Medical Informatics

What it means for Medical Libraries?

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Medical Informatics Consultant

Topic Questions

- Who am I?
- What is Medical Informatics?
- What it means for libraries?
- What can libraries do?

Who am I?


Evolution of the National Library of Medicine

First Einstein Quote

I never teach my pupils. I only attempt to provide the conditions in which they can learn.

What is Medical Informatics?

Synonyms

- Biomedical Computing
- Biomedical Informatics
- Healthcare Informatics

- Clinical Informatics
- Healthcare Information Technology

Definition

- From **Wikipedia** :

- The intersection of information science, computer science, and health care.
- It deals with the resources, devices, and methods required to optimize the acquisition, storage, retrieval, and use of information in health and biomedicine.

Definition

- From **sci.med.informatics** :

- Biomedical Informatics is an emerging discipline that has been defined as the study, invention, and implementation of structures and algorithms to improve communication, understanding and management of medical information.

Definition

- From **Vanderbilt University** :

- Biomedical Informatics is the interdisciplinary science that deals with biomedical information, its structure, acquisition and use.

Definition

- From **Vanderbilt University** (cont'd):

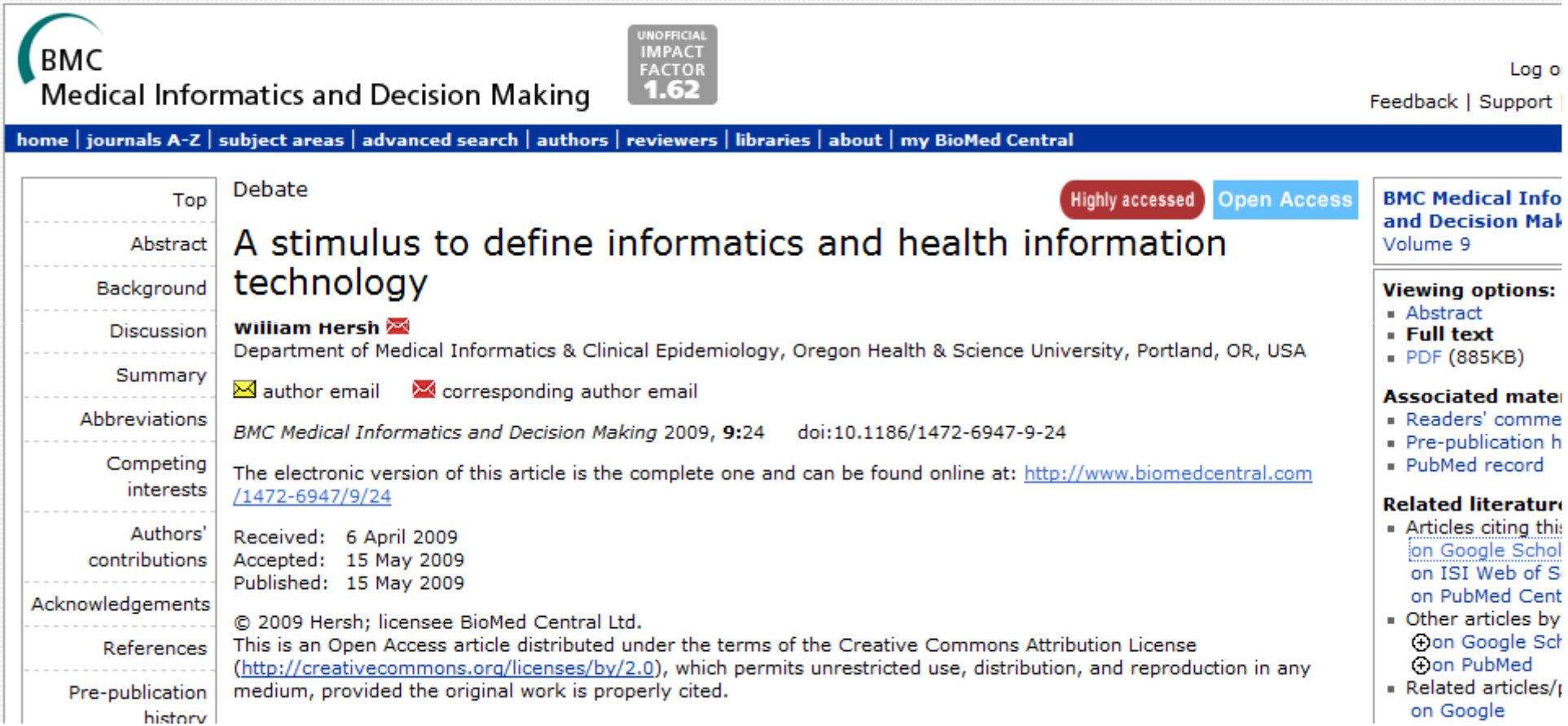
- Biomedical informatics is grounded in the principles of computer science, information science, cognitive science, social science, and engineering, as well as the clinical and basic sciences.

Definition

- From **Dr. Mike Muin**:

- Healthcare Information Technology (HIT)
- The improvement and support of **healthcare** through the effective and efficient use and management of **information** using carefully selected and implementable **technology**.

2009 Hersh ‘Debate’ Paper



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Debate

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A stimulus to define informatics and health information technology

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BMC Medical Informatics and Decision Making 2009, **9**:24 doi:10.1186/1472-6947-9-24

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Definition

- From **William Hersh**:

- The field concerned with the optimal use of information, often aided by the use of technology, to improve individual health, health care, public health, and biomedical research.

So what?

JAMIA
The Journal of the American Medical Informatics Association

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Volume 16(2); Mar–Apr 2009

Perspectives on Informatics: AMIA Board White Paper

Core Content for the Subspecialty of Clinical Informatics

Reed M. Gardner, J. Marc Overhage, Elaine B. Steen, Benson S. Munger, John H. Holmes, Jeffrey J. Williamson, Don E. Detmer, and AMIA Board of Directors

J Am Med Inform Assoc. 2009 Mar–Apr; 16(2): **153–157.** doi: 10.1197/jamia.M3045.
PMCID: PMC2649328

| Abstract | Full Text | PDF–129K |

Program Requirements for Fellowship Education in the Subspecialty of Clinical Informatics

Charles Safran, M. Michael Shabot, Benson S. Munger, John H. Holmes, Elaine B. Steen, John R. Lumpkin, Don E. Detmer, and AMIA Board of Directors

J Am Med Inform Assoc. 2009 Mar–Apr; 16(2): **158–166.** doi: 10.1197/jamia.M3046.
PMCID: PMC2649323

| Abstract | Full Text | PDF–93K |

Perspectives on Informatics: Editorial Comment

Defining the Medical Subspecialty of Clinical Informatics

Don E. Detmer, John R. Lumpkin, and Jeffrey J. Williamson

J Am Med Inform Assoc. 2009 Mar–Apr; 16(2): **167–168.** doi: 10.1197/jamia.M3094.
PMCID: PMC2649325

| Abstract | Full Text | PDF–48K |

Perspectives on Informatics: Viewpoint Paper

A "Fundamental Theorem" of Biomedical Informatics

Charles P. Friedman

J Am Med Inform Assoc. 2009 Mar–Apr; 16(2): **169–170.** doi: 10.1197/jamia.M3092.

Fundamental Theorem

Figure 1. A "Fundamental Theorem" of informatics.

"A person working in partnership with an information resource is 'better' than that same person unassisted."

Fundamental Theorem

Figure 2. What informatics is not.

Have ‘Better Doctors’
NOT replace doctors

Fundamental Theorem

- Corollary 1: Informatics is more about people than technology.

Fundamental Theorem

- Corollary 2: In order for the theorem to hold, the resource must offer something that the person does not already know.

Fundamental Theorem

- Corollary 3: Whether the theorem holds depends on an interaction between person and resource, the results of which cannot be predicted in advance.

Fundamental Theorem

Figure 1. A "Fundamental Theorem" of informatics.

"A person working in partnership with an information resource is 'better' than that same person unassisted."

Ok, that’s nice.
But how do we use that?

AAMC Learning Objectives

- Medical Informatics Advisory Panel identified five major roles played by physicians
  - Life-long Learner
  - Clinician
  - Educator/Communicator
  - Researcher
  - Manager

Life-long Learner

- Medical education is a life- (or at least career-) long process beginning with medical school, extending into residency, and continuing through years of medical practice.

Life-long Learner (cont'd)

- Includes cognizance of the broad range of medical information resources available and their relative value for particular needs, the know-how to use them, and the motivation to use them routinely.

Clinician

- The clinician must acquire information about the patient, make clinical decisions based on available information, and document and relay findings.

Educator/Communicator

- Physicians play significant roles as teachers in various contexts: with peers and students, with their patients, and with the public at large.
- In all contexts they must also communicate effectively.

Researcher

- "Research" includes traditional biomedical research performed primarily in the laboratory as well as clinical research exploring outcomes of medical interventions.

Manager

- Physicians must understand and manage costs, manage and work effectively in groups, and effectively manage themselves.
- They also must understand their roles within the context of the overall health care system.

AAMC Learning Objectives

- Medical Informatics Advisory Panel identified five major roles played by physicians
  - Life-long Learner
  - Clinician
  - Educator/Communicator
  - Researcher
  - Manager

What does it all mean for libraries?

Second Einstein Quote

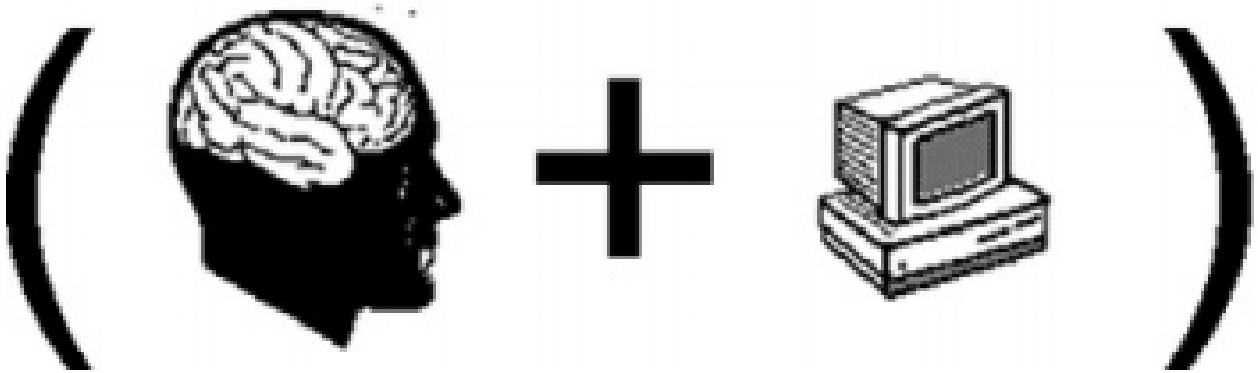
Imagination is more important than knowledge.

Physician Roles

+

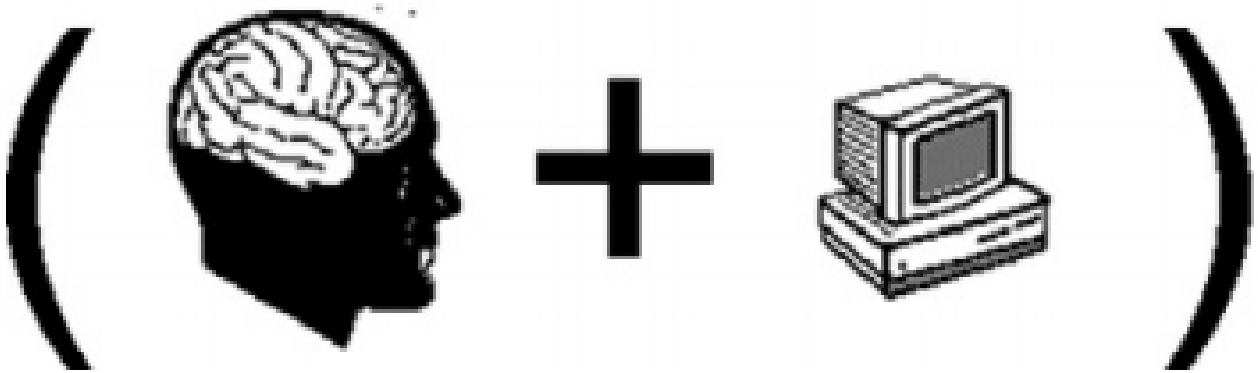
Fundamental Theorem

What can libraries do or contribute for each role?



Life-long Learner

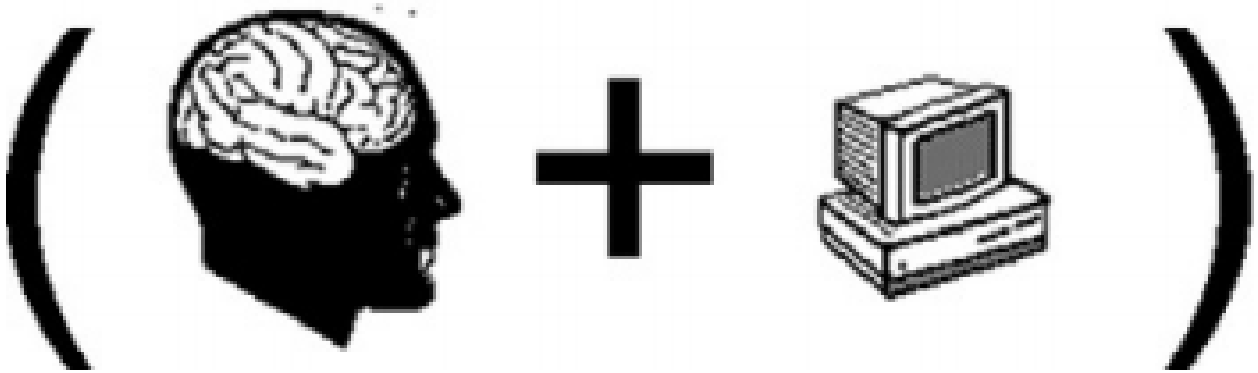
Information Resource
(Medical Library)



Clinician

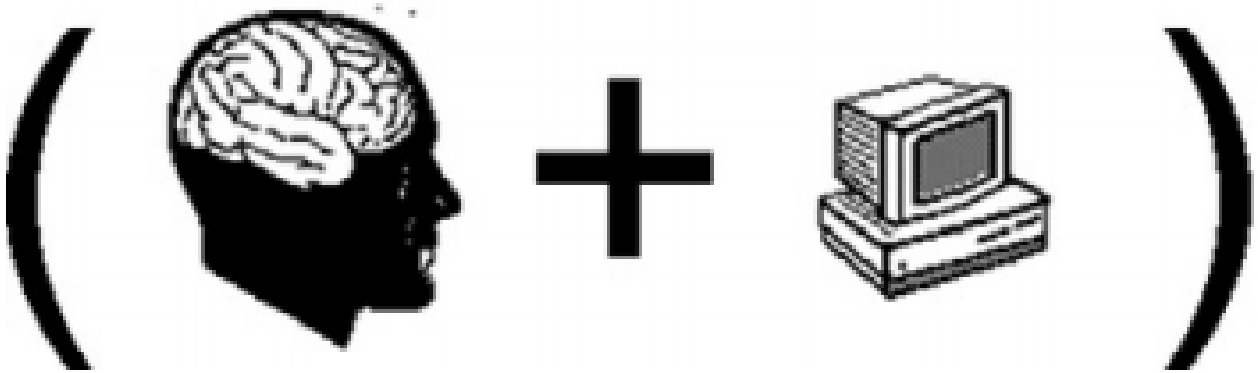
Information Resource

(Medical Library)



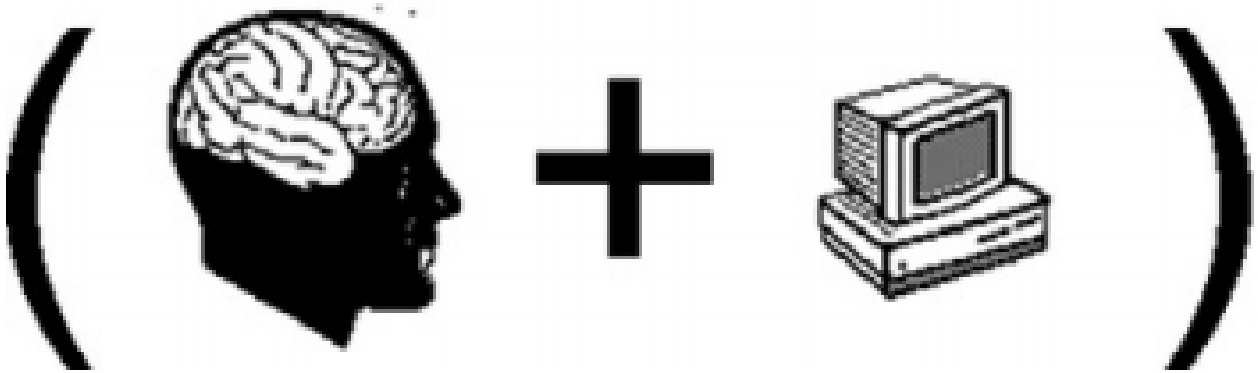
Educator/
Communicator

Information
Resource
(Medical Library)



Researcher

Information Resource
(Medical Library)



Manager

Information Resource

(Medical Library)

So, what now?

Some final musings…

Maximize role as a repository.

Go beyond role as repository.

Third Einstein Quote

The important thing is not to stop questioning.

What if?

Is this the end?

Yes, it is.

Thank you!

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