WHAT IS (AND ISN’T) INFORMATICS

Dr. Matthew Barnes, MD
“The 19th century culture was defined by the novel, the 20th century culture was defined by the cinema, and the 21st century culture will be defined by the interface.”

-- Aaron Koblin
INTRODUCTION

- Introduction to Informatics
- Biomedical Informatics
- Health Informatics
- Health IT
- Analytics
- Utilization
THE CENTRAL DOGMA OF INFORMATICS

Data-handling technology allows human cognitive energy to shift upward.

Without technology, cognitive allocation mires in low-layer processes.

ENVIRONMENT

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A Day in the Life

- Consumer Health: Educating the patient PRIOR to the appt
- Patient-centric – Consumer Health before/during/after the appointment
- Clinical Informatics: Team Leadership/Team Usability, Workflow
- Clinical Research Informatics: Clinical Decision Support – Translational Bioinformatics/Public Health
- Public Health Informatics: Find out if I’m doing well.
INFORMATICS

- American Medical Informatics Association does NOT have a formal definition.
  - As technology/public-policy changes, the field changes
  - So, the field is changing rapidly

- Crossroads of information science, computer science and healthcare
- It is a science that drives innovation, and defines approaches to knowledge in medical research, clinical care, and public health
- Business/leadership skills are a must
WHAT DO WE EVEN CALL THIS?

- Getting the right information to the right person at the right time
- Biomedical Informatics: The underlying science that has broad applicability across all the applied domains
- Health Informatics: applied research and practice in clinical and public health informatics
Let’s Start with Biomedical Informatics

Fig. 1 Biomedical Informatics at a glance
AMIA’s Scope of Biomedical Informatics

- Creates theories/methods/processes for knowledge
- Builds on communication/computing
- Supports models from molecules to populations
- Social and behavioral sciences – focus on the users
Bioinformatics is NOT Biomedical Informatics

- Bioinformatics focuses on technology in biology/basic research
- Bioinformatics is a FIELD of informatics.

- Biomedical Informatics are the CORE PRINCIPLES of Informatics.
WHAT ARE THE FIELDS OF STUDY?

- Clinical Informatics: applying informatics and IT to care
- Clinical Research Informatics: discovery and management of new knowledge relating to health
- Consumer Health Informatics: devoted to health literacy/education
- Public Health Informatics: surveillance, reporting and health promotion
- Translational Bio-informatics: taking basic research into clinical settings
“Fuzzy” Lines

Basic Research

Biomedical Informatics Methods, Techniques, and Theories

Biomedical Imaging

Consumer Health

Pharmacogenomics

Bioinformatics

Imaging Informatics

Clinical Informatics

Public Health Informatics

Continuum with “Fuzzy” Boundaries

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Health Informatics is a specific, important subfield: This is how we take our principles, and bring it to patients.

AMIHA is the organization specifically devoted to Health Informatics as it is applied to our patients.
ANOTHER WAY TO LOOK AT THINGS

Health Management

Health Informatics

Health Information

Technology
THE DEFINITION IS NOT

- Not just about Computer Systems
  - Health Information Technology (HIT)
  - Computers happen to be necessary for the modern transmission of information.
  - They are vital tools. But still tools.

- The Best Paper System is BETTER than the Worst Computer System.
BMI and HIT

Biomedical Informatics Training, Research and Development
- Academia
- Research Institutes
- Corporate Research Labs

Clinical Systems Companies
- Hospitals, Health Systems, Practices, Healthcare Industry

Academic Medical Centers

Biomedical Research Community

SOFTWARE

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THE DEFINITION IS NOT

- Not just about Analytics
  - Analytics is a very important part of informatics, and is very necessary for the subfields of Public Health, Clinical Research – and eventually, clinical informatics
  - Informatics is much, much more.

- Unless proper information systems are in place, analyzed data is not reflective of the truth
- Analytics is a tool for Informaticists
WHAT’S A CHIEF MEDICAL INFORMATION OFFICER?

- Advocate for Physicians in Systems.
  - Provide leadership in clinical information systems that assist physicians in patient care
  - Leads or participates in various committees representing the needs and requirements of the physician community
  - Envisions the big picture in terms of consequences and scope when planning for the future
  - Provides physician leadership using clinical data to proactively monitor, revise and develop automated clinical guidelines and best practices to improve the quality of care.
WHAT’S A CHIEF NURSING INFORMATION OFFICER?

- CNIO provides vision and leadership for the nursing informatics program.
  - Develops nursing informatics plans
  - Data Analysis
  - Creation of policies

- Advocates for nursing informatics programs – things that enhance efficiency/safety for nursing staff
WHAT’S A CHIEF INFORMATION OFFICER?

- Creates technical standards
  - Integrate IA
  - Portfolio Management
  - Data warehousing
  - Equipment

- They make sure the system works.
SUMMARY

- Informatics
- Biomedical Informatics
- Fields of Informatics
- Health IT
- Analytics
AND I DIDN’T EVEN MENTION AHLTA ONCE.

Questions?