THE UNIVERSITY OF TEXAS AT AUSTIN
Health Informatics and Health IT

Innovative Programs in Health Informatics and Health IT for Workforce Creation and Research

Leanne H. Field, Ph.D.
Director, Health Informatics and Health IT Programs

The Healthcare IT Workforce:

a critical link in the delivery and execution of 21st century healthcare using integrated technological tools

HIMSS Analytics - First-ever Health IT Workforce Survey

- *Approximately 1/3 of healthcare provider organizations indicated they had to place an IT initiative on hold because of staffing shortages, and many expressed that these lower priority issues created risks to patient care and revenue generation.*

- *The lack of a qualified talent pool was the biggest reported challenge to fully staffing both healthcare providers and vendor organizations.*

HIMSS Workforce Survey
HIMSS Analytics
July 2013

http://apps.himss.org/content/files/
2013HIMSSWorkforceSurvey.pdf

Health IT talent in high demand

Large IT projects, ICD-10 key drivers

BY BERNIE MONEGAIN, Editor

BOSTON – American healthcare workers' confidence levels remained fairly consistent in the second quarter of 2013, according to the Q2 Randstad Healthcare Employee Confidence Index. Confidence levels among healthcare workers decreased by one-fifth of a point, to 54.3, in the second quarter of 2013.

Harris Interactive conducted the online survey on behalf of Randstad Healthcare in April, May and June of this year, among 188 health-

> ## "Employers have to find innovative ways to compete for top talent."
>
> ### Steve McMahan

care workers, ages 18 and older. It included physicians, healthcare administrators, healthcare IT professionals and other healthcare professionals.

"Healthcare workers are in high demand, with the sector experiencing some serious labor shortages. For example, healthcare information technology specialists such as medical coders and healthcare consultants for large IT projects are in high demand within the field due to the implementation of ICD-10. Employers have to find innovative ways to compete for top talent," said Steve McMahan, executive vice president of

Randstad US, Professionals.

A March report by Wanted Analytics indicated that more than one million jobs were posted for healthcare-related occupations, representing a 3 percent year-over-year increase in hiring. Registered nurses led the country in the most job ads, up 13 percent when compared to March of 2012. However, critical care nurses had the highest year-over-year growth with 34 percent more jobs posted online this year than there were last March, according to Wanted Analytics," McMahan added.

"Even with the recent delay of the employer mandate provision of the ACA," he said, "many healthcare organizations can't pause due to other time-sensitive, mandated initiatives, such as the implementation of ICD-10 and the rigorous requirements to transition to electronic medical records by 2015. This, coupled with the ongoing issue of trying to augment nurse and physician staffing levels with the coming impact of the ACA, is creating challenging times for most."

SURVEY HIGHLIGHTS:

Percentage of healthcare workers who believe more jobs are available virtually unchanged

In the second quarter of 2013, 20 percent of healthcare workers believe more jobs available, slipping one percentage point from Q1 2013. More than half of healthcare workers (52%) believe fewer job opportunities available, holding steady compared to the previous quarter.

Majority of healthcare workers confident they can find a new job; percentage remains unchanged

More than half of healthcare workers surveyed (54%) indicate they are confident they could find a job in the next 12 months, showing no change from the previous quarter.

A March report by Wanted Analytics indicated that more than one million jobs were posted for healthcare-related occupations.

Employer confidence rises among healthcare workers

About six-in-10 (61%) healthcare workers feel confident in the future of their employer, rising three percentage points from the previous quarter.

More healthcare workers optimistic about economic strength

The number of healthcare workers who say the economy is getting stronger rose four percentage points this quarter to 26 percent. Forty-

three percent of healthcare workers believe the economy is weakening, rising two percentage points from the previous quarter.

Meanwhile, a new survey by CareerBuilder concludes that extended healthcare job vacancies are taking a toll on most healthcare organizations.
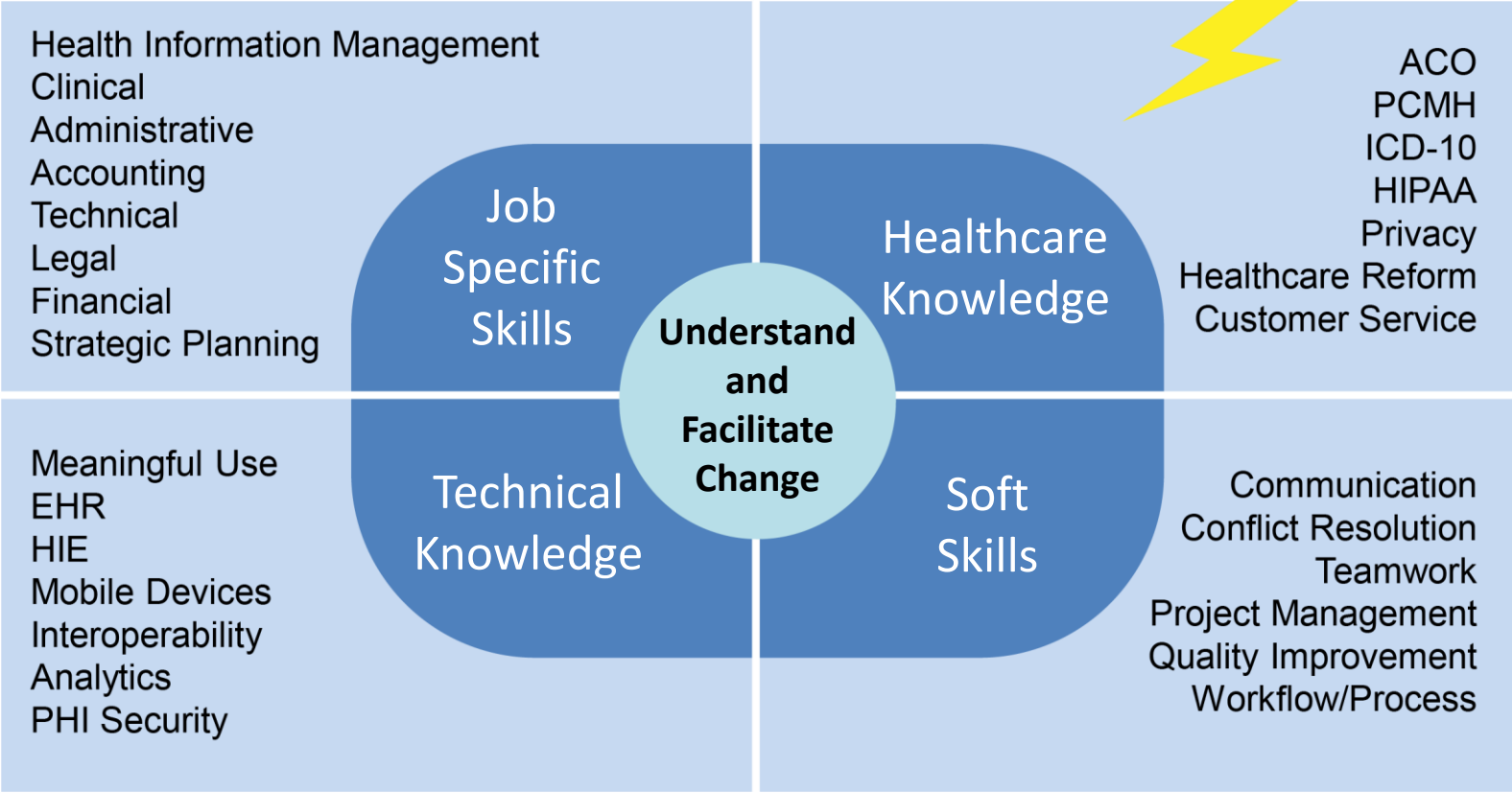
"The job market for healthcare positions continues to grow quickly in the rebounding economy, but filling key positions is far from easy, Jason Lovelace, president of

CareerBuilder Healthcare, commented in releasing the results. It takes proactive recruitment strategies focused on building pipelines and observing relevant workforce analytics. Organizations are struggling to find a balance between bringing in new talent and hiring experienced industry veterans capable of stepping into stressful environments with little ramp-up time. It's important, however, that healthcare leaders develop pathways for new graduates." ∎

Healthcare IT News: September 2013
http://www.pageturnpro.com/MedTech-Media/52817-Healthcare-IT-News-September-2013/index.html#1

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Core Competencies and Fluency with Multiple Technological Tools are needed…

Health Information Management
Clinical
Administrative
Accounting
Technical
Legal
Financial
Strategic Planning

Job Specific Skills

Healthcare Knowledge

ACO
PCMH
ICD-10
HIPAA
Privacy
Healthcare Reform
Customer Service

Understand and Facilitate Change

Meaningful Use
EHR
HIE
Mobile Devices
Interoperability
Analytics
PHI Security

Technical Knowledge

Soft Skills

Communication
Conflict Resolution
Teamwork
Project Management
Quality Improvement
Workflow/Process

Innovative Health Informatics and Health IT Programs:
The University of Texas at Austin

History of Programs at UT Austin

November 2009

Texas e-Health Alliance - a workforce is needed for Health IT;
College of Natural Sciences responds

January 2010

Curriculum development begins with industry partners; PURE-HIT
Consortium applied for university-based training grant, Office of National
Coordinator for Health IT (ONC), U.S. Department of Health and Human Services

April 2010

PURE-HIT consortium receives $5.4 million; UT Austin $2.7 million
Curriculum development continues; recruit faculty

May 2010

Recruit first class of students

June 2010

Inaugural Summer Certificate program begins with 55 students

July 2010

Graduate 54 students from the program!

August 2010 – November 2011

100% of graduates seeking Health IT jobs are hired

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Consortium of Texas Universities

- **Professional University Resources and Education for Health IT (PURE-HIT)**

    - Texas State University

    - UT School of Biomedical Informatics

    - The University of Texas at Austin
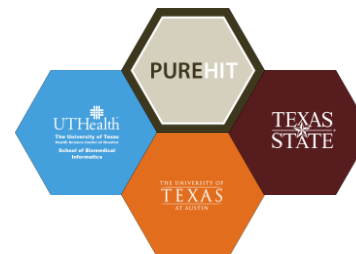
Generous Corporate and Healthcare Supporters

- Allen Technologies
- AHIMA
- Allscripts
- Athenahealth
- Availity
- Austin Regional Clinic
- Blue Cross Blue Shield of Texas
- Cerner
- Cisco
- Civility Consulting
- CTG Healthcare Solutions
- Delisi Communications
- Dell Healthcare and Life Sciences

- eClinicalWorks
- e-MDs
- Fujitsu
- GE Healthcare
- Greenway Medical
- GRIDdesign
- Healthcare Transformation Solutions
- ICA
- Infor
- Intel
- Intel-GE Care Innovations
- Jericho Systems
- Labcorp
- Lone Star Circle of Care/ Centex System Support Services
- maxIT
- McKesson

- NextGen Healthcare
- Orion Health
- Peerless Industries
- Sandlot Solutions
- SciImage
- Sentry Data Systems
- Seton Healthcare Familys
- Scientific Technologies Corporation
- Stryker Corporation
- St. David's Foundation
- TEKsystems
- Texas e-Health Alliance
- TMF Health Quality Institute
- Texas Medical Association
- UT Southwestern Medical Center
- Welch Allyn
- White Glove Technologies

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UT Austin Certificate Programs

- **Public Health Leader Certificate**
  - Public health informatics certificate program for public health professionals (2011-2013)
- **Health IT Privacy and Security Certificate**
  - Computer Science students at UT Austin (2011)

- **Health IT Nine Week Certificate Program**
  - Designed for recent college graduates and others who want to enter the Health IT workforce (ongoing)

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Health Informatics and Health Information Technology Certificate Program

Nine Week Professional Education Program

Purpose: **to prepare post-baccalaureate students to rapidly enter the Health IT workforce**

Overview: Nine week integrated program; spiral curriculum

WEEKS 1- 6

- **Five rigorous courses** to build Health IT knowledge and competencies

- **Hands-on skill development** with multiple Health IT technologies

- **Research projects**

- **Professional development**

WEEKS 7-8

Two-week practicum off campus with industry, healthcare organizations, government or other hosts

WEEK 9

Research project presentations and on-site job interviews

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Educational Partnership with UT Southwestern Medical Center

- **Successful program for distance learning**
  - Remotely train students in Dallas
  - UTSW CIO and CMIO lecture on hospital systems; provide hospital-based practicum in medical center

Student Characteristics

- **Recent College Graduates** (85%)
  - Variety of majors and degree programs
  - GPA > 2.75
  - Strong interest in healthcare
  - Variety of college experiences – shadowing medical professionals, research, global travel

- **Working Professionals** (15%)
  - Previous healthcare experience
  - Previous computer or IT experience
  - Other professions (e.g. teachers)
  - Military veterans

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Undergraduate Majors
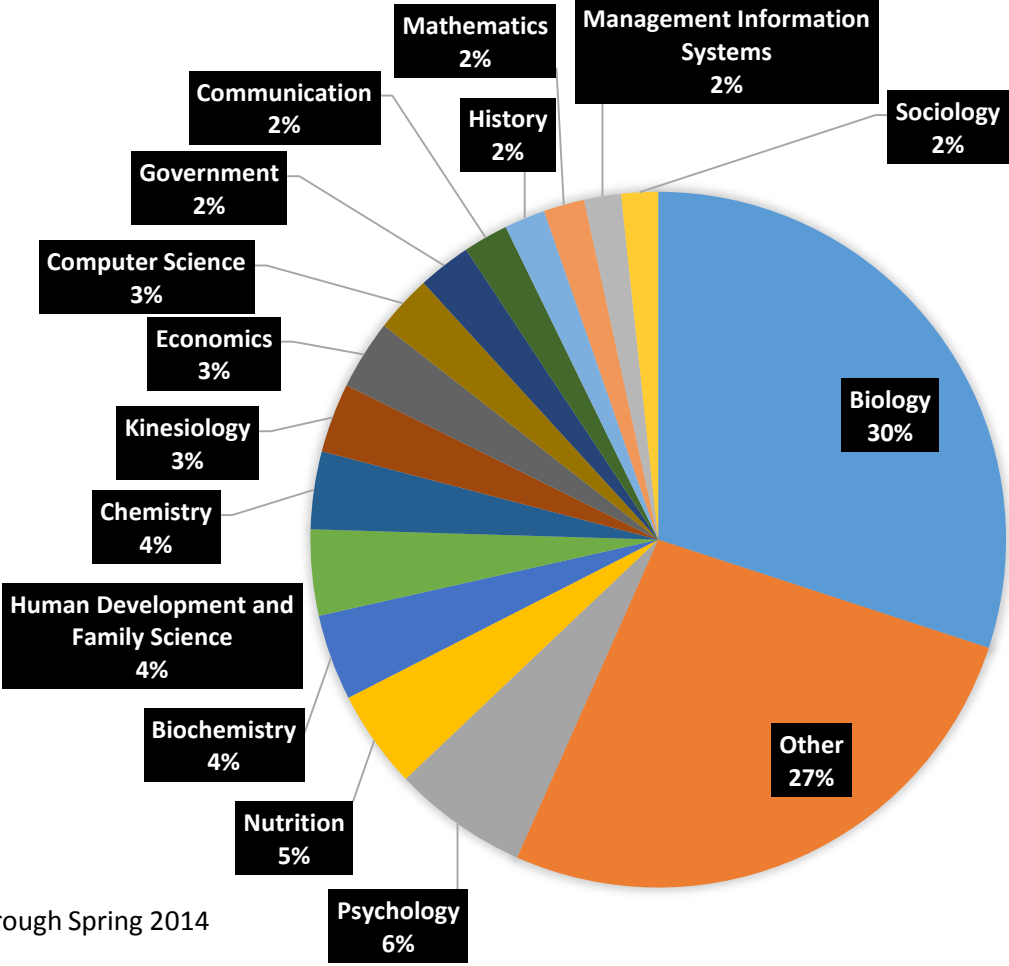
Summer 2010 through Spring 2014

N=526

"Other" Undergraduate Majors

Accounting
Advertising
Allied Health
Anthropology
Applied Learning and Development
Applied Mathematics
Biomedical Engineering
Biomedical Science
Business
Business Administration
Business Management
Chemical Engineering
Computer Information Systems
Computer Network Engineering
Computing and Information Systems
Consulting and Change
    Management
Corporate Communication
Criminal Justice
Education
Electrical Engineering
Elementary Education

Engineering
English
Finance
Fine Arts
Forensic Science
General Studies
Genetic Engineering
Global Studies
Health Management and
    Education
Health Promotion
Health Science
Healthcare Administration
Healthcare Information
    Systems
Hotel and Restaurant
    Management
Human Resource Management
Industrial Engineering
Information Technology
Interactive Design
International Studies

Latin American Studies
Learning and Development
Management
Marketing
Media Arts
Music
Nursing
Petroleum Land Management
Pharmacy
Philosophy
Physical and Applied Geography
Physics
Plan II Honors
Political Science
Public Health
Public Relations
Radio, Television & Film
Rhetoric and Writing
Sports Management
Telecommunications
Textile and Apparel
Theology

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Representative Graduate and Professional Degrees

- Business
- Computer Information Systems
- Computer Science
- Dentistry
- Education
- Engineering
- Health Administration
- Information Technology
- Law

- Management
- Medicine
- Nursing
- Pharmacy
- Public Health
- Public Policy
- Social Work
- Sociology

Program Recruiting and Admission

Recruiting

- Website
- Information sessions
- E-mails
- Academic advisors
- Posters and flyers
- Webinars
- Social media
- Newspaper
- Recommendations from former students!

Admission based on:

- Review of application and academic transcript
- Writing sample
- Group interview
    - Focused on communication skills
- Willingness to travel and relocate!

Proven three-fold approach to prepare graduates for the Health IT workforce

1. Knowledge and Skills Development
2. Real-World Experience
3. Professional Development

Health Information Technology

Health IT Consultant

Organizations
- Physician offices
- Clinics
- LTC
- Hospitals
- Government
- Home health
- Vendors
- Insurer
- Regional extension centers

Roles
- Implementer
- Regulator
- Trainer
- Advisor
- Project manager
- Payer
- Marketing/sales associate
- Analyst

EHR/HIE
- where
- why
- when
- how
- what
- who

Skills needed
- Interpersonal
- Computer
- Consulting
- Training
- Project management
- Workplace analysis

Knowledge base
- Business
- Medicine
- Technology
- Law/policy
- Public health

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Curriculum: Five Courses

1. **Introduction to Health Informatics**

2. **Fundamentals of Health Information Technology**

3. **Workflow, Process Redesign and Project Management**
   - Graduates eligible to sit for the *Certified Associate in Project Management* (CAPM) examination (Project Management Institute)

4. **Operational Models of Healthcare Practice**

5. **Electronic Health Records and Health Information Exchange Systems (Laboratory)**

6. **Practicum in Health IT**

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Enrichment Opportunities

- **Disease du Jour**

- **Guest Speakers**

- **EHR Demonstrations**

- **Hands-on skill development in the Health IT Learning Center**
  - Workflow simulations in mock ambulatory clinic
  - 7 EHR ambulatory software systems; 1 inpatient system
  - 2 HIE software systems
  - Immunization registry and electronic laboratory reporting
  - HL7/SQL
  - Data Analytics Workshop

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Approach to Teaching EHR and HIE Systems
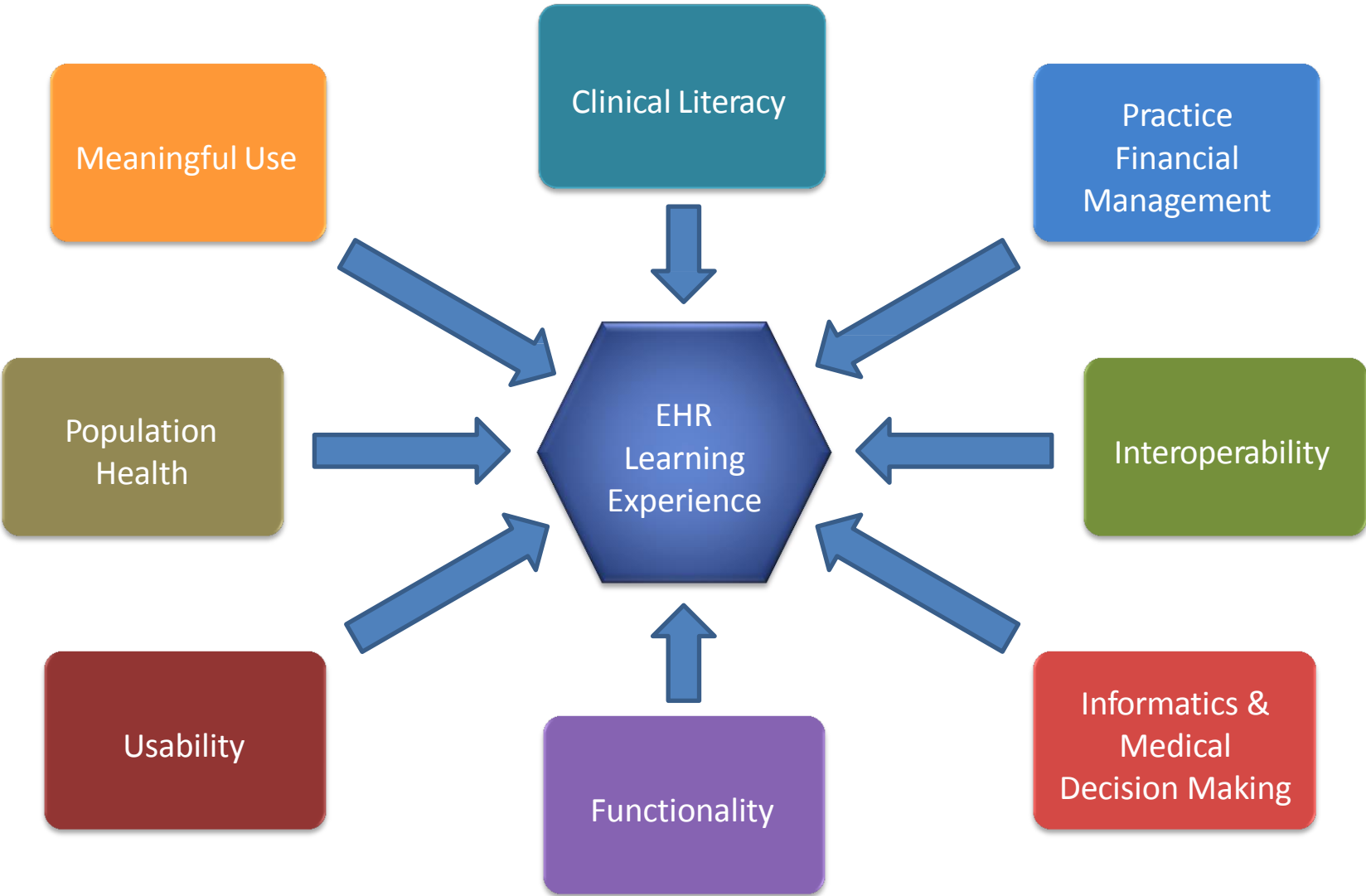
EHR Scenarios

Themes

- **Billing**
- **Continuum of care**
- **Patient Safety**
- **Policy**
- **Privacy and security**
- **Public health**
- **Quality management**
- **Quality reporting**
- **Standards and Interoperability**
- **Telemedicine**
- **Usability**

AMBULATORY EHR LEARNING ACTIVITIES

Diabetes Scenario

The University of Texas at Austin Health Informatics and Health Information Technology Program
Revision 7/14/2014

AMBULATORY EHR LEARNING ACTIVITIES

Congestive Heart Failure

The University of Texas at Austin Health Informatics and Health Information Technology Program
Revision 6/18/2014

INPATIENT EHR LEARNING ACTIVITIES

Appendicitis

The University of Texas at Austin Health Informatics and Health Information Technology Program
Revision 7/9/2014

AMBULATORY EHR LEARNING ACTIVITIES

Breast Mass

The University of Texas at Austin Health Informatics and Health Information Technology Program
Revision 6/25/2014

AMBULATORY EHR LEARNING ACTIVITIES

Asthma Scenario

The University of Texas at Austin Health Informatics and Health Information Technology Program
Revision 7/14/2014

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OPEN EMR

AMBULATORY EHR LEARNING ACTIVITIES

EHR Configuration Exercises Using OpenEMR

The University of Texas at Austin Health Informatics and Health Information Technology Program

Revision 9/18/2014
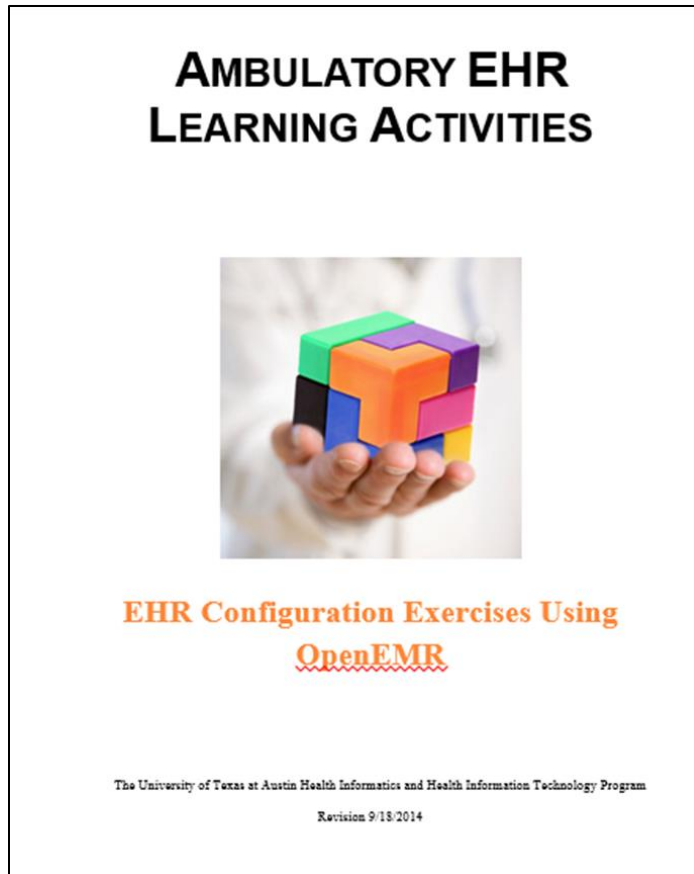
- **Goal:** to gain experience with open source EHR architecture

- **Approach:** Hands-on exercises in EHR configuration for a physician's office practice:
  – Establish facility and practice parameters
  – Create users and role-based logins
  – Set up payer profiles
  – Assign security privileges for users
  – Input fee schedules
  – Create CDSS rules
  – Understand EHR database structure and queries
  – Run clinical and administrative reports

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AMBULATORY EHR
LEARNING ACTIVITIES

HL7

(Ctrl) ▾

HL7 Messaging

The University of Texas at Austin Health Informatics and Health Information Technology Program

Revision 9/18/2014

- **Goal:** To understand HL7 messaging standards, including differences in ver 2.x and 3.x message structures
  - Create ADT, orders and result message types (Ver 2.x) using an HL7 editor
  - Test HL7 message types for correct syntax and content requirements
  - View inbound and outbound HL7 messages transmitted between an EHR and a referrnce laboratory

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Data Analytics – Meaningful Analysis of Large Healthcare Data Sets

- **Goal:** to develop problem solving skills needed to answer questions in an ever complex and ever changing healthcare ecosystem

- **Approach: create a simulated healthcare environment**
  - Data set with 100,000 covered lives
    - 2 hospitals; 3 physician practices
    - Expand to one million lives to emulate current ACO, PCMH and other population health models

  - Queries involving clinical case mix, financial risk determination, population health management, and predictive analytics

  - Hands-on analyses with Excel, Access, SQL and other analytic tools.

Research

- **Value of research for Health Informatics and Health IT students**
  - Teach basic research methodologies
  - Develop problem solving skills
  - Enhance oral and written communication skills

- **Two types of research projects:**
  - **Research projects for 9 week certificate students**
    - Pairs of students mentored by faculty
    - Poster presentations in Health IT Research Forum
  - **Applied research projects with external partners**
    - Student and faculty participation

Research Themes

- Patient Safety

- Data Analytics

- Interoperability

- Privacy and security

- Telehealth/Telemedicine

- Public Health Informatics

Health Informatics and Health IT

Using Electronic Health Records to Improve Community Health Outcomes: A Case for Query Health in Texas

Leanne H. Field, Ph.D.
Director, Public Health, Health Informatics and Health IT Programs
The University of Texas at Austin

and

James B. Daniel, MPH
Public Health Coordinator
Office of the National Coordinator for Health IT

CDC Public Health Informatics Conference
May 12, 2014

Research Project in Partnership with Jericho Systems

- ***Data Segmentation for Privacy (ONC Pilot Program)***
  - Pilot to simulate advanced patient privacy control over shared medical records
  - Successfully tested 12 scenarios simulating roles of a research university and a marketing network
    - http://wiki.siframework.org/DS4P+Jericho-UT+Austin+Pilot

JERICHO SYSTEMS

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Health IT Learning Center

Classroom
Longhorn Clinic
Health Information Exchange Laboratory

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Classroom: Expert Lectures

Classroom: Group Activities

The Longhorn Clinic
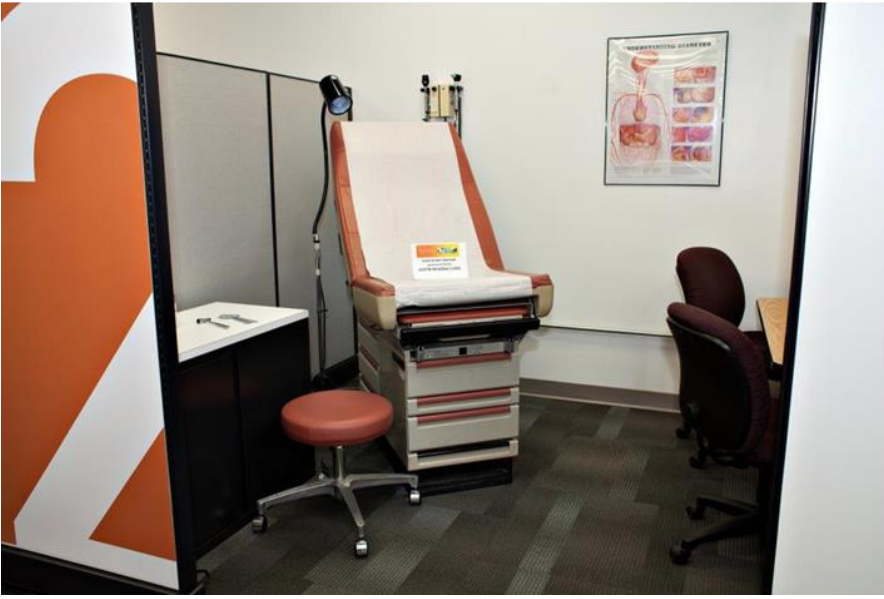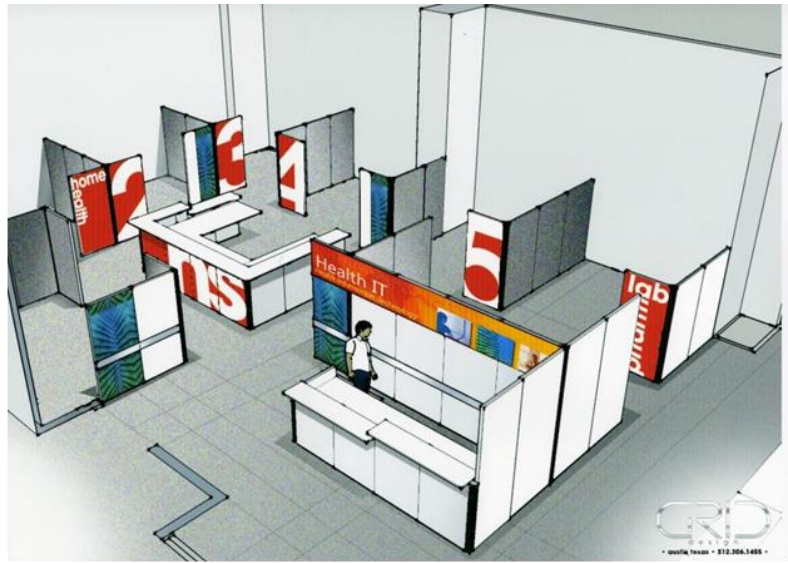
Modeling the Healthcare Continuum of Care
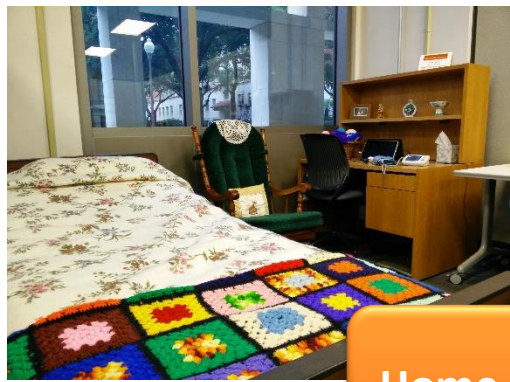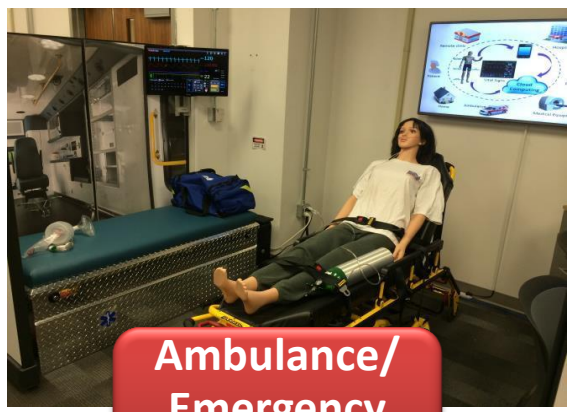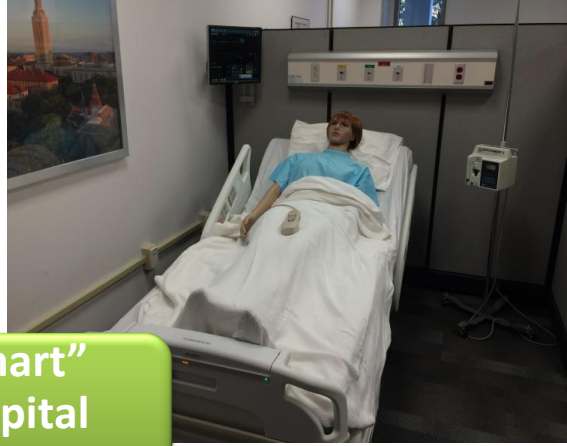
Hands-on Skill Development with EHR Systems

EHR systems: Allscripts, athenahealth, Cerner, eClinicalWorks, e-MDs, Greenway, NextGen

Workflow Exercises in the Longhorn Clinic:
Telemedicine Simulation

Workflow Exercises:

Simulation of Laboratory Reporting, Vital Signs, and Superbill Management

Health Information Exchange Laboratory

Health Information Exchange Laboratory

- *Longhorn Innovation Fund for Technology (LIFT) grant – awarded September, 2011*

- **Goals**
  - Create an interoperability learning laboratory
  - Exchange simulated healthcare data
  - Model laboratory after Texas' "network of networks"
  - Engage students in newest HIE technologies
  - Serve as a test bed and center for research
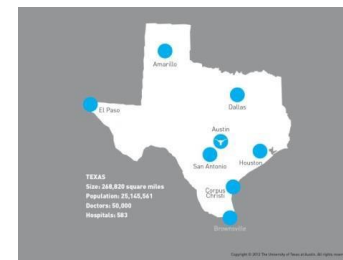
HIE Laboratory (NHB 1.324)
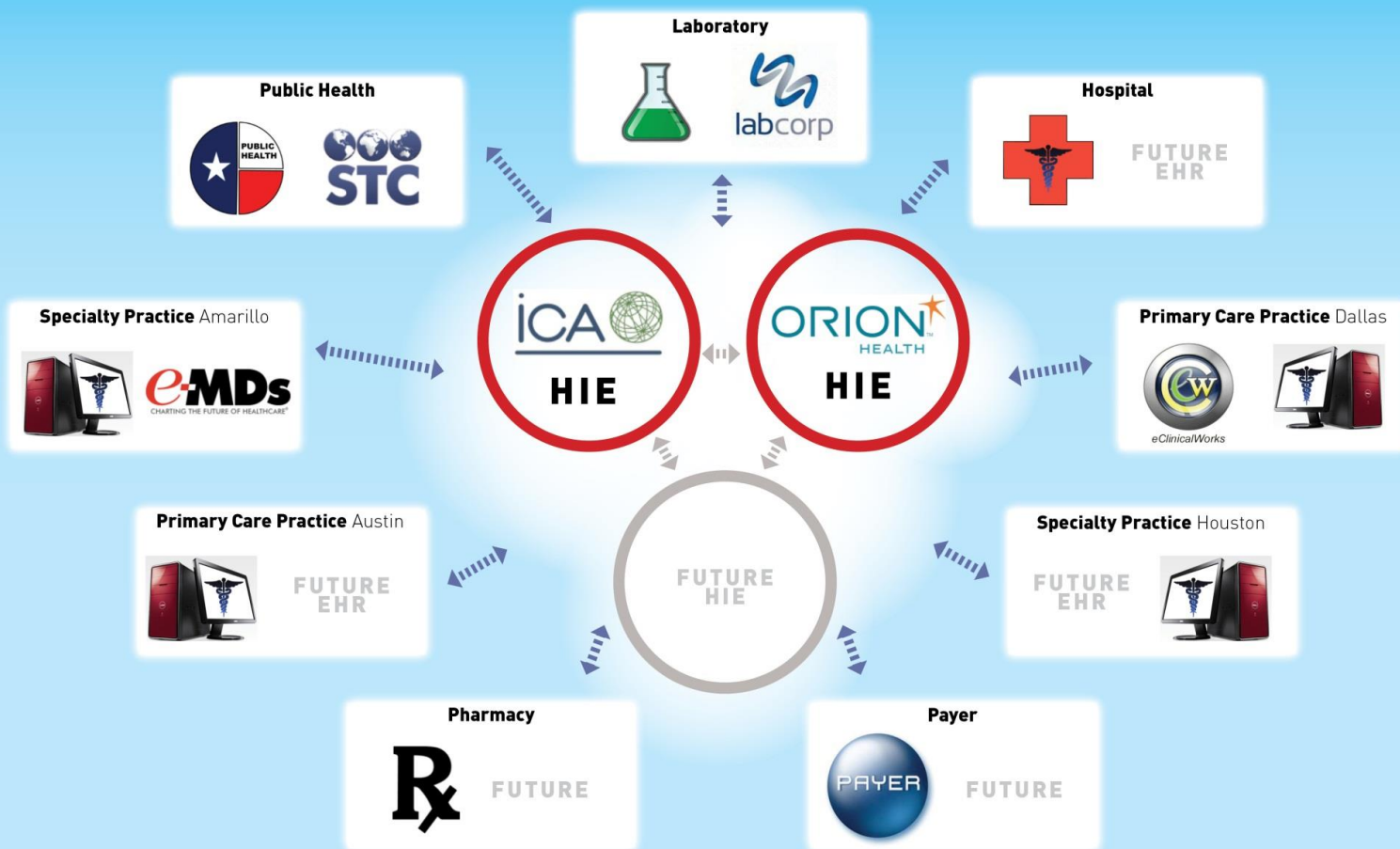
HIE Lab "Use Cases"

- **Exchange Continuity of Care Documents (CCDs) between heterogeneous "virtual" practices via HIEs**

- **Compare progress notes in the EHRs with the CCDs**

- **View Test Patient Records in an HIE portal**
  - Role-Based logins and "Breaking the Privacy Seal"
  - Patient matching exercises – reconcile similar but not identical patient demographics

- **Compare and contrast multiple HIE models**

- **Complete bidirectional transfer of laboratory orders and results**

- **Transfer immunization records from "virtual" physician practices to a simulated public health registry**

Standards Used in the HIE Lab

Transaction / Document Types	IHE and Other Transaction Standards
Transactions between EHRs and HIEs	XDS.b (Cross Enterprise Document Sharing)*
Patient Identity Feed	HL7v2 and ITI-8
Patient Demographic data (ADT)	A04
Patient Update Notification	A08
Patient Identity (PIX) Query	ITI-9
Registry Stored Query	ITI-18
Continuity of Care Document (CCD)	XML C32
Provide and Register Document Set (CCD)	ITI-41
Retrieve Document Set (CCD)	ITI-43
Transactions between EHRs and Other Entities	
Lab Orders and Results	ORM, ORU
Immunizations	VXU

*XCA (Cross Community Access) to be implemented for HIE-to-HIE transactions

HIE Laboratory in Action!

Professional Development

Professional Development Skill Areas
Lectures, Activities, Deliverables

Resume and cover letter creation	Job search strategies	Interview skills
Personal Branding	Networking	Workplace professionalism

Networking Day for Employers

Etiquette Luncheon

Two Week Practicum

Practicum Hosts

- Afoundria
- Austin Regional Clinic
- Corepoint Health
- CTG Healthcare Solutions
- Delisi Communications
- Dell Services
- e-MDs
- eCareSoft
- Greenway Medical
- Gulf Coast Regional Extension Center
- Harden Healthcare
- Harvard University (Data Privacy Lab)
- Healthcare Transformation Solutions

- Healthcare Access San Antonio (HASA)
- Legacy Community Health Services
- Lone Star Circle of Care/Centex System Support Services
- maxIT
- McKesson
- MedSpring Urgent Care
- Memorial Hermann Healthcare System
- Operational Strategies
- Office of the National Coordinator for Health Information Technology
- OZ Systems
- Patient Privacy Rights

Practicum Hosts

- People's Community Clinic
- Premier Family Physicians
- Sandlot Solutions
- San Antonio Head and Neck Surgical Associates
- Scott & White Healthcare
- South Austin Medical Center
- Scientific Technologies Corporation
- Texas e-Health Alliance
- Texas Health and Human Services Commission: Department of Aging and Disability Services, Department of State Health Services, Medicaid Program, Office of e-Health Coordination

- Healthcare Access San Antonio (HASA)
- Legacy Community Health Services
- Lone Star Circle of Care/Centex System Support Services
- maxIT
- McKesson
- MedSpring Urgent Care
- Memorial Hermann Healthcare System
- Operational Strategies
- Office of the National Coordinator for Health Information Technology
- OZ Systems
- Patient Privacy Rights

Research Poster Presentations

- **Judged by members of Health IT industry and healthcare organizations**

Job Interviews

Program Milestones

July 2010

1st in the Nation to graduate students from an ONC-funded program, and to move graduates into the workforce!

Visit from Dr. David Blumenthal, National Coordinator for Health IT
October 2010

"This program has hit a home run!"
Dr. David Blumenthal

June 2011

The program moves into the Norman Hackerman Building, a new science research and teaching building in the center of The University of Texas at Austin campus.

Norman Hackerman Building

Photo by Paul Finkel

Innovation Award
October 2011

- ***Texas-Based Innovation in Healthcare Delivery Award***

Visit from Dr. Farzad Mostashari, National Coordinator for Health IT
January 2012

"Students in this program get jobs after only 9 weeks of training! Terrific!"
-Dr. Farzad Mostashari

Launch of the Health Information Exchange (HIE) Laboratory
PRESS RELEASE - December 6, 2012

"With the launch of our new HIE learning lab, UT Austin's Health IT Certificate students have the future of American health care in their hands. . . . I applaud the vision of our faculty and the enthusiastic support of our private sector partners in making this critical resource available to our students," William M. Sage, M.D., JD, Vice Provost for Health Affairs, The University of Texas at Austin

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Employment Outcomes
2010-2014 Graduates

Individuals Trained (2010-2014)

Session	Graduates	Funding Source
Summer 2010	54	PURE-HIT grant
Summer 2011	54	PURE-HIT grant
Fall 2011	54	Professional Education
Spring 2012	48	Professional Education
Summer 2012	53 Austin; 9 Dallas	PURE-HIT grant
Fall 2012	50 Austin; 10 Dallas	Professional Education
Spring 2013	50 Austin; 9 Dallas	Professional Education
Summer 2013	49 Austin; 5 Dallas	Professional Education
Fall 2013	47 Austin; 7 Dallas	Professional Education
Spring 2014	45 Austin; 7 Dallas	Professional Education
Summer 2014	52 Austin; 9 Dallas	Professional Education
Fall 2014	47 Austin; 6 Dallas	Professional Education
Total in 4.3 years!	665	

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Where Have Our Graduates Gone?

Seeking a Job in Health IT
3%

Unknown
1%

Continuing Education
6%

Working in a Job Other
than Health IT
10%

Working in
Health IT
80%

N = 551
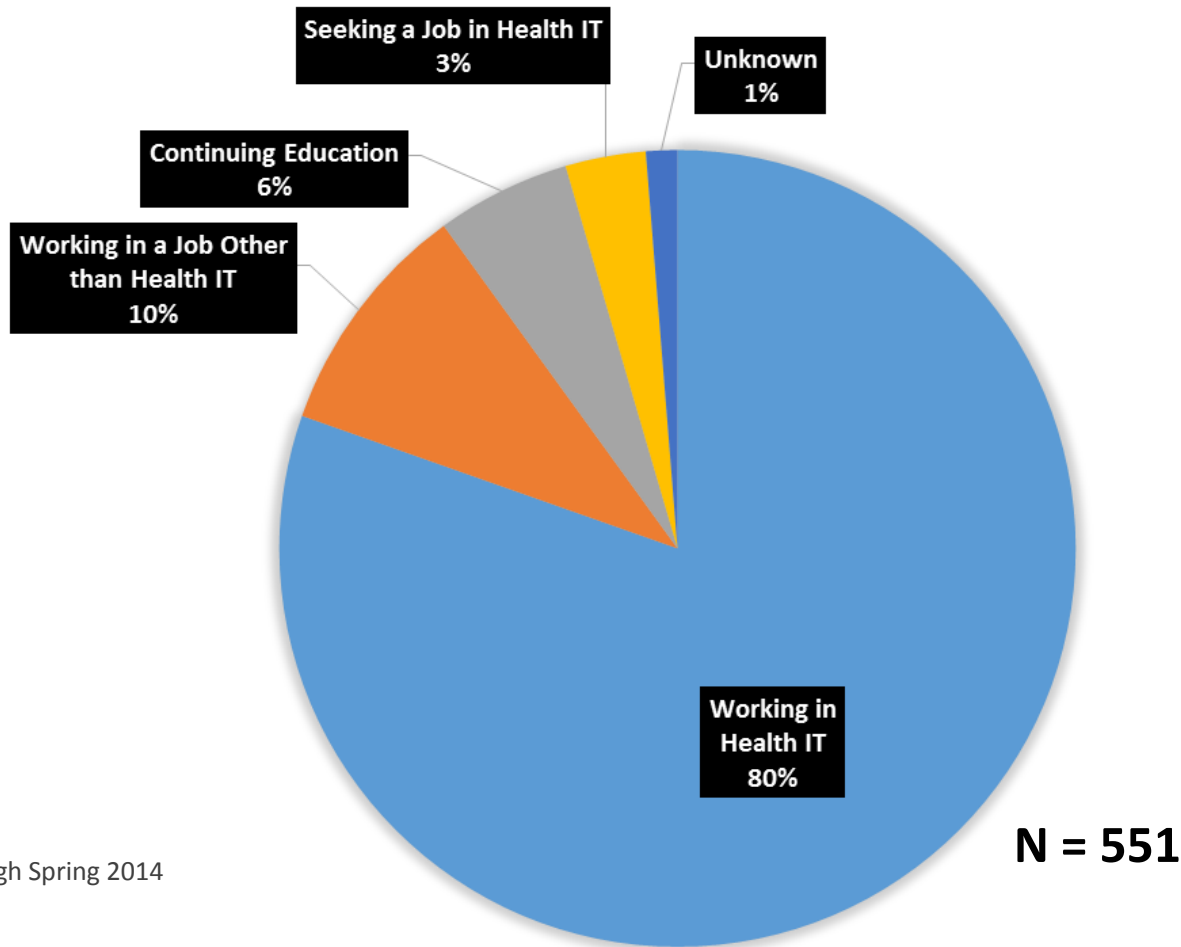
Summer 2010 through Spring 2014

Overview of Job Placement for Graduates Seeking Health IT Jobs
(Summer 2010- Spring 2014)

Seeking a Job in Health IT
4%

Working in Health IT
96%
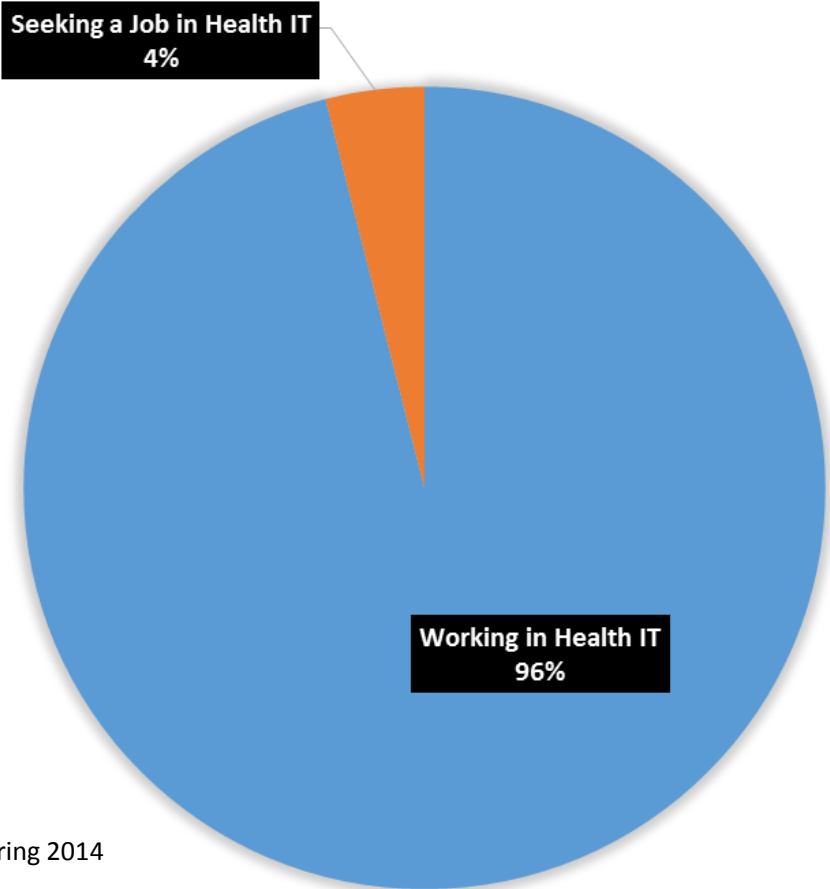
n = 446

Summer 2010 through Spring 2014

Percent Graduates Placed with 84 Employers by Type

Summer 2010 through Spring 2014

N=443

Employers of Graduates[1]

Employer	Graduates
eClinicalWorks	73
Baylor Scott & White Health	51
The University of Texas Southwestern Medical Center at Dallas	39
e-MDs	33
Cerner Corporation	27
Austin Regional Clinic (ARC)	21
Greenway	19
Dell Services	13
Corepoint Health	11
Memorial Hermann	11
Epic	9
Health Information Associates (HIA)	8
Ascension Health Information Services/ Seton Healthcare Network	7
The Advisory Board Company	7
Athena Health	6
McKesson	6
VersaSuite	6
University Health Systems	5
NextGen	4

Employer	Graduates
NextGen	4
Aprima	3
The University of Texas Health Science Center at Houston School of Dentistry	3
Medix	2
UT Medicine Health Science Center San Antonio	2
Intellica	2
eCareSoft	2
Dartmouth-Hitchcock Medical Center	2
Allscripts	2
St. Davids	2
Jericho Systems Corporation	2
CommUnity Care	2
Arcadia	2
Clinical Pathology Labs	2
Providence Health Services	2
Texas Department of State Health Services (TDSHS)	2
Your Doctor Program	2

[1]Two or more graduates
Summer 2010 through Spring 2014

Employers of Graduates[2]

Cumberland Consulting Group

American Cancer Society

Boston Public Health Commission

Mogul Medical Urgent Care

St. Edward's University

TMF

Remedy Informatics, Inc.

MedSpring Urgent Care

People's Community Clinic

Village Health Partners

TecNex

The University of Texas M.D. Anderson Cancer Center

Universal American

Lone Star Circle of Care/Cyntex Systems Support Services (CSSS)

Concentra

Accenture

Central Texas Heart Center

Kinnser Software

Physician Technology Partners

West Texas HIT REC

Odyssey Information Services, Inc.

Waterloo Consulting

Afoundria

Integra Net

E W Consulting, Inc.

Houston Department of Health and Human Services (HDHHS)

DCG Partnership 1, Ltd.

Hospital Corporation of America (HCA)

CynergisTek, Inc.

Hospira

Sonic Healthcare USA

Hewlett-Packard

Sandlot

Healthcare Access San Antonio (HASA)

United Surgical Partners International

Texas Office of eHealth Coordination

Centers for Disease Control and Prevention

Health and Human Services Commission

Premier Family Physicians

Harden Healthcare

Austin Bariatric Clinic, P.A.

Gulf Coast HIT REC

Patient Privacy Rights

Texas Nerve and Paralysis Institute

NYU Langone Medical Center

Texas Health Resources

UniMed Direct

Texas Health and Human Services Commission

New Mexico HIT REC (HealthInsight)

Visible Health, Inc.

Legacy Community Health Services

[2]One graduate

Summer 2010 through Spring 2014

Individuals Trained (2010-2014)

- Rate of hire for graduates of Health IT
  - 94% of Summer 2010 graduates found jobs within **15 months**
  - 89% of Summer 2011 graduates found jobs within **9 months**
  - 88% of Fall 2011 graduates found jobs within **6 months**
  - 43% of Fall 2012 graduates hired in **one month**
  - 74% of Summer 2013 graduates hired in **two months**
  - 51% Spring 2014 graduates hired within **one month**

- Salary Statistics
  - Salary range (10 cohorts): $27,000-$93,000
  - Average salary (10 cohorts; n=97): $52,605

Summer 2010 through Spring 2014

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On-Campus Interviews
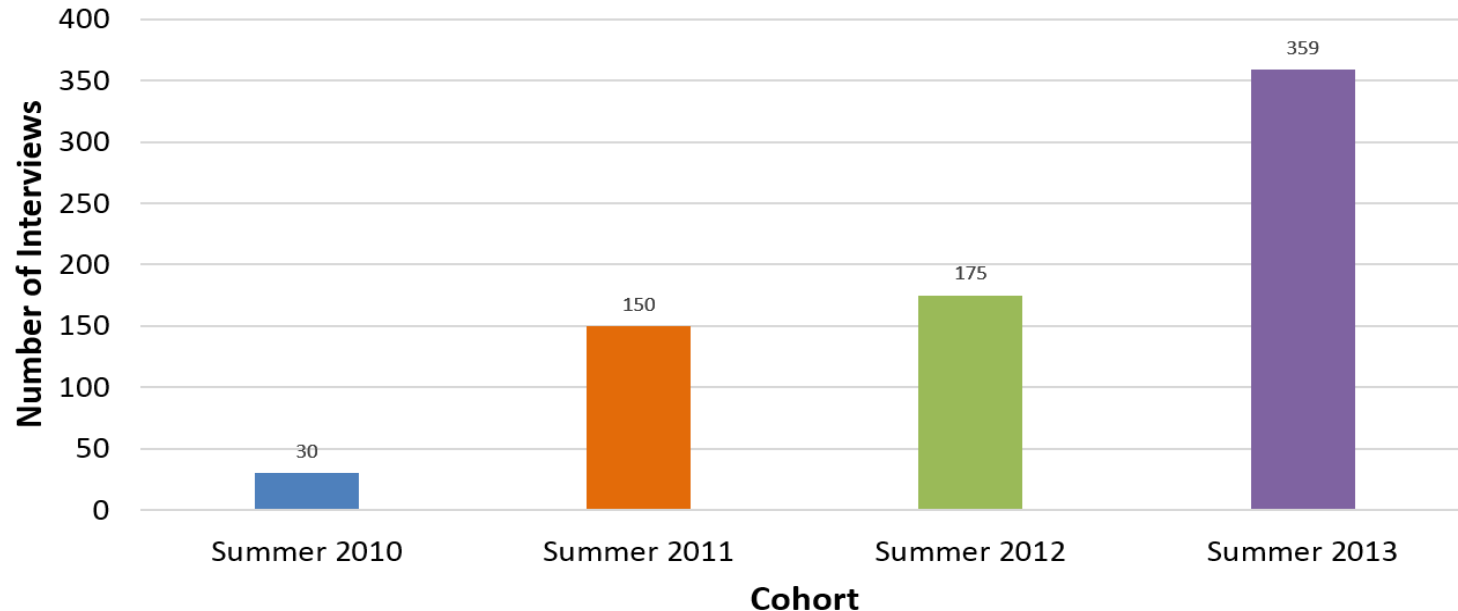
Summer 2013 statistics:

- 359 interviews in 1.5 days with 13 employers
- 3 to 8 interviews per student
  - 4 interviews per student (on average)

Summer 2010 through Spring 2014

Job Titles

- Application Analyst
- Application Coordinator
- Associate Consultant
- Associate Product Manager
- Business Analyst
- Chief Medical Officer
- Clinical Support Analyst
- Consultant
- Content Developer
- Customer Service Specialist
- Data Management Specialist
- Director of Community Relations
- EHR Template Developer
- Epic Application Analyst
- Epic Implementation Consultant
- Epic Project Manager
- "Go Live" EMR Support Specialist
- Health Business Intelligence Analytics Consultant
- Health Informaticist I
- Health Revenue Cycle Associate
- HL7 Interface Analyst

- Implementation Analyst
- Implementation Consultant
- Implementation Specialist
- Interface Developer
- IT Project Management Coordinator
- Meaningful Use Consultant
- Policy Analyst
- Product Innovation Manager
- Project Management Analyst
- Project Manager
- Project Manager II
- Product Specialist
- Senior Business Analyst
- Software Developer
- Software Systems Specialist I
- Software Training Specialist
- Support Analyst
- Training Specialist I & II
- Velocity Delivery Consultant
- Workflow Analyst

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Recent Developments/ Future Plans

Serving Our Veterans

- **Texas Veterans Commission**
  - May 2013: Program approved to train veterans and other eligible persons under provisions of Title 38, United States Code for programs

- Actively recruiting veterans in collaboration with UT Austin's *Student Veterans Services Office*

St. David's Foundation Grant

- ***Health Information Technology Training for Safety Net Clinics in Central Texas***
  - One year grant (9/1/12- 8/31/12)
  - Provided Health IT education for 45 clinic personnel in three low income clinics served by the Foundation
    - El Buen Samaritano
    - Lone Star Circle of Care
    - People's Community Clinic

Training for Office of e-Health Coordination

- Contract to provide 60 hours of didactic content

- and hands-on learning with EHR and HIE systems

- Train 10 individuals in the Office of e-Health Coordination, Texas Health and Human Services Commission

Texas Health and Human Services

Development of a Medical Informatics Theme for the Dell Medical School (DMS)
(May 2014)

- **Taskforce Chairs:**
  - Leanne H. Field, Ph.D., M.S., UT Austin,
  - DuWayne Willett, M.D., M.S., UT Southwestern Medical School

- **Recommendations:**
  - Identify knowledge objectives
  - Suggest six learning activities to teach the knowledge objectives
    - Including hands-on skill development in the Learning Center
  - Identify the best timing for the delivery of activities
  - Suggest assessment methods
  - Develop on campus and external research and experiential learning opportunities for DMS students

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Dell Medical School

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Academic Partnership with the CDC to Pilot a Public Health Informatics Fellowship Program (August 2014)

- I-Scale pilot program with the *CDC Public Health Informatics Fellowship Program* to assess ability of program graduates to solve public health informatics problems at local health departments

Educational Collaboration with Texas Tech University Health Sciences Center, School of Nursing (November 2014)
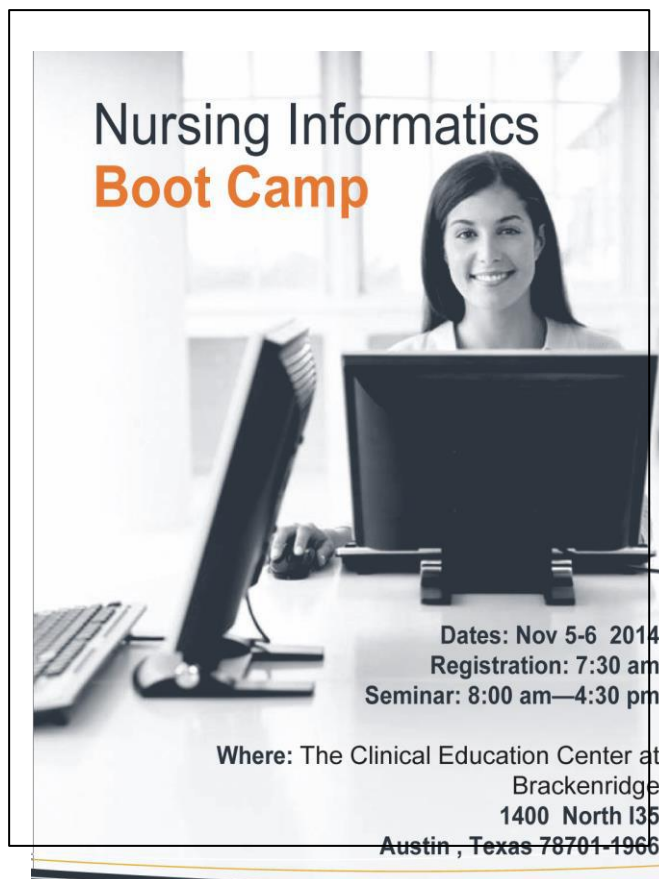
- Co-Sponsor **Nursing Informatics Boot Camp** (Nov. 5-6) with Seton Healthcare Family, UT Austin School of Nursing

- Provide **Advanced Experiential Education Workshop** for Master's of Nursing Informatics Students (Nov. 7-8)

  - Jointly develop advanced outpatient and inpatient clinical scenarios

Join Infor's Educational Alliance Program

- Offer Cloverleaf certification to interested program graduates

  - 12 students trained in Fall 2014 class

- Install Cloverleaf to integrate multiple echnologies

- Develop a *Centers of Excellence* with Infor scientists to provide students opportunities for research and experiential education

infor

What's Next?

- Continue to offer the nine–week Health Informatics and Health IT professional education certificate program three times per year

- Carry out applied research projects in partnership with ONC, state and local public health organizations, industry partners, and other university partners

- Offer executive education/customized employee training programs to interested organizations

- Integrate health informatics and public health informatics education into degree programs at UT Austin

- Participate in graduate medical education with the new Dell Medical School?
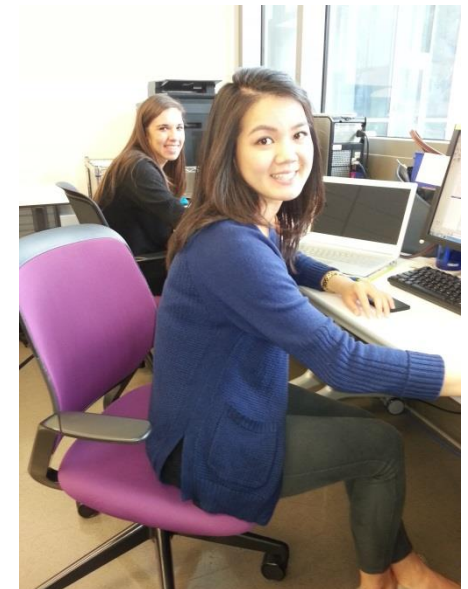
Continue Development of Health IT Learning Center

Norman Hackerman Building

- Integrate additional technologies to fully model the Healthcare Continuum of Care

- Continue development of the HIE laboratory

- Add other emerging technologies/ mobile applications

Key Elements of Program Success

Funding to launch and grow the program

- **ONC's University-Based Training Grant ($2.77 million) – 3 years**
  - Paid students' tuition (up to $10K)
  - Provided training-related expenses
    - Faculty salaries
    - Program costs

- **Longhorn Innovation for Technology Grant ($100,000) – 1 year**
  - Made possible the creation of the HIE laboratory
  - The hiring of a professional engineer and experienced project manager with PMP credentials to interface with industry and develop the laboratory

Generous Health IT industry, healthcare and governmental partners

- Initial and ongoing support from TeHA and other industry supporters

- Assistance from industry with the creation of an innovative, hands-on curriculum that makes students "job-ready"
  - Ongoing feedback to keep the curriculum current and to identify "gaps" in competencies of program graduates

- Provision of expert guest lectures from partners aligned to industry resource requirements and market drivers

- Donation of hardware, software (hosted by industry partners) and medical devices;
  - Provision of ongoing technical and training support

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Generous Health IT industry, healthcare and governmental partners (con't)

- Advice and support for the development of the HIE laboratory
- Participation in program events (e.g. employer networking day; interviews)
- Donation of scholarships (limited numbers)
- Hosting students for clinic visits and practicum experiences
- *Hiring graduates!*
- Support from our local Austin HIMSS chapter
  - Provide scholarships to students; support program events; encourage students to exhibit posters at regional meetings; mentor individual students

Additional elements of success

- **Creative team of faculty with years of real-world experience in the field**
  - Constant desire to innovate and push the envelope for Health Informatics and Health IT education!

- **Valuable distance education partnership with UT Southwestern Medical Center**
  - Provides a satellite location in Dallas
  - Hire program graduates
  - Teach in the program and advise program faculty

- **Supportive administration in the College of Natural Sciences**
  - Provision of a modern facility appropriate for a "high tech" program
  - Partially underwrote program expenses during the 3 years of the ONC grant
  - Ongoing supplemental support services to the program without charge

Snapshot of Success:

- **665** graduates in 4.3 years
- **96% of those seeking** successfully placed in Health IT jobs
- **$52,605** average starting salary

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THE UNIVERSITY OF TEXAS AT AUSTIN

Health Informatics and Health IT

Thank you!

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TEMPLE UNIVERSITY

College of Public Health
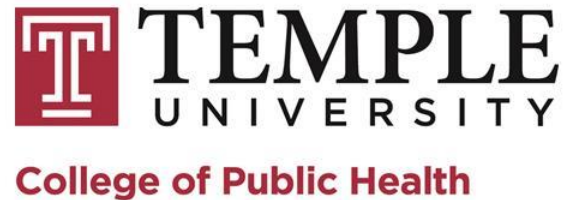
Bachelor of Science in Health Information Management (BSHIM)

Masters of Science in Health Informatics (MSHI)

Post - BS Certificates in Health Informatics

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MSHI Program

Summer	Fall	Spring
Year 1		
HIM 5001 Information Systems: Documentation, Ethical and Legal Aspects	HIM 8001: Information Technology for the EHR	HIM 8011: Healthcare Reimbursement Systems
HIM 5002: Clinical Information Systems	MIS 5001: Managing Information Technology	HIM 8027: Electronic Health Record: Ethical, Legal and Advocacy Aspects
HIM 5004:Introduction to Healthcare Delivery		
Year 2		
HIM 8028: HIS: Standards and Electronic Applications	MIS 5101: Database Analysis and Design	HIM 9189: Applied Project
OT 8509: Leadership in the Health Professions: The Art and Science of Influence	MIS 5102: Information Systems: Modeling and Development	HIM 8029: Graduate Seminar

BSHIM

- Data Analytics and IT for HIM
- Clinical Medicine
- Management

Recommended Semester by Semester Plan

Fall Semester	Credits	Spring Semester	Credits
Freshman Year – Pre-Professional			
English 0802 - Analytical Reading & Writing (GW)	4	Kinesiology 1223 - Anatomy & Physiology I	4
Quantitative Literacy (GQ)*	4	IH 0851 - Mosaic I (GY)	3
HIM 1101 - Medical Terminology	3	Race & Diversity (GD)	3
Arts (GA)	3	U.S. Society (GU)	3
General Elective	2	Human Behavior (GB)	3
Sophomore Year – Pre-Professional			
IH 0852 - Mosaic II (GZ)	3	General Elective	3
Elective (English 2596 - Writing for Business & Industry is recommended)	3	Statistics - Math 1013 OR Psych 1167 OR Soc 1167	3
World Society (GG)	3	CIS 1055 - Computers and Applications (recommended)	4
Kinesiology 1224 - Anatomy & Physiology II	4	General Elective	3
Junior Year – Professional Curriculum			
HIM 3101 - Health Information Systems in Acute Care	4	HIM 3202 -Legal Aspects of Health Information Management	3
HIM 3103 - U.S. Health Care System	3	HIM 3204 -Health Information Systems in Non-acute Care	3
HIM 3020 - Special Topics in Health Information Management	1	HIM 3206 -Clinical Medicine I	3
HIM 3111 - Statistics and Research in Health Care	3	HIM 3208 - International Classification of Disease	4
HIM 3113 -Healthcare Database Administration	3	HIM 3211 -Management in Health Information Systems	3
		HIM 3285 -Professional Practice Internship	2
Senior Year – Professional Curriculum			
HIM 4101 - Health Informatics: Infrastructure & Standards	3	HIM 4202- Health Informatics: Systems & Design	3
HIM 4105 - CPT Coding	4	HIM 4204 -Systems Analysis in Health Information Management	3
HIM 4107 - Quality Improvement in Healthcare	3	HIM 4211 - Political, Social & Ethical Aspects of Health Information	2
HIM 4109 - Clinical Medicine II	3	HIM 4213 - Healthcare Reimbursement Systems	3
HIM 4197 - Human Resource Management in Health Information Systems	3	HIM 4286 - Management Internship	3
		HIM 4298 - Health Information Management Case Studies	3

* Math 0823 or 0824 are strongly recommended

5

Industry Collaboration

BSHIM (internship)

MSHI (project)

Post-Bac (hospital)

Outlook

- 22% growth
- 36% increase in health informatics jobs in 2011

Temple Students

Types of Positions

- Director, Financial Applications
- PM Engineer
- LIS Project/Reports Coordinator
- Interface Implementation Analyst
- EPIC Applications Analyst
- Epic EMR Application Coordinator
- Network PM
- AD HIM Operations
- AD of Medical Records
- Clinical Business Systems Analyst
- PM
- Training Consultation
- TUHS Training Coordinator/Specialist

Question 10

As a result of my participation in the MSHI program:

	0%		25.5%	
I accepted a new position of greater responsibility at another employer				
I had a complete career change				
I had no change in responsibilities or role				
I had an expansion of my role or responsibilities at my current employer				
I accepted a new position of comparable responsibility at another employer				
I was promoted to a new position at my current employer				

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Thank you

Contact Information

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Duquesne University Pittsburgh, PA

Bachelor of Science in Health Management Systems

Masters in Health Management Systems

Description of HMS Program
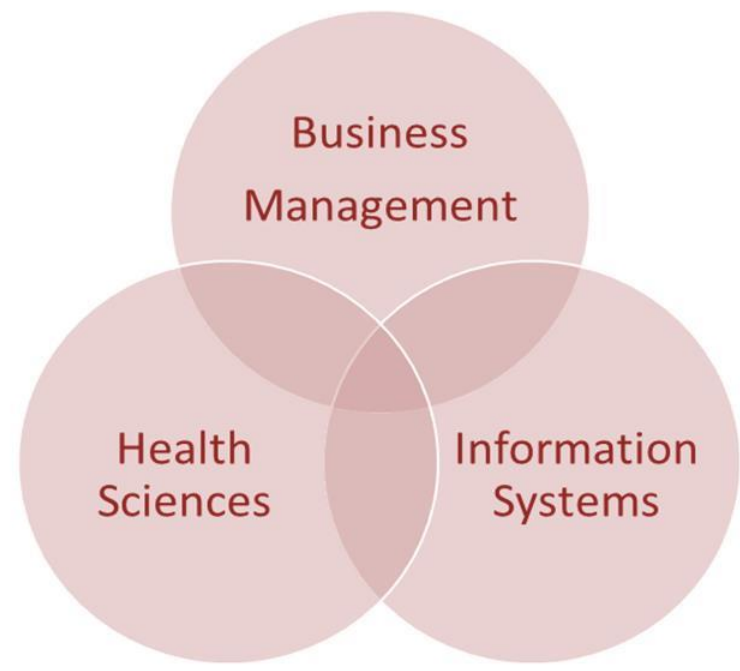
Health Management Systems Degree

- Bachelors Degree
  - Pre-professional phase (2 years) – 69 credits
  - Professional phase – 66 credits
- Masters degree
  - 36 credits

Internship Requirement

- Mandatory (undergrad)- 180 hours

- Can be completed after Junior Year

- Project based Internship

- Optional Internship II

Recent Statistics BSHMS

Year	Class size	Employed* upon graduation	Within 3 months	Grad school	??
2012	17	8		8	1
2013	15	10	1	4	
2014	14	10		2	2

* within health care field

16

Jobs Our Graduates Hold

- Quality Analyst
- Managed Care Analyst
- Physician Practice Manager
- Systems Analyst
- Human Resource Director
- Director Of Operations
- Database Manager
- Director Of Quality
- Application Analyst
- Insurance Specialist

- Patient Data Analyst
- Medical Sales Representative
- Health Care Consultant
- Project Manager

Health Information Education Options at Penn College

Dan Christopher, MBA, RHIA

Department Head, Health Information Programs

Penn College, Williamsport, PA

Pennsylvania College of Technology

- Penn College enrolls nearly 6,000 students in bachelor, associate, and certificate programs relating to more than 100 different career areas.

- Penn College manages the state's largest worker training program through its Workforce Development and Continuing Education unit.

Current Options Available at Penn College

- **Health Information Coding Specialist**
  CERTIFICATE

- **Health Information Technology**
  ASSOCIATE OF APPLIED SCIENCE DEGREE (A.A.S.)

- **Health Information Management**
  BACHELOR OF SCIENCE DEGREE (B.S.)
  - **A 2+2 bachelor's completion program offered completely online**

Possible Future Directions for Penn College Health Information Programs

- The College recognizes and agrees with AHIMA's Reality 2016 career projections for the Health Information profession which Includes four priority areas:
  - Encourage HIM professionals to obtain master's level degrees
  - Enhance opportunities for individuals with associate degrees through specialized tracks
  - Invest in faculty development in research, EHR management, data integrity, and data governance
  - Increase the number of graduate-prepared HIM professionals by creating eligible pathways for doctoral- or master's-prepared individuals, including proposed post-graduate certificates
- Since Penn College currently only offers associate and bachelor degree programs, we hope to focus on development of specialized tracks

Specialized Tracks for Health Information Education

- This will most likely take shape as post degree certificate programs building on our existing programs.

- Specialty Tracks could focus on areas such as:
  - Clinical Documentation Improvement
  - Health Data Analytics
  - Healthcare Privacy and Security
  - Healthcare Technology
  - Data Governance

- AHIMA already offers certification credentials in many of these areas

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References

- Butler, Mary. "Adapt or Disappear: AHIMA's Reality 2016 has a New Mission to Transform the HIM Workforce through Education—or Else." *Journal of AHIMA* 85, no.5 (May 2014): 24-29.

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