Dirty Data- A Plague for the Electronic Health Record

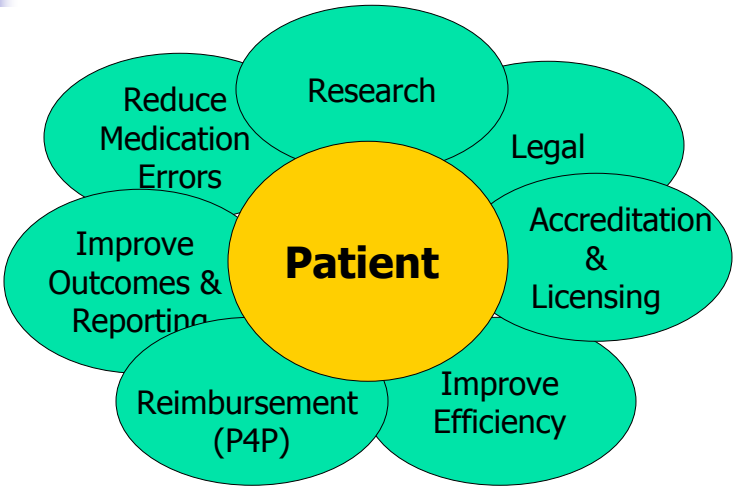
WHIMA 2007 Fall Conference

Kathy Callan, MA RHIA

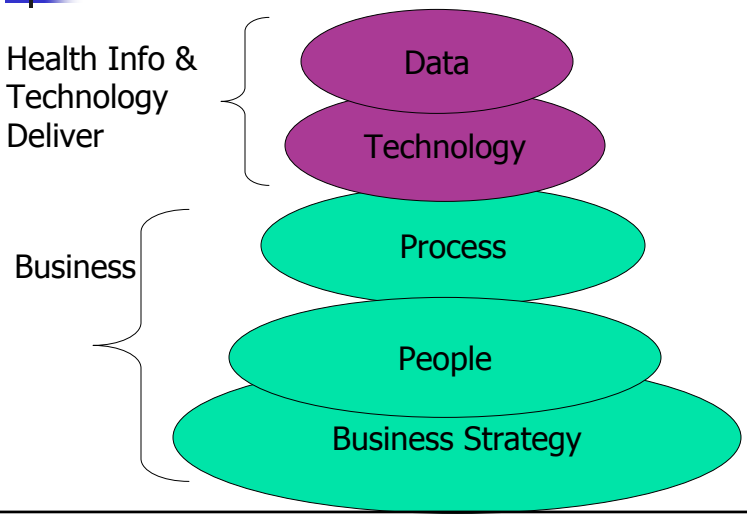
Dictionary Definition: Plague

- an epidemic disease that causes high mortality; pestilence.
- any widespread affliction, calamity, or evil, esp. one regarded as a direct punishment by God: *a plague of war and desolation.*
- any cause of trouble, annoyance, or vexation*: Uninvited guests are a plague.*
- to trouble, annoy, or torment in any manner: *The question of his future plagues him with doubt.*
- to afflict with any evil: *He was plagued by allergies all his life.*

Why is Data Quality Important?

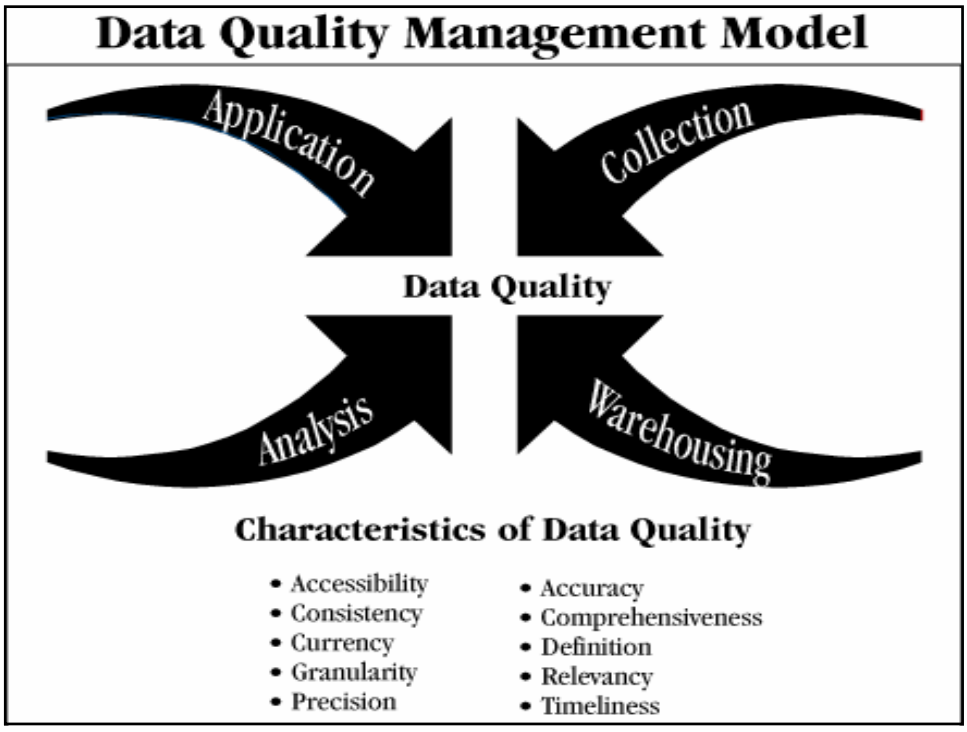


Achieving a Data Culture



Categories of Errors

- Systematic: programming mistakes, bad definitions, violation of rules established for data collection; poorly defined rules; and poor training
- Random: keying error, data transcription problems, hardware failure,



Implementing EHR Documentation Improvement

- Greater focus on standardized documentation procedures.
- Shift from the traditional "retrospective" method of auditing data to front-end acquisition of quality data and transfer of that data

Model for EHR Documentation Improvement

- **Accuracy:** *Ensure data has the correct value, are valid and attached to the correct patient.*

Policies exist on how to take BP, when to take BP, who takes and records the BP.

- **Accessibility:** *Data items should be easily obtainable and legal to access with strong protections and controls built into the process.*

Data from previous encounters is brought forward.

Model for EHR Documentation Improvement (Con't)

- **Comprehensiveness:** *All required data items are included; ensure the entire scope of data is collected and document intentional limitations.*

Includes all components required by regulatory agencies and accreditation bodies, e.g. pain assessment, pain intensity.

- **Consistency:** *The value of the data should be reliable and the same across applications.*

Data values and required content are the same across the organization

- **Currency:** *The data should be up-to-date.*

Policies exist to ensure most current data are entered or verified for each component. When auto-population of data occurs, author validates and updates, as necessary.

Model for EHR Documentation Improvement (Con't)

- **Definition:** *Clear definitions should be provided so the current and future data users will know what the data mean; each data element should have clear meaning and acceptable values.*

Standardized data definitions for each required component.

- **Granularity:** *Attributes and values of data should be defined at the correct level of detail.*

Attributes for each field are defined, e.g. blood pressure

Model for EHR Documentation Improvement

- **Granularity:** *Attributes and values of data should be defined at the correct level of detail.*
- **Precision:** *Data values should be just large enough to support the application or process.*
- **Relevancy:** *The data are meaningful to the performance of the process or application for which they are collected.*
- ***Timeliness:*** *Timeliness is determined by how the data are being used and their context.*

Data Strategies

- Context Management
- Single Sign-On
- Interfaces
- Integration
- Duplication of key information in both systems
- Data Conversion

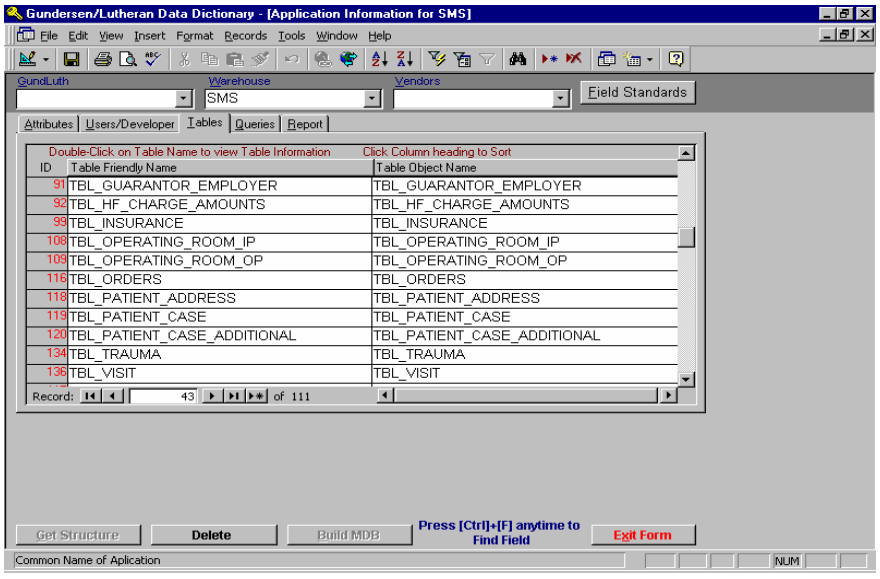
Data Quality Best Practices

- Standardize documentation practices

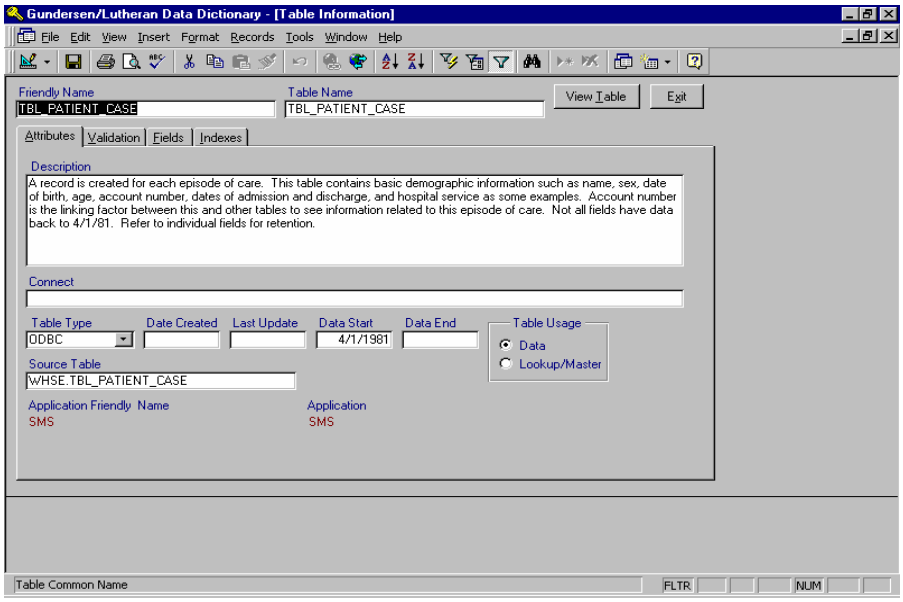
in compliance with regulatory and legal requirements.

- Design of applications and data entry screens
- Front-end acquisition of data
- Data Integrity
- A program of repeated assessment, feedback and training.
- Data Dictionary
- Data Standards

Data Dictionary



Data Dictionary – Pt Case



Common Standards Used Today

- Health Level 7 (HL7) (www.hl7.org/ehr)
- Continuity of Care Record (CCR) (www.astm.org)
- National Council for Prescription Drug Programs (NCPDP) (www.ncpdp.org/frame_standards.htm)
- Digital Imaging and Communications in Medicine (DICOM) (http://medical.nema.org/dicom)

Common Standards Used Today

- Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) (www.snomed.org)
- Logical Observation Identifiers, Names and Codes (LOINC) (www.openclinical.org/medTermLoinc.html)
- International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) (www.cdc.gov/nchs/icd9.htm)
- Current Procedural Terminology (CPT) (www.ama-assn.org/ama/pub/category/3113.html)

11 Common Data Sets

- ASTM International's E1384-02a Practice for Content and Structure of the Electronic Health Record Minimum Essential Data Set
- ASTM International's WK4363 Standard Specification for the Continuity of Care Record (CCR)
- Doctor's Office Quality Information Technology's Data Element Specification v.1.1.2
- Electronic Medical Summary project (Canada) Core Data Set
- International Organization for Standardization (ISO)/TS 18308 Health Informatics: Requirements for an Electronic Health Record Architecture

11 Common Data Sets (con't.)

- Joint Commission on Accreditation of Healthcare Organizations Comprehensive Accreditation's Manual for Ambulatory Care: Information Management Standards 6.20, EP1
- Centers for Medicare and Medicaid Services' Minimum Data Set, Version 2.0, for Nursing Home Resident Assessment and Care Screening
- National Center for Vital and Health Statistics' Core Health Data Elements
- Centers for Medicare and Medicaid Services and the Joint Commission on National Hospital Quality Measures
- AHIMA's Personal Health Record Minimum Common Data Elements
- Health Level Seven's Clinical Document Architecture, release 2

Role of HIMS

- **Develop** EHR data quality models with clinical partners.
- **Align** standard documentation practices with clinical practice.
- **Provide expertise** on accreditation and regulatory documentation requirements.
- **Audit** and monitoring check points.
- **Develop recommendations** for resolution of data collection processes that are at risk. Resolution may involve people, processes, or systems.
- **Educate** and transfer knowledge of data content standards within the organization and to vendors:

References

- AHIMA e-HIM Workgroup. "Model for Implementing an EHR Documentation Improvement Process" Available online at www.ahima.org , 3/2007.
- AHIMA e-HIM Workgroup on EHR Data Content. "Data Standard Time: Data Content Standardization and the HIM Role." *Journal of AHIMA* 77, no.2 (February 2006): 26-32.
- AHIMA e-HIM Work Group on EHR Data Content. "Guidelines for Developing a Data Dictionary." *Journal of AHIMA* 77, no.2 (February 2006): 64A-D.

Resources

- The office of the National Coordinator for Health Information Technology, U.S. Department of Health & Human Service. "Recommended Requirements for Enhancing Data Quality in Electronic Health Record Systems". June 2007.
- AHIMA e-HIM Resources
- FORE Library: HIM Body of Knowledge