Developing, Educating and Advancing the eHealth Workforce through a Foundational Curriculum

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Toria (Tori) Shaw, MSW
Senior Manager, Clinical Informatics
HIMSS North America

Joined HIMSS September 2014 (Chicago Office)

• Oversee the global TIGER community and TIGER’s Virtual Learning Environment (VLE)
• Focus on education reform, international community development & most recently, workforce development
• Manage and execute the EU*US eHealth Work Project, funded by Horizon 2020, scope of work partially delivered by the TIGER Initiative
TIGER Virtual Learning Environment (VLE)

www.himss.org/tiger
What is the TIGER VLE?

Powered by HIMSS, the VLE is a dynamic and unique one-stop portal for academic professionals, students, adult learners, and clinical educators. The VLE contains resources reflective of core international competencies to take subscribers from A to Z in health IT.

• This personalized learning experience is designed to expand skillset in a self-paced format
• Highlights the work of open source collaborators (ONC, QSEN, etc.)
• Health IT modules and resources easily integrated into curriculum
• Webinar Series & Archive
• $40 annual subscription; reduced pricing based on 10 or more VLE seats purchased
• Trial access granted to all who express interest
Learning Objectives

1. Identify potential opportunities for career advancement and/or workforce development via use of the Foundational Curriculum
2. Recognize tools and resources that expand the reach of the Foundational Curriculum
3. Describe the different modes of possible educational applications for the Foundational Curricula
Introducing the EU*US eHealth Work Project

• A 21-month Horizon 2020 Project funded by the European Commission, the EU-US eHealth Work Project has an overall goal of mapping, quantifying, and projecting the need, supply and demand for digital workforce skills and competences

• The project is utilizing these results to further develop skills and training programs for the healthcare workforce
The EU*US eHealth Work - Work Streams

Accomplishing mission and goals by undertaking research, synthesis, resource and tool development, and dissemination related to the eHealth/health information technology workforce in the following streams:

• Measuring
• Informing
• Educating
• Advancing
Working Together: The Consortium

The EU*US eHealth Work Consortium is built of networks with partners from academia, healthcare associations and providers/industry

• The project consortium is a “network of networks” and includes:
  – Omni Micro Systems/Omni Med Solutions GmbH (Project Coordinator) (Germany)
  – HIMSS (Health Information Management Systems Society) via the TIGER (Technology Informatics Guiding Education Reform) Initiative
  – EHTEL (European Health Telematics Association) (Belgium)
  – University of Applied Sciences Osnabrück (Germany)
  – Tampere University of Technology (Finland)
  – Steinbeis 2i GmbH (Germany)

• The consortium works together in partnership on project tasks and deliverables

• Tampere University of Technology and Omni Micro Systems/Omni Med Solutions are partnering to develop the Foundational Curriculum

transforming health through IT™
Rachelle Blake, PA, MHA
Project Coordinator, EU*US eHealth Work Project
CEO/President, Omni Micro Systems/Omni Med Solutions, GmbH

- Founder, CEO and President of Omni Micro and Omni Med Solutions, a full-scale health information consulting and technology development firm
- Co-chair of the HIMSS African-American Special Interest Group
- Served in clinical, consulting, operations and administrative roles in health IT for 30 years
- Serves as a TIGER International Taskforce member representing Germany
- Volunteers for the American Women’s Club of Hamburg and Integrating the Healthcare Enterprise (IHE) worldwide
Angelique Blake
COO/Vice President, Omni Micro Systems/Omni Med Solutions, GmbH

• Vice President and Chief Operating Office for five years
• Background in business development, graphic design, social media, art and communications
• Experience as project manager for European Commission Horizon 2020 Project
Alpo Värri, Dr.Tech.
Associate Professor, Faculty of Computing and Electrical Engineering, Tampere University of Technology

- Leads several research projects relating to physiological signal processing.
- Been involved in development of Health Informatics Education since 1996
- Received first National IT Standardization Prize for efforts in Health Informatics Standardization in 2012
Milla Juahiainen, BSc, MSc, PhD Candidate
Project Researcher/Doctoral Student, Faculty of Biomedical Sciences and Engineering, Tampere University of Technology

- Currently studying for a PhD in Biomedical Sciences and Engineering
- Developing movement analysis of Parkinson’s disease patients with commercial inertial measurement unit sensors
- Recent work includes information security of medical devices in a hospital environment and development of Health Technology education at Tampere
Project Milestones

- Survey
- Gap Analysis
- Case Studies
- HITComp 2.0
- Interactive Web Platform
- Foundational Curriculum
Survey Highlights

There is standardized baseline eHealth training or skills assessment for all healthcare workers as part of their on-boarding/new hire process.

What are the eHealth funding priorities identified by health and education departments/ministries within your country or region?

- Creation of national certification programs tied to skills, competencies, or...
- Establishment of formal eHealth job classifications.
- Integration of eHealth into traditional healthcare programs (for example,....
- Development of career progression pathways for current eHealth workers.
- Expansion of the healthcare workforce over the next three to five years.

Are gender disparities being adequately addressed?

- Yes, 28.6%
- No, 42.8%
- N/A, 28.6%

Are there care delivery worker shortages in your country or region?

- Yes, 88%
- No-N/A, 12%
Survey Highlights - eHealth Knowledge and Skills

- Our results showed the most pressing needs for eHealth training, among the interdisciplinary team, continue to be for nurses and physicians.
- Educators are also thought to need to keep up to date in their eHealth training.
Gap Analysis

We performed a gap analysis to analyse the survey results. It reflects the opinions of experts who oversee the entire field of health informatics as well as the voices of the broad field of health IT. We identified 10 major gaps (7 directly related to training):

**GAP 1: eHealth knowledge and skills of healthcare professionals:** The majority of healthcare managers and healthcare workers do not have digital skills.

**GAP 2: eHealth knowledge and skills of informal caregivers:** There is inadequate training for informal caregivers globally.

**GAP 3: Knowledge and skills of teachers and trainers:** The experience of educators in health informatics and ICT needs to be improved.

**GAP 4: Availability of courses and programmes at various levels and for various professions:** The number of eHealth courses and programmes is limited throughout Europe (and globally).

**GAP 5: Quality and quantity of eHealth training material:** Training material and tools are not available online and/or need to be better designed.

**GAP 6: Adaptation of job descriptions, training on the job, staff development:** There are deficiencies in preparing and training staff, and adjusting job descriptions due to system changes, new tools and methods.

**GAP 7: eHealth infrastructure:** Many countries in Europe (and globally) do not have an appropriate eHealth infrastructure.

**GAP 8: eHealth usage:** Healthcare professionals are not encouraged to use eHealth, and are not in a position to utilize eHealth to ensure continuity of care.

**GAP 9: Acceptance and usability of systems:** Users are not involved in their organisations to participate in systems engineering and IT life cycle management.

**GAP 10: Shortage of health professionals and gender disparities:** There is a shortage of health care professionals in all countries; there are still gender disparities, particularly in the technology-oriented field.
Case Studies

Recently completed case studies, from 23 countries worldwide, reinforced the need for foundational eHealth training for all actors in eHealth.
Providing Access to eHealth Tools, Resources and Innovations: HITCOMP

• What is the HITCOMP Tool? *Health Information Technology Competencies*
• Unlike other resources, it is a tool that can be used for eHealth and digital skills research, educational development, skills assessment and career progression.
HITComp

- HITComp is a global eHealth roles, competencies and education research and information tool and resource
  - Contains over 1000 competencies in five healthcare domains, including Direct Patient Care, Informatics, Administration, ICT and Research/Biotechnology
- Also includes information and reference data on over 250 healthcare and allied health roles, with equivalents in five major European languages
  - Includes Bloom’s taxonomy and is aligned with online and other educational resources
- Its roles and competencies are fully aligned to the project’s Foundational Curriculum, and will be linked to other educational programs
Foundational Curriculum

- The EU*US eHealth Foundational Curriculum is a global introductory online course in eHealth.

- Provides baseline and basic eHealth skills (digital competency in healthcare) upon completion.
Foundational Curriculum (cont’d)

- Includes 10 clusters (in pink), 21 modules (in orange), broken down into units (in blue) in 40 different areas of competency
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<tr>
<th>Clusters:</th>
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<td>Clinical Process</td>
<td>Clinical Practice and Documentation</td>
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<tr>
<td>ICT Process</td>
<td>Business Process and Clinical Workflow Design</td>
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<td>Informatics</td>
<td>Information and Communication Technology Overview</td>
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<td>EHR Systems</td>
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<td>Quality, Safety &amp; Security</td>
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- **Foundational Curriculum (cont’d)**
- **Clusters:**
  - eHealth
  - Clinical Process
  - ICT Process
  - Informatics
  - EHR Systems
  - System Connectivity
  - Patient and Device Integration/ Research and Biomedicine
  - Data
  - Quality, Safety & Security
  - Leadership & Management

- **Modules:**
  - Introduction to eHealth
  - Clinical Practice and Documentation
  - Patient Centered Interactions, Population Management and Public Health Informatics
  - Business Process and Clinical Workflow Design
  - Research, Biomedicine, and Device Development
  - Information and Communication Technology Overview
  - Collection of Data and Knowledge Management
  - Information Systems Overview
  - Data Analytics, Modeling and Reporting
  - Health Information Management
  - Quality and Safety in eHealth
  - The Informatics Process and Principles of Health Informatics
  - Data Protection and Security in eHealth
  - Working with Health IT Systems
  - Administration, Leadership and Management of eHealth
  - EHR Modules: Medications, Allergies, Clinical Decision Support and Order Entry
  - Project and Resource Management
  - Interoperability, Interfaces and Integration of eHealth
  - Issue and Communication Management (includes Change and Stakeholder Management)
  - Telematics, Telehealth and mHealth
  - Teaching, Training and Education in eHealth
Each unit is introduced in context to its related cluster and module, and presented with SMART learning objectives.

All new terms are introduced with definitions, in boldface.

There is an accompanying glossary unit to the FC.
Foundational Curriculum (cont’d)

- Graphics are used to demonstrate all relationship concepts, processes and cycles
- Each unit includes review exercises, using a variety of learning techniques
Foundational Curriculum (cont’d)

- All units feature a review of the objectives, which tie directly (in most cases) to HITComp competencies
  - The goal is to vet all newly created objectives from the FC and incorporate them into HITComp as well
- Finally, there is a quiz at the end of each unit
  - Covers all concepts learned through the unit
  - Used to define competency and are designed to align with certification programs
Foundational Curriculum: Vetting Process

• The content of Foundational Curriculum will be fully vetted before releasing the final product
• Volunteers from various countries in Europe and US have signed up for the vetting process, and a lot of valuable comments have been received
• Comments, questions and suggestions will be used to modify and polish the content and visual view of the curriculum
• Are you interested to participate in the vetting process? → Contact fcreview@ehealthwork.org for more information
Foundational Curriculum (cont’d)

Dissemination of information about the Foundational Curriculum

- This webinar
- Medical Informatics Europe, Gothenburg, Sweden, 25 April, 2018
- EU Commission newsletters
- Digital Skills and Jobs Coalition
- What else we can think of
Foundational Curriculum (cont’d)

National use of the Foundational Curriculum in Europe

- Translation to the national language
- Addition of country-specific information (e.g. the KanTa national electronic health record system in Finland or Elga in Austria)
- A kick-off for national initiatives to improve eHealth/HealthIT education for the health care work force
Foundational Curriculum (cont’d)

National use of the Foundational Curriculum in Europe, case Finland

• An application for a national project for improving the digital skills of the health care students (SOTE-PEDA 24/7)
• 21 universities of applied sciences and two universities in the consortium
• Initial positive feedback from the ministry of education, expected start in 2018
The future of the Foundational Curriculum

- The EU*US project ends but the participants are motivated to continue
- The idea is to find an authoritative international host organization to maintain the curriculum
- This will be further discussed at MIE 2018 in Gothenburg
Interactive Educational Demonstrator Modules

• The IED modules were produced by TUT: it includes a proof-of-concept platform for educational material and examples of educational videos.

The videos are:

1. Cybersecurity: Targeted Malware Attacks
2. Foundational curriculum: A Day in the Life
3. Demonstration of HITComp
Interactive Web Platform

- The Interactive Web Platform (IWP) is being finalized by the project, led by OMS.
- The IWP is a role-based learning and resource platform that integrates the Foundational Curriculum.
- The IWP is organized by first ascertaining which of the following actor groups the user is in.
Interactive Website Platform (cont’d)

- Depending on the response, the user is presented with a “tree” of education, information, resources and tools pertinent to that user.
- The IWP “TRIE” components related to eHealth, include:
  - Tools
  - Resources
  - Information
  - Education
- The IWP will also be closely linked to the HIMSS TIGER Virtual Learning Environment (VLE)
Skills & Knowledge Assessment & Development Framework

- The Skills and Knowledge Assessment and Development Framework (SKAD) is also being finalized.
- The SKAD will begin with a survey-based user-generated self-assessment of eHealth skill level.
- The SKAD will intersect with HITComp and will generate assessment questions based on competencies based on user role, level and other parameters.
- One goal of SKAD will be to tie it to preparation for eHealth and HIT certification programs, such as HIMSS’ CA/CPHIMS and other programs, such as EFMI certification.
- SKAD will also direct new students seeking further eHealth education to the Foundational Curriculum.
Activities for the near future

• Completion of the Foundational Curriculum slide set
• Presentation/Final Conference at MIE in Gothenburg, Sweden
• Vetting process continued
• Revision of the slide set based on the vetting feedback by 31 May, 2018
Questions and Answers
Thank You!

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