eHealth Safety Concepts

Foundational Curricula:
Cluster 9: Quality, Safety & Security
Module 16: Quality and Safety in eHealth
Unit 2: eHealth Safety Concepts
FC-C9M16U2

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Unit Objectives

- Define patient safety

- Explain patient safety in an eHealth context

- Recognize the importance of sharing information in a secure and appropriate manner, always keeping patient safety in mind

- State how the use of health information systems may improve patient outcomes

- Express the need for continuous monitoring of system safety and performance

Safety in eHealth

- The WHO defines **patient safety** as the absence of preventable harm to a patient during the process of health care and reduction of risk of unnecessary harm associated with health care to an acceptable minimum

- An acceptable minimum refers to the collective notions of given current knowledge, resources available and the context in which care was delivered weighed against the risk of non-treatment or other treatment

- Every point in the process of care-giving, including eHealth and health information and technology, contains a certain degree of inherent unsafety

- Clear policies, organizational leadership capacity, data to drive safety improvements, skilled health care professionals and effective involvement of patients in their care, are all needed to ensure sustainable and significant improvements in the safety of health care

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Safety in eHealth (cont'd)

- Healthcare professionals, allied health staff, and other actors in the eHealth, healthcare and ICT fields all rely on health information technology every day to support patient care

- eHealth helps consumers and all of these healthcare actors utilize and interact with data for information sharing and healthcare management, and enables providers, informaticists, researchers, organizations, manufacturers, and others to incorporate health data into analytics, population management, care improvement and new technology development

- At the core of this data use and exchange is safety and security. Organizations, healthcare professionals, governments and others all work to enhance patient safety efforts and reduce medical errors through the effective use of health IT

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Elements of Patient Safety

- The following are the elements of patient safety that most organizations, providers and developed countries have identified in their strategies for improving patient safety:

Just/Fair Culture	• Encourages reporting and questioning
In-depth Analysis process	• Establishes root causes for incidents and reviews, enabling learning
Safety Action Process	• Ensures actions are implemented and improvements can be demonstrated
Information Sharing Process	• Effective processes at various levels enable learning and improvement
Redefinition of Compensation Systems	• Enhance achievements and impacts on the patient safety culture

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Elements of Patient Safety

1. A 'just' or 'fair' culture that encourages a reporting and questioning culture; includes systems for reporting and analysing incidents organisationally, locally, regionally and nationally;

2. A good in-depth analysis process to establish root causes for selected individual incidents and aggregate incident reviews, thus enabling learning;

3. A process to ensure that actions are implemented and corresponding improvements in patient safety and quality of care can be demonstrated;

4. Effective processes for sharing information at various levels – nationally, organisationally and clinically – for learning and improvement;

5. Redefinition of compensation systems (punitive or non-punitive) and their impact on the patient safety culture and achievements.

Just/Fair Culture — •Encourages reporting and questioning

In-depth Analysis process — •Establishes root causes for incidents and reviews, enabling learning

Safety Action Process — •Ensures actions are implemented and improvements can be demonstrated

Information Sharing Process — •Effective processes at various levels enable learning and improvement

Redefinition of Compensation Systems — •Enhance achievements and impacts on the patient safety culture

How eHealth can improve Patient Safety

- How can ICT applications improve patient safety and risk management in healthcare? Based on both a review of tools in use and research on their use, the experts of EU study published in 2007 show that eHealth can help prevent medical errors, initiate rapid responses to any event, and track events, should they occur, as well as provide feedback to learn from them

- The study concludes with recommendations for concrete steps in research and development to improve patient safety and risk management in healthcare, using ICT tools and services

Secure and appropriate information sharing

- Every person has a right to privacy under the European Convention on Human Rights, as well as HIPAA in the United States
    - There are also privacy rules, rights and legislation in place around the world, often begun by the WHO
- It is important to create an environment of trust because it enables people to be open and honest for health care professionals which is necessary for offering the right help
- Examples from health IT tools:
    - Poor user interface design can lead to overdosing
    - Unclear information display may lead to failing to detect life threatening diseases
    - Loss of data may cause delays in treatment
    - Hiding information may cause misdiagnosis or adverse effects
    - On the contrary, if information is slipped to third parties, they may cause harm for the patient (e.g. difficulties to get a job)

IT Developments Benefits vs. Risks to Safety

- There have been substantial developments in information technology in recent decades and there is now real potential to apply these technological developments to improve the provision of healthcare universally

- Of particular international interest is the use of eHealth applications

- There is, however, a large gap between the theoretical and empirically demonstrated benefits of eHealth applications

- While these applications typically have the technical capability to help professionals in the delivery of healthcare, inadequate attention to the socio-technical dimensions of their use can result in new avoidable risks to patients

Health information systems in improving patient outcomes

- Health information systems facilitate the communication between health care professionals. Some of the benefits are:
  - Health information systems enable the complete patient data to be available even if the patient history had been recorded at another state or city. Easy access helps the integration to a new place.
  - The available previous patient history helps to avoid adverse effects such as reactions to anesthetics, previous post-surgery reactions, etc.
  - Health information systems help tracking and reporting of consultations and diagnostic testing and detect and alert drug & drug interactions
- Health information systems also permit the use of health care data for improving health care for example by outcome reporting and quality management.

Continuous monitoring

- Continuous monitoring is required to ensure that the IT systems perform correctly and safely
  - For example, a mistake in electronic prescription refills caused patients to receive a new prescription for a wrong medication in Finland in beginning of year 2018.
  - If patient information systems are not functioning correctly, the doctor may get a wrong person's information, or no information at all

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Unit Review Checklist

- ☐ Defined patient safety
- ☐ Explained patient safety in an eHealth context
- ☐ Recognize the importance of sharing information in a secure and appropriate manner, always keeping patient safety in mind (RB09)
- ☐ Stated how the use of health information systems may improve patient outcomes (TB05)
- ☐ Expressed the need for continuous monitoring of system safety and performance (TB06)

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Unit Review Exercise/Activity

1. Describe the reasons why information should be shared in a secure manner.

2. Identify ways in which health technology can improve health care.

Unit Exam

1. Continuous monitoring of IT systems is important
    a) To ensure low cost
    b) To track the performance of the care professionals
    c) To ensure, that no safety issues occur based on wrong information
    d) All of the above

2. Health information systems can help report the outcomes of certain treatments.
    a) True
    b) False

3. Health IT systems enable the complete patient data to be available at any time. The benefits of this are:

   a) Health care professionals can check from the patient if they have the right data in the database

   b) Health care professionals can communicate more efficiently

   c) Patients preferences of treatments can be recorded in the system

   d) All of the above

4. Health IT systems can help alert drug & drug interactions.

   a) True

   b) False