

Board Certification Update

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Speaker disclosure

- I teach informatics for a living
- In addition to
 - Research
 - Department Chair
 - Blogging
 - Etc.



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Objectives

- History
- Current status
- Getting board-certified
 - During “grandfathering” period
 - After “grandfathering” period
- Concerns



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Clinical informatics subspecialty for physicians – history

- 2009 – American Medical Informatics Association (AMIA) develops and publishes plans for curriculum and training requirements, submits proposal to American Board of Medical Specialties (ABMS)
 - Subspecialty open to physicians boarded in any primary specialty
- 2011 – ABMS approves; American Board of Preventive Medicine (ABPM) becomes administrative home
 - American Board of Pathology (ABP) signs on as co-board
- 2013 – First certification exam offered by ABPM and ABP
 - 456 physicians certified (91% pass rate for exam)
- 2014 – ACGME fellowship rules released



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Definition of clinical informatics (ACGME)

- Clinical informatics is the subspecialty of all medical specialties that transforms health care by analyzing, designing, implementing, and evaluating information and communication systems to improve patient care, enhance access to care, advance individual and population health outcomes, and strengthen the clinician-patient relationship

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Competencies of clinical informaticians (Safran, JAMIA, 2009)

- Search and appraise the literature relevant to clinical informatics
- Demonstrate fundamental programming, database design, and user interface design skills
- Develop and evaluate evidence-based clinical guidelines and represent them in an actionable way
- Identify changes needed in organizational processes and clinician practices to optimize health system operational effectiveness
- Analyze patient care workflow and processes to identify information system features that would support improved quality, efficiency, effectiveness, and safety of clinical services
- Assess user needs for a clinical information or telecommunication system or application and produce a requirements specification document
- Design or develop a clinical or telecommunication application or system
- Evaluate vendor proposals from the perspectives of meeting clinical needs and the costs of the proposed information solutions
- Develop an implementation plan that addresses the sociotechnical components of system adoption for a clinical or telecommunication system or application
- Evaluate the impact of information system implementation and use on patient care and users
- Develop, analyze, and report effectively (verbally and in writing) about key informatics processes

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Core content for clinical informatics (Gardner, JAMIA, 2009)

1. Fundamentals <ul style="list-style-type: none">1.1. Clinical Informatics<ul style="list-style-type: none">1.1.1. The discipline of informatics1.1.2. Key informatics concepts, models, theories1.1.3. Clinical informatics literature1.1.4. International clinical informatics practices1.1.5. Ethics and professionalism1.1.6. Legal and regulatory issues1.2. The Health System<ul style="list-style-type: none">1.2.1. Determinants of individual and population health1.2.2. Primary domains, organizational structures, cultures, and processes1.2.3. The flow of data, information, and knowledge within the health system1.2.4. Policy & regulatory framework1.2.5. Health economics and financing1.2.6. Forces shaping health care delivery1.2.7. Institute of Medicine quality components	3. Health Information Systems <ul style="list-style-type: none">3.1. Information Technology Systems<ul style="list-style-type: none">3.1.1. Computer Systems3.1.2. Architecture3.1.3. Networks3.1.4. Security3.1.5. Data3.1.6. Technical approaches that enable sharing data3.2. Human Factors Engineering<ul style="list-style-type: none">3.2.1. Models, theories, and practices of human-computer (machine) interaction (HCI)3.2.2. HCI Evaluation, usability testing, study design and methods3.2.3. Interface design standards and design principles3.2.4. Usability engineering3.3. Health Information Systems and Applications<ul style="list-style-type: none">3.3.1. Types of functions offered by systems3.3.2. Types of settings where systems are used3.3.3. Electronic health/medical records systems as the foundational tool3.3.4. Telemedicine3.4. Clinical Data Standards<ul style="list-style-type: none">3.4.1. Standards development history and current process3.4.2. Data standards and data sharing3.4.3. Transaction standards3.4.4. Messaging standards3.4.5. Nomenclatures, vocabularies, and terminologies3.4.6. Ontologies and taxonomies3.4.7. Interoperability standards3.5. Information System Lifecycle<ul style="list-style-type: none">3.5.1. Institutional governance of clinical information systems3.5.2. Clinical information needs analysis and system selection3.5.3. Clinical information system implementation3.5.4. Clinical information system testing, before, during and after implementation3.5.5. Clinical information system maintenance3.5.6. Clinical information system evaluation	4. Leading and Managing Change <ul style="list-style-type: none">4.1. Leadership Models, Processes, and Practices<ul style="list-style-type: none">4.1.1. Dimensions of effective leadership4.1.2. Governance4.1.3. Negotiation4.1.4. Conflict management4.1.5. Collaboration4.1.6. Motivation4.1.7. Decision making4.2. Effective Interdisciplinary Teams<ul style="list-style-type: none">4.2.1. Human resources management4.2.2. Team productivity and effectiveness4.2.3. Group management processes4.2.4. Managing meetings4.2.5. Managing group deliberations4.3. Effective Communications<ul style="list-style-type: none">4.3.1. Effective presentations to groups4.3.2. Effective one-on-one communication4.3.3. Writing effectively for various audiences and goals4.3.4. Developing effective communications program to support system implementation4.4. Project Management<ul style="list-style-type: none">4.4.1. Basic principles4.4.2. Identifying resources4.4.3. Resource allocation4.4.4. Project management tools (non-software specific)4.4.5. Informatics project challenges4.5. Strategic and Financial Planning for Clinical Information Systems<ul style="list-style-type: none">4.5.1. Establishing mission and objectives4.5.2. Environmental scanning4.5.3. Strategy formulation4.5.4. Action planning and strategy implementation4.5.5. Capital and operating budgeting4.5.6. Principles of managerial accounting4.5.7. Evaluation of planning process4.6. Change Management<ul style="list-style-type: none">4.6.1. Assessment of organizational culture and behavior4.6.2. Change theories4.6.3. Change management strategies4.6.4. Strategies for promoting adoption and effective use of clinical information systems
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INFORMATICS PROFESSOR

THIS BLOG MAINTAINS THE THOUGHTS ON VARIOUS TOPICS RELATED TO BIOMEDICAL AND HEALTH INFORMATICS BY DR. WILLIAM HERSH, PROFESSOR AND CHAIR, DEPARTMENT OF MEDICAL INFORMATICS & CLINICAL EPIDEMIOLOGY, OREGON HEALTH & SCIENCE UNIVERSITY.

WEDNESDAY, JUNE 18, 2014

WILLIAM HERSH

Eligibility for the Clinical Informatics Subspecialty, 2014 Update

One of the posts in this blog with the most page views ever is my January, 2013 description on eligibility for the clinical informatics subspecialty for physicians. No doubt part of the reason for its popularity was my using the post as a starting point for replying to those emailing or otherwise contacting me with questions about their own eligibility.

A year later, I still get such emails and inquiries. While the advice in the 2013 post is largely still correct, we have had the ensuing experience of the first year of the board exam, who qualified to sit for it, and what



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Current status (Detmer, JAMA, 2014)

- Following usual path of five years of “grandfathering” training requirements to be eligible to take certification exam before formal fellowships required
- Two paths to eligibility for exam in first five years
 - Practice pathway – practicing 25% time for at least three years within last five years (education counts at one-half time of practice)
 - Non-traditional fellowships – qualifying educational or training experience, e.g.,
 - NLM, VA, or other fellowship
 - Formal educational program (master’s degree)
 - Can combine experience from both pathways to achieve eligibility



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What about non-boarded physicians?

- Not eligible to be subspecialists, unfortunately
- AMIA undertaking Advanced Interprofessional Informatics Certification process for
 - Healthcare doctorates
 - PhDs
 - Non-boarded physicians



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Advice to those who want to certify

- Determine eligibility with ABPM and ABP
 - Warning: ABPM responds slowly to email
- *If you can be eligible by 2018, do so before then, since only pathway after 2018 will be two-year fellowship*
- Opportunities for learning
 - AMIA Clinical Informatics Board Review Course
 - 10x10 courses (general clinical informatics offerings)
 - Graduate education – including online programs
 - Other fellowships – NLM, VA, etc.
 - (All 40 alumni and students from OHSU program who took exam passed it)

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Beyond 2018 – ACGME-accredited clinical informatics fellowships

- Two-year, on-site fellowship
 - Combination of rotations, didactics, and clinical practice
 - Duration fixed, regardless of experience, mastery of competencies, etc., though can be done over 4-year period
- One of 9 specialties must serve as administrative home
 - Accreditation tied to specialty RRC
- Fellow must stay clinically active in their primary specialty
 - But because they are a “fellow,” many institutions interpret CMS rules as not allowing them to bill

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WEDNESDAY, MAY 14, 2014

WILLIAM HERSH

Square Pegs into Round Holes - Challenges for the Clinical Fellowship Model for Clinical Informatics Subspecialty Training

Although the development of the clinical informatics subspecialty is an important accomplishment for the informatics field, I have a number of continued concerns about the optimal development of the subspecialty, especially now that the Accreditation Council for Graduate Medical Education (ACGME) program requirements for clinical informatics fellowships have been released. There are a number of aspects of training to be an informatician that just do not fit into the traditional model of clinical training, requiring those of us applying for program accreditation to fit proverbial square pegs into round holes.



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Didactic learning in CI fellowships

- Must cover knowledge base to
 - Achieve competencies, evaluated by program
 - Master core content, measured by board exam
- Options for didactic coursework for fellowship programs
 - Develop own
 - Use another program's (consistent with ACGME rules), such as OHSU's

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A number of programs plan to use OHSU courses

- BMI 510 - Introduction to Biomedical and Health Informatics*
- BMI 512 - Clinical Information Systems*
- BMI 513 - Electronic Health Record Laboratory
- BMI 514 - Information Retrieval
- BMI 515 - Ethical, Legal and Social issues in Biomedical Informatics
- BMI 516 - Standards and Interoperability in Healthcare
- BMI 517 - Organizational Behavior and Management*
- BMI 518 - Project Management*
- BMI 519 - Business of Healthcare Informatics*
- BMI 520 - Consumer Health Informatics
- BMI 521 - Public Health Informatics
- BMI 523 - Clinical Research Informatics
- BMI 537 - Healthcare Quality
- BMI 544 - Databases
- BMI 548 - Human-Computer Interaction
- BMI 549 - Health Information Privacy and Security
- BMI 560 - Design & Evaluation in Health Informatics

* 5 courses that cover bulk of core content



International online students from locations that include: Argentina, Singapore, Egypt, Saudi Arabia, Israel, Zimbabwe, Thailand, China, and others



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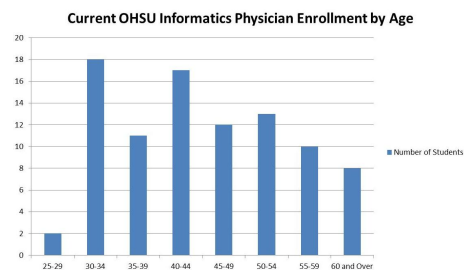
Mapping CI core content to OHSU BMI courses

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Clinical Informatics Core Content Competencies		510	512	517	518	519	513	514	515	516	520	521	523	537	544	548	549	560
2	1	Fundamentals																	
3	1.1	Clinical Informatics																	
4	1.1.1	The discipline of informatics																	
5	1.1.1.1	Definitions of informatics	L	LA															
6	1.1.1.2	History of informatics (e.g., evolution of health records)	LA	LA								L							
7	1.1.1.3	Domains/subspecialties of informatics	L											R					
8	1.1.1.4	Careers in informatics	L																
9	1.1.1.5	Professional organizations																	
10	1.1.1.6	Current and future challenges for informatics	L	LA								L		R					
11	1.1.2	Key informatics concepts, models, and theories	L																
12	1.1.3	Clinical informatics literature	A	LA								L	B						
13	1.1.3.1	Core literature	A	LA								L	B						
14	1.1.3.2	Critical analysis of informatics literature	LA	A	E		RE					A				E			LA
15	1.1.4	International clinical informatics practices	L									LR							LA
16	1.1.5	Ethics and professionalism			LR		LR							L					
17	1.1.6	Legal and regulatory issues	L								R			L				LA	
18	1.2	The Health System																	
19	1.2.1	Determinants of individual and population health	L	L															
20	1.2.2	Primary domains, organizational structures, cultures, and	L																
21	1.2.2.1	Health care delivery	LR																
22	1.2.2.2	Public health																	
23	1.2.2.3	Clinical research	E		E		E												
24	1.2.2.4	Education of health professionals	L	A	LB	LB	LR												
25	1.2.3	Personal health																	
26	1.2.3.1	The flow of data, information, and knowledge within the	L	LA								L		LA					
27	1.2.4	Policy & regulatory framework	L	LR										LR					
28	1.2.5	Health economics and financing																	
29	1.2.6	Forces shaping health care delivery	L		B	LB	LR												
30	1.2.7	Institute of Medicine quality components	L	LA															LA
31	1.2.7.1	Safety																	
32	1.2.7.2	Effectiveness	L	L															
33	1.2.7.3	Efficiency	L	L															
34	1.2.7.4	Patient-centeredness	L	L								LA							
35	1.2.7.5	Timeliness	L																
36	1.2.7.6	Equity	L																
37	2	Clinical Decision Making and Care Process Improvement																	
38	2.1	Clinical Decision Support																	
39	2.1.1	The nature and cognitive aspects of human decision	L	LA				E											
40	2.1.1.1	General	L	LA								L							
41	2.1.1.2	Medical	L	LA															
42	2.1.2	Decision science	L	LA															
43	2.1.2.1	Decision analysis	L	LA								L							
44	2.1.2.2	Probability theory	L																
45	2.1.2.3	Utility and preference assessment	L																
46	2.1.2.4	Cost effectiveness analysis					LR												
47	2.1.2.5	Test characteristics (e.g., sensitivity, specificity, predictive																	
48	2.1.3	Application of clinical decision support	L	LA				E											
49	2.1.3.1	Types of decision support (e.g., alerts, reminders,	L	LA															
50	2.1.3.2	Users of decision support (including clinicians and	L	LA															
51	2.1.3.3	Implementing, evaluating, and maintaining decision	L	LA				E											
52	2.1.4	Transformation of knowledge into clinical decision	L	LA															
53	2.1.4.1	Knowledge generation	L									R							
54	2.1.4.2	Knowledge acquisition	L																
55	2.1.4.3	Knowledge modeling	L																
56	2.1.4.4	Knowledge representation	L																
57	2.1.4.5	Knowledge management and maintenance	L																
58	2.1.5	Legal, ethical, and regulatory issues																	
59	2.1.6	Quality and safety issues	L									R	L		L	R	LB		
60	2.1.7	Supporting decisions for populations of patients														A			
61	2.2	Evidence-based Patient Care																	
62	2.2.1	Evidence sources	L																
63	2.2.2	Evidence grading	L																

Element (Abbreviation)
Lecture (L)
Article (A)
Reading (R)
Book (B)
Exercise (E)

Concerns about the subspecialty (Hersh, various from blog)

- Age at which many physicians enter informatics
 - OHSU experience shows many physicians (and others) enter field mid-career
- Ability of enough programs to build capacity after grandfathering period
 - Will ACGME develop flexibility and/or innovation?
- Paying for cost of training
 - Programs are a true cost to financially strapped academic health centers



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Going forward

- Professional recognition for field and those who work in it
 - Necessary for sustaining CMIO and related careers? Not now but probably over time
- Subspecialty model was lowest hanging fruit
 - Specialty deemed not have been feasible
 - Other certification options not pursued
- One alternative may be what results from process of AMIA Advanced Interprofessional Certification Program
 - <http://www.amia.org/advanced-interprofessional-informatics-certification>

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