Component 11/Unit 8b
Data Dictionary

Understanding and
Development

Data Dictionary

- A descriptive list of the data elements to be collected in an information system or database whose purpose is to ensure consistency of terminology (glossary, A)
- A descriptive list of names (also called representations or displays), definitions, and attributes of data elements to be collected in an information system or data base. (AHIMA e-workgroup on EHR Data Content 2006)
  - Consider it as a crosswalk or map of the data base
  - It should ensure consistency of data collected
  - An example of this would be the use of a coding system, like ICD
    - A code number is assigned to a diagnosis
    - This code number is a crosswalk to the data

Why Develop a Data Dictionary?

- Supports the infrastructure of the EHR
- Supports interoperability of systems within the organization
- Supports movement towards national interoperability
- Provides clarity on the meaning for collection
- Provides structure for interpretation of data

Lack of Data Dictionary Promotes Poor Data Rather than Quality Data

- Not standardizing data elements through a dictionary can cause duplication of data collection
- Invalid interpretation of data can occur if not collected in standardized manner
- Patient Safety, quality of care could be affected if data/information is not standardized

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Developing a Data Dictionary

- There are common pieces of information that would be a part of a data dictionary like:
  - The name of the table
  - Field names/attribute
  - Data type (text or alphanumeric)
  - A description of the field/attribute
  - The format for collecting the information (e.g. date of birth DDMMYYYY –day, month, year)
  - The number of characters that can be collected
  - The range of the numbers/values A-Z, 0-1million
  - If it is required or not
  - If there is a relationship with other attributes
  (summarized from LaTour &Eichenwald)

Guidelines for Developing the Data Dictionary

Recommended guidelines from the e-HIM Workgroup of the American Health Information Management Association (AHIMA), 2006:

1. Design a plan: Preplan the development, implementation, and maintenance of the data dictionary
2. Develop an en enterprise data dictionary: Integrate common data elements across the entire institution to ensure consistency
3. Ensure collaborative involvement: Make sure there is support from all key stakeholders.
4. Develop an approvals process: Ensure a documentation trail for all decision, updates, and maintenance
5. Identify and retain details of data versions: Version control is important
6. Design for flexibility and growth.
7. Design room for expansion of field values
8. Follow established ISO/International Electro technical Commission (IEC) 11179 guidelines for metadata registry: to promote interoperability follow standards.
9. Adopt nationally recognized standards
10. Beware of differing standards for the same concepts
11. Use geographic codes and conform to the National Spatial Data Infrastructure and the Federal Geographic Data Committee
12. Test the information system: Develop a test plan to ensure the system supports the data dictionary
13. Provide ongoing education and training
14. Assess the extent to which the data elements maintain consistency and avoid duplication
- See www.ahima.org for more information "Guidelines for Developing a Data Dictionary AHIMA Practice Brief" Journal of AHIMA 77, no. 2 (February, 2006)

Key Points in the Guidelines: Involve Stakeholders

- Involve all stakeholders in the discussion of creating the data dictionary.
- This may include data creators, owners, users which will affect:

  – Departments (represented across enter facility or enterprise)
  – Outside collaborating agencies/facilities
  – Public health agencies
  – Clinical providers including all specialties
  – HIM administrative support services
  – Reimbursement support services
  – Legal support services
  – IT support services
  – Etc

Key Points in Guidelines: Develop Flexible Yet Prescribed Systems

- Seek to accommodate expansion to infrastructure and architecture of systems
  – E.g. changing coding systems from ICD-9 to ICD-10
- Document precise details of changes
- Develop and expect adherence to approval processes and change processes

Key Points in Guidelines: Adopt Established Standards

- International Standards (ISO, IEC)

- National Standards for HIE

- National Standards for Federal Information Processing of geographic and geocoding

Key Points in Guidelines: Train Employees

- Ongoing education of long term employees to assure compliance is an important tactic for maintaining quality

- New employees should also receive appropriate training to involve them in assuring the quality of data being collected

Conclusions

- A data dictionary is one tool for ensuring data consistency
- This consistency supports clinical decisions and patient safety and quality of care
- This consistency leads to quality data interpretation for administrative decisions
- The consistency supports the infrastructure of the EHR

Resources

- www.ahima.org for more information "Guidelines for Developing a Data Dictionary AHIMA Practice Brief" Journal of AHIMA 77, no. 2 (February, 2006)
- LaTour &Eichenwald, p 131), Health Information Management, Third Edition, AHIMA press
- Amatayakul, Margaret K, Electronic Health Records: A Practical Guide for Professionals and Organizations, Fourth Edition, Chicago:AHIMA, 2009.