An Overview of eHealth

Foundational Curriculum:
Cluster 1: eHealth
Module 1: Introduction to eHealth
Unit 1: An Overview of eHealth
FC-C1M1U1

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Unit Objectives

- Delineate key definitions in the healthcare domain
- Define eHealth
- Describe the components of eHealth
- Define clinical information systems
- Identify and describe an electronic health/medical record
- Identify the components of an EHR
- Name different formats for EHRs

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Basic Healthcare Terms

- **health:** the state of the human body, its systems, and condition; also expressed as a presence or absence of illness or injury
- **healthcare**: the maintenance or improvement of health via the diagnosis, treatment, and prevention of disease, illness, injury, and other physical and mental impairments
- **eHealth**: healthcare practice supported by electronic processes and information and communication technology; also synonymous with health information technology (health IT)
- **health informatics**: literally, the intersection of information and health; also, a term used to describe the multidisciplinary field that uses eHealth/health IT to improve healthcare; in the US, the term is closely aligned to roles such as clinical informaticists, whereas in Europe, the term is frequently related to concepts such as knowledge and library skills in healthcare, health economics, etc.

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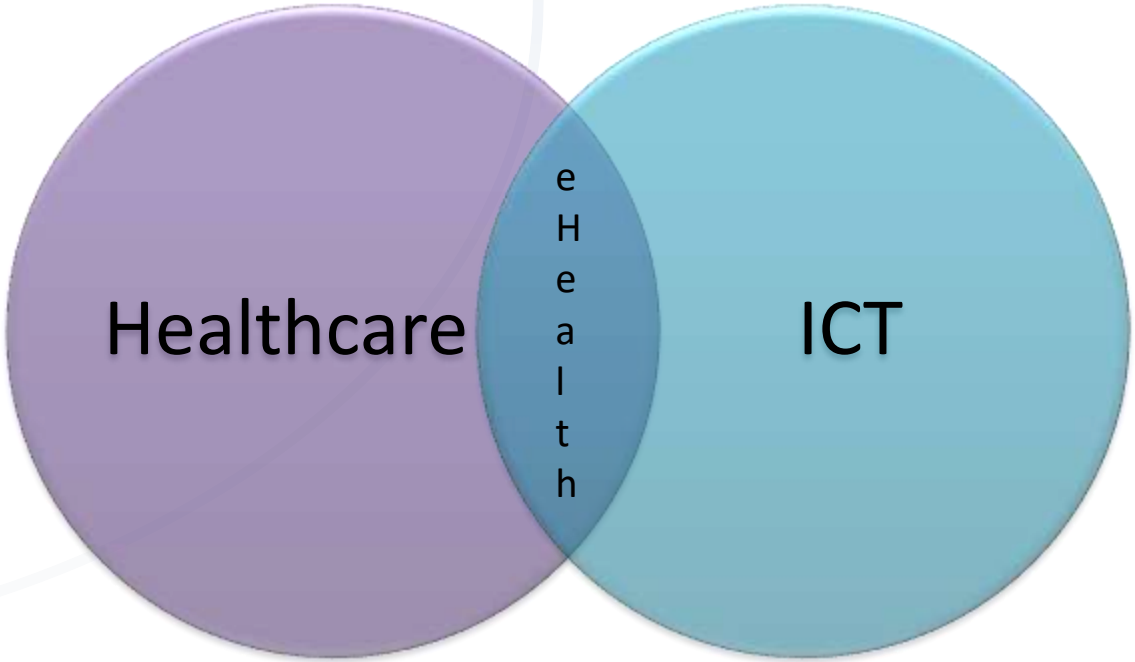
What is eHealth?

- **eHealth** is the intersection of healthcare and **information and communications technology** (ICT) (electronic processes)



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A Note on eHealth Terminology

- There are several terminology schemes that are used throughout the world regarding terminology associated with healthcare
- In the United States, for example, eHealth is more commonly referred to as health information technology, or “health IT”

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Notes on eHealth Terminology (cont'd)

- Terms you may use regarding eHealth may vary based on your region, location, organization or personal experience
- Throughout our curriculum, we have tried to utilize terms that are applicable and similar both in the United States and throughout the European Union states
- We have often used interchangeable terms such as eHealth, health IT, and informatics; however, it would be impossible to include all possible variations
  - Terms used in your region may vary

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Notes on eHealth Terminology (cont'd)

- Also, we have attempted to describe eHealth/health IT roles in a variety of languages used within the European Union and throughout the world with our tools and resources (e.g., HITComp – www.hitcomp.org)
- We do our best to keep up to date with new terms and regional variations
- We are continually checking and updating, but we apologize for any errors or discrepancies that may be found

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What are the components of eHealth?

- eHealth comprises many components, including:
  - Health informatics
  - Clinical information systems
  - Medical technology and health applications
  - Data analytics
  - Health knowledge management
  - Telemedicine and mobile health (mHealth)
  - Population and Public eHealth
  - Virtual healthcare teams
  - Patient engagement

- You will learn more about these components in later modules of the foundational curriculum

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Why Might Workers Use eHealth?

- It may seem obvious that a physician or nurse may need to use a computer to enter notes or results regarding a patient in the digital age.
- The same would apply to an information systems analyst or a research technician who uses technology routinely in her or his work in the healthcare field.
- But you may wonder why an environment services worker, or a security guard may need to use eHealth to perform his or her duties.
- As we move further into the 2000s, a digital agenda is at the forefront of most governments', organizations' and companies' lists of must-haves. This is paramount because of timeliness, financial savings, safety, satisfaction and privacy, all of which are heightened over time by transformation of paper processes to digital ones.

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What are clinical information systems?

- **Clinical information systems** (CIS) are comprehensive, integrated information systems designed to manage all aspects of a patient's journey through healthcare
  - They are at the heart of eHealth delivery
- Clinical information systems may also be known as electronic health records (EHRs) or electronic medical records (EMRs)

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What are clinical information systems? (cont'd)

- Examples of departmental clinical information systems include **laboratory information systems** (LIS), **radiology information systems** (RIS), and **pharmacy information systems** (PIS)
  - The **laboratory** is where blood, urine, and other body fluids and tissue samples are evaluated for status and disease
  - The **radiology department** is where the patient receives evaluation with x-rays, computerized tomography (CT), magnetic resonance tomography/imaging (MRT/MRI), ultrasound and other radiologic processes
  - The **pharmacy department** is where medications and drugs are prepared, packaged and dispensed for patients

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What are the components of an EHR?

- An **electronic health record**, or EHR, is the primary method of documenting a health experience for a patient by a healthcare provider, such as a physician, nurse or pharmacist
  - An EHR may also be called an EMR (**electronic medical record**), which is the classic name for the electronic documentation of patient-related health data

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What are the variations between the terms EMR and EHR?

- In Europe (and formerly in the US), EMR is the standard term used to refer to hospital generated electronic records (deriving from paper-based medical records and their associated departments)
- In many areas throughout Europe and globally, the term EHR is mainly used to refer to physician-, cloud-based or patient-generated electronic records

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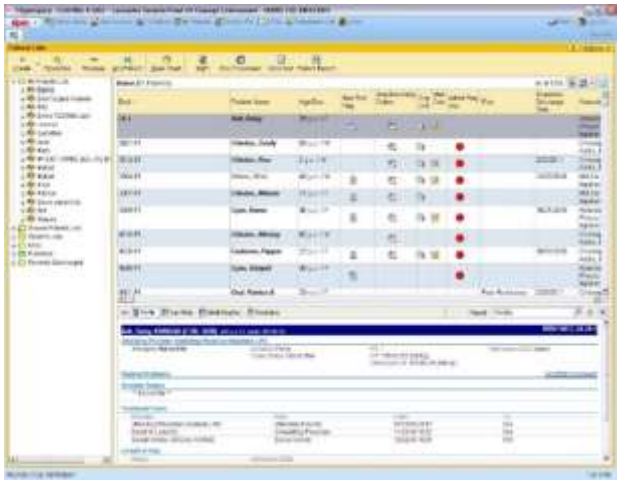
What are the components of an EHR? (cont'd)

- The EHR is a categorized, structured collection of patient and population health information that is electronically stored in a digital format. These records can be shared across different health care settings.
- The major components of an EHR include:
  - Patient health documentation (such as history, physical examination data, etc.)
  - Vital signs recording
  - Order entry (often called computerized provider order entry, or CPOE)
    - Examples include entry of orders such as a blood test, a chest x-ray or a surgical procedure
  - Clinical decision support (CDS)
  - Medication administration, often integrated with barcode medication administration (BCMA)
  - Reporting of results on exams and procedures ordered



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What are some formats of an EHR?

- The EHR has different formats in different settings. We will discuss eHealth settings in greater detail in the next unit.
- In the inpatient setting, there are several common formats for the EHR:
  - Admission Summary
  - Nursing Notes and Worklists
  - Physician Notes and Orders
  - Operative Notes and Reports
  - Pathology, Laboratory, Radiology and other departmental results and reports
  - Discharge Summary

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What are some formats of an EHR? (cont'd)

- Here are two typical formats for an outpatient EHR: the SOAP and HPIP
  - The SOAP record contains:
    - Subjective data (history, including history of present illness, past history, social history, family history, surgical history and previous hospitalizations)
    - Objective data (review of body systems and physical examination)
    - Assessment (problem list and diagnoses)
    - Plan (including treatment plan, interdisciplinary care planning and referrals)

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What are some formats of an EHR? (cont'd)

- The HPIP record contains the same data, where HPIP corresponds to SOAP by the following:
  - H: History = Subjective data
  - P: Physical = Objective data
  - I: Impression = Assessment
  - P: Plan = Plan

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Unit Review Checklist

- ❑ Delineated key definitions in the healthcare domain
- ❑ Defined eHealth
- ❑ Described the components of eHealth
- ❑ Defined clinical information systems
- ❑ Identified and described an electronic health/medical record (JL07)
- ❑ Identified the components of an EHR
- ❑ Named different formats for EHRs

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Unit Review Exercises

- Exercise 1: Explain the difference between health and healthcare
- Exercise 2: Explain the difference between eHealth and health informatics
- Exercise 3: What are SOAP and HPIP?
- Exercise 4: What are the differences between an EHR and an EMR, if any?

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Unit Exam

1. "The multidisciplinary field that uses eHealth/health IT to improve healthcare" describes which of the following terms?
   a. health
   b. healthcare technology
   c. healthcare
   d. informatics

2. eHealth is the intersection of which two fields?
   a. Healthcare and information communications technology
   b. Health and health information technology
   c. Communications and health informatics
   d. Electronics and communications

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Unit Exam (cont'd)

3. Which of the following is not an eHealth component?
   a. Clinical information systems
   b. Data analytics
   c. Immunology
   d. Patient engagement
4. The major components of an EHR include all of the following, except:
   a. Patient health documentation (such as history, physical examination data, etc.)
   b. Order entry (often called computerized provider order entry, or CPOE)
   c. Clinical decision support (CDS)
   d. Isolated Structural Analysis (ISA)

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Unit Exam (cont'd)

5. Which of the following statements is true about the SOAP record?
   a. The objective data is equivalent to the history
   b. The objective data is equivalent to the physical examination
   c. The impression includes diagnoses and a treatment plan
   d. The assessment includes diagnoses and a treatment plan

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