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: Compare IPS & Argonaut US Core IGs (Complete)
- 8
- 9 Project: FHIR Product Support
- 10 Project: US Core Ballot Reconciliation Support (Complete)
- 11 Project: FHIR Education Fact Sheets
- 12 Project: C-CDA Web Publication Tooling (Complete)
- 13 Project: C-CDA Companion Guide Update (Complete)
- 14 Project: C-CDA Release 2.2 – Phase 1 (Postponed)
- 15
- 16 Project: FHIR IG Workshop (Complete)
- 17 Project: FHIR Bulk Data Meeting (Complete)
- 18 Project: Ballot the IPS FHIR Implementation Guide
- 19 Project: FHIR Terminology Server Support
- 20 Project: Finish the IG Publisher Templates Framework (Completed)
- 21 Project: US Core Updates for Provenance (Complete)
- 22 Project: eLTSS Reference Implementation (Complete)
- 23
- 24 Project: Rubric Reconciliation
- 25 Project: FHIR Build and Implementation Guide (IG) Publishing
- 26 Project: FHIR Survey
- 27 Project: C-CDA R2.1 Value Set Updates
- 28 Project: FHIR Registry Enhancements

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.

FY20 Scope of Work

1. Bulk Data Testing Tool - Continued maintenance support & development
   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
2. Discussions with CMS (Digital Services Team) to understand their experience implementing a bulk data server.
3. 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:

1. FHIR Bulk Data Test Suite Design_v2.pdf
2. HL7 Bulk Data 2019 Final Report.pdf
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

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

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:
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-ICVHJunxBYhEw/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 - this material is updated with new content as it is available.
- Material Graeme presented at IG training session in Atlanta: 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.

Deliverables:

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
- 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 Feedback Survey - January 2019.xlsx
- Event Report - January 2019
Previous FHIR Connectathons

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: 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: 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 Education Fact Sheets

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

- improved export from trifolia
- including primitive constraints
- created custom publish template
- worked with grahame to fix a few bugs
- added a 8 core "complex" profiles
- adding a bunch of narrative
- uses the brand new templating methods developed by lloyd
- 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 sensible 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=PL4DUfomz2RZxlHNIEwGp4woy1R5IMYN

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: Ballot the IPS FHIR Implementation Guide

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;

Deliverables:

Project: FHIR Terminology Server Support

Description:

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

Deliverables:

Project: Finish the IG Publisher Templates Framework (Completed)
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

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/](https://build.fhir.org/ig/HL7/US-Core-R4/). The final address for this publication is to be [http://hl7.org/fhir/us/core/](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

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 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/1rS446r5N5khaSiPAqqkUQygSdxFra1PCTR7a2XdA4/edit

Deliverables:

Project: FHIR Survey

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 IT in the healthcare industry.

Deliverables:

Project: C-CDA R2.1 Value Set Updates

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

Project: FHIR Registry Enhancements

Description:
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.

Deliverables:
- Improved registry results that include all released FHIR versions
- Filters extended with improved ranking and display
- Framework upgraded
Project: Consolidated Clinical Document Architecture (C-CDA) Web Publication Tooling – Phase 2

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)

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