Update on Vocabularies and Value Sets for Meaningful Use

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How do we achieve interoperable healthcare information systems?

Enable stakeholders to come up with simple, shared solutions to common information exchange challenges

Curate a portfolio of standards, services, and policies that accelerate information exchange

Enforce compliance with validated information exchange standards, services and policies to assure interoperability between validated systems

NOTE: We're going to talk primarily today about enabling stakeholders…through the Nationwide Health Information Network Exchange.

How do we achieve interoperable healthcare information systems?

- **Enable stakeholders** to come up with simple, shared solutions to common information exchange challenges
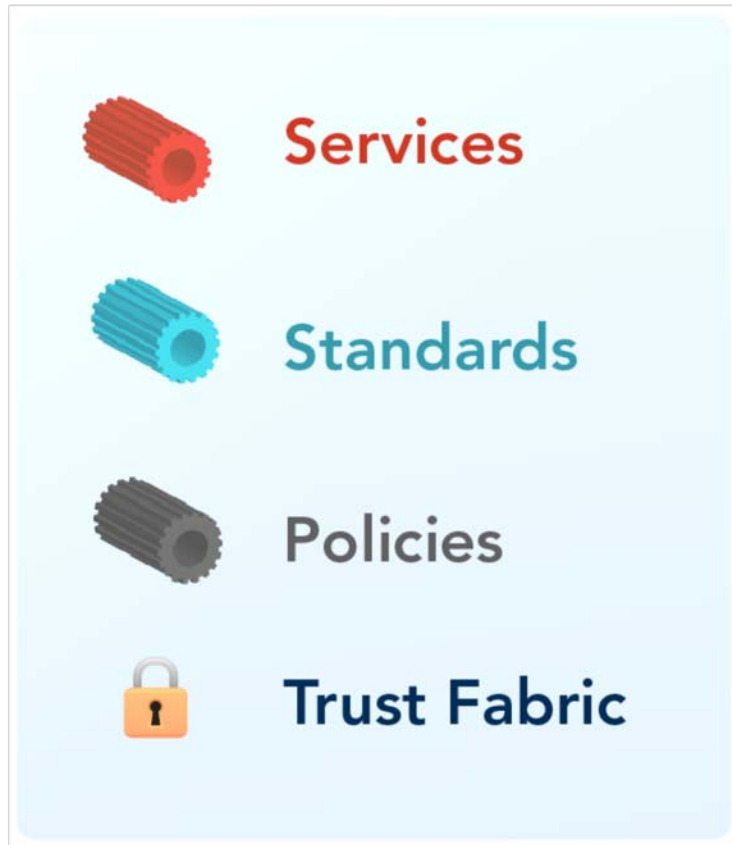
- **Curate a portfolio** of standards, services, and policies that accelerate information exchange

- **Enforce Compliance** with validated information exchange standards, services and policies to assure interoperability between validated systems

Defining the Nationwide Health Information Network

A set of **services**, **standards** and **policies** that enable secure health information exchange over the Internet.

Diagram of NwHIN Portfolio 1.0

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NwHIN Building Blocks

Vocabulary & Code Sets	SNOMED-CT	LOINC	ICD-10	RxNorm
Content Structure	Consolidated CDA Care Summaries	Quality Reporting	Lab Results IG Lab Results	HL7 v.2.5.1 Public Health Reporting
Transport		SMTP-Direct Based Exchange	SOAP-Secure Web Services	
Security		X.509 - Digital Certificates	SAML	
Services	Certificate Authority	DNS, LDAP- Certificate Discovery	UDDI-Certificate & Service Discovery	Provider Directories

NOTE: NwHIN Portfolio 1.0 : 1) Develop modular, testable portfolio of specifications (Secure Transport, Content and Vocabulary)that are most widely adopted in industry, and support key MU criteria and govt. priorities for 2012-2013. 1.0 indicates that this is just a starting point and will grown in future.

- A primary care doctor orders a lab test and gets the test back from the lab. She schedules the patient to be seen in the office to discuss the results.

- Based on the results of the test, the primary care doctor decides to send the patient to a subspecialist. She sends a summary of care record to the subspecialist electronically with a summary of the most recent visit.

- When the patient sees the subspecialist, it becomes apparent that there is a missing test that was done at a different hospital that would be helpful in taking care of the patient. Rather than repeating the test, the doctor queries the outside hospital for the lab test that she needs.

Diagram of NwHIN Portfolio 1.0 for first step in Patient Scenario

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INTEROPERABILITY STACK

SCENARIO

The physician ordered an outpatient lab test on a patient, and the lab sends the information to your office. The patient is here to discuss the results.

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SCENARIO

BUILDING BLOCKS USED

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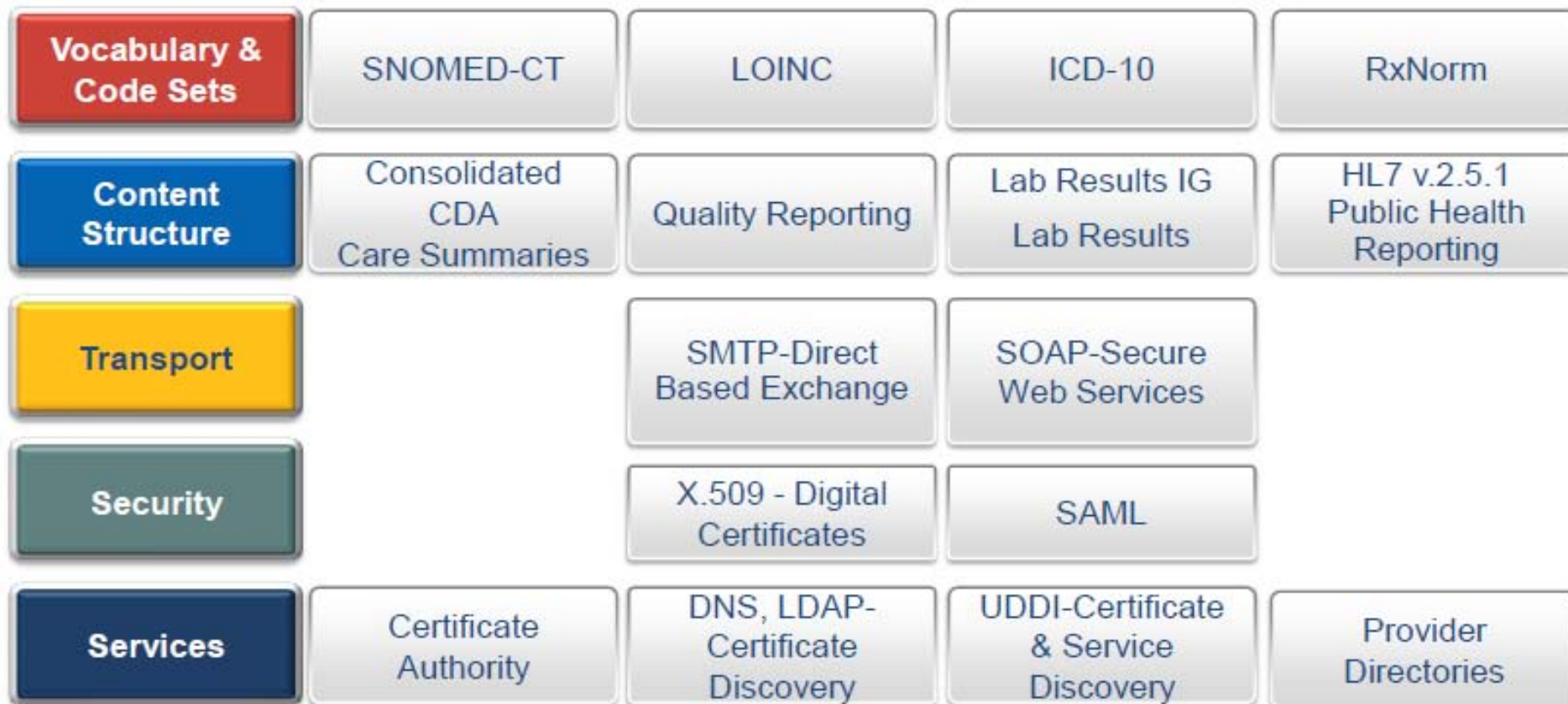| Vocabulary & Code Sets	SNOMED-CT	LOINC	ICD-10	RxNorm
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Diagram of NwHIN Portfolio 1.0 for second step in Patient Scenario

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INTEROPERABILITY STACK

SCENARIO
Based on the laboratory result, the doctor decides to refer the patient to a subspecialist. She sends the subspecialist a patient care summary in anticipation of that visit.

Interoperability Stack				
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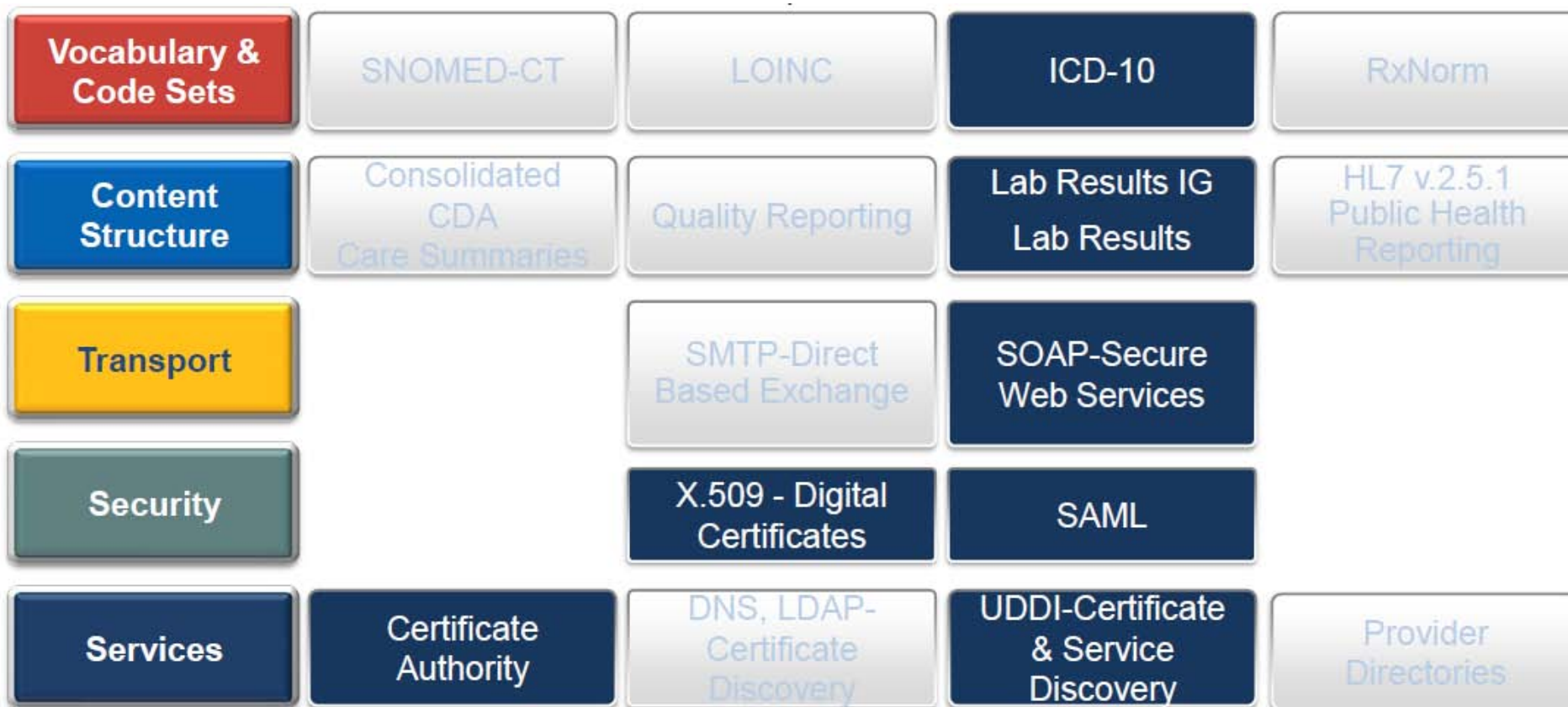
Diagram of NwHIN Portfolio 1.0 for third step in Patient Scenario

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INTEROPERABILITY STACK

The patient is in the subspecialist's office, but the doctor needs a lab test that was done at an outside hospital, so she sends a query to the hospital for the needed lab test.

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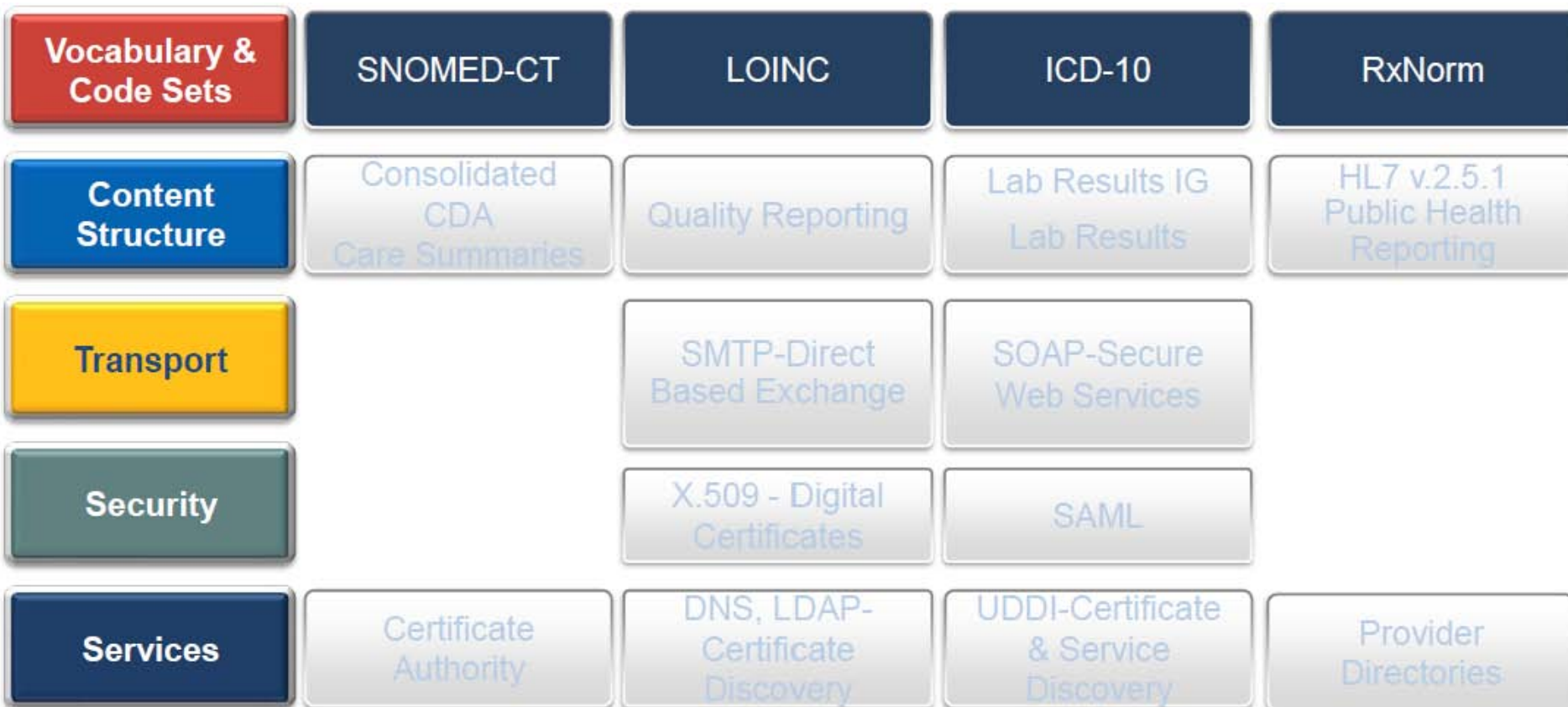
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Vocabularies and Code Set Support

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- Support maintenance, dissemination, free US use
  - SNOMED CT
  - LOINC
- Develop, maintain, disseminate, use in services&research
  - RxNorm (in cooperation with FDA, VA, drug information providers)
  - MeSH, NCBI Taxonomy
  - UMLS Metathesaurus (includes all above, HIPAA codes, many more)
- Create associated products, tools for users, e.g.,
  - Vocabulary subsets, mappings, extensions
  - Lexical & mapping tools, browsers, download sites, APIs
- Provide customer service
  - Documentation, training materials, query response, licensing
- Contribute to US HIT standards coordination, policy development

ONC-NLM Interagency Agreement

- Sets priorities for NLM vocabulary work in support of meaningful use, e.g.,
  - Additions to SNOMED CT, LOINC, RxNorm
  - High priority subsets and mappings
  - Tools for value set development, maintenance
  - Enhanced APIs
- Provides additional funding for some activities

Problem list

- Target:　　　　SNOMED CT (SCT)
- Special Challenges for MU:
  - Migrate from Uncontrolled or Local Vocabulary +/OR ICD-9-CM; Add value to free text notes
  - Implement ICD-10-CM in 2013
- Assets available from NLM (US Member of IHTSDO)
  - SCT International Release (in English & Spanish)
  - SCT web browser
  - SCT CORE problem list subset
  - Lexical matching tools for uncontrolled/local vocabularies
  - KP Convergent Medical Terminology (CMT) problem subsets (6 to date, 13,000+)
  - Mappings:
    - SCT to ICD-9-CM (issued with SCT International Release)
    - Frequently used ICD-9-CM to SCT – Trial version, in development
    - SCT to ICD-10-CM (rule-based)
      - 1st 2,000 and viewer – Trial version, Feb 2012
      - 15,000 – June 2012
  - US extension to SCT, US SCT content request system
  - Download site for all content sets, UMLS-enhanced API access to SCT
- Vendors (vocabulary services, EHR developers) have relevant value-added products/services

Medications, medication allergies

- Target: RxNorm
- Assets available from NLM:
  - RxNorm – monthly - including
    - NDCs, generic names, brand names, active ingredients, UMLS IDs
    - IDs from many commercial drug information providers (available to licensed users of specific products)
    - Many OTCs
    - VA NDF-RT (drug classes)*
    - RxTerms synonyms, dose form classes*
    - Inert ingredients (for allergy lists)– Jan 2012 release*
  - RxNorm – weekly – drugs newly approved by FDA
  - RxNorm Current US Prescribable Subset*
  - RxTerms interface terminology for orders, medication lists
  - RxNav browser, API
    - Most popular "FindRxCUIbyID", e.g., NDC
    - Also "FindRemapped" – to find new RxCUI, based on one that has been retired
- Drug information providers & other vendors (vocabulary services, EHR developers) have value-added products/services

*added in response to input from HITSC VTF and CQWG

Tests and measures

- Target: LOINC
- Special challenge for MU:
  – Get labs to report using LOINC – *significant progress here*
- Assets available (from Regenstrief Institute):
  – LOINC (in multiple languages), including
    • Recent expansions in coverage of patient assessment instruments, genetic tests, newborn screening, & public health surveillance tests
    • Clinical measures, imaging tests, document architecture – in addition to lab tests
  – Top 2000+ Lab Observations & Mapper's Guide
  – Common Lab Orders Value Set
  – Subsets for Test Panels & Assessment Forms (including CMS survey instruments)
  – RELMA tool - searching (in multiple languages) & mapping
- Vendors (vocabulary services, EHR & LIS developers) have relevant value-added products/services

Public Health Reporting

- Targets: LOINC, SNOMED CT
- Special Challenges for MU:
  – Action required by providers, vendors, & PH entities
- Existing Specialized Assets:
  – Vocabulary value sets for PH messages (CDC PHIN VADS)
  – Notifiable conditions (CDC/PHIN VADS)
    - CDC working with NLM, Regenstrief, IHTSDO, etc. to:
      – Complete SCT coverage of organisms, conditions, etc. involved
      – Update LOINC to reflect currently recommended tests
  – Newborn screening guide (NLM) (also a subset of above)
- CDC & NLM in active discussions to avoid duplication of effort, ensure appropriate range of access mechanisms/tools for all affected stakeholders

Clinical quality measures value sets

- Targets: SNOMED CT, LOINC, RxNorm, ??
- Special MU challenges:
  - Developing measures/vocabulary value sets that:
    - Retrieve appropriate sets of patients for denominators/numerators
    - Use vocabulary standards correctly
    - Are maintainable as medical knowledge and standards evolve
    - Are implementable
    - Do not greatly expand data collection burden
  - Identifying:
    - Distribution formats, mechanisms, tools, etc. that will be helpful to implementers

Potential Next Steps for HITSC VTF

- Set priorities for:
  - 2012 Outreach targets re: available assets
  - Consolidated distribution mechanisms
  - New API features to facilitate access to vocabularies
  - Additional vocabulary subsets/value sets to assist implementers

Questions/Discussion?