ONC Grant Project Page

This page is a continuation from the ONC Grant Project Page Wiki page to support projects within the following ONC Grant funded opportunity: Maturing C-CDA and FHIR Implementation (2019 - )

(The full title of the Funding Opportunity Announcement (FOA) is: Closing the Gap between Standards Development and Implementation-Maturing the Consolidated Clinical Document Architecture (C-CDA) and Fast Healthcare Interoperability Resources (FHIR) Standard)

The following are brief descriptions of each project created under the Maturing C-CDA and FHIR Implementation (2019 - ) ONC grant. Project deliverables are also linked with each project.

- 1 Project: Flat FHIR (Bulk Data & Push)
- 2 Project: Unified HL7 Terminology Governance (UTG)
- 3 Project: C-CDA Implementation-A-Thons
- 4 Project: Improve FHIR JIRA Ballot Process & Tooling
- 5 Project: FHIR Implementation Guide Publication Coordinator
- 6 Project: FHIR Connectathon Administrator
- 7 Project: FHIR Build and Implementation Guide (IG) Publishing
- 8 Project: Ballot the IPS FHIR Implementation Guide / IPS Work Stream
- 9 Project: FHIR Terminology Server Support
- 10 Project: FHIR Registry Enhancements & Support
- 13 Project: FHIR Product Support
- 14 Project: International Patient Summary Advocate
- 15 Project: Gender Harmony Support
- 16 .......................... COMPLETED C-CDA/FHIR GRANT PROJECTS ..........................
- 17 Project: Review Vaccination Implementation Guides (COMPLETE)
- 18 Project: Complete Common Data Models Harmonization IG (COMPLETE)
- 19 Project: 2021 Annual Value Set Update for C-CDA (COMPLETE)
- 20 Project: Analysis of Transferring C-CDA Value Sets from NLM VSAC to terminology.hl7.org (COMPLETE)
- 21 Project: Compare IPS & Argonaut US Core IGs (COMPLETE)
- 22 Project: US Core Ballot Reconciliation Support (COMPLETE)
- 23 Project: FHIR Fact Sheets (COMPLETE)
- 24 Project: C-CDA Web Publication Tooling (COMPLETE)
- 25 Project: C-CDA Companion Guide Update (COMPLETE)
- 26 Project: C-CDA Release 2.2 – Phase 1 (Postponed)
- 27 Project: FHIR IG Workshop (COMPLETE)
- 28 Project: FHIR Bulk Data Meeting (COMPLETE)
- 29 Project: Finish the IG Publisher Templates Framework (COMPLETE)
- 30 Project: US Core Updates for Provenance (COMPLETE)
- 31 Project: eLTSS Reference Implementation (COMPLETE)
- 32 Project: Rubric Reconciliation (COMPLETE)
- 33 Project: FHIR Survey (COMPLETE)
- 34 Project: C-CDA R2.1 Value Set Updates (COMPLETE)
- 35 Project: US Core Errata (COMPLETE)
- 36 Project: UTG External Terminologies (COMPLETE)
- 37 ------------------------ COVID/Public Health Grant: HL7 Public Health Standards and Solutions for Future Pandemics ------------------------
- 38 Project: Clinical Domains (Logica)
- 39 Project: Extract Clinical Notes (BCH)
- 40 Project: SDOH (Gravity Team (Bob Dieterle))
- 41 Project: Landscape Assessment/Gap Analysis: Public Health Standards (SME: Craig Newman of Altarum)
- 43 Project: Develop a POLST CDA IG (Lantana Consulting Group)
- 44 Project: At Home COVID Test Analysis (Gay Dolin of Namaste Informatics) (COMPLETE)
- 46 Project: US Core IG
- 47 Project: US Realm Program Manager
- 48 Project: US Realm Senior Advisor
- 49 Project: US Realm Content Administrator (Curator)
- 50 Project: US Realm Dashboard Developer
- 51 Project: Flat FHIR (Bulk Data & Push)
- 52 Project: Unified HL7 Terminology Governance (UTG)
- 53 Project: C-CDA Implementation-A-Thons
- 54 Project: Improve FHIR JIRA Ballot Process & Tooling
- 55 Project: FHIR Implementation Guide Publication Coordinator
- 56 Project: FHIR Connectathon Administrator
- 57 Project: FHIR Build and Implementation Guide (IG) Publishing
- 58 Project: Ballot the IPS FHIR Implementation Guide / IPS Work Stream
- 59 Project: FHIR Terminology Server Support
- 60 Project: FHIR Registry Enhancements & Support
- 63 Project: FHIR Product Support
- 64 Project: Review Vaccination Implementation Guides
- 65 Project: International Patient Summary Advocate
Project: Flat FHIR (Bulk Data & Push)

Description:
Ballot the FHIR Bulk Data Implementation Guide (IG) in HL7’s 2019 May ballot cycle; develop a test suite and utility to verify vendor compliance with the bulk data spec Flat FHIR format; design a Bulk Data import approach; maintain reference implementation by adding performance monitoring and User /Traffic management.

FY21 Scope of Work

1. Update the bulk data reference server implementation to Argonaut build v1.5 in time for the January 2021 FHIR Connectathon
2. Update and ballot a FHIR bulk data export Implementation Guide reflecting community feedback and experience with Connectathon testing (includes a consultant to ballot through HL7)
   a. Update the bulk data export IG
   b. Balloting in May or September, based on the consultant's availability
   c. Update the bulk data export IG based on ballot comments
   d. Actively participate in Connectathons
3. Build out and test a prototype bulk data import module.
   a. Build a prototype and demonstrate its use by loading data into the ONC LEAP funded Cumulus pipeline
   b. Produce an internal document summarizing the prototype work to help inform a future draft import IG
4. Ongoing maintenance of and updates to tooling to reflect new versions of bulk data spec
   a. Bulk data client
   b. Bulk data testing library

FY20 Scope of Work

1. Bulk Data Testing Tool - Continued maintenance support & development
2. Create and distribute a survey to gather feedback from known implementers
   a. What parts of the spec are supported now?
   b. What they plan to support down the road
   c. What extensions are supported
   d. What extensions are/would be most valuable
3. Discussions with CMS (Digital Services Team) to understand their experience implementing a bulk data server.
4. Support Import Specification

FY19 Scope of Work
Deliverables:

FY21

FY21 Deliverable #1: HL7 Bulk Data FY21 - SMART Deliverable #1.pdf
FY21 Deliverable #3b (Produce an internal document summarizing the prototype work to help inform a future draft import IG) and FY21 Deliverable
4 Explanations of Updates:
  HL7 Bulk Data FY21 - SMART Deliverable #3b & 4.pdf

FY20

- FHIR Bulk Data Test Suite Design_v2.pdf
- FY20 Deliverable 4 - SMART_HL7 FHIR bulk data implementations_Deliverable4.pdf
  a. Publication with HL7 and ONC on implementation adoption
  b. Maintain a live-listing website of client implementations
- FY20 Deliverable 5 - Process for adding extensions to the standard_Deliverable5.pdf
  a. Evaluate the process for adding extensions to the standard
  b. List potentially valuable extensions to update the standard which demonstrate real world efficacy
- FY20 Deliverable 6 - Prototype reference server for testing bulk data import clients
  This is a proof of concept prototype implementation of the Bulk Data Import proposal, currently available at https://github.com/smart-on-fhir/bulk-import/blob/master/import.md. The prototype app is available online at https://bulk-data.smarthealthit.org/sample-import-app. There is also a link to it in the footer of the bulk data server’s front page at https://bulk-data.smarthealthit.org/.
  This is an early implementation that could serve several purposes:
    1. Proof of concept - proof that the spec is usable and can work without customizations
    2. Provide a backend that performs validations and replies according to the spec, so that developers can test their clients against it.
    3. The UI can also be used as code generator (eg.: as CURL request builder)
  It should be noted that we do not enforce file size limits for the imported files, but also do not store imported FHIR resources in our database for more than 10 minutes.
  A more generic version of the UI could be developed in the future to use against any server.
- FY20 Deliverable 7 - Implement Bulk Data Export functions in three separate tools; the Bulk Data server, client, and tester (BDT):
  This report documents the work that has been done to update three bulk data tools - the Bulk Data server, client, and tester (BDT): Deliverable 7 - Export Update To Bulk Data Tools Report.docx
  This document lists various Bulk Data Access parameters and operations that are specified in the FHIR Bulk Data Access Implementation Guide, and tracks the current status of support for those functionalities in various tools that the SMART team has built and maintained for the developer community. Support that has been added for v1.5 of the specification is highlighted in yellow: Deliverable 7 - SMART Bulk Data Support Grid.xlsx

Project: Unified HL7 Terminology Governance (UTG)

Description:

Develop a working demonstration pilot for UTG-based terminology maintenance system; debug and test tool; provide Project Management

FY21: UTG THO Updates: Provide planning, analysis, engagement and terminology subject matter expertise towards ensuring the HL7 Unified Terminology Governance (UTG) system is fit for purpose to be used as an authoritative source of information for terminology content from external organizations (those organizations outside HL7 International or its Affiliates) as required in HL7 standards. This includes but is not limited to:

- Updating the layout of the HL7 Terminology (terminology.hl7.org) web site to improve navigation and making external terminologies easier to find and use after consulting with subject matter experts identified by HL7.
- Ensuring that existing external terminologies in HL7 Terminology are current and fit for purpose as follows:
  - Identifying external terminologies in HL7 Terminology which are not endorsed by the HL7 Terminology Authority (HTA).
  - Consulting with HL7 stakeholders on which of these external terminologies should be
    - Referred to the HTA for endorsement;
    - Archived, deprecated or otherwise removed from HL7 Terminology.
  - Implement the required updates to the existing external terminologies in HL7 Terminology.
- Ensuring that the HTA-endorsed external terminologies can be represented in HL7 Terminology. This representation needs to support the HTA-endorsed metadata elements, human readability and effective machine processing of the information. The following tasks are scope:
• Developing a FHIR-based technical representation of an external terminology’s metadata based on the core FHIR R4 CodeSystem and NamingSystem resources as well as any required FHIR profiles and extensions. This representation will ensure discrete data elements are available to represent all HL7 Terminology Authority (HTA) approved metadata data elements.

• Working with the UTG and FHIR Implementation Guide (IG) Publisher teams to ensure that this FHIR representation for external terminologies is supported by the UTG and IG Publisher software.

• Ensuring that as many HTA-endorsed external terminologies as possible are represented in HL7 Terminology based on this FHIR representation.

FY21 UTG Review: Analyze HL7’s Unified Terminology Governance (UTG) and make recommendations to improve usability and sustainability by conducting the following tasks:

1. Review UTG documentation;
2. Interview 4-6 key SMEs that have been part of the development team, used the tooling or participated in the UTG Task Force;
3. Prepare a presentation with findings, recommendations and areas that need to be researched further.

UTG Project Page
UTG Project Management Page

Deliverables:

UTG Document Repository Page (including project plan)
The current rendered pages for UTG content can be viewed here: https://build.fhir.org/ig/HL7/UTG/

Webinars: Linked on the Project Specific Help page:

• HL7 Terminology Overview

FY21 UTG Review Deliverable: Prepare a presentation with findings, recommendations and areas that need to be researched further

Project: C-CDA Implementation-A-Thons

Description:

Engage industry players (vendors, healthcare providers, payers and health information exchanges) via a C-CDA Implementation-A-Thon track within the FHIR Connecathon. The objective of the 2-day event is to improve the quality and consistency of C-CDA implementers. The IAT involves hands-on exercises to reduce variability among C-CDA documents and the ability to share best practice experiences.

C-CDA IAT Project Page

Deliverables:

C-CDA IAT Exec Summary 20210107 and 28.pdf

2020.10.21 Virtual IAT Track Agenda
C-CDA IAT Exec Summary 20201021.pdf

2020.07.29 Virtual IAT Track Agenda
2020.05.20 Virtual IAT Track Agenda

C-CDA IAT: September 14-15, 2019 (Atlanta, Georgia)
Results from the C-CDA IAT in Atlanta are written up here:
https://confluence.hl7.org/display/IAT/2019.09.14+Atlanta%2C+Georgia+IAT+Event+Page

C-CDA IAT: January 12-13, 2019 (San Antonio, Texas)
Results from the C-CDA IAT in San Antonio are written up here:
https://docs.google.com/document/d/1Z3JdmZZYmNiKDM6Q7ja10-Yw8c3Mz-ICVHJUNxBYhEw/edit#heading=h.eupkqds8qcvv
Project: Improve FHIR JIRA Ballot Process & Tooling

**Description:**
Determine how best to get information to participants without overwhelming them; Create dashboards that allow users to quickly see relevant information; Document the JIRA ballot process; Complete and test the MIF conversion process.

**Deliverables:**

Project: FHIR Implementation Guide Publication Coordinator

**Description:**
Monitor the FHIR IG publishing and balloting processes; facilitate review/approval of the IGs that will be published in a given ballot cycle; provide educational materials on processes related to the publication and balloting of IGs.

**Deliverables:**
- FHIR IG List
- FHIR IG Checklists:
  - Process Flow - [https://confluence.hl7.org/display/FHIR/FHIR+Implementation+Guide+Process+Flow](https://confluence.hl7.org/display/FHIR/FHIR+Implementation+Guide+Process+Flow) - this material is updated with new content as it is available.
  - Material Grahame presented at IG training session in Atlanta: [https://confluence.hl7.org/display/FHIR/Home#a0c8f2d8-9087-48ba-8b78-49a16dd5bc2f-66913917](https://confluence.hl7.org/display/FHIR/Home#a0c8f2d8-9087-48ba-8b78-49a16dd5bc2f-66913917)

Project: FHIR Connectathon Administrator

**Description:**
Prepare a FHIR Connectathon communication plan, a pre-connectathon and post-connectathon survey; an orientation package for all track leads and an event report.

**Main Confluence Page for All Events:** [Connectathons](#)

**Deliverables:**
- January 2022 FHIR Connectathon: [2022 - 01 Connectathon 29](#)
  - Pre Connectathon 29 Survey_2022Jan.xlsx
  - HL7 FHIR Connectathon 29 Report Out.docx
  - Connectathon 29 Wrap Up Slides

- September 2021 FHIR Connectathon: [2021 - 09 Connectathon 28](#)
  - HL7 FHIR Connectathon 28 Report Out.docx
  - HL7 FHIR Connectathon 28 Feedback Survey.xlsx
  - Connectathon 28 Wrap Up Slides

- May 2021 FHIR Connectathon: [2021 - 05 Connectathon 27](#)
  - HL7 FHIR Connectathon 27 Report Out.docx
  - HL7 FHIR Connectathon 27 Feedback Survey.xlsx
Project: FHIR Build and Implementation Guide (IG) Publishing

Description:
Support the HL7 FHIR Build and Implementation Guide Publishing tasks as directed by the HL7 FHIR Product Director and the HL7 CTO. Ultimately, the purpose is to take over responsibility for supporting FHIR Build and IG Publishing tasks, relieving Grahame Grieve of this work.

Make improvements to the development, publication and build tools for the core FHIR specification and associated FHIR Implementation Guides to more efficiently accommodate new use cases and new features, reduce risk dependencies, improve quality and consistency and allow for generation of a substantially expanded volume of new implementation guides.

Streamline processes used to issue new releases of the FHIR Core Specification, layered products such as CDS Hooks and FHIRCast, and FHIR Implementation Guides by additional publication and build managers without depending upon the direct involvement of HL7’s FHIR Product Director.

Progress Reports:
https://docs.google.com/document/d/1rS446r5N5khaSiPAqqkUQygSdxFra1PCTRF7a2XdA/edit

Deliverables:

Project: Ballot the IPS FHIR Implementation Guide / IPS Work Stream

Description:
Complete the remaining updates needed to the FHIR IPS Implementation Guide (IG) content so that it publishes correctly and is ready for the final submission and balloted in the September 2019 ballot cycle;

FY21-22 IPS Work Stream:

- Establish a working group under the GDHP Interoperability Work Stream to involve GDHP members in IPS projects and providing feedback on the IPS.
- Plan, prepare and maintain GDHP Interoperability Work Stream
- Discuss implementation of Inferno and allow nations to provide feedback and contributions.
- Coordinate with the Inferno project team for the incorporation of IPS in Inferno
- Facilitate pilots with EHR vendors and GDHP countries to allow the working group to test how IPS is working in member GDHP nations and recommend IPS modifications.
- Engage with the International Patient Access (IPA) team on the complementary implementation guide to IPS and the early stages of the IPA API specification development.
- Continue IPS work in HL7 and additional SDOs including IHE, ISO (and at times JIC)
- Plan/prepare for the IPS track at the HL7 FHIR Connectathons
- IPS track activities during the HL7 FHIR Connectathons

Deliverables:

Project: FHIR Terminology Server Support

Description:
Provide support for the FHIR Terminology Server including, but not limited to, rebuilding the FHIRServer project when code updates are made; updating SNOMED CT to the latest versions; additional terminology server support as needed.

Deliverables:

Project: FHIR Registry Enhancements & Support

Description:
FY21-22 Work

Provide support for the FHIR registry on an as-needed basis based on requests submitting by HL7. Implement jurisdiction enhancement.

FY20 Work

Perform enhancements to the FHIR registry (hosted at https://registry.fhir.org/) as described below:

1. Registry included results. Ensure all versioned resources for ready-to-use packages from the package registry are searchable, including the content from non-prerelease Simplifier packages which indicate to be ready to publish to the registry.
2. FHIR version. Modifications will be made to the FHIR registry so that STU3, R4 and any newer released FHIR version packages (as soon as they are implemented in Simplifier) are included.
3. Better filtering options. The User Interface will be extended with these filters: Resource category, Resource, FHIR version.
4. Better ranking. Modify weights of fields, like putting more emphasis on the search result in a title of a resource based on testing with HL7 International.
5. Better display of results. Contractor will leverage the logic Simplifier already has for pulling out an interesting title and description for each resource.
6. Framework upgrade. A new React-based user interface will be developed.
7. Measuring the use of the FHIR Registry with Google Analytics
   a. An HL7 Google Analytics account will be set up, including settings to not track users on an individual level, if not already existing. HL7 will be provided administration level access to this account, or, if already existing, HL7 will provide Contractor administration level access to make necessary changes.
   b. A privacy policy page will be added to the FHIR Registry, based on content provided by HL7.
   c. Contractor will add Google Analytics tracking code to all application pages so their visits are being measured.
   d. Contractor will add Google Analytics tags to important user interface elements to make sure their usage is being measured.
8. Registry Feedback and Search Tuning
   a. Based on feedback from HL7 and the HL7 FHIR community final tweaks and small changes will be made to the FHIR Registry, in the order prioritized by HL7. This can, for example, include textual changes, weighting of the components of the search algorithm or adding a resource filter on the package overview page.

Deliverables:

- Improved registry results that include all released FHIR versions
- Filters extended with improved ranking and display
- Framework upgraded
- Google Analytics account created; tracking code and tags added


Description:

The Phase 1 project resulted in a proof of concept where CDA templates are represented using FHIR resources and published using the FHIR IG Publisher. This project, Phase 2, will provide a publication-ready web version of the full C-CDA specification as follows:

1. Tooling Enhancements for CDA
   a. Modify Trifolia on FHIR (ToF) tooling to support CDA publication.
   b. The CDA logical model and editorial support will be integrated into ToF
   c. ToF will acquire export capability for CDA content (including templates, terminology, validation rules, and narrative entries) expressed as FHIR StructureDefinition, ValueSet, and ImplementationGuide resources, thus creating “CDA profiles.”
   d. Update ToF with required user interface functionality and documentation
2. CDA Section and Document Functionality (Iterative)
3. Import Consolidated CDA (C-CDA) templates and test/debug the publication functions in an iterative process starting with the Problems and Allergies sections and continuing to incorporate all sections and entries required to support C-CDA implementation.
4. Optional entries will be included if properly defined and do not generate errors while migrating from TWB to ToF.
5. Work with HL7’s Structured Docs Work Group to review any improperly defined optional entries to decide if they can be omitted (non-essential or never implemented) or if SDWG volunteers will use the errata process to address before import.
6. Provide demonstrations of the above work to HL7’s Structured Documents (SDWG) and CDA Management Workgroups (CMG)
7. Perform Quality Assurance and testing of the web-based publishing solution for the C-CDA standard using the FHIR IG publish being developed above by:
   a. Working with the CDA Management Group to establish QA criteria/plan
   b. Attending review and feedback meetings with HL7, SDWG, CDA Management Group
   c. Preparing assessment summaries, etc.
   3 packages in total will be reviewed
      1. Trifolia-on-FHIR basic enhancements for CDA
      2. Problems & Allergies
      3. Medications, Results, Vitals & Immunizations
Deliverables:

- Incorporate CDA logic model so it is accessible to ToF components
- Incorporate stakeholder feedback from the SDWG and other HL7 stakeholders gathered during proof of concept, define user interface (UI) improvements for CDA tooling of ToF
- Update the ToF editor features to support CDA requirements
- Update documentation for CDA functionality and describe editing method and tooling to maintain CDA profiles
- Update toolset to accommodate CDA sections appropriate for that task
- Tune ToF publication outputs to ensure they are valid per the FHIR specification and work with the FHIR IG Publisher
- Update tool documentation and promote code base in GitHub to production
- Demonstrate new functionality to HL7 governing bodies
- Quality Assurance Testing Progress: QA of C-CDA 2.2 Templates Phase 1


Description:

The Phase 2 - Task Period 1 project addressed allergies, medications, results, vitals & immunizations. Task Period 2 work will focus on procedures, social history, encounters and final demonstration of the full package by February 1, 2021.

The Project is divided into two Task Periods:

- Task Period 1 (~May '20-Oct '20)
  - T1. Trifolia Enhancements for CDA
  - T2. Problems and Allergies Sections
  - T3. Medications, Results, Vitals & Immunizations Sections

- Task Period 2:
  - T4. Procedures, Social History and Encounters Sections (dates are Estimated Completion Dates as of December 9, 2020)
    - Trifolia WB Updates and Re-Exporting: December 3, 2020
    - Publication Debugging: December 17, 2020
    - Final QA and Delivery December 24, 2020
    - Demo Updates: December 25, 2020
  - T5. Remaining Sections & Document Types
    - Trifolia WB Updates and Re-Exporting: February 19, 2021
    - Publication Debugging: March 19, 2021
    - Final QA and Delivery April 2, 2021
    - Demo Updates: April 6, 2021

- Independent QA as follows
  - Confirm the Phase II C-CDA templates are present in the new Web C-CDA IG as StructureDefinition Resources
    - Using the master list of templates in C-CDA R2.1, check off the templates that are present in the new IG and then document their existence or not on Confluence and/or in the google sheet used to track the QA work.

    - For each Template:
      - Check that the data type of elements like observation.value has the correct data type, effectiveTime and others as necessary
      - Confirm all numbered constraints are present or accounted for
      - Confirm all primitive constrains are present or accounted for
      - Confirm the Value Sets binding strength the same
        - Documentation of binding strength comparisons:
          - Confirm the same Value Sets are used in the constraints
          - Confirm correct inheritance (template X inherits from template Y)
          - Check that the template purpose descriptions match
          - Confirm Labels/descriptions within the template are present in the StructureDefinition Resource

    - Create the following deliverables:
      - A full assessment of the 126 Phase II C-CDA R2.1 templates
      - Documentation on Confluence of the Phase II QA findings
      - Meet with HL7 CDA Management Group, Structured Documents Workgroup, Lantana, and HL7 staff involved in the CDA IG Web Publishing Pilot and keep these groups informed of the Phase II QA findings and issues that need to be addressed.
      - Provide a report summarizing the findings from the Phase II analysis.

Current Status:

- Work in progress: https://build.fhir.org/ig/HL7/cda-ccda-2.2/index.html
- C-CDA Web publishing Pilot: https://confluence.hl7.org/display/CDA/C-CDA+IG+Web+Publishing+Pilot

Deliverables:

- Lantana List of Templates: Template Tracker_Lantana_20210603.xlsx
- Demo of Procedures, Social Histories and Encounters in Trifolia on FHIR
- Demo of all remaining Section and Document Types in Trifolia on FHIR
• Updated Toolset and documentation
• Quality Assurance Testing Progress: QA of C-CDA 2.2 Templates Phase 1
• Quality Assurance Final Report:

Project: FHIR Product Support

Description:

Provide increased administrative support for standards development, publication and maintenance to facilitate the release of each new version of the FHIR core specification work as well as with other key FHIR SMEs to implement specific improvements for long-term, sustainable FHIR processes and tools.

Deliverables:

Project: International Patient Summary Advocate

Description:

FY21-22:

1. Act as an advocate for the development and global implementation of the following HL7 International Standards:
   a. HL7 CDA R2 Implementation Guide International Patient Summary
   b. International Patient Summary (FHIR) Implementation Guide
   c. International Patient Access (Draft in Development)

2. The above will be achieved as follows:
   a. Learn about the current situation for both International Patient Summary (IPS) and International Patient Access (IPA) (still in development) to craft better strategy for implementation within the Global Digital Health Partnership (GDHP) and with nations outside of the GDHP.
   b. Support ONC with IPS or IPA with proactive engagement of nations, thorough presentation of technical specification documents, explanatory PowerPoints or other supporting documents to help facilitate the implementation of IPS within the GDHP.
   c. Ensure technical resources meet deliverables on time as defined/expected for HL7, ONC and GDHP timelines
   d. Work with appropriate parties to exchange ideas about the GDHP’s efforts with IPS implementation and proactively present to ONC options and opportunities for IPS engagement and implementation within the GDHP.
   e. Examine if there is a need to leverage or develop open-source tooling to ease and speed up implementation of IPS Clinical Document Architecture (CDA), IPS FHIR Composition and International Patient Access (IPA). Time devoted to this task shall not exceed 10 hours unless approved by HL7.

3. Optional Task: Based on findings the contractor may advise and/or develop tooling related to this project

Deliverables:

• Craft a strategy for implementation within the Global Digital Health Partnership (GDHP) and with nations outside of the GDHP.
• Support ONC with IPS or IPA with proactive engagement of nations, thorough presentation of technical specification documents, explanatory PowerPoints or other supporting documents to help facilitate the implementation of IPS within the GDHP.
• Present ONC options and opportunities for IPS engagement and implementation within the GDHP.
• Optional Task: Tooling related to this project

Project: Gender Harmony Support

Description:

FY22:

1. Meeting attendance, participation on discussions and support for:
   a. Gender Harmony project
   b. C-CDA project
   c. HL7 Terminology management meetings and tasks

Deliverables:
---------------------------------------  COMPLETED C-CDA/FHIR GRANT PROJECTS  ---------------------------------------

Project: Review Vaccination Implementation Guides (COMPLETE)

Description:

FY21:

Perform a comparison between the latest version of WHO Smart Vaccination Certificate (RC3) and the SMART Health Cards: Vaccination & Testing implementation guides by conducting the following tasks:

a. Contact the WHO project lead to determine the current state and near-term plans for the WHO project
b. Review the latest build of the International Patient Summary (IPS) specification being tested at Connectathon 27 (which has been updated to support WHO vaccination certificate requirements)
c. Perform a detailed review and comparison of the IPS build, implementation guides and the initial ONC comparison
d. Provide a documented review of findings, noting similarities and differences
e. Attend a meeting with SMEs identified by HL7 to share findings and recommendations.
f. Apply changes and submit a final document to HL7.

Deliverables:

A concise document, posted in an HL7 Git Repo or Confluence containing:

a. A narrative description of the similarities and main differences of the two projects;
b. A detailed list of the differences in terms of FHIR resources used, required elements, vocabularies, constrains and REST interactions and operations

https://docs.google.com/spreadsheets/d/19UChtEpP5wuUPO7JWTJLehBCCSH2ZLNKJhKRR6vCSrE/edit#gid=0

Project: Complete Common Data Models Harmonization IG (COMPLETE)

Description:

FY21:

Complete the remaining work for the Common Data Models Harmonization IG by:

1. Reconciling remaining ballot comments
2. Performing necessary updates based on reconciliation
3. Publishing the Common Data Models Harmonization IG

Deliverables:

Publication of the Common Data Models Harmonization IG:


Project: 2021 Annual Value Set Update for C-CDA (COMPLETE)

Description:

Provide Program Management, SME technical analysis and execution, Quality Assurance on VSAC produced annual C-CDA R2.1 Value Set Expansion Release Package, and continuous improvement for process documentation of the annual value set update cycle and educational materials on the responsibilities of a value set steward for maintaining value sets over time.

Deliverables:

The C-CDA R2.1 2021-08-10 Value Set Program Release is now available in VSAC:

VSAC Welcome Page: (see the HL7 C-CDA Value Sets tile): https://vsac.nlm.nih.gov/welcome

VSAC Download: https://vsac.nlm.nih.gov/download/ccda?rel=20210810

User Documentation: https://confluence.hl7.org/display/SD/C-CDA+Value+Set+Update+for+2022


This page contains the CCDA to US Core Value Set alignment with FHIR: https://confluence.hl7.org/display/SD/C-CDA+to+US+Core+value+set+alignment

Project: Analysis of Transferring C-CDA Value Sets from NLM VSAC to terminology.hl7.org (COMPLETE)

Description:

Explore the feasibility of developing a process and tooling to manage and maintain value-sets used by the HL7 C-CDA standard by conducting an analysis of the current process and tooling in VSAC and explore the feasibility of duplicating VSAC capabilities for managing and maintaining value sets within the HL7 Unified Terminology Governance (UTG) and Terminology.hl7.org (THO) infrastructure.

Deliverables:

- Draft Recommendations Document: An initial document will be prepared and delivered that lists the findings on the required functionality and an initial set of recommendations for HL7 to act upon. Available upon request. Email David Hamill (pmo@HL7.org)

- Final Recommendations Document: After review by HL7 and selected SMEs, an updated final version of the document will be delivered. This version of the document will include estimates for staffing and funding of the proposed solution. Available upon request. Email David Hamill (pmo@HL7.org)

Project: Compare IPS & Argonaut US Core IGs (COMPLETE)

Description:

Perform a comparison between the International Patient Summary and the Argonaut / US Core implementation guides

Deliverables:

- White Paper: Argonaut vs. IPS: A Compare and Contrast between Two FHIR Implementation Guides
  A list of the differences in terms of FHIR resources used, required elements, vocabularies, constrains and REST interactions and operations.

Project: US Core Ballot Reconciliation Support (COMPLETE)

Description:

Provide support for reconciliation and publication of the US Core Implementation Guide, based on FHIR R4, which was balloted in the January 2019 ballot cycle. This new ballot added support for Clinical Notes, fixed errata logged since publication of R3, and upgraded all the Resources to support the FHIR R4 release and closed on January 7th, 2019. Review and reconcile comments; update the US Core FHIR Implementation Guide to submit it for final publication.

Deliverables:

US Core R4 Implementation Guide
Project: FHIR Fact Sheets (COMPLETE)

Description:

Create HHS branded webinars and other learning materials that provide guidance on selection of FHIR releases, Implementation Guides, profiles, etc. to be used within projects. The target audience will be federal government project/program managers leading HL7 related projects.

A total of 17 Fact Sheets will be created.

Deliverables:

https://www.healthit.gov/topic/standards-technology/standards/fhir-fact-sheets

Project: C-CDA Web Publication Tooling (COMPLETE)

Description:

Produce a sustainable, efficient means of publishing new versions of C-CDA (and potentially CDA in a later phase) as a Web Specification (similar to FHIR). The output of this project will be tooling together with necessary supporting documentation to support publication of C-CDA and CDA implementation guides through the FHIR IG Publisher.

Deliverables:


Sean McIlvenna recommended this link instead for the c-cda publication: https://build.fhir.org/ig/HL7/cda-ccda-2.2/ It's using the CI build, which is generally better.

1. improved export from trifolia
2. including primitive constraints
3. created custom publish template
4. worked with grahame to fix a few bugs
5. added a 8 core "complex" profiles
6. adding a bunch of narrative
7. uses the brand new templating methods developed by lloyd
8. vastly improved the base cda "ig" as it is defined in FHIR

Project: C-CDA Companion Guide Update (COMPLETE)

Description:

The prior version of the companion guide is specific to a rule, the 2015 ONC Certification rule. The ONC published a new proposed rule in 2019 which necessitates updates to the companion guide. This project consists of project management support and content development for the update of the companion guide to support C-CDA implementations in the US consistent with ONC timelines. Updates may include new C-CDA templates and other revisions to meet industry requirements, for example changes in government requirements. The set of updates for any release SHALL require approval by the Structured Documents Work Group and the US Realm Steering Committee.

Additionally, QA and editing of the C-CDA sample files that will be associated with the published C-CDA R2.1 Companion Guide Update. These files have already passed the ONC Validator and the ONC Scorecard. The QA is to encompass evaluating the rendered documents, including sensical header (administrative data) and comparing the entries with the rendered section text. Focus will include known problematic areas such as time and effectiveTime format and rendering and ensuring that the coded entry data makes clinical sense and accurately aligns with rendered information.

Deliverables:

Project: C-CDA Release 2.2 – Phase 1 (Postponed)

Description:
Create Volume 1 for C-CDA R2.2 using existing C-CDA R2.1 plus updates being proposed for Companion Guide and using Trifolia on FHIR for this work, so as to keep both of these documents aligned during the C-CDA Companion Guide Ballot Reconciliation. The C-CDA Volume 1 content created will be aligned with balloted C-CDA R2.1 Companion Guide R2 and in conjunction with tooling revisions and ready for STU Update commenting.

Deliverables:

Project: FHIR IG Workshop (COMPLETE)

Description:
To be held September 11-13, 2019 in Atlanta. The goal of this event is to build capacity within the HL7 community for creating and reviewing high quality FHIR IGs so as to be in a better position to handle the expected future increase in volume. The agenda for Wednesday and Thursday will focus on best practices in FHIR IG Development, including understanding the IG Publisher, preparing a good quality specification and review of Melva’s FHIR IG Publication Checklist. On Friday morning there will be a workshop focused on terminology considerations - both for creating IGs and for reviewing balloted IGs. Friday afternoon will conclude with a half-day workshop for best practices in reviewing FHIR IG ballots (IG consistency review).

Individuals Interested in FHIR IG Development (waitlist)
FHIR IG Workshop FAQs

Deliverables:
Recordings from the workshop are now available by day:
Day 1:
https://www.youtube.com/playlist?list=PL4DUfomz2RZx0RZc2CTP0zGkQxSvk6DKe
Day 2:
https://www.youtube.com/playlist?list=PL4DUfomz2RZxj_brneaEeHvJc_d7RyNu
Day 3:
https://www.youtube.com/playlist?list=PL4DUfomz2RZxLHNEiwGp4woylIR5IMYN

Project: FHIR Bulk Data Meeting (COMPLETE)

Description:
To be held in November 6, 2019; Boston Children’s Hospital to lead the event (similar to the event held in December 2017) which will focus on their Bulk Data work.

Deliverables:
The final report for the FHIR Bulk Data Meeting held in Boston on November 6th is available at the SMART Health IT web site:

Project: Finish the IG Publisher Templates Framework (COMPLETE)

Description:
Modify the existing FHIR IG Publisher Templates Framework into a single new framework that uses the (newly developed and highly alpha) publisher template approach, as well as make other changes that were agreed upon at the Montreal WGM; complete all modifications by the September 2019 WGM.

Deliverables:
Project: US Core Updates for Provenance (COMPLETE)

Description:
Perform updates to the US Core FHIR Implementation Guide to prepare it for STU publication as follows:
- Develop and finalize approval/plan for STU Update
  - Key items: Provenance; MedicationRequest; Devices – Implantable Devices; New query guidance for multiple patients; Pulse Oximetry; Updated guidance
- Review and reconcile US Core gForge trackers
- Pre-STU trackers applied; Publish fixed STU update version for commenting
- Collect comments and review them onsite at the September 2019 Working Group Meeting

FY21 IPS Work Stream

Deliverables:
The IG was published on September 3, 2019 for STU Comment publication and a copy of it is located here: https://build.fhir.org/ig/HL7/US-Core-R4/ . The final address for this publication to be announced.

Regarding publishing the updates, the repository for all the material is at https://build.fhir.org/ig/HL7/US-Core-R4/ . The final address for this publication is to be http://hl7.org/fhir/us/core/

Project: eLTSS Reference Implementation (COMPLETE)

Description:
Apply eLTSS IG FHIR constraints to resources (eLTSS profiles)

Deliverables:

Project: Rubric Reconciliation (COMPLETE)

Description:
Management of ballot comment reconciliation of comments placed against the HL7 Informative Document: C-CDA Rubric, Release 1. Including incorporation of resolution edits into the guide and managing the guide through publication on the HL7 website.

Deliverables:

Project: FHIR Survey (COMPLETE)

Description:
The goals of the survey will be to inform the Office of the National Coordinator (ONC) about the current and envisioned uses of the HL7 FHIR standard, to assist the federal government in measuring standards uptake and in planning actions to improve, support, and regulate the use of I.T. in the healthcare industry.

Deliverables:
DRAFT: HL7 FHIR Survey Project Summary of Findings_Catalyst_Final with Addendum.pdf
the marked up versions (with color coded comments) of the surveys:
FHIR_API_Client_App_Survey_v2_Annotated_FINAL.pdf
FHIR_API_Server_Survey_v2_Annotated_FINAL.pdf

Project: C-CDA R2.1 Value Set Updates (COMPLETE)
Description:

Provide program management and technical support to conduct the annual update of the value sets used in C-CDA R2.1 by performing the following:

1. Technical execution to compile the VSAC release package and review/update value set definitions used in C-CDA R2.1 and all associated companion and supplemental implementation guides.
2. Provision of training and creation of documentation that supports the capacity building pilot project also proposed for 2020.
3. Review of interdependencies between C-CDA R2.1 value sets, C-CDA on FHIR, and QRDA value sets

The ONC funded prior work on C-CDA Value Sets in Fiscal Year 2016: [https://wiki.hl7.org/Enhance_C-CDA_Value_Sets_Project](https://wiki.hl7.org/Enhance_C-CDA_Value_Sets_Project)

Deliverables:

- Population of and deliver to National Library of Medicine (NLM), the required Value Set Expansion Release Requirements Request
- Publication by VSAC of the approved C-CDA R2.1 Value Set Expansion Package
- Delivery of report on the findings and recommendations from analysis of interdependencies between C-CDA R2.1 value sets and value sets used in C-CDA on FHIR

The National Library of Medicine is pleased to announce the VSAC publication and downloadable files of the 2020-07-13 release of the HL7 Consolidated Clinical Document Architecture (C-CDA) R2.1 value sets, authored by the HL7 Terminology group.

There are several ways you can access the C-CDA value sets:

- VSAC Welcome Page: The Search button of the HL7 C-CDA Value Sets program block leads you to the VSAC Search Value Sets web browser, presorted by this HL7 C-CDA release. The Download link leads you to the C-CDA Value Sets section of the Download tab and supplies prepackaged downloadable files.
- VSAC Download Tab: Here, you can download the Excel, pipe-delimited text files, and XML files, Code System Versions Currently in C-CDA R2.1 Value Sets, a list of C-CDA R2.1 Value Sets Available in VSAC, and a list of C-CDA R2.1 Value Sets Unavailable in VSAC. The published downloadable C-CDA R2.1 2020-07-13 release excludes fourteen C-CDA value sets for which VSAC does not have the required supporting code systems.
- VSAC Search Value Sets Tab: Use a web browser to search, sort, filter and view details for all or individual value sets; use the Export Search Results button to download a catalog of C-CDA value set expansions; increase the paging up to 120 rows, and use the checkboxes to download all C-CDA value set expansions as Excel, XML, or Text files. Navigate to the Search Value Sets tab, select the HL7 C-CDA program, and select the C-CDA R2.1 2020-07-13 release.
- VSAC SVS API: Given a C-CDA value set identifier (OID) that you can obtain by any of the above methods, use an SVS API call, such as: [https://vsac.nlm.nih.gov/vsac/svs/RetrieveMultipleValueSets?id=2.16.840.1.113883.1.11.16866&release=C-CDA R2.1 2020-07-13&ticket=service-ticket](https://vsac.nlm.nih.gov/vsac/svs/RetrieveMultipleValueSets?id=2.16.840.1.113883.1.11.16866&release=C-CDA R2.1 2020-07-13&ticket=service-ticket)

For additional information on API authentication and usage, see our API documentation.

Please send any questions or feedback regarding VSAC functionality to: NLM Customer Support.

Sincerely, The NLM VSAC Team

Project: US Core Errata (COMPLETE)

Description:

1. Develop and finalize approval/plan US Core Errata Release
2. Review and reconcile US Core JIRA trackers (up to 30)
3. Apply trackers
4. Collect comments
5. Review newly identified errata; apply errata
6. Final Publication review

Deliverables:

- Develop and finalize approval/plan US Core Errata Release
- Review and reconcile US Core JIRA trackers - up to 30 (currently 25 logged)
- Apply trackers
- Collect comments over fixed 1-week period
- Review newly identified errata
- Apply any errata
- Final Publication review
- Submit final publication

The current version of US Core is being prepared for comment and publishing and can be seen here: [https://build.fhir.org/ig/HL7/US-Core-R4/](https://build.fhir.org/ig/HL7/US-Core-R4/)

and the status of the project can be viewed here:[https://hackmd.io/eCMbIXYnOV-0ea8YgVoHlQ](https://hackmd.io/eCMbIXYnOV-0ea8YgVoHlQ)

September 2020: The US Core Errata has been published as V3.1.1 and can be seen here: [http://hl7.org/fhir/us/core/](http://hl7.org/fhir/us/core/)
Project: UTG External Terminologies (COMPLETE)

Description:

1. Provide planning, analysis, engagement and terminology subject matter expertise towards ensuring the HL7 Unified Terminology Governance (UTG) system is fit for purpose to be used as an authoritative source of information for terminology content from external organisations (those organisations outside HL7 International or its Affiliates) as required in HL7 standards.

Deliverables:

1. Undertaking a complete audit of the current external terminology content in UTG which including the following tasks:
   a. Determining the accuracy, currency and correctness of the content
   b. Determining whether the content is endorsed/support by the responsible external organisations.
   c. Comparing the content to the other HL7 specifications, repositories and technical registries (e.g. the OID registry, the FHIR external terminologies page, etc) and, where differences are found, confirming which is correct.
   d. Confirming whether or not the content items remain in use in HL7 standards.
   e. Capturing all technical identifiers currently in use.
   f. Liaising with the HL7 Vocabulary Work Group, the HL7 Terminology Authority (HTA), and the HL7 product family management groups to capture concerns with the content currently in UTG.
   g. Describing the findings of the above tasks in a detailed report which provides clarity on what needs to be addressed in UTG for it to become the authoritative source for external terminology content.

2. Lodging requests for engagement with external organisations to the HTA where required.
3. Lodging requests to update UTG to address all content issues from the audit report.
4. Supporting the development of plans to transition from existing HL7 resources which capture information about external content to UTG.

report of activities in relation to UTG and external terminologies: exec-report-20200918-1.pdf

COVID/Public Health Grant: HL7 Public Health Standards and Solutions for Future Pandemics

Activities under this grant include, but are not limited to:

- Expanding the Clinical Domains Supported by HL7® Standards
- Improve the privacy, security of health information Public Health Emergency Response Related HL7® Standards, Solutions and Future Pandemics
- Advance the use of HL7® FHIR Bulk Data Access Implementation Guide standard (“Bulk Access API”)
- Develop, advance and harmonize Social Determinants of Health (SDOH) Standards
- Advance public health standards

Project: Clinical Domains (Logica)

Description:

FY21

1. Initial Assessment and Plan - Create a report summarizing work to date related to clinical domains for Covid-19, including use cases, gaps, and opportunities.
2. Complete balloting of COVID-19 FHIR Profile Library IG
3. Complete ballot reconciliation and publishing of COVID-19 FHIR Profile Library IG.

Post FY21

1. Provide online access to relevant COVID-19 data concepts, elements, terminologies, and models consistent with the IG and maintain as necessary to reflect new developments
2. Participate in FHIR Connectathons to explore use of the IG and to contribute to prototypes of data capture tooling.
3. Conduct a pilot with at least one partner implementer and conduct a demonstration webinar.
4. Update the COVID-19 FHIR Profile Library IG (via ballot or non-balloted STU update process) reflecting updates identified in Connectathons and pilot.
5. Prepare a final report of lessons learned and suggested best practices for use of the IG.

Deliverables:

FY21

- A report summarizing work to date related to clinical domains for Covid-19, including use cases, gaps, and opportunities

Updated: Deliverable 1 - LogicalInitialAssessmentandPlan04192021.pptx
Project: Extract Clinical Notes (BCH)

Description:

FY21

1. Landscape Analysis
   a. Engage with the NLP community to grade tools based on accuracy, speed, licensing model, extensibility, user base and FHIR compatibility
   b. Provide a report identifying tools with the best long-term prospects to incorporate with Cumulus

2. Adapt and implement the chosen NLP tool into the Cumulus pipeline
   a. Achieve containerization and appropriate abstraction to ensure reusability across future cloud platforms and configurations
   b. Augment NLP pipelines with COVID-specific knowledge resources and modules
   c. Create a RESTful API and server inside a Docker (or other container) environment, made available in public container registries (e.g., DockerHub)
   d. Deliver software release (hosted on GitHub), including technical documentation on components of the pipeline and installation guide

Post FY21

1. Extract COVID Surveillance data from clinical notes and concatenate results with bulk FHIR in Cumulus
   a. Demonstration of results to HL7 and ONC in September 2022

2. Produce a white paper describing the landscape analysis, technical approach, and results

Potential for future work
The architecture created in the first 2 years of the project will serve as a platform to allow for the addition of advanced NLP methods to Cumulus. The field of NLP, including clinical NLP, is moving very quickly, with significant gains occurring in the last few years. An obvious high-impact addition to the NLP platform is to add our temporal information extraction systems to the NLP pipeline. Getting to that point from the present entails the porting of research code (written in python, often requiring graphics processing units) to production code (often written in systems languages like java), as well as creating new FHIR output writers for the temporal

Deliverables:

FY21

- Provide a report identifying tools with the best long-term prospects to incorporate with Cumulus: Deliverable 1 leap covid landscape analysis.pdf
- Achieve containerization and appropriate abstraction to ensure reusability across future cloud platforms and configurations
- Augment NLP pipelines with COVID-specific knowledge resources and modules
- Create a RESTful API and server inside a Docker (or other container) environment, made available in public container registries (e.g., DockerHub)
- Deliver software release (hosted on GitHub), including technical documentation on components of the pipeline and installation guide

Project: SDOH (Gravity Team (Bob Dieterle))

Description:

FY21

Conduct a Gap Analysis of the current state and emerging activities of stakeholders that capture, share, and use SDOH data across the health and human services ecosystem.

Produce an SDOH Framework per the guidance of the gap analysis (Technical Approach Report).

FY22

Develop or update technical resources/tools based on the best approach indicated in the technical approach report.

Map the FHIR specification (standard) to the Open Referral standards (Human Services Data Specification and the associated Human Services Data API Suite). The Project will also map the FHIR specification to at least one community-based service organization platform (e.g., Aunt Bertha) and will develop a translation RI code to facilitate exchange.

Conduct pilots in two phases to test 1) the SDOH FHIR IG and the smart phone applications to support closed loop referrals and 2) the mapping between FHIR and Open Referral and a Community based service platform to exchange information supported by the SDOH FHIR IG.

Develop a final report that summarizes all the deliverables reviewed and finalized in the previous four tasks. The report will include lessons learned and suggested next steps for ONC and other key stakeholder groups.
Deliverables:

FY21

Task 1: Produce a Gap Analysis that captures the current state and emerging activities of stakeholders that align with existing recommendations for SDOH interoperability related to human services, open referral, and the use of SDOH-related data for care and research purposes, and emerging opportunities that can benefit from the use of SDOH related data (Report)

Final draft version (ONC did not have any further revisions; Bob Dieterle to make this into a final version):
GAP ANALYSIS REPORT: Developing, Advancing and Harmonizing Social Determinants of Health Standards
HL7_SDOH_Gap_Analysis_August_2021_Final.pdf

Task 2: Produce a SDOH Framework per the guidance of the gap analysis (Technical Approach Report)

Final draft version (ONC did not have any further revisions; Bob Dieterle to make this into a final version):
A ROADMAP TO INTEROPERABILITY: Developing, Advancing, and Harmonizing Social Determinants of Health Standards
HL7_SDOH_Interoperability_Roadmap_August_2021_Final.pdf

FY22

Task 3: Develop or update technical resources/tools based on the best approach indicated in the technical approach report (Technical Resource /tools-TBD

Task 4: Recipient to lead 2-3 pilot projects (Final report)

Project: Landscape Assessment/Gap Analysis: Public Health Standards (SME: Craig Newman of Altarum)

Description:

FY21

SME will be responsible for conducting a landscape assessment and gap analysis in the following area:

Public Health Standards
• Goal: Support the development of HL7® standards and implementation specifications to meet public health needs.

Evaluate current HL7 and other standards used for public health and Identify needs, opportunities, gaps, and barriers to adoption to support public health reporting requirements, including transmission to immunization registries, syndromic surveillance, electronic laboratory reporting, electronic case reporting, etc. (including but not limited to standards specified in the ONC Health IT Certification Program. In addition, examine the current state and work completed to date related to electronic advance care planning, including a portable medical order standard for Physicians Orders for Life Sustaining Treatment (POLST).

Deliverables:

FY21

• A survey to review with ONC SMEs with the goal to identify a small set of priority specific standards projects
• A report summarizing the results of analysis and recommending priority areas for specific projects to address opportunities and gaps which can be presented and reviewed with ONC SMEs and members of the HL7 community

PH Interoperability Landscape for ONC 20210311.pptx
PH Standards Landscape Survey 20210311.docx
Public Health Survey Project Options 20210311.xlsx

Project: Landscape Assessment/Gap Analysis: Privacy Security and Consent Standards (SME: David Pyke of Audacious Inquiry)

Description:

FY21

SME will be responsible for conducting a landscape assessment and gap analysis in the following area:
Privacy, Security and Consent
• Goal: Improve the privacy and security of health information.
Identify opportunities to accelerate the development and deployment of standards, guidance, and tools that can help healthcare organizations protect the privacy and security of essential health information, including identity management, authentication, authorization, consent management, providing an audit log for treatment, payment and operations related to enabling patients to express their privacy preferences in a computable manner.

Fulfill the roles and responsibilities of the Security and Privacy Subject Matter Expert, including, but not limited to:

1. Examining the current landscape of relevant security and privacy standards, including HL7 and other relevant available standards (including IHE) by conducting a quick survey to review with ONC SMEs with the goal to identify a small set of priority specific standards projects
2. Working with SMEs from US Govt. agencies, Standards Development Organizations and HL7 work group and project leads to research analyze current state, desired state, gaps, and obstacles
3. Identifying opportunities to update or expand existing standards and identify gaps where essential needs in the US Realm are not currently adequate, accurate or complete or where obstacles may exist that inhibit adoption
4. Preparing a report summarizing the results of the analysis and recommending priority areas for specific projects to address opportunities and gaps which can be presented and reviewed with ONC SMEs and members of the HL7 community.

Deliverables:

FY21

- A survey to review with ONC SMEs with the goal to identify a small set of priority specific standards projects
- A report summarizing the results of analysis and recommending priority areas for specific projects to address opportunities and gaps which can be presented and reviewed with ONC SMEs and members of the HL7 community

1. Examining the current landscape of relevant security and privacy standards, including HL7 and other relevant available standards (including IHE) by conducting a quick survey to review with ONC SMEs with the goal to identify a small set of priority specific standards projects

Privacy and Security Environmental Scan Feb 2021.pptx

LEAP Analysis Deliverable: Consent LEAP Analysis.docx

Project: Develop a POLST CDA IG (Lantana Consulting Group)

Description:

FY21

Create a Clinical Document Architecture (CDA) specification for the national 'Physician Orders for Life Sustaining Treatment' (POLST) form by conducting the following:

1. Providing project management and conducting status calls
2. Gathering design input
3. Socializing the project in HL7
4. Developing and testing technical IG artifacts
5. Developing the CDA IG narrative
6. Submitting the draft IG for review
7. Updating the full IG
8. Exporting and producing the final ballot package and submitting the package for ballot

Deliverables:

FY21

- Ballot-ready IG submitted in the Jan 2021 Ballot Cycle

Project: At Home COVID Test Analysis (Gay Dolin of Namaste Informatics) (COMPLETE)

Description:

FY21

Analyze and develop recommendations via a white paper/report that documents which HL7 standards (HL7 v2, FHIR Implementation Guides) at-home COVID testing application developers can use to submit test results to states and the federal government

Deliverables:

FY21

- The "starter" guide: https://trifolia-fhir.lantanagroup.com/igs/lantana_hapi_r4/homeCovid/index.html
The white Paper: https://nibidrupail8stg.prod.acquia-sites.com/COVID-At-Home-Test-Result-Reporting-Standards-Analysis

US Realm COVID Contract: COVID-19 support for Accelerating Standards Development of the US Realm

Activities under this grant include, but are not limited to:

- Monitor, manage, and track US Realm standards development.
- Develop and enforce governance policies for US Realm standards development.
- Facilitate stakeholder outreach to coordinate standards development and implementation activities in the US Realm.
- Lead the development, balloting, and publication of the US Core Implementation Guide and C-CDA standard.
- Ensure a high-performing, efficient, and sustainable US Realm.
- Project management and administration.

**Project: US Core IG**

**Description:**

Ballot preparation of the US Core IG for the January 2021 ballot cycle.
Reconcile and publish US Core IG.

FY22: Apply USCDI v2 updates to US Core IG

**Deliverables:**

- US Core IG balloted and published

**Project: US Realm Program Manager**

**Description:**

Responsible for defining and applying a methodology for managing and monitoring US Realm projects and standards products, including Implementation Guides, Resources, Extensions, Value Sets and other documents and guidance materials. The Program Manager will define and apply quality systems, tools and process improvements to more rapidly achieve project approvals and to reduce overhead effort in order to reduce the cycle time required for updates to specifications in order to coordinate updates with new versions of the US Core Data for Interoperability (USCDI) and other regulatory requirements.

The role will include reviewing and enhancing project management systems as necessary to improve visibility and status tracking. The Program Manager will also be responsible for regular tracking, reporting on and maintaining key metrics on all US Realm projects (as well as critical dependencies that extend beyond the US Realm, such as the FHIR Core Specification and vocabularies). The Program Manager will also work with HL7 leaders to extend outreach to adopters of US Realm standards and monitor adoption levels.

Draft of the requirements for the dashboard: https://drive.google.com/file/d/13V3BVC9EazXvDT-ztBsAawmkyV5a4if4/view

**Deliverables:**

**Project: US Realm Senior Advisor**

**Description:**

1. Advise the US Realm Program Manager (USRPM) on Monitoring, managing, tracking and reporting on US Realm standards development
2. Work with HL7 CTO, HL7 Sr. Adviser, and USRPM on improving and enforcing governance policies for US Realm projects.
3. Work with the USRPM to facilitate WG stakeholder outreach to identify and coordinate standards development and implementation activities in the US Realm
4. Advise the CTO and USRPM regarding strategy, communication and direction related to the USRSC and US Realm projects.

**Deliverables:**
Project: US Realm Content Administrator (Curator)

Description:

Contractor agrees to perform the duties of the US Realm Content Administrator by supporting the HL7 team with the following tasks:

1. Work with the US Realm Program Manager, work groups and project leads to track and monitor US Realm standards projects, deliverables, and activities.
2. Work with the US Realm Steering Committee, ONC and HL7 staff and volunteers to contribute to the design, development and maintenance of a dashboard tracking HL7 projects, metrics, and other critical success factors.
3. Collect, review, and maintain data associated with project management reporting and dashboard systems for standards development projects.
4. Contribute to the support of the Unified Terminology Governance (UTG) system and UTG users regarding new terminology proposals and management of HL7 terminologies, external terminologies and Value Sets on terminology.hl7.org.
5. Design and develop user documentation to improve system usability and compliance with UTG and other processes.
6. Assist with GitHub maintenance for specifications in JIRA.
7. Review FHIR IG Validator output with FMG and assist in the resolution of errors to facilitate release of balloted and published specifications.
8. Work with the HL7 Director, Project Management Office, to assist in project reporting and reducing roadblocks that delay standards development and facilitating the completion of US Realm grant-funded projects.
9. Work with the FHIR registry, FHIR validator and other tools and data sources to monitor conformance with profiles to facilitate US Realm Program management’s quality oversight and management of US Realm related standards, components, profiles, value sets, etc.
10. Work with HTL7 staff, volunteer leaders and participants to develop or adapt educational materials (including user manuals, guidelines, tip sheets and checklists) relevant to UTG and other HL7 tracking tools and processes.
11. Work with the CTO and US Realm Program Manager to support a US Realm stakeholder outreach and engagement plan.
12. Perform other content administrative tasks as determined by the CTO and US Realm Program Manager.

Deliverables:

Project: US Realm Dashboard Developer

Description:

The contractor(s) agree to perform the following work:

1. Create iterative prototypes of an HL7 Project Dashboard progressing towards the MVP characteristics as defined in Version 1.0 within the HL7 Project Dashboard Requirements Document. It is expected that individual statements of work covering several sprints will be defined with specific deliverables during the contract period.
2. The above prototype deliverable will include (stated here at a high level as derived from the HL7 Project Dashboard Requirements Document):
   a. A Dynamic Dashboard reflecting the status of the following projects:
      i. HL7 FHIR® US Core Implementation Guide
      ii. HL7 Implementation Guide for CDA®: Consolidated CDA Templates
      iii. HL7 FHIR® Implementation Guide: Bulk Data
      iv. HL7 FHIR® IG: SMART Application Launch Framework
      v. Others as determined by the PM
   b. Minimally it will display:
      c. Name
      d. Description
      e. Ballot and/or published status with links to the project dashboards
      f. Links to NIBs
      g. Project Status
      h. Links to CI Build and latest published versions
      i. Links to Project homes on confluence
      j. If the standard is mentioned in Federal Regulation and where in it is mentioned
3. Later prototype iterations may include:
   a. Addition of all US Realm IG Projects
   b. Addition of 1-3 select pertinent Universal Realm IGs (e.g., International Patient Summary (IPS) and International Patient Access (IPA))
   c. Addition of Base FHIR and CDA standards information
   d. Other features as prioritized by the US Realm Program Manager

Deliverables:
The following are brief descriptions of each project created under the Maturing C-CDA and FHIR Implementation (2019 - ) ONC grant. Project deliverables are also linked with each project.

- 1 Project: Flat FHIR (Bulk Data & Push)
- 2 Project: Unified HL7 Terminology Governance (UTG)
- 3 Project: C-CDA Implementation-A-Thons
- 4 Project: Improve FHIR JIRA Ballot Process & Tooling
- 5 Project: FHIR Implementation Guide Publication Coordinator
- 6 Project: FHIR Connectathon Administrator
- 7 Project: FHIR Build and Implementation Guide (IG) Publishing
- 8 Project: Ballot the IPS FHIR Implementation Guide / IPS Work Stream
- 9 Project: FHIR Terminology Server Support
- 10 Project: FHIR Registry Enhancements & Support
- 13 Project: FHIR Product Support
- 14 Project: International Patient Summary Advocate
- 15 Project: Gender Harmony Support
- 16 ------------------------------- COMPLETED C-CDA/FHIR GRANT PROJECTS -------------------------------
- 17 Project: Review Vaccination Implementation Guides (COMPLETE)
- 18 Project: Complete Common Data Models Harmonization IG (COMPLETE)
- 19 Project: 2021 Annual Value Set Update for C-CDA (COMPLETE)
- 20 Project: Analysis of Transferring C-CDA Value Sets from NLM VSAC to terminology.hl7.org (COMPLETE)
- 21 Project: Compare IPS & Argonaut US Core IGs (COMPLETE)
- 22 Project: US Core Ballot Reconciliation Support (COMPLETE)
- 23 Project: FHIR Fact Sheets (COMPLETE)
- 24 Project: C-CDA Web Publication Tooling (COMPLETE)
- 25 Project: C-CDA Companion Guide Update (COMPLETE)
- 26 Project: C-CDA Release 2.2 – Phase 1 (Postponed)
- 27 Project: FHIR IG Workshop (COMPLETE)
- 28 Project: FHIR Bulk Data Meeting (COMPLETE)
- 29 Project: Finish the IG Publisher Templates Framework (COMPLETE)
- 30 Project: US Core Updates for Provenance (COMPLETE)
- 31 Project: eLTSS Reference Implementation (COMPLETE)
- 32 Project: Rubric Reconciliation (COMPLETE)
- 33 Project: FHIR Survey (COMPLETE)
- 34 Project: C-CDA R2.1 Value Set Updates (COMPLETE)
- 35 Project: US Core Errata (COMPLETE)
- 36 Project: UTG External Terminologies (COMPLETE)
- 37 ------------------------------- COVID/Public Health Grant: HL7 Public Health Standards and Solutions for Future Pandemics -------------------------------
- 38 Project: Clinical Domains (Logic)
- 39 Project: Extract Clinical Notes (BCH)
- 40 Project: SDOH (Gravity Team (Bob Dieterle))
- 41 Project: Landscape Assessment/Gap Analysis: Public Health Standards (SME: Craig Newman of Altarum)
- 43 Project: Develop a POLST CDA IG (Lantana Consulting Group)
- 44 Project: At Home COVID Test Analysis (Gay Dolin of Namaste Informatics) (COMPLETE)
- 46 Project: US Core IG
- 47 Project: US Realm Program Manager
- 48 Project: US Realm Senior Advisor
- 49 Project: US Realm Content Administrator (Curator)
- 50 Project: US Realm Dashboard Developer
- 51 Project: Flat FHIR (Bulk Data & Push)
- 52 Project: Unified HL7 Terminology Governance (UTG)
- 53 Project: C-CDA Implementation-A-Thons
- 54 Project: Improve FHIR JIRA Ballot Process & Tooling
- 55 Project: FHIR Implementation Guide Publication Coordinator
- 56 Project: FHIR Connectathon Administrator
- 57 Project: FHIR Build and Implementation Guide (IG) Publishing
- 58 Project: Ballot the IPS FHIR Implementation Guide / IPS Work Stream
- 59 Project: FHIR Terminology Server Support
- 60 Project: FHIR Registry Enhancements & Support
- 63 Project: FHIR Product Support
- 64 Project: Review Vaccination Implementation Guides
- 65 Project: International Patient Summary Advocate
- 66 Project: Gender Harmony Support
- 67 Project: UTG Terminology Process Support
- 68 ------------------------------- COMPLETED C-CDA/FHIR GRANT PROJECTS -------------------------------
Project: Flat FHIR (Bulk Data & Push)

Description:
Ballot the FHIR Bulk Data Implementation Guide (IG) in HL7’s 2019 May ballot cycle; develop a test suite and utility to verify vendor compliance with the bulk data spec Flat FHIR format; design a Bulk Data import approach; maintain reference implementation by adding performance monitoring and User /Traffic management.

FY21 Scope of Work
1. Update the bulk data reference server implementation to Argonaut build v1.5 in time for the January 2021 FHIR Connectathon
2. Update and ballot a FHIR bulk data export Implementation Guide reflecting community feedback and experience with Connectathon testing (includes a consultant to ballot through HL7)
   a. Update the bulk data export IG
   b. Balloting in May or September, based on the consultant's availability
   c. Update the bulk data export IG based on ballot comments
   d. Actively participate in Connectathons
3. Build out and test a prototype bulk data import module.
   a. Build a prototype and demonstrate its use by loading data into the ONC LEAP funded Cumulus pipeline
   b. Produce an internal document summarizing the prototype work to help inform a future draft import IG
4. Ongoing maintenance of and updates to tooling to reflect new versions of bulk data spec
   a. Bulk data client
   b. Bulk data testing library

FY20 Scope of Work
1. Bulk Data Testing Tool - Continued maintenance support & development
2. Create and distribute a survey to gather feedback from known implementers
   a. What parts of the spec are supported now?
   b. What they plan to support down the road
   c. What extensions are supported
   d. What extensions are/would be most valuable
3. Discussions with CMS (Digital Services Team) to understand their experience implementing a bulk data server.
4. Support Import Specification

FY19 Scope of Work
1. Develop a prototype test suite and utility to verify vendor compliance with the bulk data spec Flat FHIR format
2. Confirm Authentication Approach
3. Maintain Reference Implementation
4. Design Bulk Data Import Approach
5. Continue to Maintain Active Participation in the FHIR Community
6. Prepare a Final Report summarizing results of the project.
7. Ballot the FHIR Bulk Data Implementation Guide (IG)

**Deliverables:**

**FY21**

FY21 Deliverable #1: HL7 Bulk Data FY21 - SMART Deliverable #1.pdf

**FY20**

- FHIR Bulk Data Test Suite Design_v2.pdf
- FY20 Deliverable 4 - SMART_HL7 FHIR bulk data implementations_Deliverable4.pdf
  a. Publication with HL7 and ONC on implementation adoption
  b. Maintain a live-listing website of client implementations
- FY20 Deliverable 5 - Process for adding extensions to the standard_Deliverable5.pdf
  a. Evaluate the process for adding extensions to the standard
  b. List potentially valuable extensions to update the standard which demonstrate real world efficacy
- FY20 Deliverable 6 - Prototype reference server for testing bulk data import clients
  This is a proof-of-concept prototype implementation of the Bulk Data Import proposal, currently available at [https://github.com/smart-on-fhir/bulk-import/blob/master/import.md](https://github.com/smart-on-fhir/bulk-import/blob/master/import.md). The prototype app is available online at [https://bulk-data.smarthealthit.org/sample-import-app](https://bulk-data.smarthealthit.org/sample-import-app). There is also a link to it in the footer of the bulk data server’s front page at [https://bulk-data.smarthealthit.org/](https://bulk-data.smarthealthit.org/).

This is an early implementation that could serve several purposes:

1. Proof of concept - proof that the spec is usable and can work without customizations
2. Provide a backend that performs validations and replies according to the spec, so that developers can test their clients against it.
3. The UI can also be used as code generator (eg.: as CURL request builder)

It should be noted that we do not enforce file size limits for the imported files, but also do not store imported FHIR resources in our database for more than 10 minutes.

A more generic version of the UI could be developed in the future to use against any server.

- FY20 Deliverable 7 - Implement Bulk Data Export functions in three separate tools; the Bulk Data server, client, and tester (BDT):
  This report documents the work that has been done to update three bulk data tools - the Bulk Data server, client, and tester (BDT): Deliverable 7 - Export Update To Bulk Data Tools Report.docx

This document lists various Bulk Data Access parameters and operations that are specified in the FHIR Bulk Data Access Implementation Guide, and tracks the current status of support for those functionalities in various tools that the SMART team has built and maintained for the developer community. Support that has been added for v1.5 of the specification is highlighted in yellow: Deliverable 7 - SMART Bulk Data Support Grid.xlsx

**Project: Unified HL7 Terminology Governance (UTG)**

**Description:**

Develop a working demonstration pilot for UTG-based terminology maintenance system; debug and test tool; provide Project Management

FY21: UTG THO Updates: Provide planning, analysis, engagement and terminology subject matter expertise towards ensuring the HL7 Unified Terminology Governance (UTG) system is fit for purpose to be used as an authoritative source of information for terminology content from external organizations (those organizations outside HL7 International or its Affiliates) as required in HL7 standards. This includes but is not limited to:

- Updating the layout of the HL7 Terminology ([terminology.hl7.org](http://terminology.hl7.org)) web site to improve navigation and making external terminologies easier to find and use after consulting with subject matter experts identified by HL7.
- Ensuring that existing external terminologies in HL7 Terminology are current and fit for purpose as follows:
  - Identifying external terminologies in HL7 Terminology which are not endorsed by the HL7 Terminology Authority (HTA).
  - Consulting with HL7 stakeholders on which of these external terminologies should be
    - Referred to the HTA for endorsement; or
    - Archived, deprecated or otherwise removed from HL7 Terminology.
  - Implement the required updates to the existing external terminologies in HL7 Terminology.
- Ensuring that the HTA-endorsed external terminologies can be represented in HL7 Terminology. This representation needs to support the HTA-endorsed metadata elements, human readability and effective machine processing of the information. The following tasks are scope:
  - Developing a FHIR-based technical representation of an external terminology’s metadata based on the core FHIR R4 CodeSystem and NamingSystem resources as well as any required FHIR profiles and extensions. This representation will ensure discrete data elements are available to represent all HL7 Terminology Authority (HTA) approved metadata data elements
  - Working with the UTG and FHIR Implementation Guide (IG) Publisher teams to ensure that this FHIR representation for external terminologies is supported by the UTG and IG Publisher software.
- Ensuring that as many HTA-endorsed external terminologies as possible are represented in HL7 Terminology based on this FHIR representation.
FY21 UTG Review: Analyze HL7’s Unified Terminology Governance (UTG) and make recommendations to improve usability and sustainability by conducting the following tasks:

1. Review UTG documentation;
2. Interview 4-6 key SMEs that have been part of the development team, used the tooling or participated in the UTG Task Force;
3. Prepare a presentation with findings, recommendations and areas that need to be researched further

UTG Project Page
UTG Project Management Page

Deliverables:

UTG Document Repository Page (including project plan)
The current rendered pages for UTG content can be viewed here: https://build.fhir.org/ig/HL7/UTG/

Webinars: Linked on the Project Specific Help page:
• HL7 Terminology Overview

FY21 UTG Review Deliverable: Prepare a presentation with findings, recommendations and areas that need to be researched further

Project: C-CDA Implementation-A-Thons

Description:
Engage industry players (vendors, healthcare providers, payers and health information exchanges) via a C-CDA Implementation-A-Thon track within the FHIR Connecathon. The objective of the 2-day event is to improve the quality and consistency of C-CDA implementers. The IAT involves hands-on exercises to reduce variability among C-CDA documents and the ability to share best practice experiences.

C-CDA IAT Project Page

Deliverables:

C-CDA IAT Exec Summary 20211027 and 28.pdf
2020.10.21 Virtual IAT Track Agenda
C-CDA IAT Exec Summary 20201021.pdf
2020.07.29 Virtual IAT Track Agenda
2020.05.20 Virtual IAT Track Agenda

C-CDA IAT: September 14-15, 2019 (Atlanta, Georgia)
Results from the C-CDA IAT in Atlanta are written up here:
https://confluence.hl7.org/display/IAT/2019.09.14+Atlanta%2C+Georgia+IAT+Event+Page

C-CDA IAT: January 12-13, 2019 (San Antonio, Texas)
Results from the C-CDA IAT in San Antonio are written up here:
https://docs.google.com/document/d/1Z9JDmZZYncNKDM6Q7ja10-Yw8c3Mz-lCvHJUnxBYhEw/edit#heading=h.eupkqds8qcxv

Project: Improve FHIR JIRA Ballot Process & Tooling
**Description:**
Determine how best to get information to participants without overwhelming them; Create dashboards that allow users to quickly see relevant information; Document the JIRA ballot process; Complete and test the MIF conversion process.

**Deliverables:**

**Project: FHIR Implementation Guide Publication Coordinator**

**Description:**
Monitor the FHIR IG publishing and balloting processes; facilitate review/approval of the IGs that will be published in a given ballot cycle; provide educational materials on processes related to the publication and balloting of IGs.

**Deliverables:**
- FHIR IG List
- FHIR IG Checklists:
  - Process Flow: [https://confluence.hl7.org/display/FHIR/FHIR+Implementation+Guide+Process+Flow](https://confluence.hl7.org/display/FHIR/FHIR+Implementation+Guide+Process+Flow) - this material is updated with new content as it is available.
  - Material Grahame presented at IG training session in Atlanta: [https://confluence.hl7.org/display/FHIR/Home#a0c8f2d8-9087-48ba-8b78-49a16dd5bc2f-66913917](https://confluence.hl7.org/display/FHIR/Home#a0c8f2d8-9087-48ba-8b78-49a16dd5bc2f-66913917)

**Project: FHIR Connectathon Administrator**

**Description:**
Prepare a FHIR Connectathon communication plan, a pre-connectathon and post-connectathon survey; an orientation package for all track leads and an event report.

**Main Confluence Page for All Events:** Connectathons

**Deliverables:**
- January 2022 FHIR Connectathon: 2022 - 01 Connectathon 29
  - Pre Connectathon 29 Survey_2022Jan.xlsx
  - HL7 FHIR Connectathon 29 Report Out.docx
  - Connectathon 29 Wrap Up Slides

- September 2021 FHIR Connectathon (2021 - 09 Connectathon 28)
  - HL7 FHIR Connectathon 28 Report Out.docx
  - HL7 FHIR Connectathon 28 Feedback Survey.xlsx
  - Connectathon 28 Wrap Up Slides

- May 2021 FHIR Connectathon (2021 - 05 Connectathon 27)
  - HL7 FHIR Connectathon 27 Report Out.docx
  - HL7 FHIR Connectathon 27 Feedback Survey.xlsx
  - Connectathon 27 Staff Debrief.pptx
  - Pre Connectathon 27 Survey.xlsx

- January 2021 FHIR Connectathon (2021-01 Connectathon 26)
2021 - 01 HL7 FHIR Connectathon Track Report Outs
Connectathon 26 Debrief 2 1 21 January 2021.pptx
HL7 FHIR Connectathon 26 Feedback Survey_January 2021.xlsx
Participant Info Session 12.15.20 January 2021 CAT26.pptx
Track Lead Info Session 12.1 20 January 2021 CAT26.pptx

September 2020 FHIR Connectathon (Virtual) (CAT 25)

Communication Plan: CommPlan-CAT25.xlsx
HL7 FHIR Connectathon 25 Feedback Pre Event Survey.xlsx
Wrap Up Slides - September 2020 CAT25.pptx
Lessons Learned - September 2020 CAT25.pptx

Orientation Package for all Track Leads – this has evolved into multiple resources:
Track Lead Check Lists on this page: https://confluence.hl7.org/display/FHIR/2020-09+Connectathon+25
Track Lead Resources: https://confluence.hl7.org/display/FHIR/Track+Lead+Resources
Track Orientation Slide Template: https://confluence.hl7.org/display/FHIR/2020-09+Connectathon+25?preview=86968467/91984514/CAT%2025%20Connectathon%20Orientation%20Slide%20Template.pptx

May 2020 FHIR Connectathon (Virtual) (CAT 24)

HL7 Pre Connectathon Survey - May 2020 Connectathon 24
Pre Connectathon Info Session and recording.
Connectathon Report Out - May 2020 Connectathon 24

January 2020 FHIR Connectathon (CAT 23)

Communication Plan & Pre/Post Connectathon Surveys – January 2020 Connectathon 23
Orientation Package for all Track Leads
Wrap Up Slides - January 2020 Connectathon 23
Outcomes Track Report - January 2020 Connectathon 23

September 2019 FHIR Connectathon (CAT 22)

September 2019 Pre Connectathon 22 Survey.xlsx
FHIR Connectathon Info Session 9.10.19 - September 2019.pptx
CAT22 Wrap Up Slides - September 2019.pptx
CAT22 Feedback Survey - September 2019.pdf
HL7 FHIR Connectathon 22 Outcomes Report - September 2019.docx

May 2019 FHIR Connectathon (CAT 21)

Connectathon Communication Plan - CAT21 - May 2019.xlsx
Pre Connectathon Survey available upon request via pmo@HL7.org as it contains confidential information.
Orientation Package for all Track Leads
Post CAT21 Feedback Survey Response Data - 2019 May.pdf
Event Report - May 2019

January 2019 FHIR Connectathon (CAT 20)

Connectathon Communication Plan - CAT20 - January 2019.xlsx
January 2019 Pre Connectathon 20 Survey.xlsx
Orientation Package for all Track Leads
HL7 FHIR Connectathon 20 FeedbackSurvey - January 2019.xlsx
Event Report - January 2019

Previous FHIR Connectathons

Project: FHIR Build and Implementation Guide (IG) Publishing

Description:

Support the HL7 FHIR Build and Implementation Guide Publishing tasks as directed by the HL7 FHIR Product Director and the HL7 CTO. Ultimately, the purpose is to take over responsibility for supporting FHIR Build and IG Publishing tasks, relieving Grahame Grieve of this work.
Make improvements to the development, publication and build tools for the core FHIR specification and associated FHIR Implementation Guides to more efficiently accommodate new use cases and new features, reduce risk dependencies, improve quality and consistency and allow for generation of a substantially expanded volume of new implementation guides.

Streamline processes used to issue new releases of the FHIR Core Specification, layered products such as CDS Hooks and FHIRCast, and FHIR Implementation Guides by additional publication and build managers without depending upon the direct involvement of HL7's FHIR Product Director.

Progress Reports:
https://docs.google.com/document/d/1rS446r5N5khaSiPAGqkgkUOygSdxFra1PCTRF7a2XdA4/edit

Deliverables:

Project: Ballot the IPS FHIR Implementation Guide / IPS Work Stream

Description:
Complete the remaining updates needed to the FHIR IPS Implementation Guide (IG) content so that it publishes correctly and is ready for the final submission and balloted in the September 2019 ballot cycle;

FY21-22 IPS Work Stream:
- Establish a working group under the GDHP Interoperability Work Stream to involve GDHP members in IPS projects and providing feedback on the IPS.
- Plan, prepare and maintain GDHP Interoperability Work Stream
- Discuss implementation of Inferno and allow nations to provide feedback and contributions.
- Coordinate with the Inferno project team for the incorporation of IPS in Inferno
- Facilitate pilots with EHR vendors and GDHP countries to allow the working group to test how IPS is working in member GDHP nations and recommend IPS modifications.
- Engage with the International Patient Access (IPA) team on the complementary implementation guide to IPS and the early stages of the IPA API specification development.
- Continue IPS work in HL7 and additional SDOs including IHE, ISO (and at times JIC)
- Plan/prepare for the IPS track at the HL7 FHIR Connectathons
- IPS track activities during the HL7 FHIR Connectathons

Deliverables:

Project: FHIR Terminology Server Support

Description:
Provide support for the FHIR Terminology Server including, but not limited to, rebuilding the FHIRS erver project when code updates are made; updating SNOMED CT to the latest versions; additional terminology server support as needed.

Deliverables:

Project: FHIR Registry Enhancements & Support

Description:

FY21-22 Work
Provide support for the FHIR registry on an as-needed basis based on requests submitting by HL7. Implement jurisdiction enhancement.

FY20 Work
Perform enhancements to the FHIR registry (hosted at https://registry.fhir.org/) as described below:
1. Registry included results. Ensure all versioned resources for ready-to-use packages from the package registry are searchable, including the content from non-prerelease Simplifier packages which indicate to be ready to publish to the registry.

2. FHIR version. Modifications will be made to the FHIR registry so that STU3, R4 and any newer released FHIR version packages (as soon as they are implemented in Simplifier) are included.

3. Better filtering options. The User Interface will be extended with these filters: Resource category, Resource, FHIR version.

4. Better ranking. Modify weights of fields, like putting more emphasis on the search result in a title of a resource based on testing with HL7 International.

5. Better display of results. Contractor will leverage the logic Simplifier already has for pulling out an interesting title and description for each resource.

6. Framework upgrade. A new React-based user interface will be developed.

7. Measuring the use of the FHIR Registry with Google Analytics
   a. An HL7 Google Analytics account will be set up, including settings to not track users on an individual level, if not already existing. HL7 will be provided administration level access to this account, or, if already existing, HL7 will provide Contractor administration level access to make necessary changes.
   b. A privacy policy page will be added to the FHIR Registry, based on content provided by HL7.
   c. Contractor will add Google Analytics tracking code to all application pages so their visits are being measured.
   d. Contractor will add Google Analytics tags to important user interface elements to make sure their usage is being measured.

8. Registry Feedback and Search Tuning
   a. Based on feedback from HL7 and the HL7 FHIR community final tweaks and small changes will be made to the FHIR Registry, in the order prioritized by HL7. This can, for example, include textual changes, weighting of the components of the search algorithm or adding a resource filter on the package overview page.

**Deliverables:**

- Improved registry results that include all released FHIR versions
- Filters extended with improved ranking and display
- Framework upgraded
- Google Analytics account created; tracking code and tags added


**Description:**

The Phase 1 project resulted in a proof of concept where CDA templates are represented using FHIR resources and published using the FHIR IG Publisher. This project, Phase 2, will provide a publication-ready web version of the full C-CDA specification as follows:

1. **Tooling Enhancements for CDA**
   a. Modify Trifolia on FHIR (ToF) tooling to support CDA publication.
   b. The CDA logical model and editorial support will be integrated into ToF
   c. ToF will acquire export capability for CDA content (including templates, terminology, validation rules, and narrative entries) expressed as FHIR StructureDefinition, ValueSet, and ImplementationGuide resources, thus creating “CDA profiles.”
   d. Update ToF with required user interface functionality and documentation

2. **CDA Section and Document Functionality (Iterative)**

3. Import Consolidated CDA (C-CDA) templates and test/debug the publication functions in an iterative process starting with the Problems and Allergies sections and continuing to incorporate all sections and entries required to support C-CDA implementation.

4. Optional entries will be included if properly defined and do not generate errors while migrating from TWB to ToF.

5. Work with HL7’s Structured Docs Work Group to review any improperly defined optional entries to decide if they can be omitted (non-essential or never implemented) or if SDWG volunteers will use the errata process to address before import.

6. Provide demonstrations of the above work to HL7's Structured Documents (SDWG) and CDA Management Workgroups (CMG)

7. Perform Quality Assurance and testing of the web-based publishing solution for the C-CDA standard using the FHIR IG publish being developed above by:

   a. Working with the CDA Management Group to establish QA criteria/plan
   b. Attending review and feedback meetings with HL7, SDWG, CDA Management Group
   c. Preparing assessment summaries, etc.
      - 3 packages in total will be reviewed

**Deliverables:**

- Incorporate CDA logic model so it is accessible to ToF components
- Incorporate stakeholder feedback from the SDWG and other HL7 stakeholders gathered during proof of concept, define user interface (UI) improvements for CDA tooling of ToF
- Update the ToF editor features to support CDA requirements
- Update documentation for CDA functionality and describe editing method and tooling to maintain CDA profiles
- Update toolset to accommodate CDA sections appropriate for that task
**Project: Consolidated Clinical Document Architecture (C-CDA) Web Publication Tooling – Phase 2: Task Period 2**

**Description:**

The Phase 2 - Task Period 1 project addressed allergies, medications, results, vitals & immunizations. Task Period 2 work will focus on procedures, social history, encounters and final demonstration of the full package by February 1, 2021.

The Project is divided into two Task Periods:

- **Task Period 1 (~May '20-Oct '20)**
  - T1. Trifolia Enhancements for CDA
  - T2. Problems and Allergies Sections
  - T3. Medications, Results, Vitals & Immunizations Sections

- **Task Period 2:**
  - T4. Procedures, Social History and Encounters Sections (dates are Estimated Completion Dates as of December 9, 2020)
    - Trifolia WB Updates and Re-Exporting: December 3, 2020
    - Publication Debugging: December 17, 2020
    - Final QA and Delivery December 24, 2020
    - Demo Updates: December 25, 2020
  - T5. Remaining Sections & Document Types
    - Trifolia WB Updates and Re-Exporting: February 19, 2021
    - Publication Debugging: March 19, 2021
    - Final QA and Delivery April 2, 2021
    - Demo Updates: April 6, 2021

**Independent QA as follows**

- Confirm the Phase II C-CDA templates are present in the new Web C-CDA IG as StructureDefinition Resources
  - Using the master list of templates in C-CDA R2.1, check off the templates that are present in the new IG and then document their existence or not on Confluence and/or in the google sheet used to track the QA work.

  - For each Template:
    - Check that the data type of elements like observation.value has the correct data type, effectiveTime and others as necessary
    - Confirm all numbered constraints are present or accounted for
    - Confirm all primitive constrains are present or accounted for
    - Confirm the Value Sets binding strength the same
      - Documentation of binding strength comparisons:
        - Confirm the same Value Sets are used in the constraints
        - Confirm correct inheritance (template X inherits from template Y)
      - Check that the template purpose descriptions match
      - Confirm Labels/descriptions within the template are present in the StructureDefinition Resource

  - Create the following deliverables:
    - A full assessment of the 126 Phase II C-CDA R2.1 templates
    - Documentation on Confluence of the Phase II QA findings
    - Meet with HL7 CDA Management Group, Structured Documents Workgroup, Lantana, and HL7 staff involved in the CDA IG Web Publishing Pilot and keep these groups informed of the Phase II QA findings and issues that need to be addressed.
    - Provide a report summarizing the findings from the Phase II analysis.

**Current Status:**

- Work in progress: https://build.fhir.org/ig/HL7/cda-ccda-2.2/index.html
- C-CDA Web publishing Pilot: https://confluence.hl7.org/display/CDA/C-CDA+IG+Web+Publishing+Pilot

**Deliverables:**

- Lantana List of Templates: Template Tracker_Lantana_20210603.xlsx
- Demo of Procedures, Social Histories and Encounters in Trifolia on FHIR
- Demo of all remaining Section and Document Types in Trifolia on FHIR
- Updated Toolset and documentation
- Quality Assurance Testing Progress: QA of C-CDA 2.2 Templates Phase 1
- Quality Assurance Final Report:

**Project: FHIR Product Support**
Description:

Provide increased administrative support for standards development, publication and maintenance to facilitate the release of each new version of the FHIR core specification work as well as with other key FHIR SMEs to implement specific improvements for long-term, sustainable FHIR processes and tools.

Deliverables:

Project: Review Vaccination Implementation Guides

Description:

FY21:

Perform a comparison between the latest version of WHO Smart Vaccination Certificate (RC3) and the SMART Health Cards: Vaccination & Testing implementation guides by conducting the following tasks:

a. Contact the WHO project lead to determine the current state and near-term plans for the WHO project
b. Review the latest build of the International Patient Summary (IPS) specification being tested at Connectathon 27 (which has been updated to support WHO vaccination certificate requirements)
c. Perform a detailed review and comparison of the IPS build, implementation guides and the initial ONC comparison
d. Provide a documented review of findings, noting similarities and differences
e. Attend a meeting with SMEs identified by HL7 to share findings and recommendations.
f. Apply changes and submit a final document to HL7.

Deliverables:

A concise document, posted in an HL7 Git Repo or Confluence containing:

a. A narrative description of the similarities and main differences of the two projects;
b. A detailed list of the differences in terms of FHIR resources used, required elements, vocabularies, constrains and REST interactions and operations

Project: International Patient Summary Advocate

Description:

FY21-22:

1. Act as an advocate for the development and global implementation of the following HL7 International Standards:
   a. HL7 CDA R2 Implementation Guide International Patient Summary
   b. International Patient Summary (FHIR) Implementation Guide
   c. International Patient Access (Draft in Development)

2. The above will be achieved as follows:
   a. Learn about the current situation for both International Patient Summary (IPS) and International Patient Access (IPA) (still in development) to craft better strategy for implementation within the Global Digital Health Partnership (GDHP) and with nations outside of the GDHP.
   b. Support ONC with IPS or IPA with proactive engagement of nations, thorough presentation of technical specification documents, explanatory PowerPoints or other supporting documents to help facilitate the implementation of IPS within the GDHP.
   c. Ensure technical resources meet deliverables on time as defined/expected for HL7, ONC and GDHP timelines
   d. Work with appropriate parties to exchange ideas about the GDHP’s efforts with IPS implementation and proactively present to ONC options and opportunities for IPS engagement and implementation within the GDHP.
   e. Examine if there is a need to leverage or develop open-source tooling to ease and speed up implementation of IPS Clinical Document Architecture (CDA), IPS FHIR Composition and International Patient Access (IPA). Time devoted to this task shall not exceed 10 hours unless approved by HL7.

3. Optional Task: Based on findings the contractor may advise and/or develop tooling related to this project

Deliverables:

- Craft a strategy for implementation within the Global Digital Health Partnership (GDHP) and with nations outside of the GDHP.
- Support ONC with IPS or IPA with proactive engagement of nations, thorough presentation of technical specification documents, explanatory PowerPoints or other supporting documents to help facilitate the implementation of IPS within the GDHP.
• Present ONC options and opportunities for IPS engagement and implementation within the GDHP.
• Optional Task: Tooling related to this project

Project: Gender Harmony Support

Description:

FY22:

1. Meeting attendance, participation on discussions and support for:
   a. Gender Harmony project
   b. C-CDA project
   c. HL7 Terminology management meetings and tasks

Deliverables:

Project: UTG Terminology Process Support

Description:

FY22:

1. Assist in complex scripting involving JIRA/BitBucket workflow to trigger a process to perform automation tasks as part of the JIRA Unified Terminology Governance system.

Deliverables:

Updated scripting to perform automation tasks as part of the JIRA Unified Terminology Governance system.

---------------------------------------
COMPLETED C-CDA/FHIR GRANT
PROJECTS
---------------------------------------

Project: Complete Common Data Models Harmonization IG (COMPLETE)

Description:

FY21:

Complete the remaining work for the Common Data Models Harmonization IG by:

1. Reconciling remaining ballot comments
2. Performing necessary updates based on reconciliation
3. Publishing the Common Data Models Harmonization IG

Deliverables:

Publication of the Common Data Models Harmonization IG:


Project: 2021 Annual Value Set Update for C-CDA (COMPLETE)

Description:

Provide Program Management, SME technical analysis and execution, Quality Assurance on VSAC produced annual C-CDA R2.1 Value Set Expansion Release Package, and continuous improvement for process documentation of the annual value set update cycle and educational materials on the responsibilities of a value set steward for maintaining value sets over time.
Deliverables:
The C-CDA R2.1 2021-08-10 Value Set Program Release is now available in VSAC:

VSAC Welcome Page: (see the HL7 C-CDA Value Sets tile): https://vsac.nlm.nih.gov/welcome


VSAC Download: https://vsac.nlm.nih.gov/download/ccda?rel=20210810

User Documentation: https://confluence.hl7.org/display/SD/C-CDA+to+US+Core+value+set+alignment

This page contains the CCDA to US Core Value Set alignment with FHIR:
https://confluence.hl7.org/display/SD/C-CDA+to+US+Core+value+set+alignment

Project: Analysis of Transferring C-CDA Value Sets from NLM VSAC to terminology.hl7.org (COMPLETE)

Description:
Explore the feasibility of developing a process and tooling to manage and maintain value-sets used by the HL7 C-CDA standard by conducting an analysis of the current process and tooling in VSAC and explore the feasibility of duplicating VSAC capabilities for managing and maintaining value sets within the HL7 Unified Terminology Governance (UTG) and Terminology.hl7.org (THO) infrastructure.

Deliverables:

- Draft Recommendations Document: An initial document will be prepared and delivered that lists the findings on the required functionality and an initial set of recommendations for HL7 to act upon. Available upon request. Email David Hamill (pmo@HL7.org)

- Final Recommendations Document: After review by HL7 and selected SMEs, an updated final version of the document will be delivered. This version of the document will include estimates for staffing and funding of the proposed solution. Available upon request. Email David Hamill (pmo@HL7.org)

Project: Compare IPS & Argonaut US Core IGs (COMPLETE)

Description:
Perform a comparison between the International Patient Summary and the Argonaut / US Core implementation guides

Deliverables:

White Paper: Argonaut vs. IPS: A Compare and Contrast between Two FHIR Implementation Guides

A list of the differences in terms of FHIR resources used, required elements, vocabularies, constrains and REST interactions and operations.

Project: US Core Ballot Reconciliation Support (COMPLETE)

Description:
Provide support for reconciliation and publication of the US Core Implementation Guide, based on FHIR R4, which was balloted in the January 2019 ballot cycle. This new ballot added support for Clinical Notes, fixed errata logged since publication of R3, and upgraded all the Resources to support the FHIR R4 release and closed on January 7th, 2019. Review and reconcile comments; update the US Core FHIR Implementation Guide to submit it for final publication.

Deliverables:

US Core R4 Implementation Guide
Project: FHIR Fact Sheets (COMPLETE)

Description:
Create HHS branded webinars and other learning materials that provide guidance on selection of FHIR releases, Implementation Guides, profiles, etc. to be used within projects. The target audience will be federal government project/program managers leading HL7 related projects.

A total of 17 Fact Sheets will be created.

FHIR Fact Sheets - ONC Tech Lab Innovation - Confluence
Fact Sheets - Work in Progress

Deliverables:
https://www.healthit.gov/topic/standards-technology/standards/fhir-fact-sheets
FHIR Fact Sheets - ONC Tech Lab Innovation - Confluence

Project: C-CDA Web Publication Tooling (COMPLETE)

Description:
Produce a sustainable, efficient means of publishing new versions of C-CDA (and potentially CDA in a later phase) as a Web Specification (similar to FHIR). The output of this project will be tooling together with necessary supporting documentation to support publication of C-CDA and CDA implementation guides through the FHIR IG Publisher.

Deliverables:
2020 January: Lantana’s current version of IG is published here: https://hl7.github.io/cda-ccda-2.2/index.html
Sean McIlvenna recommended this link instead for the c-cda publication: https://build.fhir.org/ig/HL7/cda-ccda-2.2/ It’s using the CI build, which is generally better.

1. improved export from trifolia
2. including primitive constraints
3. created custom publish template
4. worked with grahame to fix a few bugs
5. added a 8 core “complex” profiles
6. adding a bunch of narrative
7. uses the brand new templating methods developed by lloyd
8. vastly improved the base cda “ig” as it is defined in FHIR

Project: C-CDA Companion Guide Update (COMPLETE)

Description:
The prior version of the companion guide is specific to a rule, the 2015 ONC Certification rule. The ONC published a new proposed rule in 2019 which necessitates updates to the companion guide. This project consists of project management support and content development for the update of the companion guide to support C-CDA implementations in the US consistent with ONC timelines. Updates may include new C-CDA templates and other revisions to meet industry requirements, for example changes in government requirements. The set of updates for any release SHALL require approval by the Structured Documents Work Group and the US Realm Steering Committee.

Additionally, QA and editing of the C-CDA sample files that will be associated with the published C-CDA R2.1 Companion Guide Update. These files have already passed the ONC Validator and the ONC Scorecard. The QA is to encompass evaluating the rendered documents, including sensical header (administrative data) and comparing the entries with the rendered section text. Focus will include known problematic areas such as time and effectiveTime format and rendering and ensuring that the coded entry data makes clinical sense and accurately aligns with rendered information.

Deliverables:
Project: C-CDA Release 2.2 – Phase 1 (Postponed)

**Description:**
Create Volume 1 for C-CDA R2.2 using existing C-CDA R2.1 plus updates being proposed for Companion Guide and using Trifolia on FHIR for this work, so as to keep both of these documents aligned during the C-CDA Companion Guide Ballot Reconciliation. The C-CDA Volume 1 content created will be aligned with balloted C-CDA R2.1 Companion Guide R2 and in conjunction with tooling revisions and ready for STU Update commenting.

**Deliverables:**

Project: FHIR IG Workshop (COMPLETE)

**Description:**
To be held September 11-13, 2019 in Atlanta. The goal of this event is to build capacity within the HL7 community for creating and reviewing high quality FHIR IGs so as to be in a better position to handle the expected future increase in volume. The agenda for Wednesday and Thursday will focus on best practices in FHIR IG Development, including understanding the IG Publisher, preparing a good quality specification and review of Melva’s FHIR IG Publication Checklist. On Friday morning there will be a workshop focused on terminology considerations - both for creating IGs and for reviewing balloted IGs. Friday afternoon will conclude with a half-day workshop for best practices in reviewing FHIR IG ballots (IG consistency review).

**Individuals Interested in FHIR IG Development (waitlist)**
FHIR IG Workshop FAQs

**Deliverables:**
Recordings from the workshop are now available by day:

- **Day 1:**
  https://www.youtube.com/playlist?list=PL4DUfomz2RZx0RZc2CTP0zGkQxSvk6DKe

- **Day 2:**
  https://www.youtube.com/playlist?list=PL4DUfomz2RZxj_brneaEeHvJc_d7RyNuf

- **Day 3:**
  https://www.youtube.com/playlist?list=PL4DUfomz2RZxlHNEiwGp4woy1R51MYN

Project: FHIR Bulk Data Meeting (COMPLETE)

**Description:**
To be held in November 6, 2019; Boston Children's Hospital to lead the event (similar to the event held in December 2017) which will focus on their Bulk Data work.

**Deliverables:**
The final report for the FHIR Bulk Data Meeting held in Boston on November 6th is available at the SMART Health IT web site: http://smarthealthit.org/wp-content/uploads/SMART-2019_FHIR-Bulk-Data-Meeting_final.pdf

Project: Finish the IG Publisher Templates Framework (COMPLETE)

**Description:**
Modify the existing FHIR IG Publisher Templates Framework into a single new framework that uses the (newly developed and highly alpha) publisher template approach, as well as make other changes that were agreed upon at the Montreal WGM; complete all modifications by the September 2019 WGM.

**Deliverables:**
Project: US Core Updates for Provenance (COMPLETE)

**Description:**
Perform updates to the US Core FHIR Implementation Guide to prepare it for STU publication as follows:

- Develop and finalize approval/plan for STU Update
  - Key items: Provenance; MedicationRequest; Devices – Implantable Devices; New query guidance for multiple patients; Pulse Oximetry; Updated guidance
- Review and reconcile US Core gForge trackers
- Pre-STU trackers applied; Publish fixed STU update version for commenting
- Collect comments and review them onsite at the September 2019 Working Group Meeting

**FY21 IPS Work Stream**

**Deliverables:**
The IG was published on September 3, 2019 for STU Comment publication and a copy of it is located here: https://build.fhir.org/ig/HL7/US-Core-R4/. The final address for this publication to be announced.

Regarding publishing the updates, the repository for all the material is at https://build.fhir.org/ig/HL7/US-Core-R4/. The final address for this publication is to be http://hl7.org/fhir/us/core/

Project: eLTSS Reference Implementation (COMPLETE)

**Description:**
Apply eLTSS IG FHIR constraints to resources (eLTSS profiles)

**Deliverables:**

Project: Rubric Reconciliation (COMPLETE)

**Description:**
Management of ballot comment reconciliation of comments placed against the HL7 Informative Document: C-CDA Rubric, Release 1. Including incorporation of resolution edits into the guide and managing the guide through publication on the HL7 website.

**Deliverables:**

Project: FHIR Survey (COMPLETE)

**Description:**
The goals of the survey will be to inform the Office of the National Coordinator (ONC) about the current and envisioned uses of the HL7 FHIR standard, to assist the federal government in measuring standards uptake and in planning actions to improve, support, and regulate the use of I.T. in the healthcare industry.

**Deliverables:**
DRAFT: HL7 FHIR Survey Project Summary of Findings_Catalyst_Final with Addendum.pdf

the marked up versions (with color coded comments) of the surveys:
FHIR_API_Client_App_Survey_v2_Annotated_FINAL.pdf
FHIR_API_Server_Survey_v2_Annotated_FINAL.pdf
Project: C-CDA R2.1 Value Set Updates (COMPLETE)

Description:

Provide program management and technical support to conduct the annual update of the value sets used in C-CDA R2.1 by performing the following:

1. Technical execution to compile the VSAC release package and review/update value set definitions used in C-CDA R2.1 and all associated companion and supplemental implementation guides.
2. Provision of training and creation of documentation that supports the capacity building pilot project also proposed for 2020.
3. Review of interdependencies between C-CDA R2.1 value sets, C-CDA on FHIR, and QRDA value sets.

The ONC funded prior work on C-CDA Value Sets in Fiscal Year 2016: https://wiki.hl7.org/Enhance_C-CDA_Value_Sets_Project

Deliverables:

- Population of and deliver to National Library of Medicine (NLM), the required Value Set Expansion Release Requirements Request
- Publication by VSAC of the approved C-CDA R2.1 Value Set Expansion Package
- Delivery of report on the findings and recommendations from analysis of interdependencies between C-CDA R2.1 value sets and value sets used in C-CDA on FHIR.

The National Library of Medicine is pleased to announce the VSAC publication and downloadable files of the 2020-07-13 release of the HL7 Consolidated Clinical Document Architecture (C-CDA) R2.1 value sets, authored by the HL7 Terminology group.

There are several ways you can access the C-CDA value sets:

- **VSAC Welcome Page:** The Search button of the HL7 C-CDA Value Sets program block leads you to the VSAC Search Value Sets web browser, prepopulated by this HL7 C-CDA release. The Download link leads you to the C-CDA Value Sets section of the Download tab and supplies prepackaged downloadable files.
- **VSAC Download Tab:** Here, you can download the Excel, pipe-delimited text files, and XML files, Code System Versions Currently in C-CDA R2.1 Value Sets, a list of C-CDA R2.1 Value Sets Available in VSAC, and a list of C-CDA R2.1 Value Sets Unavailable in VSAC. The published downloadable C-CDA R2.1 2020-07-13 release excludes fourteen C-CDA value sets for which VSAC does not have the required supporting code systems.
- **VSAC Search Value Sets Tab:** Use a web browser to search, sort, filter and view details for all or individual value sets; use the Export Search Results button to download a catalog of C-CDA value set expansions; increase the paging up to 120 rows; and use the checkboxes to download all C-CDA value set expansions as Excel, XML, or Text files. Navigate to the Search Value Sets tab, select the HL7 C-CDA program, and select the C-CDA R2.1 2020-07-13 release.
- **VSAC SVS API:** Given a C-CDA value set identifier (OID) that you can obtain by any of the above methods, use an SVS API call, such as: [https://vsac.nlm.nih.gov/vsac/svs/RetrieveMultipleValueSets?id=2.16.840.1.113883.1.11.16866&release=C-CDA R2.1 2020-07-13&ticket=service-ticket](https://vsac.nlm.nih.gov/vsac/svs/RetrieveMultipleValueSets?id=2.16.840.1.113883.1.11.16866&release=C-CDA R2.1 2020-07-13&ticket=service-ticket). For additional information on API authentication and usage, see our [API documentation](https://wiki.hl7.org/fs/VSAC/Value_Set_Expansion_Services_API).

Please send any questions or feedback regarding VSAC functionality to: NLM Customer Support.

Sincerely, The NLM VSAC Team

Project: US Core Errata (COMPLETE)

Description:

1. Develop and finalize approval/plan US Core Errata Release
2. Review and reconcile US Core JIRA trackers (up to 30)
3. Apply trackers
4. Collect comments
5. Review newly identified errata; apply errata
6. Final Publication review

Deliverables:

- Develop and finalize approval/plan US Core Errata Release
- Review and reconcile US Core JIRA trackers - up to 30 (currently 25 logged)
- Apply trackers
- Collect comments over fixed 1-week period
- Review newly identified errata
- Apply any errata
- Final Publication review
- Submit final publication

The current version of US Core is being prepared for comment and publishing and can be seen here: [https://build.fhir.org/ig/HL7/US-Core-R4/](https://build.fhir.org/ig/HL7/US-Core-R4/)

and the status of the project can be viewed here: [https://hackmd.io/eCMBtXYnQV-0ea8YgVoHiQ](https://hackmd.io/eCMBtXYnQV-0ea8YgVoHiQ)

September 2020: The US Core Errata has been published as V3.1.1 and can be seen here: [http://hl7.org/fhir/us/core/](http://hl7.org/fhir/us/core/)
Project: UTG External Terminologies (COMPLETE)

**Description:**

1. Provide planning, analysis, engagement and terminology subject matter expertise towards ensuring the HL7 Unified Terminology Governance (UTG) system is fit for purpose to be used as an authoritative source of information for terminology content from external organisations (those organisations outside HL7 International or its Affiliates) as required in HL7 standards.

**Deliverables:**

1. Undertaking a complete audit of the current external terminology content in UTG which including the following tasks:
   a. Determining the accuracy, currency and correctness of the content
   b. Determining whether the content is endorsed/supported by the responsible external organisations.
   c. Comparing the content to the other HL7 specifications, repositories and technical registries (e.g. the OID registry, the FHIR external terminologies page, etc) and, where differences are found, confirming which is correct.
   d. Confirming whether or not the content items remain in use in HL7 standards.
   e. Capturing all technical identifiers currently in use.
   f. Liaising with the HL7 Vocabulary Work Group, the HL7 Terminology Authority (HTA), and the HL7 product family management groups to capture concerns with the content currently in UTG.
   g. Describing the findings of the above tasks in a detailed report which provides clarity on what needs to be addressed in UTG for it to become the authoritative source for external terminology content.
2. Lodging requests for engagement with external organisations to the HTA where required.
3. Lodging requests to update UTG to address all content issues from the audit report.
4. Supporting the development of plans to transition from existing HL7 resources which capture information about external content to UTG.

report of activities in relation to UTG and external terminologies: exec-report-20200918-1.pdf

--------------------------- COVID/Public Health Grant: HL7 Public Health Standards and Solutions for Future Pandemics ---------------------------

Activities under this grant include, but are not limited to:

- Expanding the Clinical Domains Supported by HL7® Standards
- Improve the privacy, security of health information Public Health Emergency Response Related HL7® Standards, Solutions and Future Pandemics
- Advance the use of HL7® FHIR Bulk Data Access Implementation Guide standard (“Bulk Access API”)
- Develop, advance and harmonize Social Determinants of Health (SDOH) Standards
- Advance public health standards

Project: Clinical Domains (Logica)

**Description:**

**FY21**

1. Initial Assessment and Plan - Create a report summarizing work to date related to clinical domains for Covid-19, including use cases, gaps, and opportunities.
2. Complete balloting of COVID-19 FHIR Profile Library IG
3. Complete ballot reconciliation and publishing of COVID-19 FHIR Profile Library IG.

**Post FY21**

1. Provide online access to relevant COVID-19 data concepts, elements, terminologies, and models consistent with the IG and maintain as necessary to reflect new developments
2. Participate in FHIR Connectathons to explore use of the IG and to contribute to prototypes of data capture tooling.
3. Conduct a pilot with at least one partner implementer and conduct a demonstration webinar.
4. Update the COVID-19 FHIR Profile Library IG (via ballot or non-balloted STU update process) reflecting updates identified in Connectathons and pilot.
5. Prepare a final report of lessons learned and suggested best practices for use of the IG.

**Deliverables:**

**FY21**
• A report summarizing work to date related to clinical domains for Covid-19, including use cases, gaps, and opportunities
  Updated: Deliverable 1 - LogicaInitialAssessmentandPlan04192021.pptx
  Original: Deliverable 1 - LogicaInitialAssessmentandPlan03112021.pptx

• Completed Comment ballot of COVID-19 FHIR Profile Library IG in the September 2021 ballot cycle
  Will ballot the artifact as informative in the January 2021 ballot cycle, then complete reconciliation and publish the of COVID-19 FHIR Profile Library IG.

Project: Extract Clinical Notes (BCH)

Description:

**FY21**

1. **Landscape Analysis**
   a. Engage with the NLP community to grade tools based on accuracy, speed, licensing model, extensibility, user base and FHIR compatibility
   b. Provide a report identifying tools with the best long-term prospects to incorporate with Cumulus

2. **Adapt and implement the chosen NLP tool into the Cumulus pipeline**
   a. Achieve containerization and appropriate abstraction to ensure reusability across future cloud platforms and configurations
   b. Augment NLP pipelines with COVID-specific knowledge resources and modules
   c. Create a RESTful API and server inside a Docker (or other container) environment, made available in public container registries (e.g., DockerHub)
   d. Deliver software release (hosted on GitHub), including technical documentation on components of the pipeline and installation guide

**Post FY21**

1. Extract COVID Surveillance data from clinical notes and concatenate results with bulk FHIR in Cumulus
   a. Demonstration of results to HL7 and ONC in September 2022

2. Produce a white paper describing the landscape analysis, technical approach, and results

**Potential for future work**

The architecture created in the first 2 years of the project will serve as a platform to allow for the addition of advanced NLP methods to Cumulus. The field of NLP, including clinical NLP, is moving very quickly, with significant gains occurring in the last few years. An obvious high-impact addition to the NLP platform is to add our temporal information extraction systems to the NLP pipeline. Getting to that point from the present entails the porting of research code (written in python, often requiring graphics processing units) to production code (often written in systems languages like java), as well as creating new FHIR output writers for the temporal

**Deliverables:**

**FY21**

• Provide a report identifying tools with the best long-term prospects to incorporate with Cumulus: Deliverable 1_leap covid landscape analysis.pdf
• Achieve containerization and appropriate abstraction to ensure reusability across future cloud platforms and configurations
• Augment NLP pipelines with COVID-specific knowledge resources and modules
• Create a RESTful API and server inside a Docker (or other container) environment, made available in public container registries (e.g., DockerHub)
• Deliver software release (hosted on GitHub), including technical documentation on components of the pipeline and installation guide

Project: SDOH (Gravity Team (Bob Dieterle))

Description:

**FY21**

Conduct a Gap Analysis of the current state and emerging activities of stakeholders that capture, share, and use SDOH data across the health and human services ecosystem.

Produce an SDOH Framework per the guidance of the gap analysis (Technical Approach Report).

**FY22**

Develop or update technical resources/tools based on the best approach indicated in the technical approach report.

Map the FHIR specification (standard) to the Open Referral standards (Human Services Data Specification and the associated Human Services Data API Suite). The Project will also map the FHIR specification to at least one community-based service organization platform (e.g., Aunt Bertha) and will develop a translation RI code to facilitate exchange.

Conduct pilots in two phases to test 1) the SDOH FHIR IG and the smart phone applications to support closed loop referrals and 2) the mapping between FHIR and Open Referral and a Community based service platform to exchange information supported by the SDOH FHIR IG.

Develop a final report that summarizes all the deliverables reviewed and finalized in the previous four tasks. The report will include lessons learned and suggested next steps for ONC and other key stakeholder groups.
Deliverables:

FY21

Task 1: Produce a Gap Analysis that captures the current state and emerging activities of stakeholders that align with existing recommendations for SDOH interoperability related to human services, open referral, and the use of SDOH-related data for care and research purposes, and emerging opportunities that can benefit from the use of SDOH-related data (Report)

Final draft version (ONC did not have any further revisions; Bob Dieterle to make this into a final version):
GAP ANALYSIS REPORT: Developing, Advancing and Harmonizing Social Determinants of Health Standards
HL7_SDOH_Gap_Analysis_August_2021_Final.pdf

Task 2: Produce a SDOH Framework per the guidance of the gap analysis (Technical Approach Report)

Final draft version (ONC did not have any further revisions; Bob Dieterle to make this into a final version):
A ROADMAP TO INTEROPERABILITY: Developing, Advancing, and Harmonizing Social Determinants of Health Standards
HL7_SDOH_Interoperability_Roadmap_August_2021_Final.pdf

FY22

Task 3: Develop or update technical resources/tools based on the best approach indicated in the technical approach report (Technical Resources/tools-TBD)

Task 4: Recipient to lead 2-3 pilot projects (Final report)

Project: Landscape Assessment/Gap Analysis: Public Health Standards (SME: Craig Newman of Altarum)

Description:

FY21

SME will be responsible for conducting a landscape assessment and gap analysis in the following area:

Public Health Standards
• Goal: Support the development of HL7® standards and implementation specifications to meet public health needs.

Evaluate current HL7 and other standards used for public health and Identify needs, opportunities, gaps, and barriers to adoption to support public health reporting requirements, including transmission to immunization registries, syndromic surveillance, electronic laboratory reporting, electronic case reporting, etc. (including but not limited to standards specified in the ONC Health IT Certification Program. In addition, examine the current state and work completed to date related to electronic advance care planning, including a portable medical order standard for Physicians Orders for Life Sustaining Treatment (POLST).

Deliverables:

FY21

• A survey to review with ONC SMEs with the goal to identify a small set of priority specific standards projects
• A report summarizing the results of analysis and recommending priority areas for specific projects to address opportunities and gaps which can be presented and reviewed with ONC SMEs and members of the HL7 community

PH Interoperability Landscape for ONC 20210311.pptx
PH Standards Landscape Survey 20210311.docx
Public Health Survey Project Options 20210311.xlsx

Project: Landscape Assessment/Gap Analysis: Privacy Security and Consent Standards (SME: David Pyke of Audacious Inquiry)

Description:

FY21

SME will be responsible for conducting a landscape assessment and gap analysis in the following area:
Privacy, Security and Consent
• Goal: Improve the privacy and security of health information.
Identify opportunities to accelerate the development and deployment of standards, guidance, and tools that can help healthcare organizations protect the privacy and security of essential health information, including identity management, authentication, authorization, consent management, providing an audit log for treatment, payment and operations related to enabling patients to express their privacy preferences in a computable manner.

Fulfill the roles and responsibilities of the Security and Privacy Subject Matter Expert, including, but not limited to:

1. Examining the current landscape of relevant security and privacy standards, including HL7 and other relevant available standards (including IHE) by conducting a quick survey to review with ONC SMEs with the goal to identify a small set of priority specific standards projects
2. Working with SMEs from US Govt. agencies, Standards Development Organizations and HL7 work group and project leads to research analyze current state, desired state, gaps, and obstacles
3. Identifying opportunities to update or expand existing standards and identify gaps where essential needs in the US Realm are not currently adequate, accurate or complete or where obstacles may exist that inhibit adoption
4. Preparing a report summarizing the results of the analysis and recommending priority areas for specific projects to address opportunities and gaps which can be presented and reviewed with ONC SMEs and members of the HL7 community.

Deliverables:

FY21

- A survey to review with ONC SMEs with the goal to identify a small set of priority specific standards projects
- A report summarizing the results of analysis and recommending priority areas for specific projects to address opportunities and gaps which can be presented and reviewed with ONC SMEs and members of the HL7 community

1. Examining the current landscape of relevant security and privacy standards, including HL7 and other relevant available standards (including IHE) by conducting a quick survey to review with ONC SMEs with the goal to identify a small set of priority specific standards projects

Privacy and Security Environmental Scan Feb 2021.pptx

LEAP Analysis Deliverable: Consent LEAP Analysis.docx

Project: Develop a POLST CDA IG (Lantana Consulting Group)

Description:

FY21

Create a Clinical Document Architecture (CDA) specification for the national 'Physician Orders for Life Sustaining Treatment' (POLST) form by conducting the following:

1. Providing project management and conducting status calls
2. Gathering design input
3. Socializing the project in HL7
4. Developing and testing technical IG artifacts
5. Developing the CDA IG narrative
6. Submitting the draft IG for review
7. Updating the full IG
8. Exporting and producing the final ballot package and submitting the package for ballot

Deliverables:

FY21

- Ballot-ready IG submitted in the Jan 2021 Ballot Cycle

Project: At Home COVID Test Analysis (Gay Dolin of Namaste Informatics) (COMPLETE)

Description:

FY21

Analyze and develop recommendations via a white paper/report that documents which HL7 standards (HL7 v2, FHIR Implementation Guides) at-home COVID testing application developers can use to submit test results to states and the federal government

Deliverables:

FY21

- The "starter" guide: https://trifolia-fhir.lantanagroup.com/igs/lantana_hapi_r4/homeCovid/index.html
US Realm COVID Contract: COVID-19 support for Accelerating Standards Development of the US Realm

Activities under this grant include, but are not limited to:

- Monitor, manage, and track US Realm standards development.
- Develop and enforce governance policies for US Realm standards development.
- Facilitate stakeholder outreach to coordinate standards development and implementation activities in the US Realm.
- Lead the development,balloting, and publication of the US Core Implementation Guide and C-CDA standard.
- Ensure a high-performing, efficient, and sustainable US Realm.
- Project management and administration.

Project: US Core IG

Description:

Ballot preparation of the US Core IG for the January 2021 ballot cycle. Reconcile and publish US Core IG.

FY22: Apply USCDI v2 updates to US Core IG

Deliverables:

- US Core IG balloted and published

Project: US Realm Program Manager

Description:

Responsible for defining and applying a methodology for managing and monitoring US Realm projects and standards products, including Implementation Guides, Resources, Extensions, Value Sets and other documents and guidance materials. The Program Manager will define and apply quality systems, tools and process improvements to more rapidly achieve project approvals and to reduce overhead effort in order to reduce the cycle time required for updates to specifications in order to coordinate updates with new versions of the US Core Data for Interoperability (USCDI) and other regulatory requirements.

The role will include reviewing and enhancing project management systems as necessary to improve visibility and status tracking. The Program Manager will also be responsible for regular tracking, reporting on and maintaining key metrics on all US Realm projects (as well as critical dependencies that extend beyond the US Realm, such as the FHIR Core Specification and vocabularies). The Program Manager will also work with HL7 leaders to extend outreach to adopters of US Realm standards and monitor adoption levels.

Draft of the requirements for the dashboard: https://drive.google.com/file/d/13V3BVC9EazXvDT-ztBsAawmkyV5a4if4/view

Deliverables:

- US Core IG balloted and published

Project: US Realm Senior Advisor

Description:

1. Advise the US Realm Program Manager (USRPM) on Monitoring, managing, tracking and reporting on US Realm standards development
2. Work with HL7 CTO, HL7 Sr. Adviser, and USRPM on improving and enforcing governance policies for US Realm projects.
3. Work with the USRPM to facilitate WG stakeholder outreach to identify and coordinate standards development and implementation activities in the US Realm
4. Advise the CTO and USRPM regarding strategy, communication and direction related to the USRSC and US Realm projects.

Deliverables:
**Project: US Realm Content Administrator (Curator)**

**Description:**

Contractor agrees to perform the duties of the US Realm Content Administrator by supporting the HL7 team with the following tasks:

1. Work with the US Realm Program Manager, work groups and project leads to track and monitor US Realm standards projects, deliverables, and activities.
2. Work with the US Realm Steering Committee, ONC and HL7 staff and volunteers to contribute to the design, development and maintenance of a dashboard tracking HL7 projects, metrics, and other critical success factors.
3. Collect, review, and maintain data associated with project management reporting and dashboard systems for standards development projects.
4. Contribute to the support of the Unified Terminology Governance (UTG) system and UTG users regarding new terminology proposals and management of HL7 terminologies, external terminologies and Value Sets on terminology.hl7.org.
5. Design and develop user documentation to improve system usability and compliance with UTG and other processes.
6. Assist with GitHub maintenance for specifications in JIRA.
7. Assist with review and curation of JIRA updates for tracker items.
8. Review FHIR IG Validator output with FMG and assist in the resolution of errors to facilitate release of balloted and published specifications.
9. Work with the HL7 Director, Project Management Office, to assist in project reporting and reducing roadblocks that delay standards development and facilitating the completion of US Realm grant-funded projects.
10. Work with the FHIR registry, FHIR validator and other tools and data sources to monitor conformance with profiles to facilitate US Realm Program management’s quality oversight and management of US Realm related standards, components, profiles, value sets, etc.
11. Work with HL7 staff, volunteer leaders and participants to develop or adapt educational materials (including user manuals, guidelines, tip sheets and checklists) relevant to UTG and other HL7 tracking tools and processes.
12. Work with the CTO and US Realm Program Manager to support a US Realm stakeholder outreach and engagement plan.
13. Perform other content administrative tasks as determined by the CTO and US Realm Program Manager.

**Deliverables:**

---

**Project: US Realm Dashboard Developer**

**Description:**

The contractor(s) agree to perform the following work:

1. Create iterative prototypes of an HL7 Project Dashboard progressing towards the MVP characteristics as defined in Version 1.0 within the HL7 Project Dashboard Requirements Document. It is expected that individual statements of work covering several sprints will be defined with specific deliverables during the contract period.
2. The above prototype deliverable will include (stated here at a high level as derived from the HL7 Project Dashboard Requirements Document):
   a. A Dynamic Dashboard reflecting the status of the following projects:
      i. HL7 FHIR® US Core Implementation Guide
      ii. HL7 Implementation Guide for CDA®: Consolidated CDA Templates
      iii. HL7 FHIR® Implementation Guide: Bulk Data
      iv. HL7 FHIR® IG: SMART Application Launch Framework
      v. Others as determined by the PM
   b. Minimally it will display:
      c. Name
      d. Description
   e. Ballot and/or published status with links to the project dashboards
   f. Links to NiBs
   g. Project Status
   h. Links to CI Build and latest published versions
   i. Links to Project homes on confluence
   j. If the standard is mentioned in Federal Regulation and where in it is mentioned
3. Later prototype iterations may include:
   a. Addition of all US Realm IG Projects
   b. Addition of 1-3 select pertinent Universal Realm IGs (e.g., International Patient Summary (IPS) and International Patient Access (IPA))
   c. Addition of Base FHIR and CDA standards information
   d. Other features as prioritized by the US Realm Program Manager

**Deliverables:**