

Slide 1

**Health Management
Information Systems**

Unit 2
Hardware and Software
Supporting Health Information
Systems

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Slide 2

Objectives

- Define the concept of an information system and its characteristics
- Describe the different types of information systems
- Describe various types of technologies that support health care information systems.

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Version 1.0/Fall 2010 2

Slide 3

**What is an Information
System (IS)?**

- Combination of
 - People
 - Hardware
 - Software
 - Communication devices
 - Network
 - Data resources
- Process data and information

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Version 1.0/Fall 2010 3

Slide 4

General Characteristics of an Information System (IS)

- Inputs
 - Order for a drug
- Data
 - Prescribed drug
- Process
 - Verifies drug is correct for the order
- Outputs
 - Documentation of administration

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Version 1.0/Fall 2010

Slide 5

Characteristics of an Information System (IS)

- Organization of data into information
 - Example: A healthcare data dictionary is a central repository of information about stored data
- Ability to analyze the information
 - Example: medication management

<http://www.bettscomputers.com/characteristicsofinformationssystem.htm>

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Version 1.0/Fall 2010

Slide 6

Major Information System Categories

- Transaction Processing System (TPS)
- Management Information System (MIS)
- Decision Support System (DSS)

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Version 1.0/Fall 2010

Slide 7

Transaction Processing System (TPS)

- Transaction Processing System (TPS)
 - A system that processes information in order to complete a transaction
- Examples:
 - Admit, discharge, transfer (ADT)
 - Patient billing

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Version 1.0/Fall 2010

Slide 8

Management Information System (MIS)

- Management Information System (MIS)
 - System that helps managers plan and direct business
- Examples:
 - Laboratory management
 - Pharmacy management

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Version 1.0/Fall 2010

Slide 9

Decision Support System (DSS)

- Decision Support Systems
 - Information systems that support business and organizational decision-making activities
- Example:
 - Clinical DSS
 - Computerized Provider Order Entry (CPOE)

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Version 1.0/Fall 2010

Slide 10

Health Care Information System (HCIS)

- Information system used within a health care organization
 - Facilitates communication
 - Integrates information
 - Documents health care interventions
 - Performs record keeping, or
 - Otherwise supports the functions of the organization

Shortliffe, Editor, Biomedical informatics: computer applications in health care and biomedicine, 3rd Edition, 2006.

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Slide 11

HCIS Components

- Patient management and billing
- Department management
- Care delivery and clinical documentation
- Clinical decision support
- Financial and resource management

Vogel, LH, Perreault, LE., Management of Information in Healthcare Organizations, Shortliffe, EH, editor, Biomedical informatics: computer applications in health care and biomedicine, 3rd Edition, 2006.

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Slide 12

Patient Management and Billing

- Systems that support patient management functions
 - Example
 - Patient identification
 - Supporting technology
 - Master patient index
- Houses centralized database of patient financial, demographic, registration and location data

Vogel, LH, Perreault, LE., Management of Information in Healthcare Organizations, Shortliffe, EH, editor, Biomedical informatics: computer applications in health care and biomedicine, 3rd Edition, 2006.

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Slide 13

Department Management

- Systems that support a department's information needs
 - Example
 - Health Information Management Department systems
 - Supporting technology
 - Electronic Document Management Systems
- Supplies data to patient databases

Vogel, LH, Perreault, LE., Management of Information in Healthcare Organizations, Shortliffe, EH, editor, Biomedical informatics: computer applications in health care and biomedicine, 3rd Edition, 2006

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Slide 14

Care Delivery and Clinical Documentation

- Systems that support the delivery of the care and documentation of that care
 - Example
 - Clinical information systems
 - Supporting technology
 - Electronic clinical order entry and results reporting
- Houses centralized database of patient clinical data

Vogel, LH, Perreault, LE., Management of Information in Healthcare Organizations, Shortliffe, EH, editor, Biomedical informatics: computer applications in health care and biomedicine, 3rd Edition, 2006

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Slide 15

Clinical Decision Support

- Systems that support the clinical staff with data interpretation and decision-making
 - Example
 - Medication Administration System
 - Supporting technology
 - Bar-code medication administration (BCMA)
- Accesses patient and other databases

Vogel, LH, Perreault, LE., Management of Information in Healthcare Organizations, Shortliffe, EH, editor, Biomedical informatics: computer applications in health care and biomedicine, 3rd Edition, 2006

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Slide 16

Financial and Resource Management

- Systems that support business functions
 - Example
 - Accounts Payable System
 - Supporting technology
 - Claims administration
- Houses centralized database of financial and employee data

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Slide 17

Summary

- Definition of an information system and its characteristics
- Types of information systems that support the health care enterprise requirements
- Types of technologies that support health care information systems

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