United States Health Information Knowledgebase
Online Metadata Registry for HITSP

May 4, 2006
USHIK: The United States Health Information Knowledgebase

- An Online Metadata Registry
  - An orderly compilation of facts about data
  - ISO/IEC 11179 is a standard way of presenting these facts

- Use
  - Registry of health data standards elements
  - Contains metadata about data elements found in HIPAA and CHI domain standards
  - Available and monitored for updates in USHIK are data elements and definitions from HL7, X12, ASTM, NCPDP, ADA, Health Industry Business Communications Council (HIBCC), LOINC, IEEE: Medical Device Communications Industry Group (IEEE 1073)
  - USHIK also includes select DoD Military Health System and NCVHS data elements and definitions

www.ushik.org
USHIK use by HITSP Technical Committees

- As a tool for technical committees to screen across the standards in USHIK for possession of the data elements (concept, variables)
  - Same definition
  - Same representation of data elements in the particular standard (name, codes, possible values)

- To support standards selection
  - Which standard has the most of the data elements required?
  - Are the data definitions consistent with the needs of the use case?
  - Are data of the standard represented in a manner that is consistent with data in the standards chosen for other HITSP Use Cases?

- To support a mapping analysis
  - E.g., do two standards have the same demographic variables and representations

- To support the gap analysis after the standards have been selected by the Technical Committee
  - For comparing the required data elements of the use case with what the chosen standard contains

- To support giving feedback to the SDOs for improving a standard to fit the needs of the use case
  - Ask the SDO if some specific changes are possible to improve interoperability (cross-organizational, cross-system data sharing)?
## Comparison Matrix

**Organization**: CMS  
**Data Element ID**: 0060-92-764-5622.65902.v000  
**Data Element Name**: Gender  
**Definition**: 1 = Male; 2 = Female; 3 = Unknown/not stated as recommended by the Uniform Hospital Discharge Data Set and the Uniform Ambulatory Care Data Set.  
**Context**: NCVHS Core Health Data Elements  
**Registration Status**: Incomplete  
**Status Date**: 2002-07-08  
**Comments**:  

| Data Collection Methods: | NCPDP | X12  
|--------------------------|-------|-----  
| Data Type: N | 0060-02-166-0014.60872.v0 | 0060-07-329-4837.25320.v0  
| Minimum Size: 1 | Gender Code | Gender Code  
| Maximum Size: 1 | |  

**Representational Layout: Not Provided**  
**Representational Form: Not Provided**  
**Unit of Measure: Not Provided**  
**Precision: 0**  
**Minimum Range:**  
| Data Domain: 1 Male | M Male | F Female  
| 2 Female | F Female | M Male  
| 3 Unknown/not stated | U Unknown | U Unknown  
**Maximum Range:**  

This data element utilizes a sub domain of the X12 data element domain that is based on the its use in a Transaction Set. Please refer to the Transaction Set Implementation Guide for the specific sub domain utilized.
## HITSP: Standards Screening & Selection

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<th>X12 Marital Status</th>
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</table>

USHIK provides a uniform query and interface environment for data element comparisons that simplifies understanding the definition of various health information standard terms.
USHIK Data Validity

- Quality validation is by the SDOs who supply their standards’ data information to HITSP and USHIK
- USHIK works cooperatively with SDO’s on data entry
- SDOs are the Registration Authority for their information in USHIK
- USHIK works to capture updates and modifications to SDO standards data elements on a timely basis
- Ultimately, SDO’s are the ‘source of truth’ for their data entered into USHIK
How AHRQ, DoD, and CMS Propose to Support HITSP

- By providing a USHIK specialist assigned to the Technical Committee for one use case
  - To learn the standards selection process of the HITSP TC
  - To provide expertise at using USHIK to answer TC questions
  - To provide expertise at using USHIK to present comparisons across standards requested by the TC
  - To display choices made by the TC in a readily comparable format

- By providing a potential method for comparing the standards choices made by an HITSP TC with those choices made by another HITSP TC in metadata format

- By providing an opportunity for helping HITSP to streamline the processes of standards screening, selection, and gap analysis
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Relationship of Health Metadata Registries

**NIST Landscape** “The National Institute of Standards & Technology Health Care Standards Landscape (HCSL) “Landscape” project is a web-based repository of information on healthcare standards, organizations, and resources that can assist in standards development, coordination, implementation, adoption and use by developers and other stakeholders.”
*Used to:* Find the groups or organizations that are working on healthcare standards that are of interest to program requirements.

**UMLS**: National Library of Medicine Unified Medical Language System (UMLS) project develops and distributes multi-purpose, electronic "Knowledge Sources" and associated lexical programs for system developers. Researchers will find the UMLS products useful in investigating knowledge representation and retrieval questions.”
*Used to:* Research terms and phases to use in developing definitions for data element concepts or data elements.

**NCI caCORE**: “A number of tools and services are provided by the caCORE suite of technologies, which include resources for vocabulary and metadata management, data hosting, and model-driven software engineering. With collaborators in the caBIG™ program, the NCICB Infrastructure is developing, caGrid, a data and analytical service grid built from the latest federated computing technologies.”
*Used to:* Consume existing data elements or build new ones to meet functional requirements.

**USHIK** “The United States Health Information Knowledgebase (USHIK) provides and maintains a metadata registry of health information data element definitions, values and information models that enable browsing, comparison, synchronization and harmonization within an uniform query and interface environment.”
*Used to:* Publish data elements or designate the group of standards that meet functional requirements and that registration organizations want public and private organizations to use for the adoption of health information technology standards.