Slide 1

Networking and Health Information Exchange

Unit 5c
Health Data Interchange
Standards

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Slide 2

Unit 5c Objectives

- Understand imaging standards
- Understand standards for pharmacy services
- Understand interface standards for medical devices
- Understanding claims and reimbursement standards
- Understand concept of profiling
- Understand the use and value of implementation guides

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Slide 3

DICOM

- Digital Imaging and Communication in Medicine (DICOM)
- Industry standard for transfer of radiologic images and other medical information between computers
- Developed by
  – American College of Radiology
  – National Electrical Manufacturers Assn.
- Current structure developed in 1993; current version 3.0.

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Slide 4

DICOM

- A single DICOM file contains both a header (which stores information about the patient's name, the type of scan, image dimensions, etc), as well as all of the image data (which can contain information in three dimensions).
- DICOM is the most common standard for receiving scans from a hospital

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Slide 5

National Council for Prescription Drug Programs (NCPDP)

- Data interchange standards for pharmacy services
- Standards included in meaningful use criteria
- Key standards include
  - Telecommunication Standard
  - Batch Standard
  - Script for electronic prescribing
  - Manufacturers Rebate Standard

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Slide 6

Institute of Electrical and Electronic Engineering (IEEE)

- Standards Developing Organization focused primarily on device standards
- Works with ISO, HL7, CEN and DICOM to create device standards
- Standards referred to as point of care standards
- Also creates waveform standards

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Slide 7

IEEE Standards

- Family of standards labeled 11073 – nnnnn
- ISO rules – title is Health Informatics – class – purpose

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Slide 8

IEEE - 2000

- 30200 Transport profile – cable connected

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Slide 9

IEEE - 2008

- 00101 [TR] – Guidelines for the use of wireless technology
- 10404 – Pulse Oximeter
- 10407 – Blood pressure monitor
- 10408 – Thermometer
- 10415 – Weighing scale
- 10441 – Cardiovascular fitness and activity monitor

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Slide 10

IEEE – 2008 (cont)

- 10442 - Strength fitness equipment
- 10471 – Independent living activity hub
- 20601 Application profile – Optimized Exchange protocol

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Slide 11

IEEE - 2009

- 10417 – Glucose monitor

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Slide 12

IEEE - 2010

- 10420 – Body composition analyzer
- 10421 – Peak expiratory flow monitor
- 10472 – Medication monitor
- 30400 – Interface profile – cabled Ethernet

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Slide 13

IEEE under development

- 00103 [TR] – Overview
- 10101 [rev] – Nomenclature
- 10102 – Nomenclature – Annotated ECG
- 10103 – Nomenclature – Implantable device, cardiac
- 10201 [rev] – domain information model
- 10202 – domain information model – XML schema format

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Slide 14

IEEE under development

- 10404 [rev] – pulse oximeter
- 10406 – basic electrocardiogram (1 to 3 lead ECG)
- 10413 – Respiration rate monitor
- 10417 [rev] – Glucose meter
- 10418 – International normalized ratio (INR) monitor
- 10419 – Insulin pump

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Slide 15

IEEE under development

- 10441 [rev] – cardiovascular fitness and activity monitor
- 20200 –association control function
- 20201– polling mode
- 20202 – baseline asynchronous mode
- 20301 – Optional package, remote control
- 20401 – Common networking infrastructure

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Slide 16

IEEE under development

- 20601a [amendment] – optimized exchange protocol
- 30200a [amendment] – Transport profile – cable connected
- 30503 – Transport profile – RF wireless – local area network (wLAN)

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Slide 17

IEEE 2004

- 10101 – nomenclature
- 10201 – domain information model
- 20101 Application profile – base standard
- 30300 – Interface profile – cabled Ethernet

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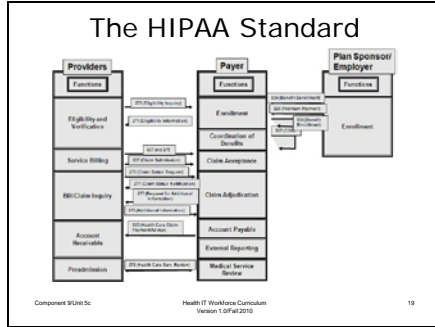
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Slide 18

X12N

- Creates EDI standards related to claims and reimbursement
- Use required by HIPAA
- Standards available from Washington Publishing Company or buy CD version

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Slide 19

The HIPAA Standard

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Slide 20

Integrating the Healthcare Enterprise (IHE)

- Is not a standards developing organization
  - Use standards developed by other SDOs
- Provides a <u>common framework</u> for passing health information seamlessly:
  - <u>**within**</u> **the healthcare enterprise**
  - <u>**across**</u> **multiple healthcare enterprises**
  - **for local, regional & national <u>health information networks</u>.**
- <u>Drives standards adoption</u> to address specific clinical needs.

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Slide 21

IHE

- Drives standards adoption to address specific clinical needs
- Coordinates implementation of standards to meet clinical and administrative needs
- Creates integration profiles to provide end-to-end interoperability
- Sponsor annual Connectathon at HIMSS
  - Provides opportunity for vendors to test and demonstrate interoperability of their products

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Slide 22

Domains of Activity

- IT Infrastructure
- Radiology
- Laboratory
- Cardiology
- Patient care coordination
- Patient care devices
- Radiation Oncology
- Eye

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Slide 23

Document Exchange Profiles

- XDS –document sharing
- XDR – document reliable interchange
- XDM – document media interchange
- PIX – patient identifier cross reference manager
- PDQ – patient demographic supplier
- XCA – cross-community access

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Slide 24

Summary

This unit has introduced you to a series of standards are used for networking between sites at all levels. Much of the focus was on clinical messaging standards – namely HL7 version 2.n and v3. standards. You were also introduced in imaging standards, pharmacy services standards, medical device standards, and claims and reimbursement standards,. Finally we looked at an organization that provided profiles and implementation guides that put these standards together to support end-to-end interoperability.

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