HL7®
International

THE OFFICIAL PUBLICATION
OF HEALTH LEVEL SEVEN® INTERNATIONAL

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NEWS

Standards Enable Progress throughout Healthcare

The PanCareSurPass Project

Dutch National Terminology Server Launched

Da Vinci Project: Payer Cost Transparency Implementation Guide

Electronic Product ACE Edits Information Track

Plus: Updates from CodeX, Gravity and much more!

In This Issue

HL7 News

Excelling at Producing
Successful Virtual Meetings

Update from Headquarters

By Mark McDougall,
HL7 Executive Director

We are pleased to report that our virtual events continue to provide an effective forum for our HL7 community to collaborate in a seamless manner.

May FHIR Connectathon and Working Group Meeting

The May HL7 FHIR Connectathon attracted 589 participants while the May 2021 WGM attracted 415 attendees. Our May WGM also featured several surprise guest speakers that were fun and well-received, including:

- Anthony Anderson, actor in Blackish and several movies
- Dr. Mehmet Oz, television personality and cardiothoracic surgeon
- Lisa Leslie, WNBA basketball legend
- Steve Wozniak, co-founder of Apple Computers
- Stephen Tobolsky, actor from several television shows provided hilarious bits of his famous characters such as Ned Ryerson from Groundhog Day

| Anthony Anderson | Dr. Mehmet Ox | Lisa Leslie | Steve Wozniak | Stephen Tobolsky |

We are thrilled that our HL7 WGMs and FHIR connectathons are productive, meaningful and successful whether they are conducted in-person or virtually.

Virtual HL7 FHIR DevDays in June

HL7 FHIR DevDays is where the FHIR community thrives. Participants learn all about FHIR and refine their expertise. The focus appeals to developers, non-coders, FHIR experts and also those who are newbies. A total of 548 attendees participated in our second virtual version on June 7-10, in collaboration with our partners at Firely.

For more details on the June 2021 FHIR DevDays, please visit *www.devdays.com/june-2021/*

September HL7 FHIR Connectathon

Our next FHIR connectathon occurred virtually on September 13-15, where we once again featured hands-on FHIR development and testing. Attendees got their hands dirty and learned by helping evolve the FHIR specification (lectures and presentations were not included). Implementers and developers gained experience developing FHIR-based solutions and exchanged data with other FHIR interfaces. Participants select one of several tracks based on level of readiness and area of interest, and can engage in hands-on, heads down development and testing. This was an excellent opportunity to work directly with other FHIR developers and senior members of the FHIR standards development team. Over 550 attendees participated in more than 40 tracks.
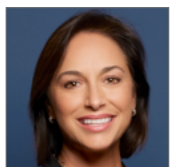
Virtual 35th Plenary and Working Group Meeting

The upcoming Plenary and WGM will occur September 20-24 in a virtual format. As was the case for our last several WGMs, we have transformed our WGMs to move seamlessly within the Whova and Zoom platforms for a productive collaboration experience. While the May WGM was set in Central European time zone, the Plenary and WGM will be set in US Eastern time zone.

Karen DeSalvo, MD, MPH   **Don Rucker MD**   **Micky Tripathi, PhD**

The Plenary meeting occurring on Monday, September 20, will feature two panel presentations:

1. Panel presentation on the use of artificial intelligence in healthcare (trends/challenges) featuring bulk FHIR

2. Panel presentation on the future of interoperability from National Coordinators, including:

    a. Micky Tripathi, PhD, National Coordinator for Health Information Technology

    a. Karen DeSalvo, MD, MPH, Chief Health Officer, Google and former ONC National Coordinator

    a. Don Rucker, MD, Professor of Clinical Emergency Medicine & Biomedical Informatics, Ohio State University, Former National Coordinator at ONC

Please visit the HL7 website for more details on the 35th Plenary and WGM.

Benefactors and Gold Members

We are pleased to recognize HL7's 2021 benefactors and gold members who are listed on page 21. Their support of HL7 is very much needed and sincerely appreciated. We recognize our benefactors in all of our HL7 newsletters, on the HL7 website and at all of our HL7 working group meetings.

Organizational Member Firms

As listed on pages 30-33, HL7 is very proud to recognize the organizations who are HL7 organizational member companies. We sincerely appreciate their ongoing support of HL7 via their organizational membership dues.

In Closing

We miss you and look forward to seeing our HL7 family again when we restart our in-person events. Until then, best wishes to you and your loved ones for staying healthy, and finding time for plenty of hugs and laughter!

The HL7 Job Board

Are you looking for health IT experts with HL7 and FHIR experience? Or are you looking for the next step in your career?

Be sure to check out the HL7 Job Board! It's a great resource to address the growing demand for specialized IT skills, as well as the increasing adoption of HL7 FHIR and the ONC/CMS rule!

HL7.org/jobs

The Job Board provides a central location for the HL7 community to learn about openings aligned with their skills and for employers to gain visibility with implementers that have HL7 experience. During the pandemic we are waiving all fees to post positions.

HL7 FHIR Fundamentals Course
Next edition begins October 28, 2021!

HL7 FHIR Fundamentals

http://HL7.me/FHIRfun

BEGIN.

October 28-November 25, 2021

- An introductory online course on HL7 FHIR - no experience necessary!

- Four week course includes new module each week

- Guided real-world exercises with instructor assistance and feedback

- Interactive online community with students and instructors

HL7 International
EDUCATION ON DEMAND

Find the training you need, straight from the source! HL7 Education on Demand is your online source for HL7-related professional development and certification resources

- HL7's Fast Healthcare Interoperability Resources (FHIR®) standard
- Standards cited in federal legislation
- Skill building in HL7's most popular standards
- Health IT policy issues

➤ **Check it out online at** bit.ly/HL7EdOnDemand ◄

HL7 Standards Published Since May 2021

Informative publication of HL7 Version 3 Specification: Ordering Service Interface, Release 1 – U.S. Realm

Normative publication of HL7 Cross-Paradigm Specification: Clinical Quality Language (CQL), Release 1

STU Publication of HL7 CDA® R2 Implementation Guide: Pharmacist Care Plan Document, Release 1 – US Realm

Normative Publication of ANSI/HL7 Privacy and Security Logical Data Model, Release 1

STU Publication of HL7 CDS Hooks: Patient-View Hook, Release 1

STU Update of HL7 CDA® R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes; Occupational Data for Health Release 1, STU 1.1 – US Realm

STU Publication of HL7/NCPDP FHIR® Implementation Guide: Specialty Medication Enrollment, Release 1 – US Realm

STU Publication of HL7 FHIR® Implementation Guide: Data Exchange for Quality Measures STU3 for FHIR R4 – US Realm

STU Update of HL7 Version 2.6 Implementation Guide: Vital Records Death Reporting, Release 1 STU 2.2 – US Realm

STU Publication of HL7 FHIR® Implementation Guide: Clinical Decision Support for Immunizations, Release 1 – US Realm

STU Publication of HL7 FHIR® US Core Implementation Guide STU 4 Release 4.0.0

STU Publication of HL7 CDA® R2 Implementation Guide: Healthcare Associated Infection Reports, Release 4, STU 1 – US Realm

STU Update of HL7 FHIR® Implementation Guide: Consumer Directed Payer Data Exchange (CARIN IG for Blue Button®), Release 1 – US Realm

STU Update of HL7 FHIR® Profile: Occupational Data for Health (ODH), Release 1 – US Realm

STU Publication of HL7 Services Functional Model: Consent Management Service, Release 1

Benefactors

Member Spotlight on Anne Smith

Professional Background

Anne Smith began her career at the National Committee for Quality Assurance (NCQA) in 2000 as the manager for software certification. It took her a somewhat circular route to end up working in informatics.

Anne attended St. Olaf College and graduated as a registered nurse (RN) in 1987. She was very interested in computers and programming during college, but with nursing clinicals did not have time to take any extra classes. However, outside of class she would work with some friends who were computer majors on understanding code and how computers operated. She commented that early on her friends did not understand she was a nursing major and told her that she was wasting her life when they found out she was not a computer major.

Perhaps there was some truth to their words, because in the early 1990s Anne decided to combine her love of computers and nursing by pursuing a master's degree in health informatics. While she completed the course work, she was unable to complete her master's project. Anne obtained a job as a project analyst at United Healthcare in their informatics division, Ingenix.

While at Ingenix, she worked on research projects including the Stroke Prevention Patient Outcomes Research Team (PORT) for the AHCPR, "Evaluation of Treatment Outcome for Children with Acute Otitis Media Using an HMO Claims Database" with the Center for Disease Control (CDC) as well as a clinical profiling pilot project. Eventually, Anne focused on managing the integration of data and production of United Healthcare's Health Employer Data and Information Set (HEDIS) reports.

In 1999, Anne worked with NCQA to pilot the Software Certification program and transitioned to running the program in 2000. In addition, Anne helped develop the Electronic Clinical Quality Measure (eCQM) Certification Program. She also completed her master's in health services administration with an emphasis in

Anne and daughter MariAnna enjoy a beach ride.

health informatics at the University of Phoenix.

Currently, Anne serves as an assistant vice president in performance measurement at NCQA, where she works closely with all NCQA's digital measures. This includes the measures NCQA maintains and updates annually for the CMS MIPS programs as well as the digital measures NCQA releases as part of HEDIS.

HL7 Activities

Anne began her involvement with HL7 in early 2012, where she attended her first HL7 Working Group Meeting (WGMs) in Baltimore. She remembers being very lost (what is standards development?) as NCQA split the week between two people and she only attended the second half. Also, she had not attended any of the weekly meetings yet.

Anne participated in Structured Documents (SDWG) until the Clinical Quality Information (CQI) group was

Plans to Build Dynamic Dashboard for US Projects

Update from the HL7 US Realm Program Management Office

This initiative is supported by the ONC to assist in HL7 standards development and implementation activities in the US Ream.

By Gay Dolin, MSN, RN
US Realm Program
Manager

The HL7 US Realm Program Management Office is part of the initiative being funded under the HL7 ONC contract "COVID-19 Support for Accelerating Standards Development for the US Realm". A primary objective of this portion of the contract is to assist the ONC in gathering, organizing, monitoring, and managing work products associated with HL7 standards development and implementation activities for the US Realm.

As such, the HL7 US Realm Program Manager has primary responsibility for defining and applying a methodology for managing and monitoring US Realm projects and standards products. We recognize that this requires the build of a tool that will support tracking, reporting on and maintaining key information on all US Realm projects, as well as critical dependencies that extend beyond the US Realm, such as the FHIR Core Specification, vocabularies and HL7 International projects.

Since assuming this role in April, my first task was to define a requirements document for a tool that would be the foundation for enabling this work. HL7 currently has several sources of truth for its products and projects, each providing useful information and none providing a one-stop shop with all pertinent information for HL7 stakeholders.

To achieve this, our goal is to build a user-friendly dynamic dashboard that reports on the state of all active HL7 projects, including but not limited to ballot status and publication status. Base standards version information will also be provided. This will improve visibility of HL7 work and provide information about vendor and/ or health system implementation progress and status. The dashboard will contain pointers to supporting artifacts and project owners and also indicate if and where an implementation guide or standard is mentioned in regulation.

A Tiger Team was assembled to provide feedback on the HL7 Project Dashboard Requirements Document (https://confluence. hl7.org/display/USRPM/ HL7+Projects+Dashboard) and it will resume meeting when the dashboard begins to be developed.

The initial focus is on a prioritized subset of Fast Healthcare Interoperability Resources (FHIR®) and Clinical Document Architecture (CDA®) projects with a blend of manual and dynamic data.

However, it will ultimately become a dynamic, automatically updated tool that will allow HL7 and its stakeholders a streamlined view of all initiatives and products, supporting the HL7 re-envisioning efforts of a more focused, agile, simpler to understand organization to participate in, that is efficient in its processes and effective in the delivery of its products and services. ◼

ONC Grant Funded Project Update

By Dave Hamill,
Director, HL7 Project
Management Office

Jira and the Project Scope Statement (PSS)

A second pilot of the Jira PSS process is underway to address a few items discovered by the seven projects submitted in the first pilot. HL7 plans to roll out the Jira PSS form to everyone by Q4, 2021, after which, the project team will focus on sunsetting Project Insight.

Additionally, the PMO and TSC continue to work together to utilize Jira for the reaffirmation and withdrawal processes. Doing so will provide systematic notifications to work groups and co-chairs of expiring artifacts and decisions/actions needed. The team is targeting the last quarter of 2021 to pilot the process.

A New Association Management System

The HL7 Board approved funding to replace our decade-plus old meetings and membership software. The project team evaluated five systems on three platforms and concluded Fonteva, built on a Salesforce platform, was the best fit for HL7.

Implementation is targeted for the latter half of 2022.

Users of HL7's website will notice changes with event registration, education and training along with membership maintenance.

Website Cleanup

The HL7 staff began the arduous task of cleaning up the HL7.org website. The goal is to make the site easier to navigate, especially for newcomers to HL7.

Staff evaluated over 500 items. Obsolete material was removed, outdated information was updated, and tools/resources used by co-chairs have been moved to Confluence.

Cleanup will continue through 2021. 2022 will bring forth an annual evaluation to ensure the website is as up to date as possible.

ONC Grant Funded Project Update

The ONC extended the grant for continued maturation of the Consolidated Clinical Document Architect (C-CDA) and HL7 Fast Healthcare Interoperability Resources (FHIR®) standards, and with that, awarded HL7 an additional $1.36 million for fiscal year 2022. Specific projects had not been identified at the time of writing this article.

- Work completed under the ONC's fiscal year 2021 $1.36 million grant to mature C-CDA and FHIR standards included the following:
- Rollout and support of the Unified Terminology Governance (UTG) process and tooling
- Continued improvements to the FHIR Jira Ballot process
- Continued administration of the FHIR Connectathons
- Continued work on Bulk Data Access and Push
- Continued support for the FHIR Terminology Server
- Continued work on the HL7 FHIR Build and Implementation Guide Publishing tasks
- Support of the FHIR Registry
- Conducted additional C-CDA Implementation-A-Thons
- Continued work on the C-CDA Web Publishing Tool
- Performed the annual updates to C-CDA R2.1 value set
- Analyzed transferring C-CDA value sets from NLM VSAC to terminology.hl7.org
- Published of the Common Data Models Harmonization Implementation Guide (IG)
- Supported the FHIR International Patient Summary Implementation Guide development and implementation

In addition to the above, work progressed on two additional COVID related ONC grant-funded opportunities for HL7:

A four-year $2M cooperative agreement titled *HL7 Public Health Standards and Solutions for Future Pandemics*. Projects under this endeavor include the following:

- Expanding the clinical domains supported by HL7 standards by balloting the COVID-19 FHIR Profile Library implementation guide

- Improve the privacy and security of health information by examining the current landscape of relevant security, privacy, and public health standards

- Advance the use of HL7 Bulk Data Access API and other relevant standards-based API technologies to improve surveillance capacity for future pandemics and other public health emergencies by assessing available open-source natural language processing (NLP) tools which unlock high-value information contained in the text of clinical notes

- Support development, advancement, and harmonization of social determinants of health (SDOH) standards by analyzing the current state and emerging activities of SDOH related data

- Advance HL7 public health standards by developing a Physician Orders for Life-Sustaining Treatment (POLST) CDA implementation guide

- Analyze and document which HL7 Version 2 messaging standards or FHIR IGs, resources and profiles can be used to support submission of test results from at-home COVID testing applications to state and federal government agencies

The five-year $3.5M contract *COVID-19 support for Accelerating Standards Development for the US Realm*. Projects under this effort include the following:

- Ballot, reconcile and publish updates to HL7's US Core Implementation Guide

- Financial support for the US Realm Steering Committee (USRSC) Project Manager and US Realm senior advisor

The objectives of this federal contract are:

- Assist the ONC in gathering, organizing, monitoring, and managing work products associated with HL7 standards development and implementation activities for the US Realm

- Assist the ONC in developing, maintaining, and enforcing governance of US Realm standards and implementation specifications

- Assist the ONC in engaging the US standards development community to increase awareness of US Realm guidelines and identify strategic priorities for US Realm standards development and implementation activities

- Lead the development of new versions of the US Core Implementation Guide and C-CDA standard (including the C-CDA Companion Guide)

- Implement relevant aspects of the governance plan and strategic roadmap to manage and oversee standards development and implementation activities in the US Realm

HL7 appreciates ONC's continued support of C-CDA and FHIR for 2021 and beyond. ◼

For more information:

Progress for all of the above ONC work can be found on HL7's Confluence page at:

https://confluence.hl7.org/display/PMO/ONC+Grant+Project+Page

Staying the Course

By Wayne Kubick,
HL7 CTO

Yes, I know—another tooling update, another reminder of focus on finishing. Yes, HL7 continues to evolve as the world changes all around us, yet we need to stick to the plan so we can establish a stable standard tooling stack that will form a foundation for HL7's growth and advancement in the next decade or more.

The good news is that so many initiatives that have been in progress over several years are finally getting close to realization. Though that won't mean we're ever really finished with tooling and process updates, it will signify a change in our focus from introduction toward sustainability and continuous improvement.

There will always be more to do but, for now, we need to follow key initiatives through to an initial state of production, so we'll be in a position to build out a re-envisioned HL7 from the foundation we're pouring.

FOCUS ON FINISHING

It's inevitable that each new tool and process improvement will uncover additional opportunities and lingering pain points. However, as we focus on finishing, we have to be careful about what we add to the pile. Once again, your patience will be tested as we move through this current transition phase while we continue to log new enhancements and change requests. We need to pass "Go" first before we begin the next trip around the gameboard.

To review, some of the ongoing major projects expected to complete within the next 12 months include:

• Completion of the rollout of the online Project Scope Statement with JIRA workflow for all new projects

• Development and rollout of other JIRA-based workflow forms, including Withdrawal/Reaffirmation, Notice of Intent to Ballot, Publication Request and Ballot Readiness Checklist

• Rollout of JIRA balloting to replace the current spreadsheet process – and making it available for affiliate use by next year

• Simplification of the Unified Terminology Governance (UTG) Process and more usable tooling that reduces the effort required by work groups to keep up with the dependence on controlled terminologies so critical to HL7's vision for interoperability

• Upgrade of our Confluence/JIRA/BitBucket installations to Atlassian's new data center platform, which will simplify maintenance and upgrades, and increase reliability and performance

• Completion of the rollout of new Fonteva Association Management System – the mainstream system that drives HL7's core business operations

• Replacement of our listserv and installing a new content management system to power the www.hl7.org website

• Completion of the migration of all remaining servers from HL7 HQ to the cloud

Even re-reading such a long list immediately brings to mind the need to plan for sustainability. As we roll out new capabilities, we need to ensure we can keep them operational so the organization can actually realize the benefits.

Furthermore, as we continue to commence additional projects and involve more people who become more dependent on the improved tooling, we will need to limit downtime. Since we have only a small team to manage this, we must highlight the core infrastructure components most critical to HL7's core business, making sure there is adequate documentation, knowledge and coverage to sustain future growth within the constraints of our available funding. We will also need contributions from the HL7 community to keep us moving in the right direction and help us actually get there.

While we want to focus on finishing first, we already know that additional projects will commence in 2022, including:

• full replacement of ballot desktop and associated feeder databases;

• potentially a new learning management system;

• a new accounting platform and additional process improvements to continue to reduce bureaucratic holdups; improve visibility into work in process; and identify projects that are falling significantly behind schedule.

We also hope to provide much more visibility into work in progress and see new web-based specifications for C-CDA and V2+ in 2022.

In addition, we expect additional enhancements to the FHIR IG publisher and validator to include improved automation to lessen the load on committers, and additional terminology capabilities, including rebuilding the tx.fhir.org terminology server.

We're fortunate to continue to have funding support from the US Office of the National Coordinator (ONC) to pursue many of these ambitious goals, and while the next round of finishing is also daunting, we can accomplish a whole lot with a little help from our friends.

For now, we're staying the course until the next roll of the dice. We've got a long road ahead, but there's light at the end of the first tunnel—before we take a hard turn into the next one. The path ahead is looking pretty exciting, and you'll all get a front row seat to see how we're doing by the winter update. Maybe we still won't be quite ready to chill the champagne yet by January, but here's to betting that we can at least hoist a few beers together by then to what is aiming to be a memorable 2022 for HL7. ◼
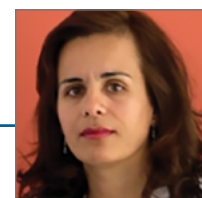
PANEL III: INVESTING IN INNOVATION AND THE SDG9

Nicole Denjoy
Vice-chair, Business at OECD Health
Committee, Secretary General,
COCIR

In Memoriam

Remembering Nicole Denjoy, Secretary General of COCIR

Nicole Denjoy passed away in June of this year. Her influence in digital health is undeniable and will be enduring. In September 2020, Nicole said: "The only way to be impactful and be heard in the eHealth domain is by working with all stakeholders." She did exactly that by leading COCIR for almost two decades and collaborating with many.

By Catherine Chronaki
Secretary General
HL7 Europe

With extensive experience in the medical technology industry and a background in organizational and change management, in 2005 she took the position of the Secretary General in COCIR, the European Trade Association representing the medical imaging, radiotherapy, and health information and communication technologies. Under her leadership, COCIR opened an office in China and contributed to European Standardization with its eHealth working groups, publications and annual events.

Nicole had strong views and while you might not have agreed with her every time, she was captivating and charming. Nicole brought COCIR to a variety of influential fora at the European

level as well as the international level. She was Chair of DITTA, the Global Trade Association representing Medical Imaging, Radiation Therapy and Healthcare IT Industry (www.globalditta. org) and led the DITTA industry voice in official relationships with the World Health Organization (WHO) and in partnership with the World Bank since 2016.
In addition, Nicole was Vice-Chair of the Business at OECD Health Committee. As part of the multistakeholder platform, she supported the recognition of IHE profiles by the EU.

I recall meeting Nicole around 2008 in one of the European Commission Presidency events on eHealth. I was impressed by her French flair, beautiful scarves, bright smile, and

elegance as well as her deep subject matter knowledge. We collaborated on the eHealth Governance initiative which resulted in the EU guidelines for patient summaries and ePrescriptions, and later in the eStandards project that developed the roadmap for large scale deployment of eHealth standards in Europe. For our first meeting, her passion, commitment, and engagement across stakeholders made it clear that she was a power to be reckoned with. Step by step, I got to know her better, and enjoyed stimulating discussions and a few laughs with her over dinner. The last time I saw her in person was at the November 2019 meeting of the European eHealth Network. Although she had lost weight, she reported proudly on the

accomplishments of COCIR and the recent publication on the European Health Data Space. However, the disease had already started to progress. She was active until the end. The last time she was seen in person was as part of the Portuguese Presidency eHealth event in June 2021. Two weeks later, Nicole passed away. She was happily married and a mother of three.

Robert Stegwee, Chair CEN/TC251 shared: "Over the past 15 years, Nicole Denjoy has played an important role in promoting interoperability of health information systems and health data. She was part of the consortium that took on Mandate 403 on eHealth Standards from the European Commission, was instrumental in the success of the eHealth Governance Initiative, marking the first of a series of Joint Actions by the EU Member States and the Commission, and promoted the adoption of IHE profiles by the Multi Stakeholder Platform on ICT Standardisation. As part of the eHealth Stakeholder Group, she led the publication of the Perspectives and Recommendations on Interoperability report and engaged in discussions on business models and incentives to further the digital transformation of health and care in Europe and beyond. With her enthusiasm and warm personality, she has been a true ambassador for eHealth interoperability. Even when we didn't agree, there was always the mutual respect and the willingness to move forward."

IHE Europe announced on their site: "We are very sad to learn of the recent passing of Nicole Denjoy, Secretary General of COCIR for the past 15 years. She played an important part in the initial organization of IHE-Europe, was a regular speaker

at IHE conferences and seminars, and a champion of interoperability on behalf of the members of COCIR. Our thoughts are with her relatives and friends at this sad time. She will be hugely missed by us all."

MedTech Europe also noted her passing with deep regret, writing "MedTech Europe offers its sincere condolences on the passing of Nicole Denjoy, Secretary-General of COCIR. For more than 15 years, she has been a formidable and remarkable stakeholder in the EU healthcare community and has helped advance multiple initiatives within the medical technology sector. Our thoughts are with her family, friends and the COCIR team in this challenging time."

Petra Wilson and Elinaz Mahdavy, who both worked with Nicole for many years through their roles at the HIMSS Personal Connected Health Alliance and in other functions, shared their reflections. Petra remembered Nicole warmly, commenting: "She was a pioneer of what we now call digital health, right from its earliest stages when we called it health telematics, but where the challenges of balancing patient interests with innovation were just as prevalent. Throughout all the years she worked in the sector, Nicole never held back from pointing out and discussing

the difficult issues of any topic at hand and was key in shaping many of the answers we now take for granted. I remember many happy lunches with her, sharing not only her wisdom but also a great deal of laughter and kindness. She will be sorely missed."

Elinaz still cannot believe Nicole has passed away. She shared, "I have known Nicole for more than 15 years. From colleagues, we became friends. Nicole has been one of the most amazing women I have ever known in my career. She was smart, fast, a visionary and a real leader. What a pride as a woman to be able to say I have known Nicole. Behind her strong character, there was this big hearted, funny person. We laughed so much. I loved her and feel fortunate that my path crossed hers. It's such a big loss for her family, for healthcare sector, for her friends including me. I will never ever forget her. Rest in peace my friend."

Nicole Denjoy has been a vibrant presence in the European digital health/ eHealth Scene relentendlessly active and passionate at the junction of policy, business, standardization to last of her days among us.

Her loss is a void that is hard to fill.

Καλό ταξίδι. ◼

HL7 Da Vinci Project

Da Vinci Initiative Begins Work on Payer Cost Transparency Implementation Guide

New Work Group Starts Effort that Has a Goal of Getting Consumers, Providers and Payers on the Same Page

By Fred Bazzoli, Writer, HL7 Da Vinci Project

The Da Vinci Project is tackling another ambitious initiative that is working toward developing a standardized implementation guide to address one of the great unknowns in healthcare—what's this going to cost me?

Many variables go into that determination, and reaching a trustworthy estimate depends communication on quick and effective of information between payers and providers. The new initiative aims to use HL7's Fast Healthcare Interoperability Resource (FHIR®) standard to facilitate the necessary data exchange.

The healthcare industry is under pressure to provide more accurate price estimates to patients before they select medical services, particularly because of recent federal legislation, such as the "No Surprise Act of the Consolidated Appropriations Act," for which an interim final rule was released on July 1. The regulations will take effect for healthcare providers and facilities on Jan. 1, 2022. For group health plans, health insurance issuers and FEHB Program carriers, the provisions will take effect for plan, policy, or contract years beginning on or after Jan. 1, 2022.

The Da Vinci working group for Payer Cost Transparency (PCT) thus is on a fast track to develop an implementation guide—after an initial public meeting in June, the team hopes to pull together a first version of a Standard for Trial Use (STU1) that can be voted on as a standard. Comments submitted as part of that balloting process will allow the standard to be further refined and improved.

The ability to determine a somewhat accurate estimate of the cost of care prior to delivery has always been nearly impossible due to the number of variables involved, such as whether multiple providers are involved in care, the extent of discounts payers have with those providers, whether they are in or outside a payer's network, which supplies are used, and more. The inability to provide estimates makes it difficult for consumers to comparison shop or for anyone to estimate the value of services ultimately received by patients.

Recent federal laws and subsequent regulations exemplify the importance of developing a PCT implementation guide for providers and payers. The push is on to develop a FHIR standard that meets the need to share a Good Faith Estimate for the costs and codes for planned services and provide an Advanced Explanation of Benefits (AEOB) back to the patient prior to patient care while reducing the additional burden on providers and payers to do so.

Providers need this type of information as well, and payers need to align with claims processing needs so working with existing technology is a key piece of the solution. Da Vinci initiatives such as this aim to meet the industry where it is today while advancing the industry forward in ways that achieve value-based care goals through improved information sharing and efficiency gains.

For More Information or to Get Involved

The PCT workgroup is meeting weekly at 11 a.m. ET on this project. More information can be found on its Confluence Page. ■

HL7 Da Vinci Project

Use of FHIR Aims to Improve Accuracy of Risk-Based Adjustment

New Use Case Aims to Fill in the Gaps So Payers and Providers Can Document Patient Needs

By Fred Bazzoli,
Writer, HL7 Da Vinci
Project

With healthcare now transitioning to value-based care, more payers are being reimbursed based on the healthcare needs of their patients, a practice known as risk adjustment.

Accurate assessment of risk depends on providers and payers obtaining a complete and accurate picture of patients' acuity – it's critical to ensuring proper reimbursement, effective cost management for high-risk members, and delivering high quality care. Challenges in risk adjustment currently lies in the communication of potential missing risk adjustment data, which may be either done differently and sometime not at all by payers.

Inaccurate risk adjustment can cause inadequate payment to payers that don't have enough information to understand and substantiate patients' true condition and cost of care. Total underpayments for all causes were reported to be nearly $7.5 billion in fiscal year 2020 by the Centers for Medicare & Medicaid Services.

The HL7 Da Vinci Project has started work on a new standard to facilitate information sharing in this area that will help alleviate provider burden in dealing with potential missing gaps and assist payers by standardizing how risk adjustment gaps are communicated for patients.

The traditionally manual process can be enabled with standard protocols that help facilitate the communication of a patient's risk-adjusted conditions, which ensures more accurate assessment of conditions that should impact the cost of covering that patient under value-based contracts.

The work group, which began work on developing the use case recently, hopes to have a first version of a standard for trial use (STU) ready for ballot early in 2022.

Public calls for the work group are now underway, and participants have carved out the data elements needed for the use case. It's now working on a FHIR gap analysis and refining the FHIR resources that can be used in the implementation guide. Currently, the group is looking at using Measure Report and Measure Resources.

The work group has started building the implementation guide as a continuous integration (CI) build and added examples under the artifacts section.

Currently, no FHIR implementation guide exists to standardize the format for the way in which risk-based coding gaps are communicated between payers and providers. The goal for this implementation guide is to provide a standard for adopting and communicating risk-based coding gaps to better inform clinicians of opportunities to address patients' risk-adjusted conditions. Conversely, it will better enable payers to communicate risk-adjusted information to providers.

Benefits from developing this standard can be seen by all players in the industry. Many believe it will result in improved workflow for payers and decrease the need to seek patient records, while providers will benefit by having a standardized communication format from all payers, rather than trying to interpret multiple reports from different payers.

The project is reviewing the use of specific triggers and exchange methods and interoperability standards as well as FHIR resources to verify and facilitate documentation that supports risk adjustment, HCC models and version.

In addition, the HL7 Clinical Quality Information (CQI) Work Group is sponsoring this use case and has expressed interest in risk adjustment. The use case is gearing up to plan a track for the upcoming HL7 September FHIR Connectathon and will be posting the information on the Confluence track page.

Participants are encouraged to attend and participate in the testing sessions. ■

Improving the Flow of Data from Multiple Databases is Crucial in Improving Therapy for Oncology Patients

Recent mCODE Efforts Aim to Support Radiation Therapy Treatment

By the CodeX Community Support Team

Getting radiation therapy information flowing throughout the healthcare system is crucial to effectively treating patients and ensuring seamless care delivery. This is important because more than 50 percent of cancer patients receive radiation therapy during their treatment.

But for the most part, a lack of standards has stymied efforts to easily move anything but the most rudimentary data.

However, getting a wide range of information on radiation therapy to flow from radiation oncology information systems to those who need it is rapidly becoming a reality thanks to the work group developing a use case supporting the exchange of radiation therapy treatment data by using mCODE™, short for the Minimal Common Oncology Data Elements, an initiative intended to assemble a core set of structured data elements for electronic health records.

CodeX Radiation Therapy Use Case

The work is being pursued within CodeX, (Common Oncology Data Elements Extensions), a member-driven HL7 FHIR ACCELERATOR™, building a community to facilitate the development of interoperable data modeling and applications leading to improvements in cancer patient care and research.

Radiation therapy (RT) is one of the most technologically intensive treatments in medicine. Diagnosis and treatment are carried out with multiple databases and computer control in the design, analysis and delivery of safe radiation treatments. The collaboration of physicians and physicists—combining medical and technical domain knowledge—is a central element of clinical practice. That collaboration is exemplified by the partnership of the American Society for Radiation Oncology (ASTRO) and the American Association of Physicists in Medicine (AAPM) in developing clinically oriented standards supporting interoperable data exchange that is leveraged in CodeX RT use cases.

Treatment data is often not easily transferred into EHR systems, and the use of FHIR-enabled exchange of mCODE standards could bring numerous benefits, such as enabling multi-purpose exchange of radiation treatment summary data for care coordination and data reuse. This can enhance patient care and better support data aggregation for research into oncology treatment.

Inclusion of radiation therapy information means increasing the number of standard data elements to support broader information exchange, said Jim Hayman, MD, director of the clinical division of radiation oncology for Michigan


CodeX (Common Oncology Data Elements eXtensions) is an HL7 FHIR® Accelerator building a community—through new applications and use cases—around the mCODE (minimal Common Oncology Data Elements) FHIR Implementation Guide. mCODE is a publicly released, HL7 FHIR data standard comprised of data elements all centered around oncology. mCODE—as a health data standard—leverages these elements to achieve interoperable exchange of cancer patient data.

Medicine, and a clinical subject matter expert and terminologist for the CodeX work group.

Impetus for the project also came from ASTRO, the premier radiation oncology society, which led initial efforts to create a standard minimum data set for radiation therapy data; the effort was joined by other stakeholder groups.

The push for standardization of data elements is important because radiation therapy information resides in multiple
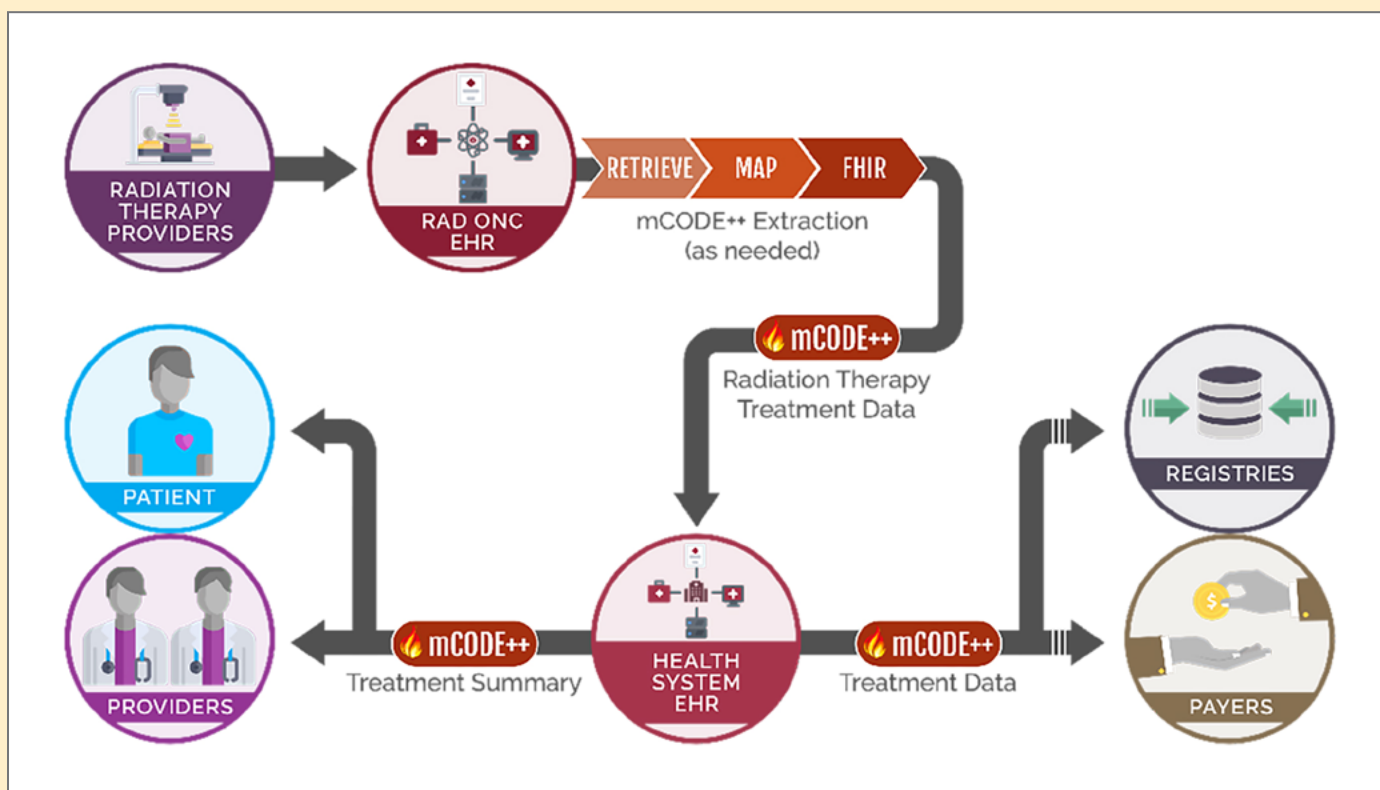
CodeX Radiation Therapy Treatment Data for Cancer conceptual map

information systems and historically in different formats and data structures, noted Mary Feng, MD, vice chair for clinical research and professor in the Department of Radiation Oncology for the University of California—San Francisco, and co-chair for the Integrating the Health Care Enterprise-Radiation Oncology (IHE-RO) planning committee. "Exchange of information between electronic systems has been particularly challenging for our field, limiting big data efforts across oncology."

The work on the use case for RT has required significant cross-professional communication and education, said Chuck Mayo, MD, director of radiation oncology informatics and analytics at University Hospital of Michigan Medicine and a member of the American Association of Physicists in Medicine (AAPM), which is playing an important role in developing the use case.

"To actually make this work, you have to have a lot of detailed knowledge of where the data is stored, how people use them, what matters to the clinician and how to prioritize that," Mayo said. "It's tempting to think that all of this just happens automatically, but it takes a lot of coordinated effort."

Standards are also vital to research, notes a recent blog by ASTRO on the RT use case. The importance of precision medicine using advanced computing, machine learning and artificial intelligence is dependent on better and easier aggregation of data, enabled by information exchange through standards-based exchange.

While the initial CodeX goal is to connect vendor information systems, the proposed interface also will eventually serve as a connection between radiation oncology information systems and other cancer data repositories, the ASTRO article notes. These improved connections "will create a pipeline of more accurate and comprehensive data summarizing a patient's radiation treatment, increasing the power and value of these repositories."

Larger sets from "real world" data will give researchers and clinicians better data to guide care for future patients. Experts believe that big data, the development of standard nomenclature and the ability to share data between cancer centers is important if AI is to play a role in improving the precision of treatment through radiation oncology. ■

Accelerating National SDOH Data Standards
The Gravity Project Update

By Evelyn Gallego,
Program Manager,
Gravity Project

The Gravity Project convenes multi-stakeholder groups from across the health and human services sectors through an open and transparent collaborative process where they develop and test consensus-based standards to facilitate social determinants of health (SDOH) data capture, exchange, and use across a variety of systems and settings of care and social services.

Project Accomplishments

Since May 2019, over 2,000 stakeholders across the healthcare, health IT, community-based, federal and state agency, payer, academic, and consumer advocacy sectors have signed up as members of the Gravity Project. Key project accomplishments and target milestones over the past quarter follow:

ONC USCDI SDOH Data Class Submission. On July 9, 2021, the Office of the National Coordinator (ONC) officially announced the inclusion of the SDOH data class to the United States Core for Data Interoperability (USCD) V2. This addition provides health IT stakeholders nationwide clear direction toward standardized electronic exchange of SDOH. It also lays the foundation for the provider community to start systemizing the capture and use of this data in clinical settings and to adopt health IT that support the activities.

Multi-domain SDOH ICD-10 CM Code Submission. In December 2020, the Gravity Project submitted its multi-domain ICD-10 CM submission representing a year and a half of collective labor. The submission was presented to the ICD-10 CM Coordination and Maintenance Committee on March 10, 2021. The submission for new and updated education, food insecurity, and housing ICD-10 CM codes was approved for implementation beginning Oct. 1, 2021.

HL7 SDOH Clinical Care FHIR Implementation Guide & Reference Implementation. The Gravity Project submitted its first FHIR IG for ballot as part of the HL7 January 2021 ballot cycle and completed ballot reconciliation and the development of a reference implementation in June 2021. The ballot was published as an HL7 Standard for Trial Use (STU) in August 2021.

Multi-domain SDOH data set development. In May 2021, the Gravity Project completed the development of screening and diagnosis data sets for the SDOH domains of material hardship, stress, social isolation, elder abuse, and intimate partner violence. These data sets are available for download via the SDOH Domain Code Dashboard. In the fall, we will continue development of goals and interventions data sets for these same domains.

FHIR Connectathons. The Gravity Technical team led the SDOH track at the May HL7 FHIR Connectathon and the SDOH track at the July CMS FHIR Connectathon. Both the FHIR IG and Reference Implementation were demonstrated.

Upcoming Activities

The Gravity Project will facilitate the testing and validation of the Gravity terminology and technical standards through real-world pilots in 2021. We anticipate pilots will advance the maturity of the SDOH Clinical Care FHIR IG and validate coded SDOH data elements. To learn more about the pilots, please email: *gravityproject@ emiadvisors.net*

For more information on the multi-SDOH domain ICD-10 CM submission , please visit: *https:// confluence.hl7.org/display/GRAV/ ICD-10+Coding+Submissions*

To view the latest consensus voted master datasets by SDOH domain, please visit: *https://confluence.hl7. org/display/GRAV/Terminology+ Workstream+Dashboard*

Launched in May 2019 by the Social Interventions Research and Evaluation Network (SIREN) with funding from the Robert Wood Johnson Foundation, the Gravity Project is a national public collaborative that is developing data standards to help reduce current barriers for documenting and exchanging social risk and protective factors within health care and other sectors. In August 2019, the Gravity Project became an official HL7 FHIR Accelerator Project.

HL7 Offers Education in Different Formats to Meet Market Needs

HL7 Education Update

Sadhana Alangar, PhD
HL7 Director of
Education

Synchronous Online Classes

A major shift has occurred in the delivery of HL7's synchronous online classes. Previously the online classes were about three hours in length, similar to the two-quarter tutorials offered at face-to-face working group meetings (WGMs).

Based on student feedback, HL7 is offering longer, more applied courses with most being about six hours long over three days. We are utilizing the Zoom platform along with its break-out rooms and are incorporating practical exercises, more demos and group work. In 2021, HL7 is hosting a total of 19 online classes, including three new offerings:

- **FHIR Bootcamp** (nine-hour class, offered three times annually)
- **FHIR for Healthcare Information Analysts** (12-hour class offered twice annually with one weekend option)
- **Whirlwind Tour of FHIR Resources** (three-hour class offered once)

The new format and classes have been well received and the FHIR Bootcamp is a popular individual and corporate training class. As an example, the following is feedback for FHIR for Healthcare Informatics class:

> **"This course was exactly what I needed. It led me to understand the conceptual underpinnings of FHIR and its vast utility for healthcare interoperability. The course isn't just for developers but for many helping move healthcare to the digital economy. I would highly recommend this course to technical roles such as interface/data exchange/transaction; and specifically, to business analysts and advanced analytics professionals to make your jobs easier. The professor, the content, the hands-on approach, the supporting materials, and the delivery make this a very valuable course."**

Asynchronous Online Courses

HL7 also continues to offer longer self-paced (asynchronous) online courses, which last four, six, or 12 weeks. These courses include weekly assignments, practice exams and a final project/exam. An instructor holds weekly office hours, and each student is assigned a tutor. HL7 is holding a total of 13 classes, including the following two new offerings:

- **HL7 FHIR Proficiency Exam Review** (Offered 3 times annually)
- **HL7 Advanced V2** (Offered once)

All our courses as well as our education catalog can be found on the HL7 website at: Education Calendar | HL7 International.

FHIR & LMIC

There is an increasing need for FHIR education in Lower and Middle-Income Countries (LMIC). HL7 is addressing this need by:

- Offering discounts to LMIC residents for all self-paced classes
- Working with WHO and Oxford University representatives to teach FHIR to developers, district managers and policy makers in Indonesia
- Offering full scholarships for the July FHIR Fundamentals Course to 20 individuals from Indonesia
- Anticipating expansion of the scholarship program to other LMIC ◼

Seeking Better Healthcare for Childhood Cancer Survivors

The PanCareSurPass Project

Thanks to better cancer treatments, more than 80% of children and adolescents in Europe who are treated for cancer will now survive more than five years.

By Catherine Chronaki
Secretary General
HL7 Europe

Giorgio Cangioli
Board Member and
Senior Consultant
HL7 Europe

There are nearly 500,000 survivors of childhood and adolescent cancer across Europe, and this figure is growing every year. However, the cancer treatments are harsh and may cause long-term effects, so survivors require closer health monitoring over their lifetime than their peers who have not had cancer. Currently, only a minority of adult childhood cancer survivors receive appropriate care, meaning there is still a long way to go in providing high quality long-term, person-centred follow-up care for survivors.

One of the challenges for long-term follow-up care is informing survivors about their personal risk for long-term effects, and thereby empower them to manage their own needs for care and support together with their healthcare professionals. The Survivorship Passport (SurPass, www.survivorshippassport.org) was developed by a number of EU-funded projects including ENCCA (*https://cordis.europa.eu/project/id/261474*), PanCareSurFup (*www.pancaresurfup.eu*), ExPo-r-Net (*https://www.expornet.eu/*), PanCareFollowUp (*www.pancarefollowup.eu*), and the PanCare Network (*www.pancare.eu*) as a tool to help overcome this challenge. The SurPass is currently available in both electronic and paper formats. It provides survivors with a complete overview of their treatment, and thanks to built-in algorithms, gives personalised recommendations for follow-up care

based on a combination of the internationally approved IGHG guidelines (*www.ighg.org*) and the PanCareFollowUp guidelines. However, the SurPass has not yet been widely implemented in Europe.

PanCareSurPass Project Launches

The EU-funded project PanCareSurPass (*www.pancaresurpass.eu*), which launched on March 1, 2021, will examine how to scale up implementation of SurPass to improve survivorship care. 17 partners from eight European countries (Austria, Belgium, Germany, Ireland, Italy, Lithuania, Netherlands, Spain) are joining forces to further develop the SurPass and create a strategy for European implementation. Part of the development work will include linking the SurPass to electronic health record systems (e.g. hospital medical record, national health records, where available) and registries (e.g. regional/national cancer registries) to improve the accuracy of health information available, and reduce the time needed to generate the SurPass for each patient. The new SurPass version will be launched and tested in a multi-country study in Austria, Belgium, Germany, Italy, Lithuania and Spain. The study
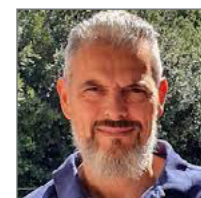
PanCareSurPass: An EU project to improve long-term care for survivors of childhood and adolescent cancer by widely implementing the European digital Survivorship Passport based on the HL7 FHIR International Patient Summary and the European Electronic Health Record Format.

will look at how survivors sand healthcare professionals view the SurPass, as well as the health economics of implementation. In addition, the project will gain insight into how health data from different sources can be used by adopting interoperability standards, specifically HL7 Fast Healthcare Interoperability Resources (FHIR®) and HL7 Clinical Document Architecture (CDA®). To ensure the PanCareSurPass project is only the start of an even wider implementation of the SurPass across Europe, replication materials and policy recommendations, as well as a prediction model to help healthcare decision makers, will be developed.

HL7 Europe's Role

HL7 Europe is contributing to

the implementation strategy and will be leading the work package on SurPass v2.0—which will address technological challenges and solutions in six European countries. An important outcome of this work will be the development of the Surpass FHIR Implementation Guide.

"We are delighted that the survivors' need for optimal long-term care is seen as well at the European Commission – we are thankful that they fund our project which is of high

Dr. Desiree Grabow

importance for Survivors of childhood cancer," said Dr. Desiree Grabow (PanCareSurPass Project Coordinator, University Medical Centre, Germany).

Dr Riccardo Haupt (PanCareSurPass Research Manager, Istituto Giannina Gaslini, Italy) added, "We are looking forward to this project which will allow a more efficient integration

Dr. Riccardo Haupt

between high quality clinical care and late effects research. We hope that in the future the electronic Survivorship Passport will become a

standard for care in all the European countries."

Dr. Helena van der Pal (Past President of PanCare and late effects specialist) "PanCareSurPass will facilitate further imple-mentation of survivorship care in Europe and therefor ensure equal access of care and improve quality of life for survivors of childhood cancer." ◼

Dr. Helena van der Pal

Get updates on the PanCare SurPass

For more information, please visit:

https://www.pancaresurpass.eu/

Contacts:

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Member Spotlight on Anne Smith

launched. She still participates in the SDWG as time allows. In addition, she has been known to participate in Da Vinci meetings.

As quality measures have ventured into using FHIR as a data model, Anne has started to participate in the HL7 FHIR Connectathons. She answers questions about the quality measures in the Clinical Reasoning Track.

Personal Life

Anne and her family live in northern Colorado. She and her husband are involved in Morris dancing, which is an ancient English dance from around

the time of the Renaissance. They travel with their dance team throughout the Midwest and occasionally to England to see actual English Morris dancers in action.

They have one daughter, MariAnna (18), who has been involved in Girl Scouts for 10 years. Anne and MariAnna do a lot of outdoor activities including hiking, canoeing, and camping with Girl Scouts. They have even traveled to Nepal and Costa Rica! MariAnna also participates in the local dinner theater. She has played Eponine in "Les Misérables" and most recently Jo in "Little Women". ◼

Electronic Product Information (ePI) Track at FHIR Connectathon

HL7 Vulcan Accelerator Track Addresses ePI Standards

By Catherine Chronaki
Secretary General
HL7 Europe

On September 13-15, 2021, during the HL7® FHIR® Connectathon, there was a Vulcan Accelerator track dedicated to Electronic Product Information. We are looking for app developers, electronic health record vendors, business developers, and software engineers interested in developing ideas and solutions.

The vision of the Vulcan HL7 FHIR ACCELERATOR[1] is to connect clinical research and healthcare bringing together stakeholders across the translational and clinical research community in order to bridge existing gaps, strategically connect industry collaboratives, maximize collective resources, and deliver integrated tools and resources.

Amy Cramer
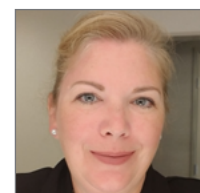Co-Chair, Vulcan
HL7 FHIR
Accelerator

The HL7 Structured Product Labelling standard (SPL) used by the US Food and Drug Administration (FDA) to present medicinal product information is well known. The European Medicine's Agency (EMA) has Summary of Product Characteristics (SmPC) and Patient Information Leaflet (PIL) formats for electronic product information (ePI).

A medicine's ePI is regulated, scientifically validated information to assist healthcare professionals in prescribing and dispensing. It also informs patients and consumers about their medicine and its safe use. Thus, trusted access and understanding of up-to-date product information on medications when and where it is needed is extremely important. In Europe, the EMA in collaboration with Heads of Medicines Agencies in member states and the European Commission, has developed key principles through stakeholder consultations to guide the development and use of ePI in the European Union (EU).

Craig Anderson
Pfizer
Regulatory
Information
Management

These principles highlight how ePI benefits public health; creates efficiency gains for regulatory systems; aligns with the existing legislative framework and complements the paper package leaflet; fits into the EU's multilingual environment; and interacts with other ongoing digital initiatives at EU and global level[2].

Earlier this summer, the EMA released the first version of the Draft ePI Application Program Interface (API) specification in HL7 FHIR[3] that

1   https://www.hl7.org/vulcan/
2   https://www.ema.europa.eu/en/documents/regulatory-procedural-guideline/
electronic-product-information-human-medicines-european-union-key-principles_en.pdf
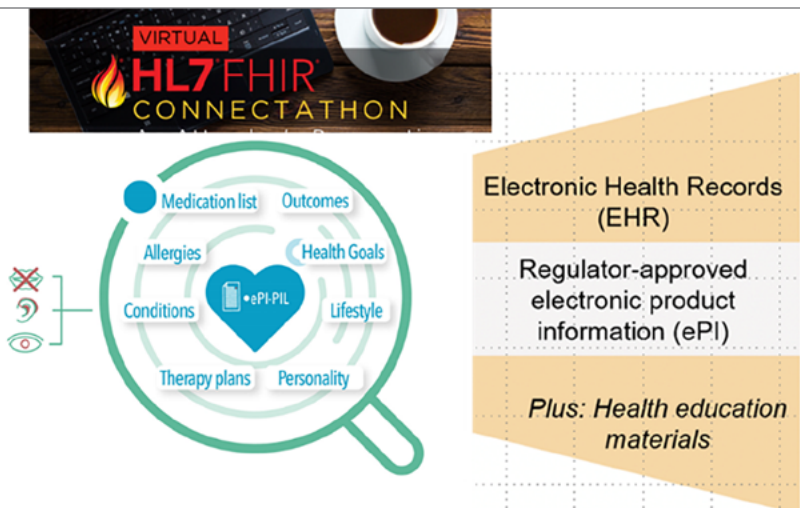3   https://www.ema.europa.eu/en/documents/regulatory-procedural-guideline/
draft-eu-common-standard-electronic-product-information-human-medicines-epi_en.pdf

Maria and her medicines

Picture: Line H. Linstad, NSE

Picture: Hanne Bjertnes, UiO

How can we apply an open access digital platform with trusted Digital health Information to transform the way patients access and understand health information, and apply this in personal health for adherence to treatment, risk minimization and quality of life ?

was open for consultation until the end of July. During the month of July 2021, a series of webinars and hands on workshops helped stakeholders get acquainted with the standard using an experimental FHIR server hosted by EMA.

The September HL7 FHIR Connectathon explored more specific consumer-centered use cases that make use of the specification in the context of the larger eHealth ecosystem. These use cases are linked to the Gravitate Health project.

The Gravitate Health project (*www.gravitatehealth.eu*), under the Innovative Medicines Initiative, explores how to use the ePI standard in conjunction with the HL7 FHIR International Patient Summary (IPS) and other services, such as those under myHealth@EU or EMA's own SPOR implementation of ISO IDMP, to increase access, understanding, adherence, and safe use of medicines.

The Gravitate Health use case explores the story of Maria, an elderly Norwegian lady, a real-life

advocate of the Gravitate Health project, who spends her life between Oslo and Cyprus and struggles with a long medication list, multiple conditions, and allergies. ◼

For more information:

ePI track in the 28th HL7 FHIR Connectathon:
https://confluence.hl7.org/pages/viewpage.action?pageId=120095544

Collection of Patient Vaccination Information

Getting Acquainted with the Dutch National Terminology Server

The National Terminology Server (NTS) was launched in the Netherlands in February 2021.

By Roel Barelds
Tenzinger
The Netherlands

Sander Mertens
Nictiz, The Netherlands

Michael van der Zel,
University Medical
Center Groningen
The Netherlands

HL7 The Netherlands (NL) organized a focused NTS track during its online working group meeting (WGM) on April 14-16.[1]

The track kicked off with a tutorial titled "Terminology on FHIR" and was followed by an introductory session on the why and the how of the NTS (vision and operation). On the last day, we organized a hands-on connectathon which offered the participants a glimpse of some of the practical possibilities of the NTS. We received so much positive feedback afterwards that the HL7 NL community decided to organize connectathons on the NTS and FHIR Terminology in general every month going forward.

The Promise of the NTS

The NTS is a new service provided by Nictiz, the Dutch competence center for electronic exchange of health and care information. We look upon the release of the NTS as another significant step toward a coded and standardized recording of clinical data in a healthcare system, such as an electronic health record (EHR).

Using the NTS has many advantages for a healthcare organization. First, it enables software solutions to provide the latest standardized clinical terminology to its users. In this way, the NTS facilitates an unambiguous exchange and reuse of clinical data among them. Secondly, software programmers and vendors see the NTS as an easy solution for a major technical problem. Right now, it is rather difficult to work with the 'raw' terminology files because they come in a variety of technical formats. Using HL7 Fast Healthcare Interoperability Resources (FHIR®) puts an end to this, as one single API provides universal access to all terminologies and terminology functionalities, such as expanding value sets and looking up translations or patient friendly representations of codes. In addition, the NTS prioritizes the use of international standards which opens the possibility of an international unambiguous exchange of healthcare information in the near future. Finally, Nictiz offers the use of the NTS free of charge. A user only pays for the licences of terminologies or code systems that he or she wants to access.

Fast Updates and Unique Data Sets

The NTS stores several standardized terminologies and code systems in one place. It currently includes SNOMED CT, LOINC, the Dutch Lab Code Set and the value sets of the so-called HCIMs or in Dutch: 'zibs'. They can be accessed using the latest HL7 FHIR Release 4 API.

This is only the beginning. The goal is to add every operational national standard terminology to its catalogue. The NTS enables vendors to easily create automated processes for updating terminologies and code systems. As a result, healthcare professionals with

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1   The authors wish to thank Marc de Grauw, Frank Ploeg and Pim Volkert for their contributions to the NTS track.

access to the NTS will always have the latest versions at their disposal. Another advantage of the NTS is the possibility to maintain complex dynamic value sets and expand them for local easy usage. These can be of great value in a healthcare professional's daily routine.

Software Vendors and Future Healthcare

Nictiz needs the trust and collaboration of software vendors of EHRs, patient portals and – not unimportantly – the holders of the code systems to make the NTS successful in the long run. It is crucial that they decide to integrate the NTS in the workflow of their systems. A solid agreement must be reached so that all stakeholders involved know exactly where they stand. This is a necessary condition for a large-scale introduction of the NTS in the near future.

Fortunately, the NTS uses the HL7 FHIR R4 format and communicates using the accompanying API specification. This is not only promoted by the Dutch Ministry of Health, Welfare and Sport but also by the healthcare sector itself. If FHIR is adopted as the generally accepted standard for future implementations, this is another significant step toward fully digital national healthcare, as all national programs to accelerate clinical data exchange between patient and professional are lined up to start using it. Following this, Dutch healthcare can start participating in the international exchange of clinical data.

Support Required from the Field

The NTS is provided by Nictiz, with the financial support of the Dutch Ministry of Health, Welfare and Sport. Because of its great significance for the transition of Dutch healthcare towards a digital future, Nictiz decided to provide this service free of charge to end users. In return Nictiz expects the field to support this development by offering expert assistance. There are, for instance, many terminologies and code systems which need to be transformed to fit the format of the FHIR terminology modules. We need all stakeholders to join in and help change and improve national healthcare. It is for the benefit of all and we can only do this together!

The Success of the Connectathons

During the first connectathon at the HL7 WGM last April, the participants were given the opportunity to get a closer look at the NTS. The key question addressed was: "What happens when you put theory into practice?" After two theoretical sessions, this practical angle hit the right chord. The participants were so intrigued, and their feedback was so positive, that we felt we could not leave it at that. We decided that this was to be the first connectathon in a series.

So, what did we do during the first one? We showed the participants how to copy value lists from the NTS to a local FHIR server. Of course, we also touched on questions that could not be immediately resolved. There was, for instance, a lively discussion about the way a

specific term can be identified as either clinical or patient friendly in FHIR terminology. As of yet, there is no unambiguous answer to this, neither on a national nor an international level. Not surprisingly, we did not find a solution for this during the session. However, it was a good thing to work and explore together, looking for clues. In this game there are no easy answers.

One of the participants noted later: "The connectathon about the National Terminology Server provided by Nictiz showed us the unprecedented possibilities which it has to offer. Clear examples enabled us to really grasp them ourselves. I was impressed." – Paul Dreef, CTO Meditools

Sharing Knowledge for a Cutting Edge

The connectathons that followed have proven once again that sharing knowledge is key. We need each other's brains to find our ways into the complex issues of our field. One of the participants observed: "The NTS is one of the best examples of the practical use of one common clinical language. That makes it a major development in digital healthcare promoted by Nictiz and HL7 NL. With pleasure, Drimpy joins the monthly connectathons organized by HL7 NL and is ready to offer input. The NTS does not only list terms that are easier to understand for a lay person, but the included terms are also presented in different languages in the correct spelling and with the correct meaning. This is convenient when travelling abroad and of the utmost importance in our multicultural society." – Arnold Breukhoven, Chief and Founder of Drimpy

HL7 International

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Congratulations to the following people who recently passed an HL7 Certification Exam!

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JUNE 2021

Jolanta Horudko

WELL DONE

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- **SNOMED**
- **GS1**

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American Clinical Laboratory Association

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American Heart Association
American Immunization Registry
   Association (AIRA)
American Medical Association
Arkansas Department of Health
Association of Public Health Laboratories
Avaneer Health
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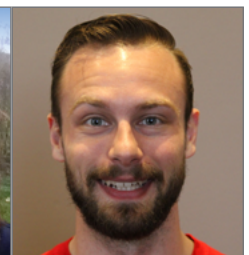**Director of Membership & Administrative Services**

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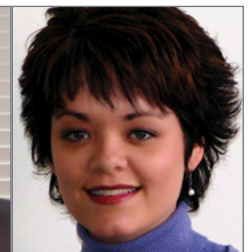**Director of Technical Services & Webmaster**

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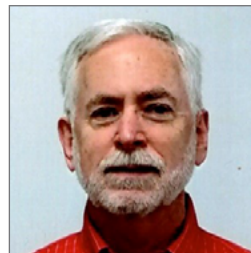walter.g.suarez@kp.org

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2021 HL7 FHIR ACCELERATOR™ Program

http://www.hl7.org/about/fhir-accelerator

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Upcoming HL7 Meetings

Virtual Meetings

35th Annual Plenary & Working Group Meeting
September 20 – 24, 2021

HL7 FHIR Connectathon
Central Time Zone
January 10 - 12, 2022

January 2022 Working Group Meeting
Central Time Zone
January 15 - 21, 2022

In-person Meetings

March 14 - 18, 2022
HIMSS22 – HL7 Booth #3841
Orange Cty Convention Center

Orlando, FL

May 16 - 20, 2022
May 2022 Working Group
Meeting and FHIR Connectathon

Dallas, TX

June 6 - 9, 2022
HL7 FHIR DevDays 2022

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September 17 - 23, 2022
36th Annual Plenary & Working Group
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