information technology (HIT) “stimulus” in the USA
- HIT “workforce development”
- Experience of our program at OHSU
- AMIA 10x10 Program
- Clinical informatics subcertification



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The US has a (not so) new advocate for health information technology (HIT)



“To lower health care cost, cut medical errors, and improve care, we’ll computerize the nation’s health records in five years, saving billions of dollars in health care costs and countless lives.”

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Health Information Technology for Economic and Clinical Health (HITECH) Act

- Portion of the American Recovery and Reinvestment Act (ARRA) that allocates \$29 billion to the Office of the National Coordinator for Health IT (ONC) to provide incentives for “meaningful use” of HIT through
 - Adoption of electronic health records (EHRs)
 - Health information exchange (HIE)
 - Infrastructure
 - Regional extension centers – 60 across country
 - Research centers – four centers in specific areas
 - Beacon communities – 17 “beacon” demonstration projects
 - Workforce development – four programs

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ONC workforce development program

- Based on estimated need for 51,000 additional professionals needed to implement HITECH agenda
- ONC has allocated \$118M in HITECH funds for four programs
 - Community College Consortia to Educate Health Information Technology Professionals Program (\$70M)
 - Curriculum Development Centers Program (\$10M)
 - Program of Assistance for University-Based Training (\$32M)
 - Competency Examination for Community College Programs (\$6M)

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Program based on anticipated 12 workforce roles

- Mobile Adoption Support Roles
 - Implementation support specialist*
 - Practice workflow and information management redesign specialist*
 - Clinician consultant*
 - Implementation manager*
- Permanent Staff of Health Care Delivery and Public Health Sites
 - Technical/software support staff*
 - Trainer*
 - Clinician/public health leader†
 - Health information management and exchange specialist†
 - Health information privacy and security specialist†
- Health Care and Public Health Informaticians
 - Research and development scientist†
 - Programmers and software engineer†
 - Health IT sub-specialist†

(to be trained in *community colleges and † universities) (Monegain, 2009)

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Community College Consortia to Educate HIT Professionals Program

- Five regional consortia of 84 community colleges to develop short-term programs to train 10,000 individuals per year in the six community college job roles
- Anticipated enrollment of people with healthcare and/or IT backgrounds – probably baccalaureate or higher degrees



Curriculum Development Centers Program

- Five universities to collaboratively develop (with community college partners) HIT curricula for 20 components (topics)
 - 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
 - Training – event for about 200 community college faculty held in August, 2010
 - Dissemination – Web site and feedback collection for curricula



The 20 components of the HIT curriculum

- Introduction to Health Care and Public Health in the U.S
- The Culture of Health Care
- Terminology in Health Care and Public Health Settings
- Introduction to Information and Computer Science
- History of Health Information Technology in the U.S.
- Health Management Information Systems
- Working with Health IT Systems
- Installation and Maintenance of Health IT systems
- Networking and Health Information Exchange
- Fundamentals of Health Workflow Process Analysis & Redesign
- Configuring EHRs
- Quality Improvement
- Public Health IT
- Special Topics Course on Vendor-Specific Systems
- Usability and Human Factors
- Professionalism/Customer Service in the Health Environment
- Working in Teams
- Planning, Management and Leadership for Health IT
- Introduction to Project Management
- Training and Instructional Design

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Program of Assistance for University-Based Training (UBT)

- Funding for education of individuals in job roles requiring university-level training at nine universities with existing programs
 - Oregon Health & Science University (OHSU)
 - Columbia University
 - University of Colorado Denver College of Nursing
 - Duke University
 - George Washington University
 - Indiana University
 - Johns Hopkins University
 - University of Minnesota (consortium)
 - Texas State University (consortium)
- Emphasis on short-term certificate programs delivered via distance learning
- OHSU program being run as “scholarship” program for existing Graduate Certificate and Master of Biomedical Informatics programs

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Experience of our program at OHSU

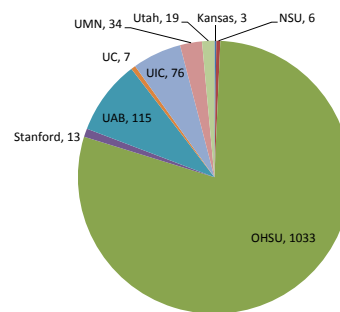
- <http://www.ohsu.edu/dmice/>
- Graduate-level programs at Certificate, Master's, and PhD levels
 - “Building block” approach allows courses to be carried forward to higher levels
- Two “populations” of students
 - “First-career” students more likely to be full-time, on-campus, and from variety of backgrounds
 - “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

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AMIA 10x10 (“ten by ten”) program

- Based on call by Charles Safran for one physician and one nurse trained in informatics in all US hospitals (Safran, 2005)
- Named and operationalized by OHSU in 2005 (Hersh, 2007)
- Program has been well-received and about 15% of graduates go on to further study (Feldman, 2008)



Nearing end of 2010, a total of 1306 people have completed or are currently enrolled



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Clinical informatics specialization in medicine

- AMIA has submitted proposal to American Board of Medical Specialties (ABMS) to develop subspecialty in clinical informatics
 - Physicians board-certified in other areas will be able to sub-certify (Detmer, 2010)
 - Curriculum (Gardner, 2009) and training requirements (Safran, 2009) described in Mar/Apr 2009 JAMIA
- Initial effort focused on physicians; other efforts to follow in other doctoral-level professions in future

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Conclusions

- Informatics is maturing as a discipline and profession worldwide
 - Field has emerging identity as one with practitioners using information to solve biomedical and health problems with information systems
- There are tremendous opportunities now and in the future
 - A competent and well-trained workforce is an essential requirement
- Stay tuned for the results of exciting “experiments” in the US and elsewhere in the years ahead!

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