The Office of the National Coordinator for Health Information Technology

Health IT Advisory Committee

Interoperability Standards Priorities Task Force March Update

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March 19, 2019

Agenda

- Orders & Results - Final Recommendations
  - » Steven Lane & Ken Kawamoto, Task Force Co-Chairs
- Closed-Loop Referral & Care Coordination - Final Recommendations
  - » Steven Lane & Ken Kawamoto, Task Force Co-Chairs
- Preview of Future Domains
  - » Steven Lane & Ken Kawamoto, Task Force Co-Chairs

Orders & Results

Final Recommendations

Orders & Results Priorities & Recommendations

- Priority 1: Results Ordering
  - Priority 1A: Consistent encoding of Lab & Other test results
  - Priority 1B: Results need to be sent to clinicians in codified format
  - Priority 1C: Orderable tests need to be standardized between systems and with mapping to standard terminologies
  - Priority 1D: Results need to be available for patients/proxies to effectively view, receive, and utilize
- Priority 2: Standardization
  - Priority 2A: Need a standard way to differentiate the Type of result
  - Priority 2B: The C-CDA standard does not prescribe how to group components

Orders & Results Priorities & Recommendations

- Priority 2: Standardization (Cont'd)
  - Priority 2C: Need standard interoperable methodology to specify and identify what has been ordered, and what is the Status of an order
  - Priority 2D: Existing standard code sets are not unique or sufficiently granular to accurately determine the clinical equivalency of tests
  - Priority 2E: Integrate external decision support
  - Priority 2F: Support the integration of Prior Authorization into EHR-based ordering workflows
  - Priority 2G: Result data exchanged between HIT systems may not include sufficient Provenance Metadata
  - Priority 2H: Need vendors to send unique Reference IDs for results data
  - Priority 2I: Tampering or other data modification may occur

Priority 1A: Consistent encoding of Lab & Other test results

- Standardized Logical Observation Identifiers Names and Codes (LOINC) & Systematized Nomenclature of Medicine - Clinical Terms (SNOMED-CT) coding must be provided by resulting agencies as a Clinical Laboratory Improvement Amendments (CLIA) requirement
- Identify and prioritize the most common/important results of each order type (including but not limited to lab, imaging, cardiac, pulmonary, neuro-muscular)
- Require and enforce the use of information models and terminology standards for all test orders and results
- Mapped codes must be included with results as they are maintained in and exchanged between health information technology (HIT) systems
- Resulting systems, e.g. electronic health records (EHRs) & laboratory information systems (LISs) should provide a mechanism that allows clients to map internal result codes to standard vocabularies
- Implement mechanisms to support and ensure proper LOINC encoding by resulting agencies, such as auditing or certification by CLIA

Priority 1B: Results need to be sent to clinicians in codified format

- Utilize US Core Data for Interoperability (USCDI) to assure that prioritized results are interoperable via HL7 v2 messages (where applicable), C-CDA, Fast Health Information Resources (FHIR), and future transport standards
- Prioritize complete and accurate coding at the data source (e.g., LIS, RIS) rather than trying to code or correct externally sourced data downstream
- Require that resulting agencies provide standardized metadata, (e.g., methodology, units, normal ranges) to ordering and copy to providers as well as patients
- Standard metadata must be maintained as result data is transmitted between systems (e.g., LISs, Imaging systems, EHRs, PHRs, HIEs, Payers, and Public Health)

Priority 1C: Orderable tests need to be standardized between systems with mapping to standard terminologies

- Develop and eventually require the use of standards-based catalogs of orderable tests with consistent mapping to associated code sets (e.g., LOINC) for all order types
- Utilize consensus development process to develop standard orderables for the most common/important tests of each order type, including the orders that link to prioritized results
- Standardize commonly used order panels, building on the ~2,000 order panels currently cataloged by LOINC
- Standardize orderables and order details with existing information models in mind (e.g., FHIR)

Priority 1D: Results need to be available for patients/proxies to effectively view, receive, and utilize

- Require that ordering providers make results available to patients/proxies within a reasonable timeframe, as allowed by state laws, assuring that, where appropriate, providers have an adequate opportunity to review and comment on results to facilitate patient interpretation
- Make all results in the EHR available to patients via APIs, whether or not results are LOINC/SNOMED-CT encoded
- Develop and require the use of standardized "patient friendly" result display names to patients based on LOINC and SNOMED-CT standards (in process)
- In the future consider requiring resulting agencies to make results available directly to patients. This could initially be required via CLIA regulations. As necessary, this could be required as a condition of payment for resulting agencies
- Alignment of state and federal policies to assure consistent and predictable patient data accessibility and interoperability. This should begin with a clear articulation of varying state requirements, followed by specification of national standards to promote maximal sharing of data with patients/proxies in both human and machine-readable formats

Priority 2A & 2B

No standard way to differentiate the Type of result

- Create a C-CDA standard component that identifies the different Result Types
- Assure that FHIR specifications for test result components include the exchange of Result Type metadata

The C-CDA standard does not prescribe how to send components

- The C-CDA standard should be updated to require that result components sent with documents be grouped by procedure in order to keep the necessary context for interpretation on the receiving side

Priority 2C & 2D

Need standard interoperable methodologies

- Include Order Status as required component of interoperable metadata
- Include in scope all orderables
- Map priority orderables to standard codes. LOI standard could be useful. Potentially us LOINC for orderables, SNOMED for values

Existing standard code sets are not unique

- Create a means of interpreting the different codes and information available for procedures and result components so that when received, they can be uniquely identified.
- This new way of translating codes would then be adopted by all EHRs and other systems exchanging results data.

Priority 2E & 2F

Integrate external decision support

- Support the advancement of standards such as CDS Hooks
- Support the development of Hooks that can be activated/utilized when a provider or patient receives and/or is reviewing a result
- Support the development and use of standards to determine and expose/display net pricing and suggested alternative order information to relevant stakeholders

Support the integration of Prior Authorization into EHR-based ordering workflows

- There is a need for standard methodologies to integrate external decision support for clinicians, patients and other stakeholders, into the full range of order and results workflows

Priority 2G

Result data exchanged between HIT systems may not include sufficient Provenance Metadata

- Require interoperability of provenance metadata with orders and results
- Provenance data inclusion should be independent of transport mechanism (e.g., HL7 V2, LOI, LRI, C-CDA, FHIR)

Priority 2H

Vendors do not consistently send unique Reference IDs for discrete results data

- All systems should generate, use, and send unique and consistent Reference IDs for all orders, procedures and result components
- Require interoperability of order/result Reference ID metadata with orders and results such that receiving systems can recognize a specific order or result as having been received previously
- Internal identifiers must be persistent and not change over the life cycle of an order or result
- Internal identifier data inclusion should be independent of transport mechanism

Priority 2I

Vendors do not consistently send unique Reference IDs for discrete results data

- With the advancement of consumer-mediated exchange, clinicians may not be able to tell if an order, result or document has been tampered with while under the control of the patient or un-regulated HIT vendor system
- Explore the value of requiring digital signatures on appropriate order and result data
- A digital signature should allow the originating system to be confirmed, and the values to be verified, and reveal any tampering that may have occurred

Closed-loop Referrals &

Care Coordination

Final Recommendations

Closed-Loop Referrals & Care Coordination

Priority 1

- Priority 1A: Closed-Loop Communications
- Priority 1B: Clinical Data collected prior to and sent when referring a patient
- Priority 1C: Clinician-to-Clinician Patient-Specific Messaging
- Priority 1D: Referral Management and Care Coordination
- Priority 1E: Governance

Priority 2

- Priority 2A: Automatically incorporate relevant patient information into EHR
- Priority 2B: Patient-to-Clinician Messaging
- Priority 2C: Multi-Stakeholder, Multi-institutional Care Plan
- Priority 2D: Real time text messaging

Closed-Loop Referrals & Care Coordination

Priority 1A: Lack of Closed-Loop Communications

Establish minimum baseline requirements for HIT solutions supporting closed loop referral management

- Encourage/support pilots of the 360X project with a variety of EHR systems and healthcare organizations
- Iteratively enhance 360X approach based on real-world feedback
- Support the 360X standards for Patient Identity Management and the further development and expansion of these capabilities to allow all referral orders to be tracked to completion.
- Encourage/support efforts to harmonize existing approaches to representing Message Context
- Investigate how FHIR-based approaches can best be leveraged to support closed loop referral and care coordination messaging workflows.

Closed-Loop Referrals & Care Coordination

Priority 1B: Standard clinical Data should be collected prior to referring a patient

- Identify an organization to develop and evolve recommendations
- Identify, catalog and, as necessary, manage and evolve best practice standard data elements
- Potential collaborators:
  - American Medical Association (AMA) Integrated Health Model Initiative (IHMI)
  - 360X Project Group
  - Council of Medical Specialty Societies (CMSS)
  - Physicians' Electronic Health Record Coalition (PEHRC)
  - Physicians Consortium for Performance Improvement (PCPI)
  - Health Services Platform Consortium (HSPC)
  - Healthcare Information and Management Systems Society (HIMSS)
  - Electronic Health Record Association (EHRA)
  - HL7 Da Vinci Project
  - ONC FHIR at Scale Taskforce (FAST)
- Consider piloting FHIR Argonaut Questionnaires to support referral workflows
- Explore the use of referral management apps (e.g., using SMART technology solutions) to support referral management workflows and associated information exchange

Closed-Loop Referral & Care Coordination

Priority 1C: Clinician-to-Clinician Patient-Specific Messaging

- Support and incentivize EHR and clinician user adoption of functionality needed to fully utilize compatible transport mechanisms (e.g., Direct)
- Investigate how FHIR-based approaches can be leveraged to support clinical messaging for referrals and care coordination

Priority 1D: Provider Directories

- Support the development and advancement of a nationwide standard for provider directories and their management to support referrals and care coordination, including cross-organizational clinical messaging

Priority 1E: Governance

- Include access to and governance of push messaging, and the associated technical and workflow requirements necessary to support referrals and care coordination, in the scope of the final TEFCA

Closed-Loop Referral & Care Coordination Draft Recommendations (Cont'd)

Priority 2A: Automatically incorporate patient information into EHR

- Support transition to secure, cross-organizational, cross-vendor, EHR-integrated electronic messaging between providers, payers and all care team members

Priority 2B: Patient-to-Clinician Messaging

- Support pilots of patient to provider messaging using multiple available technology solutions, e.g., Direct, FHIR
  - » Provide flexibility to individuals/patients to select the messaging tools of their choice and to manage messaging with care team members utilizing disparate HIT solutions
  - » Viable messaging solutions will integrate with established clinician workflows for portal-based messaging

Closed-Loop Referral and Care Coordination Draft Recommendations (Cont'd)

Priority 2C: Patient-centric, Multi-Stakeholder, Multi-institutional Care Plan

- Investigate various approaches, such as those based on the FHIR and C-CDA Care Plan
- Ensure that patient, caregiver and family goals and wishes are incorporated into the care plan

Priority 2D: Real time text messaging

- Explore the usage of and development of standards for the use of secure, real time text messaging that supports appropriate integration with EHR documentation and workflows

Additional Closed Loop Referral Draft Recommendations

Technology needs to support both Care Coordination and Orders & Results

- Identify opportunities for harmonization of technology standards and governance support of various instances of closed loop exchanges

Transitions of Care

- Identify opportunities for harmonization of technology standards and governance support of various instances of Transitions of Care

Custom interoperability solutions add cost and complexity

- Actively seek out and identify opportunities to consolidate, simplify and render cost effective the health IT interoperability landscape

Health data interoperability needs with no clear single best approach

- Avoid ”picking winners” prematurely and remain open to potential alternative approaches which may ultimately be superior for a given problem or in a larger context that considers various use cases

Preview of Future Domains

Medication & Pharmacy Data

Medication & Pharmacy Domain Preview

Priority 1

- Priority 1A: Medication administration/dispensation information is not universally available
- Priority 1B: Medication reconciliation at transitions of care is challenging
- Priority 1C: US Core FHIR profiles do not require transmittal of free-text sigs
- Priority 1D: Access to prescription drug monitoring program (PDMP) data can be cost prohibitive
- Priority 1E: It is difficult to know the net price of prescribed medications
- Priority 1F: Need standards to integrate Prior Authorization into prescribing workflows

Priority 2

- Priority 2A: National Library of Medicine RxNorm API does not return codes for discontinued drugs
- Priority 2B: Free text sigs are prevalent, but difficult to interpret/use when structured information is needed
- Priority 2C: There is currently not a way to "forward" an eRx to an alternate pharmacy

Preview of Future Domains

- Evidence-based Disease Management
- Price Transparency
- Prior Authorization
- All of these uses of health information technology include the need to
  - Collect appropriate patient information
  - Send patient information to a service that analyzes it relative to a set of rules/requirements
  - Return recommendations to the requestor which must be incorporated into the workflow

Questions