Introduction To Standards,

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What are Medical Data?

❑ Data provide the basis for categorizing the problems the patient may be having,

❑ Data help physician to decide what action should be taken,

❑ Medical Data are multiple observations about patient,

❑ Medical Data is important in guiding healthcare decision-making.

What are the types of Medical Data?

❑ Narrative

  ➢ Description of patient illness

  ➢ Responses to questions from physician

  ➢ Patients and family history

  ➢ Hospitalization information

❑ Numeric Values

  ➢ Laboratory tests

  ➢ Vital signs

  ➢ Measurements during physical examination

- ❑ Recorded Signals
  - ➢ Electrocardiogram (ECG)

- ❑ Visual Images
  - ➢ Radiological Images

- ❑ Drawings

- ❑ Other forms

Key concepts

- ❑ *Information is a major resource which is crucial to the health of individual patients, the population in general, and to the success of the organization*

- ❑ *Healthcare IS AND will increasingly be an information-driven service*

- ❑ *ENTER THE DATA ONE TIME AND USE IT MANY TIMES*

Use of Medical Data

❑ Create the basic for Historical Record,

❑ Support Communication Among Providers,

❑ Anticipate Future Health Problems,

❑ Record Standard Preventive Measures,

❑ Identify Deviations from Expected Trends,

❑ Provide a Legal Record,

❑ Support Clinical Research, etc.

Standards

- ❑ What is a Standard?

- ❑ Importance of Standards?

- ❑ Examples of Standards
- ❑ Process of standards development
- ❑ Types of standards

THE NEED FOR STANDARDS

- ❑ *Excessive diversity creating inefficiencies*
- ❑ *Little communication and coordination among services and sharing of data*
- ❑ *Standardized identifiers for individuals*
- ❑ *Encoding data about the patient that are collected by one system and used by another*
- ❑ *Inclusion of medical knowledge in clinical systems*
- ❑ *Multiple-interface problem*
- ❑ *Secure exchange of information requires that interacting systems use standard technologies.*

THE NEED FOR STANDARDS

- ❑ *EMRs and almost any other information-oriented system in a clinical environment cannot be used without well-defined standardsfor representing and communicating information*

- ❑ *Data need to be exchanged between multiple, heterogeneous systems and might be used by very different applications*

- ❑ *Standards are needed for several different uses:*

- ❑ *Identifying patients, providers, health-careplans, employers*

- ❑ *Transferring patient dataacross different systems within the same organization or across different organizations*

- ❑ *Representing medical knowledgethat can be utlized*

STANDARDS

❑ *A standard can be defined in many forms, but essentially it comprises a set of rules and definitions that specify how to carry out a process or produce a product.*

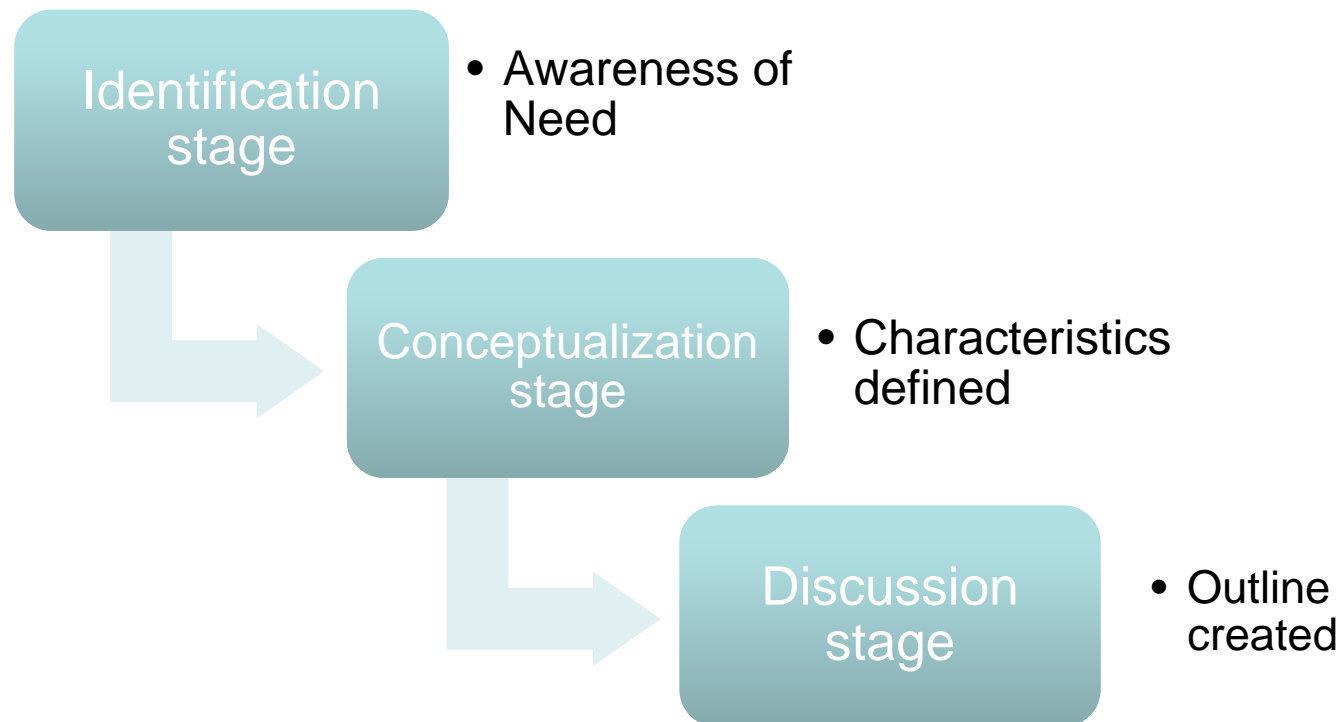❑ *or specifications for passing information between disparate systems*
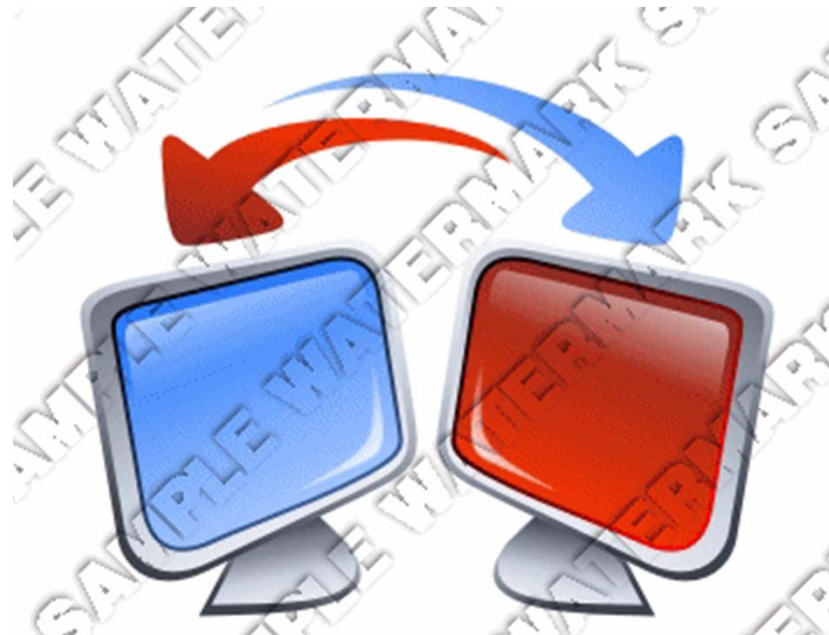
HOW ARE STANDARDS DEVELOPED?

❑ *Standard for medical images was standardized by NEMA (National Electrical Manufacturers Association) in 1988 and was actually put in use in1993.*

❑ *The code was written by students at Washington University School of Medicine's, Mallinckrodt Institute of Radiology.*

HOW ARE STANDARDS DEVELOPED?

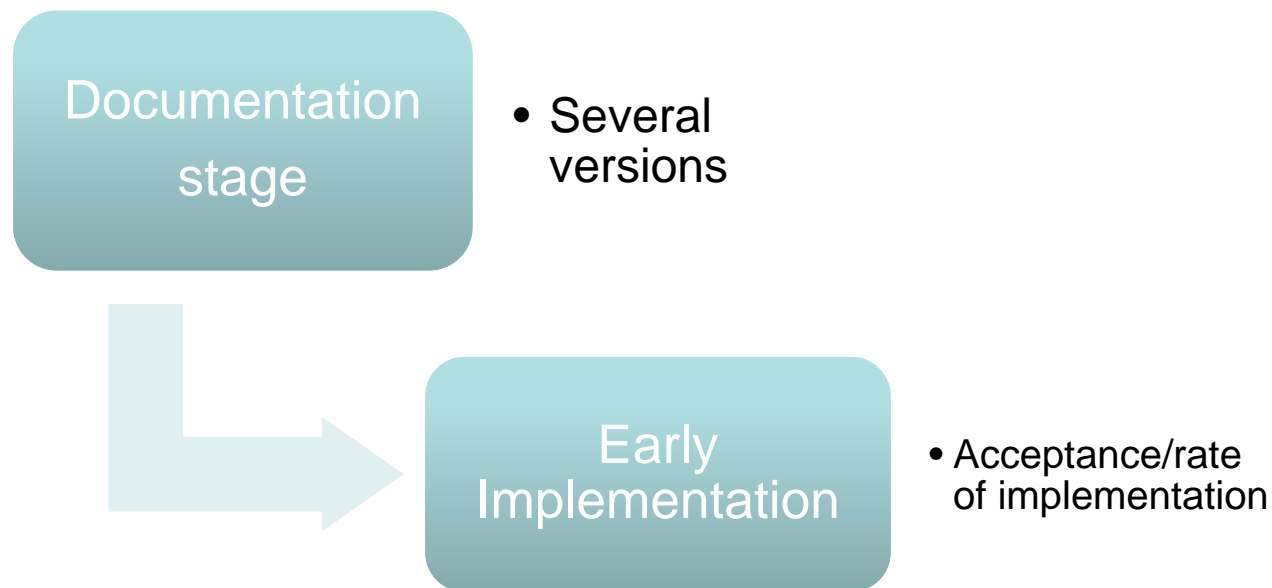**Stages for Creating a Standard**

Identification stage	• Awareness of Need
Conceptualization stage	• Characteristics defined
Discussion stage	• Outline created

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HOW ARE STANDARDS DEVELOPED?

Stages for Creating a Standard (cont.)

Documentation stage
- Several versions

Early Implementation
- Acceptance/rate of implementation

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TYPES OF STANDARDS

❑ *There are, essentially, different methods by which standards can be created and adopted that vary in the level of formality and the scope of agreement between stakeholders that they encapsulate:*

❑ *Ad-hoc method*
❑ *Defacto Method*
❑ *Government-mandate Method*
❑ *Consensus Method*

AD-HOC METHOD

❑ *The ad-hoc method of standards specification involves groups of stakeholders agreeing on a standard specification between them.*

❑ *For example: The American College of Radiology/National Electrical Manufacturers Association (ACR/NEMA) formulated the popular DICOM standard for medical imaging in this manner.*

❑ *The specification is informal and is only accepted as a standard by the agreement of all the participating groups.*

DEFACTO METHOD

❑ *A single vendor enforces a standard by virtue of their market share.*

❑ *For example: Microsoft is a perfect example of such a standardisation where its Windows platform has become the defacto standard for application development*

GOVERNMENT-MANDATE METHOD

❑ *This method is based on a government agency creating and enforcing it, by legislation or other means, the use of a given standard.*

❑ *For example: In the United States, the Health-Care Financing Administration (HCFA) enforce a standard insurance claim standard known as UB92.*

CONSENSUS METHOD

❑ *This is the most common means by which standards have been formulated in the health informatics domain*

❑ *Groups of volunteers, usually representing specific interest-groups or stakeholders, work via an open process to create a standard.*

❑ *For example: HL/7, the standard for exchange of clinical-data, was created in this manner*

EXAMPLES OF INFORMATION-STANDARDS ORGANIZATIONS

- *American National Standards Institute(ANSI)*
  - *Private, nonprofit*
  - *Accredits organizations that create standards*

- *Technical Committee 251(CEN TC 251)*
  - *The European Standardization Committee's technical committee for medical informatics standards*

- *American Society for Testing and Materials(ASTM)*
  - *Largest non-government source of standards in the USA*
  - *ASTM committee E31 is responsible for development of medical information standards*

STANDARD BODIES

There are many standards setting bodies in the world with specific domains:

- ❑ *Healthcare providers*
- ❑ *Vendors*
- ❑ *Equipment Manufacturers*
- ❑ *General Manufacturers*
- ❑ *Government*
- ❑ *Others*

STANDARD BODIES

❑ *American National Standards Institute (ANSI)*
❑ *American Society for Testing and Materials (ASTM)*
❑ *Health-Care Informatics Standards Board (HISB)*
❑ *International Classification of Diseases (ICD10) & (ICD9)*
❑ *International Classification of Primary Care (ICPC)*
❑ *Health Insurance Portability and Accountability Act (HIPAA)*

Standard Bodies

❑ *Health Insurance Portability and Accountability Act (HIPAA)*

  ❑ *HIPAA of 1996 was signed into law*

  ❑ *The administrative-simplification portion ,requires the Secretary of Health and Human Services (HHS) adopt standards for the electronic transmission of specific administrative transactions.*

  ❑ *Standards will apply to health plans, health-care clearinghouses, and health-care providers who transmit any health information in electronic form*

Codes in The International Classification of Diseases (ICD-9 CM)

724	Unspecified disorders of the back	
	724.0	Spinal stenosis, other than cervical
		724.00 Spinal stenosis, unspecified region
		724.01 Spinal stenosis, thoracic region
		724.02 Spinal stenosis, lumbar region
		724.09 Spinal stenosis, other
	724.1	Pain in thoracic spine
	724.2	Lumbago
	724.3	Sciatica
	724.4	Thoracic or lumbosacral neuritis
	724.5	Backache, unspecified
	724.6	Disorders of sacrum
	724.7	Disorders of coccyx
		724.70 Unspecified disorder of coccyx
		724.71 Hypermobility of coccyx
		724.71 Coccygodynia
	724.8	Other symptoms referable to back
	724.9	Other unspecified back disorders