Updates on HL7 Infrastructure and Standards Development

New and noteworthy updates about standards development, tooling, infrastructure, and process improvement activities at HL7. General updates are curated in the HL7 Newsroom and on our blog The Standard.

Update on Standards Development

Daniel Vreeman posted on Sep 19, 2022

It's a real treat to gather for HL7's first in-person Annual Plenary and Working Group Meeting since the start of the COVID-19 pandemic. We see (again) how the true value of HL7 is not the specifications we produce (as lovely as they are), but rather the diverse global collective of people who commit to working together instead of on their own.

As an organization, we recognize our need for a perpetual learning mindset as we transform to meet the evolving interoperability needs of the industry. Here I'll summarize some highlights of how we're continuing to advance standards for interoperability and the ways in which we produce them.

Year to Date: Standards Publications

As we head into Fall, we've now published 40 new specification versions.
Did you know that you can get notified of new HL7 standards publications via an RSS feed from standups.hl7.org?

Year to Date: Consensus Making

Getting to publication is no small feat. It takes significant contributions from project teams, Work Groups, Management Groups, HL7 staff, and others to make that happen. Along the way, the foundation of consensus-driven standards is soliciting and incorporating community feedback. This chart shows the cumulative number of submitted issues that we have resolved since the beginning of the year.

We’ve now resolved more than 4,440 submitted issues across all of our specifications.
Welcoming New Participants

Since 2021, we’ve had 535 people submit comments on HL7 specifications. This is wonderful. And I’m particularly pleased that newcomers are participating in the process:

| 163 new people submitted comments in 2022 that didn’t in 2021. |

Ballot Cycle

We just wrapped up our typical September ballot cycle, which contained 23 ballot consensus groups. And we’ve just opened up our late-September cycle which contains the ground-breaking Gender Harmony Project specification HL7 Cross Paradigm Implementation Guide: Sex and Gender Representation, Release 1, HL7 Version 2.9.1, as well as HL7 FHIR® Release 5. These specifications exemplify the power of HL7’s community convening process.

| 3157 change requests were applied to produce the FHIR R5 Ballot specification! Of those, 1486 were deemed substantive changes. |

Working Together Better

As we apply our learning mindset in how we work together, we aim to keep refining our community habits, processes, tools, and roles to produce self-sustaining effectiveness and growth. Here I wanted to mention 2 important recent initiatives.

Goodbye Co-chair Webinars ... hello Technical Steering Committee (TSC) Updates!

For quite some time the TSC has held periodic update sessions for co-chairs in between the cadence of Work Group Meetings. Recognizing that the information and discussion was valuable to others in the HL7 community beyond those serving as co-chairs, the TSC has recently rebranded those sessions as TSC Updates. We welcome everyone to join. Typical topics include updates on tooling, infrastructure, process, and governance things, as well as open discussion on issues of the moment. Invites to future meetings will arrive in your inbox if you’re subscribed to our main mailing list. Our inaugural session, held Aug 30, had a good discussion around...?

Optimizing for Contributor Happiness

Out of the summer HL7 Board of Directors and TSC meeting came an initiative to consider and develop recommendations on how we might continue to improve the quality and process of the current Work Group structure. On the August TSC Update webinar we discussed initial ideas around reducing co-chair burden and the expanding frame of reference: optimizing for contributor happiness. There I’ve outline what I believe are four key guiding principles:

1. We’re all in this together.
3. Rejuvenation, not exasperation.
4. Match the rigor with the readiness.

We welcome your comments on how we might work better together as a community. You’ll notice that these ideas tie in directly with a key strategy in HL7’s 3 Year Plan: S07 Develop and execute a contributor engagement plan.
And as you’ve heard, HL7 HQ is pushing hard to complete the first phase of our new Association Management Software (AMS) called Fonteva. The AMS system is like the nervous system for running the organization, so this is a significant project that will have tremendous downstream benefits. As noted in our recent email to membership, we will go live on Fonteva before October 31, 2022. Watch your inbox for instructions on updating your password.

Single Sign On

If you’re active in the HL7 community, no doubt you’ve realized that each of our tool platforms (hl7.org, Atlassian, chat.fhir.org, hl7fundamentals.org, etc) has a separate login. This is stinky both for users and for HL7. We’re really excited that with support from our cooperative agreement with ONC (#90AX0019/01-06), we’ve put in place the foundation for single sign on services across these platforms. You’ll barely notice it, but when Fonteva goes live in October, the main hl7.org website will authenticate using this new mechanism. Over time, we’ll be rolling out this functionality to the other platforms. Stay tuned for more on this in the future.

Reference Implementations

As the HL7 leadership works towards a seamless interplay between standards development and implementation, we believe that open source reference implementation software for HL7 specifications are crucial for world-class standards development. They provide mechanisms for demonstrating implementability, testing various actors in exchange scenarios, and for learning how a standards-compliant service behaves.

In addition to our transitioning of the Logica Sandbox, we are excited about recent developments (also funded by the cooperative agreement #90AX0019/01-06) to advance open source reference implementation software and sample data for testing cohort definitions in OMOP and FHIR (with an initial focus on Digital Quality Measures) and the International Patient Summary. We are pleased to make these available to the community for testing and exploration, and look forward to having them as a component of the emerging FHIR Foundry (HL7 3 Year Plan strategy S03 Create a platform for discovery and testing of our specifications).

Extending our Collaboration with the U.S. Office of the National Coordinator for Health Information Technology (ONC)

From September 2017 to September 2022, HL7 and ONC work together under a cooperative agreement (#90AX0019/01-06) titled Closing the Gap between Standards Development and Implementation - Maturing the Consolidated Clinical Document Architecture (C-CDA) and Fast Healthcare Interoperability Resources (FHIR) Standard. This agreement enabled HL7 to develop key tools and standards development infrastructure that HL7 makes freely available to the public, and also directly contributed to the development of HL7 standards that are now foundational to many interoperability solutions.

We are pleased to announce that ONC has awarded HL7 with a follow-on 5-year cooperative agreement (#90AX0035/01-00) from September 2022 to September 2027, with the same aim: Closing the Gap between Standards Development and Implementation - Maturing the Consolidated Clinical Document Architecture (C-CDA) and Fast Healthcare Interoperability Resources (FHIR) Standard. Under this agreement, HL7 and ONC will work together to enhance the infrastructure and processes for standards development and implementation that help improve the implementation consistency and readiness of current and new versions of HL7 standards. Accomplishing these objectives will advance interoperable health IT and better position HL7 to support the continued evolution of the health ecosystem’s needs.
Year to Date Progress: Standards Development

Already this year we have published 19 new specification versions.

- **Jan**
  - STU: HL7 CDA® R2 IG: Public Health Case Report – the Electronic Initial Case Report (eICR) Release 2, STU Release 3.0
  - STU Update: HL7 FHIR® Profile: Quality, Release 1 STU 4
  - STU: HL7 FHIR® IG: Electronic Case Reporting (eCR), Release 2
  - STU: HL7 FHIR IG: minimal Common Oncology Data Elements (mCODE) Release 1 STU 2
  - STU: HL7 FHIR IG: Profiles for ICSR Transfusion and Vaccination Adverse Event Detection and Reporting, Release 1

- **Feb**
  - Normative: HL7 FHIR® IG: FHIR Shorthand, Release 2

- **Mar**
  - STU: HL7 FHIR® Structured Data Capture (SDC) IG, Release 3
  - Informative: HL7 CDA® R2 Attachment IG: Exchange of C-CDA Based Documents, Release 2
  - Normative: Reaffirmation of HL7 EHR-System Pharmacist/Pharmacy Provider Functional Profile, Release 1
  - STU: HL7 FHIR® IG: Health Record Exchange (HRelx) Framework, Release 1- US Realm
  - STU: HL7 FHIR® IG: Clinical Data Exchange (CDex), Release 1
  - STU Errata: HL7 FHIR® Profile: Quality, Release 1 STU 4.1.1

- **Apr**
  - STU Update Publication for HL7 FHIR® IG: Payer Data Exchange (PDex) Payer Network, Release 1
  - STU: HL7 FHIR® IG: Quality Measures, Release 1 STU 3
  - Informative: HL7 Cross-Paradigm Specification: Clinical Negation Requirements, Release 1
  - STU: CDA® R2 IG: Consolidated CDA Templates for Clinical Notes; Advance Directives Templates, Release 1 STU 2

- **May**
  - Informative: HL7 EHR-ES Release 2.1 – Pediatric Care Health IT Functional Profile Release 1
  - STU: HL7 FHIR® IG: SMART Web Messaging IG, Release 1
  - STU: HL7 FHIR® IG: Clinical Genomics, STU 2

We celebrate these publications because they reflect the our community’s ongoing pursuit to advance interoperability across the breadth of health information stakeholders. And just around the corner are a couple of much-anticipated specifications too, including FHIR R4B, FHIR US Core 5.0.0, and the C-CDA Companion Guide Release 3.

As you well know, getting to publication takes significant effort. The essential work of receiving and resolving comments from the community is the beauty (and pain) of creating consensus-driven standards. This chart shows the cumulative number of submitted issues that we have resolved since the beginning of the year.
The total number of resolved issues across all of our specifications is now more than 2500 for the year!

**HL7 Informatics Internship**

We are delighted to announce the launch of our new [HL7 International Informatics Internship](https://www.hl7.org) program. The 12-16 week program is co-led by me and [Viet Nguyen](https://www.hl7.org), and designed for informatics trainees who have completed at least one year of academic coursework. This year, the internship will focus specifically on synthesizing best practices for using standard terminologies within HL7's specifications.

From HL7’s perspective, we see the strategic objectives of the internship to:

1. Develop an initial internship model and processes that can serve as a framework for expansion
2. Improve pressing, multi-factor organizational needs (in this year’s case: best practices in use of terminology within HL7 standards)
3. Provide a “behind the scenes” look at consensus health IT standards development for early career/in training informaticians as a technique for growing the profession’s next generation

From the perspective of the trainee, the internship offers significant personal and professional growth opportunities, including:

1. Understand the processes by which global health IT standards are created
2. Develop competence in using controlled terminologies within prevailing exchange standards
3. Synthesize disparate processes, perspectives, and information resources into an action plan for a global informatics community

If you know an outstanding informatics trainee, please [encourage them to apply](https://www.hl7.org)! Hurry, the application deadline is **May 13, 2022**. We’ve received a significant amount of interest so far, so the top applicant will need a compelling application!

**Infrastructure Developments**

We’ve continued making investments in our tools to support the community ecosystem. Here are a couple of highlights from recent updates.

[stats.hl7.org](https://stats.hl7.org)
We're pleased to share that we now have a consolidated monitoring dashboard for all of the key services and resources that the HL7 community relies on. Wondering if tx.fhir.org is down for an update or if there's an issue with Jira? Check here first.

validator.fhir.org

This site provides a web-based interface for doing validation checks on FHIR data. You can easily paste in a FHIR resource (or upload it from a FHIR server) and the app will execute the FHIR Validator software. You can review any warnings or errors from the validation tests right in your browser. Check it out!

registry.fhir.org
The FHIR Packages Registry is a comprehensive catalog of packages (collections of FHIR resources) from FHIR Implementation Guides. The FHIR Packages Registry was recently updated to enable searching and filtering by realm.

projectlifedashboard.hl7.org

Our newest project is a dashboard for tracking specifications through their lifecycle. With support from the ONC, this project is being developed first as a prototype that's now live. The super exciting part is that underneath the clean design is a modern open source content management system (Wordpress) with API functionality that will serve as the basis for a major hl7.org platform revamp we're planning for the future. Stay tuned!

Fonteva Association Management Software
And as you’ve heard, HL7 HQ is pushing hard to complete the first phase of our new Association Management Software (AMS) called Fonteva. The AMS system is like the nervous system for running the organization, so this is a significant project that will have tremendous downstream benefits. We’re gearing up for managing the membership information and event registration for our September Working Group Meeting on this new platform.

**Seamless Interplay between Standards Development and Standards Implementation**

The entire HL7 leadership team continues working towards the vision for a tightly coordinated set of standards development and standards implementation activities that are part of a virtuous cycle. Viet Nguyen, Diego Kaminker, and I are collaborating closely on how our new Division’s efforts to support the HL7 implementer community will also enhance and extend our standards development work.

To illustrate how these development and implementation activities are mutually beneficial, consider this image that depicts various phases a project may go through.

In this image, the blue colored activities indicate those with greater standards implementation activity, the mustard yellow colored activities are those primarily about standards development, and the green colored phases are those with shared standards development and implementation involvement.
Working together, the feedback from these interacting activities helps create standards that are best suited for meeting the evolving needs of the health community. At the same time, we're working to provide the resources and services that help scale and spread the use of our specifications through the ecosystem.

With time, this interplay will become an integral part of how we operate here within HL7.

We look forward to working with all of you, as together we create the HL7 we want to become for the future.

- cso
- tooling

Executive Roadmap...er 20, 2021.pptx