Standardizing Drug Allergy Information Through Coding

SPL/DailyMed/RxNorm Jamboree
Date: Tuesday, September 27, 2016
Presenter:
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Pharmacy HIT Collaborative Executive Director
Collaborative Overview

Founding Organizations

- 9 Professional Pharmacy Associations
- Represents over 250K members in all practice settings

Members

- AACP-ACCP-ACPE-AMCP-APhA-ASCP-ASHP-NASPA-NCPA

Associate Members

- Surescripts – NCPDP – RelayHealth – OutcomesMTM – Amgen – Pfizer – Cardinal Health/Fuse
Vision

• The US healthcare system is supported by meaningful use of Health Information Technology (HIT) and the integration of pharmacists for the provision of quality patient care.

Mission

• To advocate and educate key stakeholders regarding the meaningful use of HIT and the inclusion of pharmacists within a technology-enabled integrated health care system.
Goals

Access
- Ensure HIT supports pharmacists in health care service delivery

Connectivity
- Achieve pharmacists’ integration within health information exchange

Quality
- Support national quality initiatives enabled by HIT
Steering Committee – oversees workgroup activities
Over 70 volunteers
  - WG1 – Professional Service Claims and Codes
  - WG2 – Professional Service Documentation and Coding
  - WG3 – Communication Standards
  - WG4 – Pharmacist EHR

www.pharmacyhit.org
Work started at NCPDP

May 24, 2011 letter to HIT SC Vocabulary TF and NCVHS

http://www.ncpdp.org/members/pdf/20110522.NCPDP.AllergyClass.Recommendation.to.ONC-NCVHS.pdf

EHR med allergy documentation supported by proprietary code sets

Codified allergy and drug sensitivity information is commonly exchanged as free-text or converted to interoperable code sets
Establish a sustainable governance process to guide the ongoing interagency maintenance and publication of Federal Medication Terminology vocabularies and context-sensitive subsets to ensure that functional medication and allergy interoperability use cases are satisfied.

The Veterans Health Administration author and publish a subset of NDF-RT class concepts to satisfy the context of medication allergy and drug sensitivity class-based interoperable exchange.
NDF-RT allergy class subset members be integrated within RxNorm and assigned an appropriate RxNorm source vocabulary terminology type to enable the programmatic selection by implementing systems.

The Food and Drug Administration author and publish subsets of UNII values likely to be relevant in the documentation of food, inactive ingredient and environmental allergens; such UNII values would be integrated within RxNorm and given subset attributes to enable the programmatic selection by implementing systems.
NCPDP work identified Interoperable Medication Allergy Class “Starter Set”

NDF-RT (VHA) therapeutic classes

35 classes representing 80% of drug allergy classes

Appendix A
Slide Presentation - Proposal To Address Medications, Allergies Disparities In Final Rule MU Stage 2

Oct 4, 2012 George Robinson, RPh FirstDataBank, Inc and James Shalaby, Pharm.D. PSMI Consulting, Inc

Source:
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&ved=0CCsQFjAA&url=http%3A%2F%2Fwiki.hl7.org%2Fimages%2FF%2F6%2FProposalForMedsAllergiesLabs_rev2_20121003.pptx&ei=Lgj5UqCxlqCgSW84KYAg&usg=AFQjCNHaX7i12PjqpmVgoUhPI6l-82YbA&sig2=pmBFguKgo7VXzvNIcdzl0Q&bvm=bv.60983673,d.cGU
Fact: Most EHRs document allergies mostly at the medication ingredient, medication class or brand name levels

Problem: The standard is inconsistent with respect to which ingredient standard to use when the ingredient is a drug
Took on the project at NLM request
Form advisory committee
Wrote governance document
Coding Manager contract position
Volunteers specializing in drug information
Allergy Classification Project

- NCPDP Update August 2013
- March 2014 Update
- Samm Anderegg, PharmD, MS, BCPS
  Chair, Value Set Committee
Pharmacy HIT Collaborative

Pharmacy HIT Collaborative Value Set Committee (PCVSC)

Associated Workgroups

Made up of volunteer members working towards pharmacy integration within the Electronic Health Record
Need for a standard Allergy Value Set for Meaningful Use Stage 3 (2017)

- NLM asked for task group to accomplish this
- NCPDP WG10 Allergy Task Group had made previous recommendations drug class categories
- Pharmacy HIT Collaborative volunteered to take project to completion
NCPDP WG10 Allergy Value Set Task Group

- Interoperable medication allergy vocabulary recommendations
- Developed “Starter Set” of 35 drug classes that account for over 90% of all allergic reactions
- PCVSC nested medication/substances under these 35 drug classes
NDF-RT = drug classes
FDA UNII = medication/substances
Integrate using RxNorm as universal terminology

DailyMed
http://dailymed.nlm.nih.gov/dailymed/about.cfm
Members built drug classes manually using multiple references

- DailyMed (NDF-RT/SPL Drug Classes)
- FDA Substance Registration System (UNII)
- NCI Term Browser (NDF-RT; RxNorm)
- Individual resources: drug knowledge bases, AHFS, etc.

National Cancer Institute Term Browser
http://ncitbrowser.pages/multiple_search.jsf?nav_type=terminologies

AHFS Drug Information  Therapeutic Classification
Drug Class building and validation

- Each member was assigned to a drug class, used resources for create
- Second member performed validation as a double check
- Original member who built would format and finalize before marked complete
Utilized Google Drive for file sharing

- All members worked within the same spreadsheet
- Allows multiple users to access at the same time
<table>
<thead>
<tr>
<th>Drug Class</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macrolides</td>
<td>Heparin</td>
</tr>
<tr>
<td>Phenothiazines</td>
<td>Salicylic Acids</td>
</tr>
<tr>
<td>Histamine H2 Receptor Antagonists</td>
<td>Calcium Channel Antagonists</td>
</tr>
<tr>
<td>Hydantoins</td>
<td>Cinchona Alkaloids</td>
</tr>
<tr>
<td>Angiotensin-Converting Enzyme Inhibitors</td>
<td>Iodine Compounds</td>
</tr>
<tr>
<td>Sulfonamides</td>
<td>Xanthines</td>
</tr>
<tr>
<td>Tetanus Toxoid</td>
<td>Opioid Agonists</td>
</tr>
<tr>
<td>Barbiturates</td>
<td>Nonsteroidal Anti-inflammatory Compounds</td>
</tr>
<tr>
<td>Gold</td>
<td>Benzodiazepines</td>
</tr>
<tr>
<td>Cephalosporins</td>
<td>Aminoglycosides</td>
</tr>
<tr>
<td>Quinolones</td>
<td>Diphosphonates</td>
</tr>
<tr>
<td>Estradiol Congeners</td>
<td>Serotonin 5HT-3 Antagonists</td>
</tr>
<tr>
<td>Cyclooxygenase 2 Inhibitors</td>
<td>Sulfanilamides</td>
</tr>
<tr>
<td>Triiodobenzoic Acids</td>
<td>Hmg-CoA Reductase Inhibitors</td>
</tr>
<tr>
<td>Adrenergic Beta-Antagonists</td>
<td>Tetracyclines</td>
</tr>
<tr>
<td>Thiazides</td>
<td>Gadolinium DTPA</td>
</tr>
<tr>
<td>Proton Pump Inhibitors</td>
<td>Influenza Vaccines</td>
</tr>
<tr>
<td>Penicillins</td>
<td></td>
</tr>
</tbody>
</table>

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Made up of members from several federal entities

- National Library of Medicine (NLM)
- RxNorm
- Value Set Authority Center (VSAC)
- Food and Drug Administration (FDA)
- Dept. of Veteran’s Affairs (VA)
- Office of the National Coordinator (ONC)
Pharmacy HIT Collaborative agrees to create allergy drug classes (April 2013)

Goal to finalize Allergy Starter Set & submit to VSAC (Oct 2013)

Maintenance and development of other medication-related value sets (2014)

PCVSC Assembled, work begins (May 2013)

Finalize process to maintain value sets under PCVSC (Dec 2013)
Collaborative Council met Jan 29, 2014
- Allergy Project was out of our scope of work
- Collaborative not a legal entity
- Notified NLM that we needed to transition project to another group

Collaborative Council’s recommendations
- Find a standards organization to take over the project
2014 ONC (Julia Skapik) drove work with NLM, government agencies & USP
- Held a substance meeting in Nov 2014 at USP
- No actions resulting from this meeting

2015 ONC met with government agencies and stated they will not be driving the project

2014 submitted resolution to USP to take over the project

April 2015 USP resolution was accepted

Turned over Pharmacy HIT Collaborative’s allergy project material and VSC contacts to USP
HEALTHCARE QUALITY STANDARDS

**USP will collaborate with stakeholders to develop, strengthen, revise, and promote adoption of healthcare quality standards that address quality and safety related to the use of medications and that are of value to patients and practitioners.**

**Background excerpt:**

- *Discussions with stakeholders during the 2010-2015 Convention cycle have identified several key areas for potential standard development, including:*
  - Creation of standards that address quality and safety issues related to the use of medications arising from implementation of national healthcare reform initiatives, such as creating a national formulary model for all outpatient drugs and developing drug allergy/intolerance classes to assist in electronic health records.*
USP Contact

USP started work on the allergy classification project July 1, 2015

USP formed Allergy & Intolerance Expert Panel

- Chaired by Dr. Raymond Love
- Donna Bohannon USP contact
Contact

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