HIC 2009 Workshop
Introduction to Health Informatics

Part 2: Knowledge Domain & Educational Options

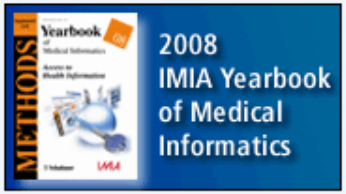
Professor Anthony Maeder
University of Western Sydney

Health Informatics Knowledge Domain

- Perspectives on HI body of knowledge
  - Built from component topics (e.g. Mathematics)
  - Based on applications areas (e.g. EHRs)
  - Aligned with affiliation interests (e.g. Nursing)

- Many areas of fundamental HI knowledge
  - Aggregate these from different fields
  - Inherently a multidisciplinary connected space

INTERNATIONAL MEDICAL INFORMATICS ASSOCIATION



IMIA Publication Office

The IMIA Vision

Saturday, August 15, 2009

There will be a world-wide systems approach for healthcare. Clinicians, researchers, patients and people in general will be supported by informatics tools, processes and behaviors that make it easy to do the right thing, in the right way, at the right time to improve health care for all. This systems approach will incorporate and integrate research, clinical care and public health. To achieve this vision it will require everyone being supported by informatics-based information and communication systems and technologies.

IMIA will provide leadership and expertise to the multidisciplinary health focused community and policy makers to enable the transformation of healthcare in accord with the world-wide vision to improve the health of the world population.

Inherent in IMIA's role is to bring together, from a global perspective, scientists, researchers, users, vendors, developers, consultants and suppliers in an environment of cooperation and sharing - to research and develop the concepts needed to support the organizations of the world seeking technology as transformational. As an organization committed to promoting best practice in the use of information and communication technologies within biomedical informatics and in health and healthcare, IMIA will ensure that it uses and promotes best practice in its own use of technology as a transformational strategic asset.

A message from IMIA President, Prof Dr. Reinhold Haux

IMIA General Assembly
November 25, 2009
Collaborative Meetings on Health Informatics (CoMHI 2009),
November 21-25, 2009
Hiroshima. Japan

Meetings & Conferences

MIE09 SARAJEVO
Medical Informatics in a United and Healthy Europe
30 August to 2 September 2009
www.mie2009.org

August 30 - Sept. 2, 2009
Sarajevo, Bosnia and Herzegovina

AMIA 2009
SAN FRANCISCO • November 14-18

San Francisco, CA. USA
November 14 – 18, 2009

Revision of the Recommendations of the International Medical Informatics Association (IMIA) on Education in Bio-Medical and Health Informatics

International Medical Informatics Association, Working Group 1: Health and Medical Informatics Education

Abstract: The International Medical Informatics Association (IMIA) agreed on revising the existing international recommendations in health informatics / medical informatics education. These should help to establish courses, course tracks or even complete programs in this field, to further develop existing educational activities in the various nations and to support international initiatives concerning education in Biomedical and Health Informatics (BMHI), particularly international activities in educating BMHI specialists and the sharing of courseware.

The IMIA recommendations centre on educational needs for health care professionals to acquire knowledge and skills in information processing and information and communication technology. The educational needs are described as a three-dimensional framework. The dimensions are: 1) professionals in health care (eg. physicians, nurses, BMHI professionals), 2) type of specialisation in bio-medical and health informatics (IT users, BMHI specialists), and 3) stage of career progression (bachelor, master, ...).

Learning outcomes are defined in terms of knowledge and practical skills for health care professionals in their role (a) as IT user and (b) as BMHI specialist. Recommendations are given for courses/course tracks in BMHI as part of educational programs in medicine, nursing, health care management, dentistry, pharmacy, public health, health record administration, and informatics/computer science as well as for dedicated programs in BMHI (with bachelor, master or doctor degree).

To support education in BMHI, IMIA may offer to award a certificate for high quality BMHI education and supports information exchange on programs and courses in BMHI through a web server of its Working Group on Health and Medical Informatics Education (http://www.imia.org/wg1).

Keywords: Health Informatics, Biomedical Informatics, Education, Recommendations, International Medical Informatics Association, IMIA.

Australian Health Informatics Educational Framework

Dr Sebastian Garde, Prof. Evelyn Hovenga,
Faculty of Informatics and Communication, Central Queensland University, Rockhampton

Health Professionals increasingly need to use Information Technology (IT), and some also deploy, research or develop health care IT. Consequently, they need to be adequately educated for *their* roles in Health Informatics (HI). A myriad of different opportunities exist in Australia for obtaining an education in Health Informatics. This education can start with an Information Technology or Information Systems Bachelor's degree with or without a specialization in HI, or with any health professional degree followed by HI education in the form of continuing professional development, or by undertaking a certificate, diploma or degree program in HI. To date we have seen engineers, mathematicians, physicists, librarians, medical record administrators, computer scientists and others become experts in HI. The HI discipline is broad and varied. Health Informatics education providers need to remain relevant and current in the content and delivery of Health Informatics education and training.

The aim of this Australian Health Informatics Educational Framework is to provide guidance with regard to 'good' Health Informatics education while acknowledging

- the diversity of different roles in Health Informatics,
- the diversity of ways that lead to Health Informatics and
- the diversity of education within the Health Informatics discipline

This diversity is fruitful and needed, however, in the process of providing national

Australian Health Informatics Education Council

Meetings
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Our Mission:

To address the supply of health informaticians and to increase the information management skill and knowledge of health workers across the sector.

Auspicing Organisations:

Australian College of Health Informatics (ACHI)

Health Information Management Association Australia (HIMAA)

Health Informatics Society of Australia (HISA)

Health Level 7 Australia (HL7)

Contact us:

AHIEC

c/o ACHI
PO Box 125
GLEN IRIS 3146
Australia

News:

June 2009: Workplan completed
May 2009: DOHA support for a Health Informatics Education Workplan
March 2009: NHIEC/AHIEC formed

COACH: CANADA'S HEALTH INFORMATICS ASSOCIATION - Windows Internet Explorer provided by SCM

http://coachorg.com/

COACH Canada

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University of Western Sydney

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Taking Health Informatics Mainstream

Our community is large and diverse – and our strength and creativity lie in this diversity. We are a multi-disciplinary group of individuals from the health, information and management sciences with a common interest in advancing health informatics.

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Industry News

Congratulations to the first CPHIMS-CAs!

August 4, 2009

COACH congratulates the first individuals to

Upcoming Events

MIE 2009 - Medical Informatics in a United and Healthy Europe

August 30 - September 2, 2009

Scientific presentations are from more

COACH Fall Forum

Healthcare 2.0: Moving from Implementation to Impact

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About Health Informatics

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- Health Informatics Associations

COACH Definition of Health Informatics

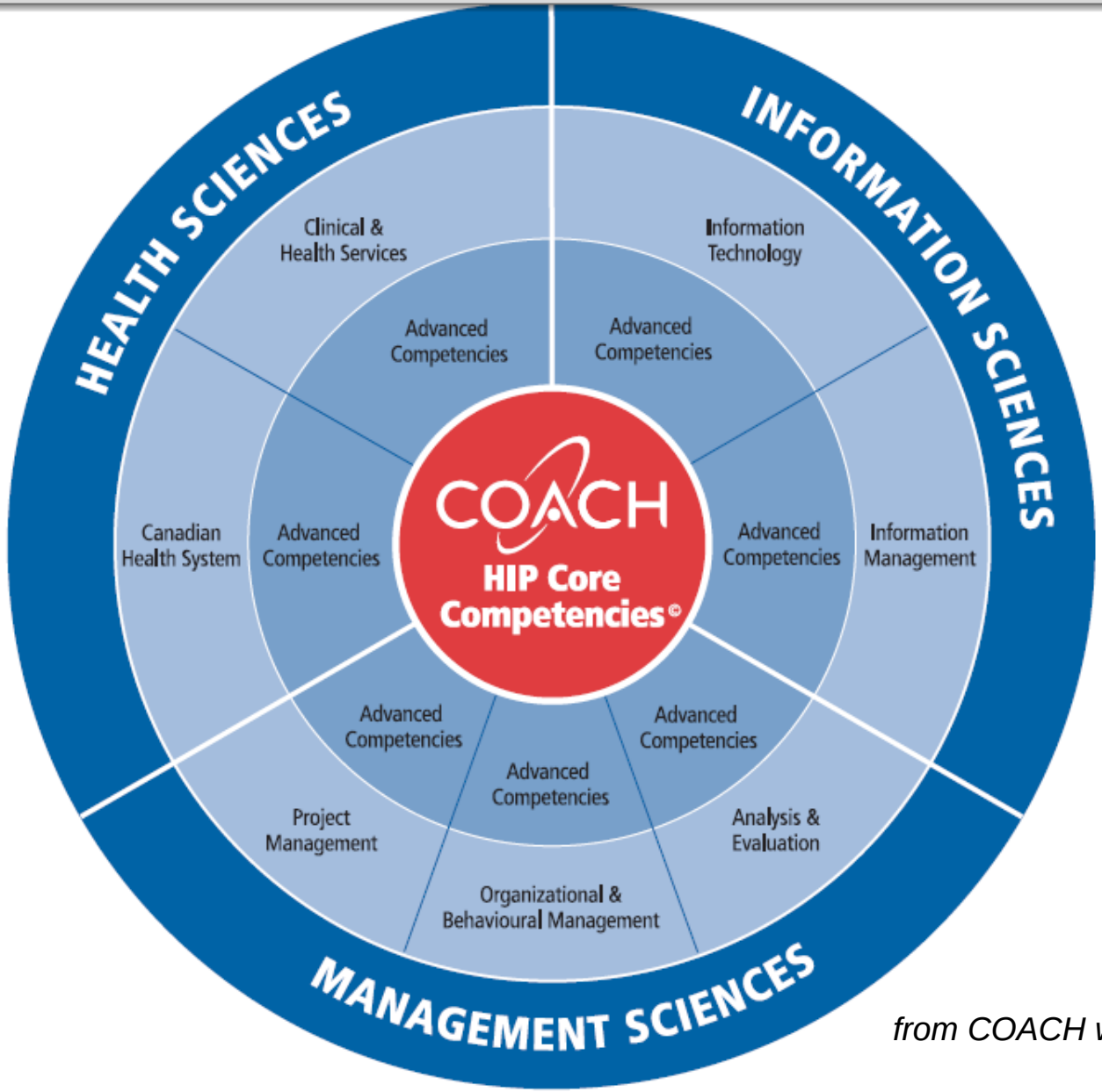
Health informatics (HI) is the intersection of clinical, IM/IT and management practices to achieve better health.

HI involves the application of information technology to facilitate the creation and use of health related data, information and knowledge. Health informatics enables and supports all aspects of safe, efficient and effective health services for all Canadians (e.g., planning, research, development, organization, provision, evolution of services, etc.). Health Informatics Professionals develop and deploy information and systems solutions, drawing on expert knowledge from fields such as computer science, information management, cognitive science, communications, epidemiology, management sciences and health sciences. Examples of health informatics applications include the design, development, implementation, maintenance and evaluation of:

2009 Guidelines for the Protection of Health Information

The 2009 Guidelines for the Protection of Health Information, available as both user-friendly PDF and a new reference book, is an important resource for protecting privacy and security of health information, particularly when designing or maintaining information systems.

READ MORE



from COACH website

Examples of health informatics applications include the design, development, implementation, maintenance and evaluation of:

- communication protocols for the secure transmission of healthcare data
- electronic patient record systems (regionally, provincially, territorially or nationally)
- evidence-based clinical decision support systems
- classification systems using standardized terminology and coding
- case management systems (e.g., for community, home and long-term care)
- access and referrals systems for healthcare services
- patient monitoring systems (e.g., computer controlled bedside monitors and patient home monitoring devices)
- digital imaging and image processing systems
- telehealth technologies to facilitate and support remote diagnosis and treatment
- internet technology for engaging patients in their own care
- public health surveillance and protection systems
- methodologies and applications for data analysis, management and mining
- clinical information data warehouses and reporting systems
- business, financial, support and logistics systems

from COACH website

UK Council for Health Informatics Professions

UKchip

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Welcome to the UK Council for Health Informatics Professions

UKCHIP has been established to promote professionalism in Health Informatics and the certification of those who work in the profession.

It operates a voluntary Public Register of Health Informatics professionals who meet clearly defined standards of competence and agree to work to a common code of conduct.

Registration and certification is open to anyone currently working in Health Informatics, whether for the National Health Service, for the private health care sector or for commercial suppliers to the health care sector. The majority of registrants are employed in the United Kingdom, although we welcome individuals from elsewhere.

The pages on this website:

- **explain why professionalism in Health Informatics is essential for the well-being and safety of patients and the public;**
- **show how Health Informatics professionals can register with UKCHIP;**
- **provide guidance and support for Health Informatics professionals**

Latest News

Follow this link to find out about the latest developments at UKCHIP and in the Health Informatics profession, including:

- Statement about the ***Independent Review of NHS and Social Care IT***
- Vacancies on ***UKCHIP Council***
- Developments in the ***Health Informatics Careers Framework***

UKCHIP Public Register of Accredited Health Informatics Professionals

Follow this link to view the current register of accredited Health Informatics professionals.

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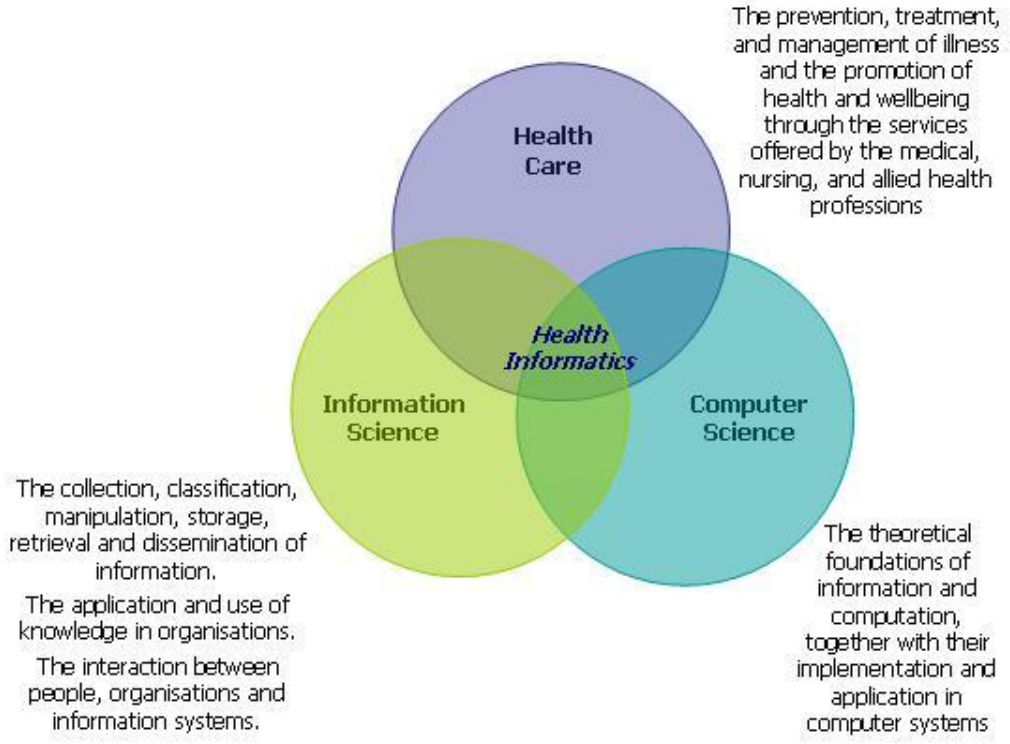
Professionalism in Health Informatics

Over the past few years, the term "***Health Informatics***" has been accepted increasingly to describe the knowledge, skills and tools which enable information to be collected, managed, used and shared safely to support the delivery of healthcare and promote health.

This concept is illustrated further in the diagram below, which shows how the generic sciences of health care, information and computer technology interact to create the domain of Health Informatics.



THE ROYAL AUSTRALIAN COLLEGE OF GENERAL PRACTITIONERS

Message from the President

On 27 July, Prime Minister Kevin Rudd announced that a consultation process will take place with general practitioners, other health care workers and members of the public to consider the 'big changes necessary to improve the Australian hospital and health care system'.

Online QA&CPD points statements

Log on to the website to access your statement. If you need your login details please call 1800 284 789.

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Your opinion and experience of Influenza A H1N1 09 (swine flu)

The RACGP is interested in receiving feedback from GPs and their practice teams regarding their experiences in responding to this pandemic. The RACGP regards this information as useful in developing ongoing resources for general practice. This information will support the College in its ongoing communication with governments and health departments at all levels.

New partnership boosts support for general practice managers

The RACGP and the Australian Association of Practice Managers (AAPM) will work together to promote the speciality area of management in general practice. The three year partnership will focus on enhancing management in general practice to deliver better health care outcomes for patients.

Influenza A (H1N1)/swine flu Update 14 August 2009

Influenza in Children: The Facts

A voice for General Practice in health reform

Quick links

H1N1 alert feed
RACGP news
Media releases
United General Practice Australia
Curriculum
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QA&CPD
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Mental health
GPMHSC

Health informatics

Contents

The five domains of General Practice – Health Informatics

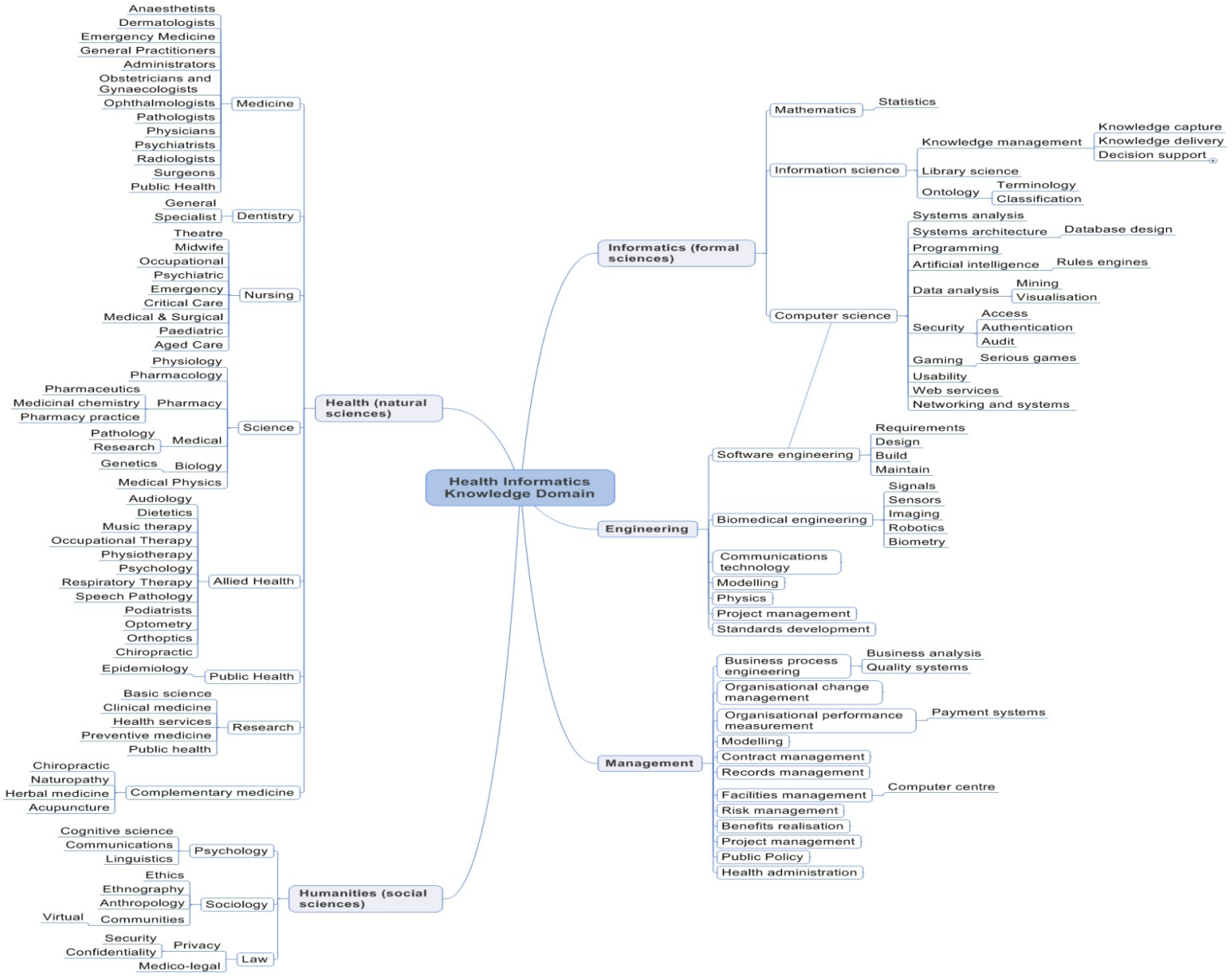
- **Communication skills and the patient-doctor relationship**
- **Applied professional knowledge and skills**
- **Population health and the context of general practice**
- **Professional and ethical role**
- **Organisation and legal dimensions**

from RACGP website

Health Informatics Knowledge Domain

- 3 levels of information complexity in HI
  - Data (e.g. EHRs, data mining, data linking)
  - Decisions (e.g. CAD, care management)
  - Systems (e.g. workflow, business processes)

Health Informatics Knowledge Domain



Health Informatics Knowledge Domain

- Health
- Informatics
- Engineering
- Management
- Humanities

Health

- Allied Health
- Biomedical Sciences
- Complementary Medicine
- Dentistry
- Medicine
- Public Health

Informatics

- Computer Science

  e.g. data analysis, networks, programming, security, systems, usability, web services

- Information Science

  e.g. knowledge management, library science, ontologies

- Mathematics

  e.g. statistics

Engineering

- Biomedical engineering
- Communications technologies
- Physics
- Project management
- Software engineering
- Standards development

Management

- Benefits realisation
- Business process engineering
- Change management
- Facilities management
- Health administration
- Organisational performance
- Policy

Humanities

- Law
- Psychology
- Sociology
- Ethics

Health Informatics Educational Options

- Certificates and training (coursework)
- Undergraduate degrees (coursework)
- Postgraduate degrees (coursework)
- Higher degrees (research)

Certificates and Training

- TAFE
  - Qualifications in underlying topics, not HI
- Commercial sector
  - Specific HI applications and packages
- Professional bodies
  - Core curriculum (clinical areas)
  - Continuing Professional Development

Australian Universities offering Health Informatics Courses (from websites)

University of Adelaide
University of Ballarat
University of Canberra
University of Melbourne
Monash University
University of New England
University of New South Wales
University of Newcastle
University of Notre Dame Australia
University of Queensland
University of South Australia
University of Southern Queensland
Swinburne University of Technology
University of Sydney
University of Tasmania
University of Technology Sydney
University of Western Australia
University of Western Sydney
University of Wollongong
Victoria University

Undergraduate degrees

- Computing
  - Bachelor of IT (Health Informatics) or with Health Informatics major (typically 4+ prescribed subjects)
- Science
  - Bachelor of Biomedical Sciences or Health Sciences with elective Health Informatics subjects
- Medicine and Nursing
  - Subjects covering or including Health Informatics content

Postgraduate degrees

- Grad Certificate / Diploma / Masters
  - Health Informatics
  - eHealth, mHealth, uHealth…
- Masters
  - Health Administration / Management
  - Health Sciences
  - Nursing
  - Public Health

Higher degrees

- Masters (by research)
- Doctor of Philosophy (by research)
- Professional Doctorate (portfolio)

Conclusion

- A wide ranging knowledge domain
- Several distinct educational pathways

The Healthcare Information and Management Systems Society (HIMSS) is the healthcare industry's membership organization exclusively focused on providing global leadership for the optimal use of healthcare information technology (IT) and management systems for the betterment of healthcare. more >

Topics

ARRA/Economic Stimulus new
Electronic Health Record
Healthcare Reform new
HITSP
Management Engineering & Process Improvement
Nursing Informatics
Patient Safety & Quality Outcomes

View all topics

HIMSS News

Healthcare Reform Update: Federal Agencies Take Additional Steps to Foster Interoperability

New One-Day Conference Highlights ARRA Funding Opportunities

Watch HIMSS Interview on Healthcare Reform

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http://www.himaa.org.au/

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No. 258
(July 2009)
online here

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SEPTEMBER 18, 2009

or visit www.himaa.org.au/2009/

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The professional home for biomedical and health informatics

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- HIPAA enforcement now run by Office for Civil Rights
- Plans to put health records online concerns Britons

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Meetings & Education

AMIA holds several meetings each year. Our College of elected fellows meets early in the year, followed by the Summit on Translational Bioinformatics in March, the Spring Congress in May, an Academic Forum meeting in the summer and our two fall meetings, the Health Policy Meeting, and our signature event, the AMIA Annual Symposium. Our education, training and academic related opportunities are unmatched; we continue to develop new programs and services to serve our growing community. Read More

Membership

AMIA's 4,000 members advance the use of health information and communications technology in clinical care and clinical research, personal health management, public health/population, and translational science with the ultimate objective of

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AMIA 2009 Annual Symposium Early Bird Registration Deadline is August 27
Click here to register.

CMIO Boot Camp On-line Registration Open
Click here for more information.

2010 Summit on Translational Bioinformatics Submission Site Now Open
Click here to submit

AMIA NEWS

- AMIA Submits Comments to HIT Policy Committee
- JAMIA Publishes Results of Five-Year Study
- AMIA Welcomes New President & Chief Executive Officer