HL7® International

THE OFFICIAL PUBLICATION
OF HEALTH LEVEL SEVEN® INTERNATIONAL

FALL 2023

NEWS

Unlocking Healthcare Innovation

The Power of HL7 Standards

FHIR® Implementation Guide (IG) for Electronic Medicinal Product Information (ePI)

HL7 and WHO Join Forces to Advance Open Interoperability Standards in Healthcare

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HL7 News

is the official publication of

Health Level Seven International

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37th Annual Plenary Goes to Phoenix

Update from Headquarters

FHIR DevDays in Amsterdam

HL7 International and Firely organized HL7 FHIR DevDays 2023, held June 6-9 as a hybrid event. The format included the in-person component taking place in Amsterdam and others joining virtually from around the world making it possible for the global FHIR community to convene.

The event attracted 542 attendees with 350 in-person and 192 virtually, all aiming to learn about FHIR, refine their expertise and connect with the FHIR community. The three pillars for DevDays are education, sharing ideas and networking. The pillars were demonstrated through a program that featured over 140 educational sessions, more than 110 expert speakers, impactful keynote addresses and invaluable networking opportunities. Experts from around the world participated to instruct, guide, and discuss how best to implement the HL7 FHIR standard.

For more insight on the event, please review a three-minute video with quotes from participants and event highlights at: *www.devdays.com/devdays-2023/*

We are pleased to recognize our event sponsors that helped make DevDays possible:

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July FHIR Connectathon for CMS

HL7 produced another virtual FHIR Connectathon for the Centers for Medicare & Medicaid Services (CMS) July 18-20, 2023. The event focused on:

- Educating interested parties at CMS and within the health IT community about HL7 FHIR, FHIR implementation guides (IGs) developed by HL7's FHIR accelerators Da Vinci, CARIN Alliance, FAST, and Gravity and their real-world uses.
- Supporting impacted stakeholders as they comply with the CMS and ONC interoperability rules.
- Engaging providers, payers, and partners to join the growing collaborative FHIR community and directly access associated free and open resources.

By Mark McDougall,
HL7 International Executive Director

Almost 1,400 attendees registered to participate in 15 different tracks of activities organized by subject. CMS has expressed their appreciation for HL7 once again producing a successful FHIR connectathon. Many thanks to Sandy Vance for her role in supporting the management of the FHIR connectathon.

Mark Your Calendars

Please be sure to add to your calendar the dates and locations of our other upcoming HL7 events:

- January 2024 HL7 WGM and FHIR Connectathon will be produced virtually
  - FHIR connectathon will occur January 16-18, 2024
  - January 2024 WGM will convene January 29 – February 2, 2024
- ViVE – HL7 at the Interoperability Pavilion – February 25 – 28, 2024, Los Angeles, CA
- HIMSS24 – HL7 at the Interoperability Showcase – March 11 – 15, 2024, Orlando, FL
- May 2024 HL7 WGM will convene in Dallas, Texas
  - FHIR connectathon will occur May 18-19, 2024
  - May 2024 WGM will occur May 20-24, 2024

We look forward to seeing you at these HL7 events. For more details on these events, please visit *www.HL7.org/events*

Benefactors and Supporters

We are pleased to recognize HL7's 2023 benefactors and gold members who are listed on page 7. Their support of HL7 is very much needed and sincerely appreciated. We are pleased to recognize our benefactors in all of our HL7 newsletters, on the HL7 website, in all of our HL7 press releases, and at all of our HL7 Working Group Meetings.

Organizational Member Firms

As listed on pages 31-33, 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.

Best wishes to you and your loved ones for staying healthy and finding time to enjoy moments in each day. For those old enough to remember Hill Street Blues, "*Let's be careful out there.*"

HL7 Welcomes New Members

Organizational

1upHealth	Parachute Health	Nebraska Health Information Initiative, Inc d/b/a CyncHealth
CCS Health	Phreesia	
Module 3 Solutions, LLC	TechVariable	RevDoc LLC
OpenCDx, Inc	Texas Tech University Health Sciences Center	Revolve Healthcare

HL7 Leads and Responds to Public Healthcare Policy

Global and Federal Policy Arena Heat Up

As autumn comes again, the federal health IT agenda is speeding up with HL7 responses to the Interoperability Standards Advisory and the United States Core Data and Interoperability Version 5 (USCDI v5) due. On the global front, HL7 recently responded to Digital Square's Notice G1 for Content Global Goods requesting that HL7 FHIR be recognized as a digital health Global Good. A mature digital health Global Good is defined by Digital Square as "a resource, toolkit, or data standard that is available under an open license and that is used to improve or analyze the capabilities required to manage health data. Capabilities include those related to resource allocation, people, hardware, software, infrastructure, and operations." Lower- and Middle-Income Country (LMIC) capability is particularly highlighted.

In terms of recent regulatory activity, HL7 responded over the summer to the noteworthy ONC Health Data, Technology, and Interoperability: Certification Program Updates, Algorithm Transparency, and Information Sharing proposed rule (HTI-1).

Information on the HTI-1 proposed rule, with key HL7 perspective highlighted at right.

Ticia Gerber, MHS, HP, Senior HL7 Policy Advisor

ONC Health Data, Technology, and Interoperability: Certification Program Updates, Algorithm Transparency, and Information Sharing Proposed Rule (HTI-1)

https://www.federalregister.gov/documents/2023/04/18/2023-07229/health-data-technology-and-interoperability-certification-program-updates-algorithm-transparency-and

Key provisions of the proposed rule include:

- Implementing the Electronic Health Record Reporting Program as new Condition and Maintenance of Certification requirements (Insights Condition) for developers of certified health information technology (health IT) under the Certification Program.
- Modifying and expanding exceptions in the information blocking regulations to support information sharing and certainty for regulated actors.
- Revising several Certification Program certification criteria, including existing criteria for clinical decision support (CDS), patient demographics and observations, electronic case reporting, and application programming interfaces for patient and population services.
- Raising the baseline version of the United States Core Data for Interoperability (USCDI) from Version 1 to Version 3.
- Updating standards adopted under the Certification Program to advance interoperability, support enhanced health IT functionality, and reduce burden and costs.

Summary of Key HL7 Points:

HL7 recognizes and applauds ONC's effort to put innovative provisions forward in the proposed rule relating to issues such as:

- Further implementation of the 21st Century Cures Act;
- Updating ONC's information blocking regulations;
- Data standards that help to ensure information can be understood when it enters and leaves a system;
- New and revised standards and certification criteria, including the United States Core Data for Interoperability Standard Version 3 (USCDI v3);
- Application programming interface provisions that further support the secure movement of information between health information technology (IT) systems;
- Electronic case reporting that supports public health and emergency response; and
- Evolving, cutting-edge health care data use such as in clinical decision support, health equity, Social Determinants of Health (SDOH), Sexual Orientation and Gender Identification (SOGI) and artificial intelligence (AI).

HL7 also appreciates the inclusion of HL7 standards and accompanying implementation guides (IGs) in the proposed HTI-1 framework. This proposed rule is a critical incremental step in our nation's interoperability journey. As HL7 is the global authority on health care interoperability and a linchpin and driver in the standards arena, we stand ready to aid ONC in finalizing policy and implementation efforts related to this rule.

Other key issues and recommendations highlighted in HL7's HTI-1 proposed rule comments are in the areas of:

- Clinical Decision Support, Clinical Quality Information, HL7 CDS Hooks and Decision Support Intervention
- Device issues
- Laboratory data interoperability
- Patient empowerment
- Recording sex, sexual orientation and gender identity
- Social Determinants of Health

Federal policy activity will continue to be brisk in the coming months and HL7 is prepared to respond. More information and HL7's complete policy responses can be accessed at: *http://www.hl7.org/newsroom/issueandpolicy.cfm?ref=footer* ■

HL7 data standards and guides will be integrated with AMA CPT codes and descriptors

New Collaboration Opens CPT Content for Developers

Under a new collaboration between HL7 and the American Medical Association (AMA), technology developers using HL7 data interoperability standards and guides will have increased accessibility to AMA-published medical codes and descriptors. The collaboration will work to fully integrate HL7 Fast Healthcare Interoperability Resources (FHIR®) with the AMA's Current Procedure Terminology (CPT®) code set to advance the organizations' mutual goal of promoting the efficient exchange of interoperable health information.

"Collaboration with the AMA will provide invaluable opportunities for the communities of developers to seamlessly incorporate this critical terminology within the HL7 development and implementation processes," said HL7 CEO Charles Jaffe, M.D., P.h.D, FHL7.

"As the health system's foundational terminology for coding and describing medical services, CPT is the uniform code set trusted to efficiently exchange data that identifies specific treatments and procedures provided to patients," said AMA CEO James Madara, M.D. "By working toward greater CPT accessibility for developers, the collaboration between AMA and HL7 allows the use of CPT in the development and testing of FHIR-based technology to further advance the next generation of health information solutions. We also look forward to working more closely with HL7 on educational opportunities and collaborating on industry conferences and events."

The agreement builds on more than a decade of cooperation between AMA and HL7 in support of standardization that drives health data interoperability and opens new opportunities for developers and promotes innovation in FHIR-based technology that use CPT for measurement, analysis, and benchmarking of medical services. ■

About the AMA

The American Medical Association is the physicians' powerful ally in patient care. As the only medical association that convenes 190+ state and specialty medical societies and other critical stakeholders, the AMA represents physicians with a unified voice to all key players in health care. The AMA leverages its strength by removing the obstacles that interfere with patient care, leading the charge to prevent chronic disease and confront public health crises, and driving the future of medicine to tackle the biggest challenges in health care. For more information, visit ama-assn.org.

HL7 Benefactor Members

HL7® and WHO Join Forces to Advance Open Interoperability Standards in Healthcare

Coordinated collaboration to foster global adoption of open interoperability standards that are critical to the development of equitable and evidence-based digital health

In a joint effort to drive digital health transformation and foster seamless data exchange, Health Level Seven International (HL7®), a leading standards-development organization, and the World Health Organization (WHO) have entered into a Project Collaboration Agreement.

The primary aim of this partnership is to promote the widespread adoption of open interoperability standards on a global scale. Interoperability standards play a crucial role in ensuring consistent representation of health data and information, enabling various digital health solutions to communicate effectively, and supporting continuity of care across all levels of the healthcare system, irrespective of the software in use. For instance, interoperability can help payers and insurers access real-time patient data, leading to more accurate and efficient claims processing, fraud reduction, and enhanced utilization management.

"As countries increasingly embrace digital technologies in healthcare, the need for guidance on interoperability standards adoption and translation of clinical, public health, and data recommendations into digital systems becomes paramount," said Daniel Vreeman, DPT, FHL7, HL7 chief standards development officer. "Through HL7's collaboration with WHO we will drive progress in digital health and enhance the reach and impact of evidence-based guidelines in healthcare systems globally."

Under the agreement, HL7 will create the technical mechanisms for Fast Healthcare Interoperability Resources (FHIR®)-based standards to be translated into the six official languages of the United Nations—Arabic, Chinese, English, French, Russian and Spanish. FHIR is an API-based open data exchange standard.

The collaboration between WHO and HL7 aims to achieve the following objectives:

1. Strengthen the implementation of the WHO Global Strategy on Digital Health 2020-2025 at the country level and enhance capacity to adopt and utilize interoperability standards in Member States equitably.
2. Improve access to WHO's guidance and recommendations by developing interoperability specifications applicable globally and adaptable locally.
3. Support the use of WHO Family of international classifications and terminologies (WHO-FIC) within the HL7 FHIR community.
4. Provide technical infrastructure, including a sandbox testing environment and documentation, to support interoperability.

Aligned with its Global Strategy on Digital Health 2020-2025, WHO has developed the SMART Guidelines approach, – Standards-based, Machine-readable, Adaptive, Requirements-based, and Testable – which encodes evidence-based recommendations, clinical and public health protocols, and decision support logic into computable care plans and data dictionaries using interoperability standards.

The expect outcome of the collaboration is HL7 FHIR-enabled SMART Guidelines with multilingual support across all United Nations languages that are made available to the public at no cost. No exchange of funds occurred as part of this five-year agreement. ■

HL7® International

Newly Certified HL7 Specialists

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

HL7 FHIR R4 Proficient Certified

JUNE 2023

Alejandro Varela González
Eman Awad
Simon Johnson
Koushiki Suri
Priti Dave
Wing Hang Mario Yu
Keiran Warner
Rima Bouchakri
Yue Qi
Russell Ott
William Lakenan
Julien Levesque
Zachary Coleman
Marie Smith
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Christopher Cioffi

JULY 2023

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Lin Zhu
Sara Martínez Alabart
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Armando De Chiara
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Tristan Rieu
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Prexa Patel
Robin Corey

Certified HL7 CDA R2.0 Specialist

AUGUST 2023

Aleksandar Nadjinski

The Care Plan FHIR Bundle

Revolutionizing Care Management

Seamless Exchange of Care Plans as HL7 FHIR Bundles

In the realm of modern healthcare, effective care management plays a pivotal role in ensuring the well-being of patients. Care managers bear the responsibility of coordinating and orchestrating myriad aspects of patient care. This includes disease management, behavioral health management, care transitions, health coaching, wellness, maternity management, pain management, sleep apnea, and more. With the evolving healthcare landscape, the traditional methods of managing care plans can be improved with new interoperability standards and automation. By harnessing the power of HL7's Fast Healthcare Interoperability Resources (HL7 FHIR®) bundles, Telligen is enhancing the exchange of care plans, streamlining processes, and facilitating more efficient healthcare coordination.

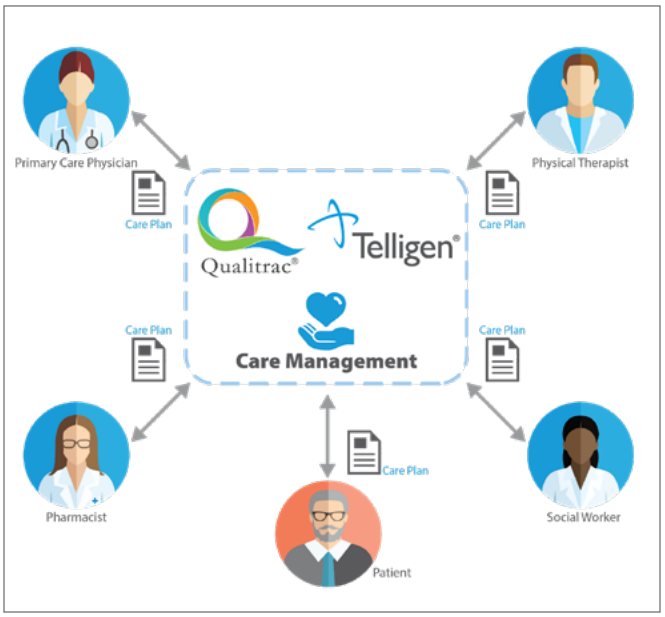

Figure 1: Traditional Care Plan Communication

Problem Context

The practice of care management involves the strategic collaboration between care providers and patients to establish tailored care plans addressing specific healthcare concerns. These care plans comprise identified problems, measurable goals, and a roadmap of activities designed to achieve those goals. The interdisciplinary nature of care management necessitates the involvement of multiple stakeholders, typically including a patient's primary care physician, specialized service providers, and dedicated care managers. The challenge lies in seamlessly coordinating the efforts of these stakeholders, exchanging information, tracking progress, and ensuring that the patient's well-being remains the focal point.

Historically, care plans have been communicated through traditional means, such as postal mail, fax, or PDF documents (See Figure-1). While these methods served their purpose in the past, the digital era demands a more efficient and instantaneous approach to

By Srinivas Velamuri, CISSP, CPHIMS, Enterprise Architect, Telligen

information exchange. Recognizing this need, Telligen has embarked on leveraging the HL7 FHIR standard to enhance the process of care plan exchange.

The Telligen Solution: Transforming Care Management with HL7 FHIR

To facilitate a seamless integration of care plans, Telligen has introduced the electronic exchange of care plans through the utilization of HL7 FHIR bundles. This represents a paradigm shift in how care managers engage with care plans and collaborate with other care providers. By adopting FHIR-based application programming interface (API) calls, care managers can fluidly exchange care plans in the standardized HL7 FHIR format. This standardization guarantees the consistent, accurate, and comprehensive sharing of information, surpassing the constraints of conventional communication methods (See Figure-2).

The adoption of FHIR API endpoints by Telligen empowers various service providers to seamlessly connect with Telligen's Care Plan FHIR API endpoint, regardless of their technological ecosystem. The interoperability offered by FHIR serves as a cornerstone of this transformative process. FHIR-enabled Electronic Health Record (EHR) systems can effortlessly consume these FHIR-based care plans, fostering a cohesive and streamlined approach to care management. This integration reduces the likelihood of miscommunication, minimizes errors, and enables real-time updates on patient progress, ultimately leading to more informed decision-making and improved patient outcomes.

A typical care plan FHIR bundle comprises the following FHIR resources:

- *CarePlan:* This resource outlines the intentions of one or more practitioners in delivering care to a specific patient, group, or community for a defined period, potentially focused on specific conditions.
- *Patient:* This resource identifies the patient for whom the care plan is intended.
- *Condition:* This resource identifies the conditions, problems, concerns, diagnoses, and similar issues that are addressed and managed by the care plan.
- *Goal:* This resource defines the intended objective(s) of executing the care plan.
- *CareTeam:* This resource identifies all individuals and organizations anticipated to be involved in the care outlined by the care plan.

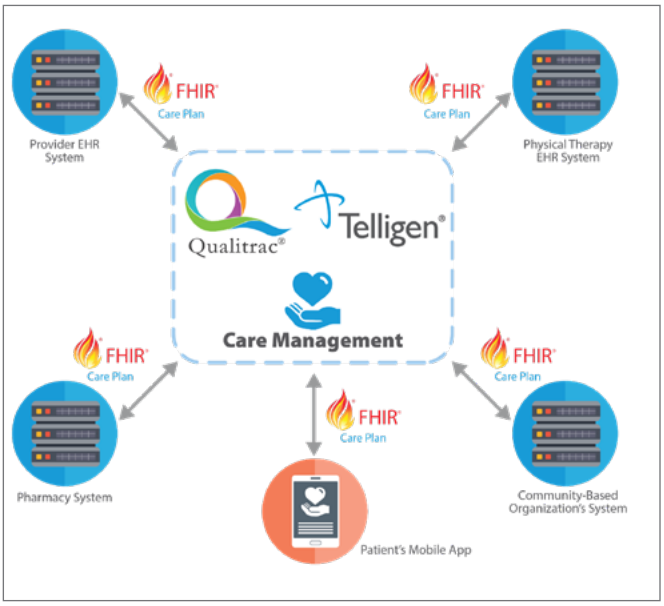

Figure 2: Care Plan Exchange as FHIR Bundles

Conclusion

In the landscape of healthcare, the effective exchange of care plans forms the backbone of successful care management. Through the utilization of HL7 FHIR bundles for electronic care plan exchange, the healthcare industry has ushered in a new era of efficiency and precision within this critical realm. By eliminating the inefficiencies associated with traditional communication methods, the industry has laid a solid foundation for seamless collaboration between care managers and service providers. This transformative approach not only expedites the exchange of information but also enhances the quality of patient care. As the healthcare sector continues its evolution, innovations centered around FHIR-based solutions will pave the way for a future in which healthcare coordination becomes not only a necessity but an essential feature of patient well-being. ■

Revolutionizing Care Management by
Implementing HL7 Standards in Laboratory Reporting

Meeting Public Health Reporting Requirements

HL7's Version 2.5.1 Implementation Guide to standardize Electronic Laboratory Reporting (ELR) to Public Health agencies "describes the transmission of laboratory-reportable findings to appropriate local, state, territorial and federal health agencies using the message". The anticipated benefits of implementing the guidance include consistent implementations across disparate systems and more efficient reporting processes to multiple jurisdictions. Furthermore, for those receiving reports from multiple laboratories, the Version 2.5.1 ELR IG outlines the expected format and terminology constraints.

Written by Sarah Brumley, MHA, Client Success Manager, Clinical Architecture (Lead Author); Millie Malai, MPH, Technical Project Manager, Datapult; Carol Macumber, MS, PMP, FAMIA , Co-Chair, Terminology Services Management Group, HL7 International, and Clinical Architecture; Patina Gagne, MPH, Director, Datapult

Due to the emergence of COVID-19 in 2020, the need to report a massive amount of ELR data, including new terminology (e.g., new lab tests and results), became critical to collect and analyze public health data. Datapult, an Association of Public Health Laboratories (APHL) Company, immediately began the development of an expanded electronic laboratory reporting (ELR) service to build upon its centralized, intelligent routing service. This service was used to manage the millions of test results reported to public health agencies (PHAs), including the CDC, during the COVID-19 public health emergency. The centralized ELR service reduced the burden on reporting laboratories and PHAs with a one-to-many connection and stringently validated HL7 Version 2.5.1 messages. The expansion to the ELR service presents an opportunity to build the next generation of reporting services with the Clinical Architecture tools and services deployed on the APHL Informatics Messaging Services (AIMS) platform. Datapult's ELR service is rule-driven, tailored reporting via a uniform HL7 Version 2.5.1 output that takes into consideration all the non-negotiable, jurisdiction-specific reporting requirements. The collaboration between Datapult and Clinical Architecture is an example of how technology innovation and HL7 standards can improve the data quality of public health reporting through applications and tools that will standardize those reports.

CSV to HL7 2.5.1 Electronic Laboratory Reporting

Data reporters that could not readily send HL7 Version 2.5.1 ELR messages relied on a publicly available Excel macro to convert comma-separated-values (CSV) to HL7 2.5.1 ELR that was brittle, redundant, not scalable and which impacted the quality and timeliness of data available to public health. Due to high volumes of COVID-19 testing and required reporting, it was imperative for Datapult's CSV to HL7 service to have a highly available, flexible, and responsive solution in place. A custom implementation of Clinical Architecture's Symedical and Pivot tools provided an enterprise, product-based, scalable approach to ingest CSV and output ELR compliant HL7 2.5.1 messages for delivery to identified jurisdictions via integration with the AIMS platform.

The CDC, APHL, and the Council of State and Territorial Epidemiologists (CSTE) collaborated with federal and private sector partners to create a standardized National ELR Flat File. The reference data and mappings available in the National ELR Flat File were implemented in Symedical so real-world data could be systematically mapped to the identified multi-source standard content. In order to increase automation and decrease manual effort, the mappings are curated and maintained via the self-learning mapping intelligence and other settings based on data roles and domains.

The expansion to the ELR service presents an opportunity to build the next generation of reporting services with the Clinical Architecture tools and services deployed on the APHL Informatics Messaging Services (AIMS) platform.

The result has been a highly reliable, flexible, and scalable solution for delivery of COVID-19 test results from some of the largest healthcare systems to jurisdictions across the United States.

Required Laboratory Results Reporting

Laboratories conducting infectious disease testing are required to report certain results to the relevant public health agency (PHA). Each jurisdiction, often a US state or territory, may define a condition with some nuance, which adds to the complexity of determining reportability.

Clinical Architecture and Datapult sought to alleviate much of this burden by creating a custom solution to transform HL7 messages semantically and syntactically and identify jurisdiction-specific conditions for reporting. The Clinical Architecture team created flexible ingest methods for labs, either CSV or HL7 Version 2.5, easing a resource constraint for terminology expertise that many laboratories did not have. The team also built inference rules utilizing the Reportable Condition Knowledge Management System (RCKMS) logic for Nationally Notifiable Diseases as the foundation, defined terminology value sets, and created jurisdiction-specific variants based on specific reportability requirements.

Continued on page 14

Continued from page 13

Meeting Public Health Reporting Requirements

The Datapult process supports audited modification of the jurisdiction-specific reportability criteria and subsequent inference logic changes based on RCKMS guidelines. Integration with AIMS enables an HL7 message to seamlessly flow through the Clinical Architecture tools for syntactic and semantic normalization and jurisdiction specific reportable condition detection for reporting.

HL7 Implementation at Scale

The utilization of Symedical and the AIMS platform accelerated the implementation of HL7 2.5.1 ELR nationwide, especially with assisting laboratories that could only report using a CSV format. Some of those that could generate CSV could not use the publicly available HL7 Generator Tool (an Excel macro) that would convert these results to HL7 Version 2.5.1 due to the volume of results or resource and technology limitations. Many times, the data quality and completeness were inadequate because there was no inline method for validation other than what was available in the National Flat File itself (or read and interpreted manually by non-terminologists via the published implementation guide). Laboratories were directly sending CSV via secure email or SFTP to PHAs, adding to the extreme burden that agency staff faced just to ensure that the data ingested into surveillance systems reflected accepted data standards.

Using Datapult's CSV conversion service enabled by Clinical Architecture tools saved hundreds of hours each month by one data reporter's account. Over 28,000 CSVs were received resulting in nearly 800,000 HL7 Version 2.5.1 messages delivered to PHAs.

The Expanded ELR service adds the ability to report a fully standardized and complete HL7 Version 2.5.1 message for a growing list of reportable results tailored to each jurisdiction's rules. Prior to the availability of this service, laboratories had to maintain their own reporting rules for each separate jurisdiction—which tests and which result types. Depending on the laboratory's test menu, range of states, and reportability criteria the onboarding process to report could take upwards of six months to a year. With Expanded ELR, that time frame is shortened to about three months to reach all jurisdictions that can accept HL7 Version 2.5.1 for ELR.

Using Datapult's CSV conversion service enabled by Clinical Architecture tools saved hundreds of hours each month by one data reporter's account.

Of additional benefit to PHAs is the inline validation and standardization. Every record that reaches the agency will be complete and include the correct standard codes and terms – which means that the data can be ingested into the surveillance system with no added work. Time and resources of the PHA could be spent on other tasks and not the onboarding or error handling for invalid and incomplete HL7 ELR.

Future of HL7 Implementation in Public Health

Throughout the remainder of 2023 and into 2024, Datapult will continue to deploy sets of pathogens/agents for ELR to achieve all those aligned with a Nationally Notifiable Disease first, and then those that are state-specific (not nationally notifiable). As this expansion continues, PHAs should benefit from the uniformity and completeness of the data they receive, and from the streamlined onboarding that Datapult and Clinical Architecture undertake first to ensure that they receive errorless, standardized HL7 messages.

As Expanded ELR matures, there are plans to include HL7 Fast Healthcare Interoperability Resources (FHIR®) as an input and as an output, broadening the type of data reporter that can use the service to get data to public health and to stay current with emerging standards as they are used in public health. The goal is to decrease the barriers and relieve some of the burden of reporting via innovative solutions and scaling HL7 standards implementation so that the highest quality data can be used for public health decision-making. ■

HL7 Standards Published Since May 2023

June 2023
STU Publication of HL7 FHIR® Implementation Guide: Identity Matching, Release 1 – US Realm
STU Publication of HL7 FHIR® Implementation Guide: Making Electronic Data More Available for Research and Public Health (MedMorph) Reference Architecture, Release 1- US Realm
STU Update Publication of HL7 CDA® R2 Implementation Guide: National Healthcare Safety Network (NHSN) Healthcare Associated Infection (HAI) Reports for Long Term Care Facilities (HAI-LTCF-CDA), Release 1, STU 1.1 – US Realm
STU Update Publication of HL7 CDA® R2 Implementation Guide: C-CDA Templates for Clinical Notes Companion Guide, Release 4.1 STU – US Realm
STU Update Publication of HL7 FHIR® US Core Implementation Guide STU6 Release 6.1.0
July 2023
STU Publication of HL7 FHIR® Implementation Guide: Cancer Electronic Pathology Reporting, Release 1 – US Realm
STU Publication of HL7 FHIR Implementation Guide: Electronic Medicinal Product Information, Release 1
Unballoted STU Update Publication of HL7 FHIR® Implementation Guide: SDOH Clinical Care, Release 2.1 – US Realm
STU Publication of HL7 FHIR® Implementation Guide: CodeX™ Radiation Therapy, Release 1- US Realm
August 2023
STU Publication of HL7 FHIR® Implementation Guide: US Public Health Profiles Library, Release 1 – US Realm
STU Publication of HL7 FHIR® Implementation Guide: ICHOM Patient Centered Outcomes Measure Set for Breast Cancer, Edition 1
STU Publication of HL7 FHIR® Implementation Guide: Health Care Surveys Content, Release 1 – US Realm
STU Publication of HL7 FHIR® Implementation Guide: Physical Activity, Release 1 – US Realm
STU Publication of HL7 FHIR® Implementation Guide: Quality Measures, Release 1 STU4 – US Realm
September 2023
Unballoted STU Update Publication of HL7 FHIR® Implementation Guide: Healthcare Associated Infection Reports, Release 1, STU 2.1 —US Realm
STU Publication of HL7 Cross Paradigm Specification: Health Services Reference Architecture (HL7-HSRA), Edition 1
Errata publication of HL7 CDA® R2 Attachment Implementation Guide: Exchange of C-CDA Based Documents, Release 2 US Realm
Informative Publication of HL7 EHR-S FM R2.1 Functional Profile: Problem-Oriented Health Record (POHR) for Problem List Management (PLM), Edition 1

Multiple Initiatives Give Patients Better Healthcare Data Access

Fall 2023 Update from the CARIN Alliance

The CARIN Alliance is a multi-sector group of stakeholders representing numerous hospitals, thousands of physicians, millions of consumers and caregivers, and an HL7 FHIR Accelerator program. We are committed to providing consumers and their authorized caregivers access to health information. Specifically, we are promoting the ability for consumers and their authorized caregivers to gain digital access to their health information via open Application Programming Interfaces (APIs) and the ability to use that information in any third-party application they choose.

Creating Access to Real-time Information Now through Consumer-Directed Exchange

By Ryan Howells, Program Manager, CARIN Alliance; Principal, Leavitt Partners

CARIN Digital Insurance Card IG

In 2021, the CARIN Alliance began work on the CARIN Digital Insurance Card implementation guide (IG), which provides a set of resources that payers can display to consumers via an HL7 Fast Healthcare Interoperability Resources (FHIR®) API. The IG focuses on standardizing how data elements from the physical insurance card can be transmitted in a FHIR-based exchange, leveraging the Coverage resource as well as Patient and Organization resources. On July 13, 2022, the STU 1.0.0 version of the IG was published.

In early 2023, we identified the need for a Digital Insurance Card that can also be made available to the member in a verifiable, tamper-proof package that the subscriber can store, manage, and share with health care providers as they see fit. To address this need, the next version of the IG will be expanded to include support for SMART Health Cards/Links. In this model, the payer will provide the member with a QR code or URL representing their digital insurance card, likely using the same modalities used to share digital cards today (e.g., payer mobile application, website, email). The member can present the QR code to be scanned during in-person visits or provide the QR code or URL to mobile or web forms during online registration or check-in flows. The provider then uses the QR code or URL to retrieve the Digital Insurance Card and verify its authenticity.

On February 28, 2023, a public working session was held with members from CARIN, HL7, and other organizations to discuss the CARIN IG for Digital Insurance Card and SMART Health Card/Link use case. A recording of the working session can be found here: *https://www.youtube.com/watch?v=Tjfajew3rlY*. The group agreed to participate in a future HL7 FHIR Connectathon to test this use case.

At the July 2023 CMS HL7 FHIR Connectathon, CARIN held a track to test the new SMART Health Card/Link use case. The goal was to generate, capture, display, and share a SMART Health Link (SHL) and consume, validate, and display the SHL Digital Insurance Card via a SMART QR code. Over thirty individuals, including representatives from CMS and ONC, participated in the track as observers or testers. Implementers from six organizations, who participated as testers, successfully retrieved the SMART Health Link that was generated by Evernorth. Most were then able to save the information in a user profile, render the information, and display the QR code within a third party app. A report out can be found here: *https://confluence.hl7.org/display/FHIR/2023+-+07+CARIN+IG+For+Digital+Insurance+Card*. We will continue testing the use case at future HL7 FHIR Connectathons.

CARIN Blue Button® IG

In 2019, the CARIN Alliance Health Plan Workgroup developed a FHIR-based API that could be sent to a consumer-facing application and was designed to answer the challenge for health plans to "meet or exceed" the CMS Medicare Blue Button 2.0 capabilities. The CARIN Consumer Directed Payer Data Exchange Implementation Guide (CARIN IG For Blue Button®) describes the CARIN for Blue Button® Framework and Common Payer Consumer Data Set (CPCDS), providing a set of resources that payers can display to consumers via a FHIR API to meet the CMS requirements related to the Patient Access API. STU 1.0.0 was published in November 2020; minor technical corrections were published in early July 2021 as STU 1.1.0; and STU 2.0.0 was published November 28, 2022. CARIN anticipates that there will be an updated version of the CARIN IG for Blue Button soon and is currently reviewing Jira tickets and moving them through the HL7 process. In addition, one of the major changes that the workgroup is proposing to include in the IG is the addition of non-financial explanation of benefits (EOBs) to meet the CMS Advancing Interoperability and Improving Prior Authorization Processes Proposed Rule. The proposed updates will tested at upcoming HL7 FHIR HL7 Connectathons.

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Fall 2023 Update from the CARIN Alliance

CARIN Consumer Facing Real Time Pharmacy Benefit Check (RTPBC) IG

Using the RTPBC IG, a patient can learn the cost of, and insurance coverage related to, medications they have been prescribed. Specifically, how a medication will be covered by their insurance, including out of pocket costs and any coverage restrictions or requirements that might apply discount pricing available for the medication. The STU 1.0.0 was published August 8, 2020. CARIN is currently in the process of requesting an STU extension for the IG and continues to actively recruit implementers interested in continuing to progress and implement the IG.

Digital Identity & Authentication

In 2022, the CARIN Alliance completed a year-long OpenID Connect-based Digital Identity Federation Proof of Concept (PoC) with the HL7 FAST Digital Identity Tiger Team, the Department of Health and Human Services (HHS) NextGen External User Management System (XMS) team, the Office of the National Coordinator for Health Information Technology (ONC), the Centers for Medicare and Medicaid Services (CMS), and private sector stakeholders. Once implemented in production, the PoC's work eliminates the need to create separate "portal" accounts for data holders.

The PoC tested this objective and demonstrated its feasibility through four workgroups: Credential Service Provider (CSP) Standalone, CSPs with Health Information Exchanges (HIEs), CSPs with HHS XMS, and CSPs with UDAP™ Tiered OAuth (which utilized the Interoperable Digital Identity & Patient Matching IG). The PoC decided to require NIST 800-63-3 Identity Assurance Level 2 (IAL2) certified credentials during the testing, but considered the HL7 FAST Digital Identity Tiger Team's recommended levels between IAL1 and IAL2, discussed in their working draft. Video demos of the testing can be found on the CARIN Alliance YouTube channel: *https://www.youtube.com/channel/UCrtsZllAJXZ09aPphSt1m2w*.

The PoC recommended two preferred paths toward identity federation: (1) leveraging HHS XMS as a national identity broker service, and (2) leveraging the UDAP™ Tiered OAuth protocol. Both options will enable the health care ecosystem to allow individuals the ability to identity proof themselves once, establish their own digital identity credential, and then use that digital credential across multiple relying parities as their own "single sign on" for U.S. healthcare.

A more detailed description of the PoC's findings can be found in the March 2023 report (*https://www.carinalliance.com/wp-content/uploads/2023/03/Proof-of-Concept_Final-Report.pdf*), including lessons learned and recommendations. These recommendations help define how the healthcare system can move toward a more interoperable, equitable, and privacy-centric federated digital identity ecosystem.

The PoC also informed the creation of the CARIN Credential Policy: *https://www.carinalliance.com/wp-content/uploads/2023/03/CARIN-Credential-Policy_3.20.2023.pdf*). The CARIN Credential Policy is an openly available, public good that creates policy equivalency across different identity trust frameworks established by the National Institute of Standards and Technology (NIST). The CARIN Credential Policy was developed in collaboration with DirectTrust and the Kantara Initiative, and provides a common policy that accreditation bodies can observe to achieve policy equivalence across trust frameworks.

The CARIN Alliance workstreams meet regularly. If you would like to engage please feel free to contact Ryan Howells, *ryan.howells@leavittpartners.com*, or Mark Roberts, *mark.roberts@leavittpartners.com* ■

Vulcan HL7® FHIR® Accelerator and Gravitate-Health

FHIR® Implementation Guide (IG) for Electronic Medicinal Product Information (ePI)

Ensuring patients and healthcare professionals have easy access to trusted and up to date Medicinal Product Information that can be adapted to support user needs is a topic of global importance.

Therefore, to maximize international cooperation and accelerate progress, the Vulcan HL7® FHIR® Accelerator and Gravitate-Health collaborated to engage the global community and drive development of a new implementation guide that outlines how to create and exchange Medicinal Product Information using HL7's standard for Fast Healthcare Interoperability Resources (FHIR®). To see the guide, please visit: *https://hl7.org/fhir/uv/emedicinal-product-info/*.

A medicine's Product Information is a pivotal source of regulated and scientifically validated information that assists healthcare professionals in prescribing and dispensing medicine and informs consumers or patients about its safe and effective use. Product Information can have different names depending on the country:

- USA: Prescription Drug Label and/or Patient Package Insert and/or United States Prescribing Information (USPI)
- Europe: Summary of Product Characteristics (SmPC) and Package Leaflet
- Japan: Package Insert (JPI) and/or Drug Guide for Patient
- Canada: Product Monograph and Patient Medication Information

Usually, Product Information is made available to users in paper and/or ePI—whereby the latter version is mostly based on Portable Document Format (PDF) and available online. These formats do not always meet user and, specifically, patient needs. For example, they can be difficult to search, you cannot increase font size, and they offer low accessibility support.

FHIR is an important enabler for innovation since it has a strong foundation in web standards, is free for use, fast and easy to implement. As a result, it allows us to leverage an international community of experts and modern health solutions built for the internet age. Particularly important is how FHIR enables interoperability between ePI and healthcare use cases like ePrescribing, eHealth records, and data sharing across devices.

Importantly, through this standard, it will be easier to create patient-focused digital information tools that will help empower patients, make them more confident in their healthcare journey and encourage safe use of medicines for better health outcomes and quality of life.

We encourage all international health authorities, national medicinal product compendia, and the biopharmaceutical industry to come together as a global community to facilitate rapid implementation of this standard and for continued maintenance throughout its lifecycle, delivering a transformational future landscape for all.

About Vulcan

An HL7® FHIR® Accelerator, Vulcan's mission is to accelerate interoperability of health data to seamlessly integrate clinical and translational research with clinical care in order to reduce burden, enable learning health systems, and improve patients' lives. Vulcan is a diverse research community that creates FHIR® implementation guides for the exchange of health and research data, creating alignment at the development of standards through to implementation. Vulcan is currently accepting new members. To learn more about participating in Vulcan, please contact vulcan@hl7.org or visit *https://hl7vulcan.org/*.

About Gravitate-Health

Gravitate-Health is a public-private partnership with the mission to equip and empower citizens with digital information tools that make them confident, active, and responsive in their patient journey, specifically encouraging safe use of medicines for better health outcomes and quality of life. The partnership has 40 members from Europe and the US, co-led by University of Oslo (coordinator) and Pfizer (industry lead), and funded under contract no 945334 by the Innovative Medicines Initiative (IMI) – a joint undertaking of the European Commission, the European Federation of Pharmaceutical Industries and Associations (EFPIA), IMI2 Associated Partners. For more information, visit *https://www.gravitatehealth.eu/* ■

Utilize Gravity Project's Free SDoH Data Sharing Resources

As HL7 FHIR Accelerator Gravity Project and Civitas Networks for Health continue to support our Pilot Sites doing important work nationwide to embed social determinants of health (SDoH) data-sharing into their processes, we also want to offer the public free resources to do this work with your respective organization(s). All tools and resources are open-source and free to use—visit the Gravity Project Confluence page to utilize these resources today.

Pilot Sites Update: On Thursday, July 27, Civitas and the Gravity Project team hosted our monthly Pilots Affinity Group meeting. This outlet for an ongoing, vibrant conversation about SDOH data-sharing implementation continues to bring wonderful learnings to the table that organizations nationwide can take on board. Here are a few takeaways about the progress of our Pilot Site's work:

- Gail Shenk from MITRE presented on Gravity Project's CMS HL7® FHIR® Connectathon findings including a new use case for a Social Care Supplemental Benefit Proof of Concept
- Key themes from our four public health/health equity pilot sites include building standardized terminologies beyond existing processes and moving from encoding just instruments to interventions to better align with regulatory drivers (e.g., quality measures)
- In line with the goal of creating universal education to assist implementation, the group discussed considerations for the planning phase of implementation, led by Gravity Project Terminology Director, Sarah DeSilvey. This discussion included domain selection in line with regulatory drivers and instrument selection with an eye to interoperability and inclusiveness.
- This conversation uncovered that guidance should recommend social risk screening questions rather than panels to decrease the implementation burden and increase alignment
- Gravity Project Terminology team member, Himali Saitwal, presented about creating Q&A value sets in VSAC to support implementers and align with the SDOH CC IG. You can find these value sets within the SDOH CC IG under guidance for Observation Screening Response (linked here)
- Participants requested information to learn more about the Value Sets; Gravity prepared an educational 101 session in 2021 to support implementers early in their journey (access to existing webinar linked here).

Access all materials from this presentation, including Gravity Project Value Sets, via the Gravity Project Confluence Pilot Sites page: *https://confluence.hl7.org/display/GRAV/Pilots+Workstream* ■

By Kelsey Matheson, Writer, Civitas Networks for Health and Gravity Project

DA VINCI CHAMPIONS: 2022








Champion attributes

- Industry above self
- Passion for making the healthcare system work better
- Supporting others
- Promoting change

Da Vinci Project Names *2022 Community Champions*

For the third year, the HL7 Da Vinci Project has recognized Community Champions, innovative leaders in health IT who are helping to guide the evolution of the HL7 Fast Healthcare Interoperability Resources (FHIR®) standard.

"A FHIR accelerator's greatest strength are the people partnering with us to solve today's interoperability challenges," said Kirk Anderson, HL7 Da Vinci Project Steering Committee member and Vice President and Chief Technology Officer at Cambia Health Solutions.

"The Da Vinci Community Champions help cultivate transformational change through collaboration between payers, providers and vendors and a shared vision of improving healthcare data exchange."

The Da Vinci Project named eight healthcare technology experts as its 2022 Da Vinci Community Champions. The individuals recognized for this prestigious honor represent the diverse membership of the HL7 Da Vinci Project, a collaborative multi-stakeholder effort including health plans, hospital systems, accountable care organizations (ACOs) and technology vendors. Honorees were nominated by their peers for their efforts in 2022.

As a designated HL7 FHIR Accelerator™ Program, the Da Vinci Project is a private sector consortium dedicated to improving the healthcare delivery system by accelerating interoperability standards to support value-based care, reduce administrative burden, automate workflow and improve provider teams' ability to impact health outcomes.

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By Leslie Amorós, Communications Lead, CodeX and Da Vinci Project FHIR Accelerators, and Senior Communications Consultant, Point-of-Care Partners

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Da Vinci Project Names *2022 Community Champions*

The Da Vinci Project leadership created the Community Champions Program to recognize and celebrate the talented problem solvers advancing interoperability within the industry. The Community Champion Program puts a spotlight on individuals who display the unique traits of "industry above self, a passion for making the healthcare system work better, supporting others, and promoting change."

The HL7 Da Vinci Project's 2022 Community Champions are:

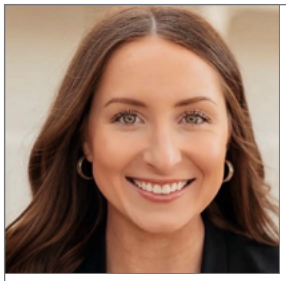
- **Susan Bellile**, Principal, Clinical Solutions, Availity
- **Caitlyn Campi**, Digital Interoperability Product Owner, Florida Blue
- **Kyle Johnsen**, Software developer, Epic
- **Tom Loomis**, Architecture Senior Advisor, Interoperability, Evernorth
- **Michael Marchant**, Director, Interoperability and Health Information Exchange, UC Davis Health
- **Ezequiel (EZ) Morales**, Architecture Senior Advisor—Interoperability, Evernorth
- **Snapper Ploen**, Associate Director of Marketing, Content Creation & Distribution, MCG Health
- **Matt Schuller**, Director, Health IT and Industry Standards, Interoperability Solutions, Blue Cross Blue Shield Association

Anderson noted that each individual was nominated by their peers based on their daily applied effort, exemplary achievements and unique contributions to the Da Vinci Project in 2022, and said, "We are honored to have the support of community members who share our goals, and to encourage and inspire others to join us on this journey to improve the delivery of care using FHIR APIs." ■

Susan Bellile

Principal, Clinical Solutions
Availity

"The Da Vinci project plays a critical role in accelerating the adoption of FHIR by bringing together representatives of payers, providers and vendors to collaborate on approaches to specific use cases. All parties, especially patients, benefit from more consistent and truly interoperable exchanges of healthcare data."



Caitlyn Campi

Digital Interoperability
Product Owner
Florida Blue

"The HL7 Da Vinci Project is important as it provides health plans and other stakeholders with practical implementation guidance for using FHIR to achieve interoperability through compliance, provider, and digital channels. This guidance has allowed us as a health plan to support value-based care, foster industry collaboration with a multitude of stakeholders, and ultimately has led us to improved healthcare outcomes with a new experience for our members through interoperability."

Kyle Johnsen

Software Developer
Epic

"The potential impact automating prior authorization would have on so many lives keeps me working on it over the years, and Da Vinci bringing together people with vastly different backgrounds but the same shared goal keeps me energized to build a strong foundation."

Michael Marchant

Executive Director—Interoperability
UC Davis Health

"The Da Vinci Project is a critical industry initiative as it is addressing one of the largest administrative costs in healthcare – the exchange of information between payers and providers. That cost is not only dollars, but significantly impacts the timeliness and therefore quality of the care patients / members receive—which adds a multitude of costs—that include the health and wellbeing of everyone involved."

Snapper Ploen

Associate Director of Marketing, Content Creation & Distribution
MCG

"The HL7 Da Vinci Project has been a sterling example of industry collaboration with the goal of improving patient care delivery as well as outcomes. As a member of the MCG Health team partnering with payers, providers, and government stakeholders, I feel like Da Vinci is leading historical transformations in healthcare technology which are already producing measurable benefits to patients."

Tom Loomis

Architecture Senior Advisor—Interoperability Focus
Evernorth

"Da Vinci is executing on its goal of bringing payers and providers together to address industry interoperability challenges. Having spent a large part of my career on the provider side, not working on the payer side, solutions and challenges are not always obvious. Fostering conversations that have both sides present is extremely important."

Ezequiel Morales

Architecture Senior Advisor, Interoperability
Evernorth Health Services

"'If you want to go fast, go alone, if you want to go far, go together'.

Da Vinci is a forum that will take us far, together."

Matt Schuller, MS, RHIA

Health IT and Industry Standards
BCBSA
Interoperability Solutions

"As a leader in health IT and industry standards, it was only natural for the BCBS System to step in on the early formation of this thought-leading interoperability initiative. As stewards of Blue System data, BCBSA and Blue Cross and Blue Shield companies have long been champions for health data exchange, and we believe the next generation of leadership in health care data interoperability will require significant coordination, collaboration, perseverance, innovation, and the willingness to break down long-standing barriers."

Collaboration is Key to CodeX Momentum

CodeX, the HL7® Fast Healthcare Interoperability Resources (FHIR®) Accelerator™ working to advance the adoption of FHIR as the standard to obtain high-quality, computable data for complex patient healthcare and research, is making significant strides in its domains of oncology, cardiovascular health, and genomics.

Several CodeX highlights to date reflecting this great momentum are included in the overview below.

Highlights include:

- New CodeX members
- CodeX Radiation Therapy Implementation Guide publication
- Regulatory developments showcase recognition of CodeX work
- United States Core Data for Interoperability (USCDI) and CodeX inputs
- Recent and Upcoming Events

New Members

CodeX continues to gain momentum as its work and thought leadership become more widely known. New members in 2023 include:

Benefactor Members

- American College of Cardiology
- American Heart Association
- American Medical Association
- Epic Systems Corporation
- Foundation Medicine, Inc.
- Oracle America, Inc.

Developer/Implementer Members

- AvoMD, Inc.
- Elekta Solutions AB
- Graphite Health
- InfoWerks Data Services
- mmHG, Inc
- Oak Bioinformatics
- Onco, Inc.
- Syneos Health, Inc.
- United Biosource, LLC (UBC)

By Leslie Amorós, Communications Lead, CodeX FHIR Accelerator; and Senior Communications Consultant, Point-of-Care Partners.

Government Member

- National Cancer Institute, a participating institute of the National Institutes of Health and an agency of the U.S. Department of Health and Human Services

View the CodeX membership to learn who is shaping the course of this project and the benefits of joining: *https://confluence.hl7.org/display/COD/CodeX+Membership*.

CodeX Radiation Therapy Implementation Guide Publication

A foundational milestone was achieved in July with the publication of the CodeX Radiation Therapy Implementation Guide (STU 1). This implementation guide, leveraging HL7 FHIR, describes how to represent, model, and exchange radiation therapy information that is generated during a patient's radiation therapy planning and treatment. This will result in a seamless way to share radiation therapy data for care coordination and data reuse. Kudos to the incredible team working on the radiation therapy use case, as their commitment and perseverance are advancing interoperability and improving patient care in oncology.

Regulatory Developments Showcase Recognition of CodeX Work

Federal agencies have shown an interest in CodeX work over the past few months, demonstrating real-world viability and potentially providing the impetus for widespread adoption.

- Stemming from the Centers for Medicare & Medicaid Services (CMS) interest in the CodeX Prior Authorization and Quality Measures use cases, the mCODE® (minimal Common Oncology Data Elements) data standard was named as the data submission option for the CMS Enhancing Oncology Model. A core set of non-proprietary, open-source structured data elements for oncology, mCODE adoption promises to greatly increase the amount of high-quality shareable data for all cancer types, allowing data to be collected once and used for multiple purposes by clinicians and researchers to support patient care. The data element reporting format aligns directly with mCODE, and 14 out of 15 reported data elements are explicitly in mCODE. The missing data element (history of metastatic disease) can be derived from the mCODE specification.
- The Office of the National Coordinator for Health Information Technology (ONC) issued a proposed list of data elements for the United States Core Data for Interoperability Plus (USCDI+) Quality that includes eight data elements from mCODE.
- The CodeX Radiation Therapy Treatment Data for Cancer use case developed the Radiotherapy Course Summary and Radiotherapy Volume data elements that are pointed to in the USCDI+ Quality Data Elements (QDE) proposed list.
- Listening sessions were held with ONC and CMS for the Prior Authorization in Oncology use case, which aims to reduce burden, automate approvals, and provide patients with timely care without delay because prior authorization turnaround time is reduced.
- ONC presented at the CodeX July Community of Practice on USCDI/USCDI+ related to Quality Measurement. During the meeting the presenters also recognized the synergy with CodeX and USCDI+ for Cancer.

United States Core Data for Interoperability (USCDI) and CodeX Inputs

CodeX has actively supported both new submissions and public comments on various data elements for USCDI. Most recently, USCDI v4 added 20 data elements and one data class to USCDI v3. On these elements, CardX supported

public comment to USCDI v4 for Average Blood Pressure, which was adopted into the official USCDI v4. In addition, ONC recently accepted submissions for new data elements for USCDI v5 through September 20, 2023, and sought to collect inputs from the CodeX community.

"The Dish on Health IT" Podcast Appearance

The episode topic, CodeX Advances Clinical Specialty Terminology Data Standards Development and Adoption, featured Su Chen, MD, Program Manager and Clinical Director of CodeX, and Michelle Galioto, Deputy Program Manager of CodeX, to discuss the mission and scope of the CodeX community. Listen to The Dish on Health IT podcast (pocp.com) and learn more: *https://info.pocp.com/codex_clinical-specialty-terminology?utm_campaign=The%20Dish%20on%20Health%20IT%20Podcast&utm_content=258041603&utm_medium=social&utm_source=linkedin&hss_channel=lcp-1075188*.

HL7 Da Vinci Project Community Roundtable Provides Forum for Showcasing Accelerator Collaboration

CodeX presented with Da Vinci at the August event, "Reducing Prior Authorization Burden and Improving Oncologic Care with HL7 FHIR." Ellen Anderson, Enterprise Architect, Evernorth; Kirk Anderson, Vice President and Chief Technology Officer and Chair, Da Vinci Steering Committee, Cambia Health Solutions; and Su Chen, MD, CodeX Program Manager and Clinical Science Principal, MITRE, presented on why and how Da Vinci is tackling prior authorization and how CodeX is leveraging the work of the Da Vinci Implementation Guides (IGs), which have been referenced in federal proposed interoperability rules, to tackle prior authorization challenges in Oncology. You can view the recording and slides on the Da Vinci Confluence presentation page: *https://confluence.hl7.org/display/DVP/Da+Vinci+Video+Presentations*.

CodeX Community of Practices Highlight Progress

Recent Community of Practice sessions allowed participants to gain insight and understanding into recent developments in several IGs.

- The July Community of Practice began with "Collectively Building the Next Generation of Quality Measures: A Discussion with the ONC on Quality Standards and Leveraging USCDI+ Quality," where special guests Kyle Cobb, Acting Deputy Director of Standards, and Lisa Wagner, Senior Advisor, both of the Office of the National Coordinator for Health Information Technology (ONC), discussed the development of the United States Core Data for Interoperability Plus (USCDI+) Quality initiative. To complement the discussion, Anthony DiDonato, Senior Healthcare Analyst at MITRE, and Gail Winters, Integrations Architect at Telligen, presented "CodeX Quality Measures for Cancer: Use Case Overview and Next Steps." They shared an overview and early successes from the Quality Measures for Cancer use case.
- Genomics was the focus of the August Community of Practice and included two presentations. The first, "Advancing Genomics Data Exchange Using HL7 FHIR at the Molit Institut," featured lessons learned from an early adopter of HL7 FHIR in this realm, Patrick Werner of the Molit Institut, a small independent non-profit research organization in Germany that has received FHIR genomic reports for more than two years. During the second presentation, "The GenomeX Opportunity: Exploring the Art of the Possible," MITRE's May Terry shared her insights into how interoperable genomic data sharing can improve the quality and safety of patient care by enhancing research efforts and enabling precision medicine at the point of care. She also provided a brief update regarding the latest GenomeX progress and several opportunities for genomic data sharing within CodeX use cases.

To learn more and update about prior CoP sessions, visit: *https://confluence.hl7.org/display/COD/Monthly+Meeting+Minutes*

Upcoming Events and Engagements
CodeX has a full calendar and many opportunities for participation and education. A few highlights include:

- Oct. 23-25, NCQA (National Committee for Quality Assurance) Innovation Summit, Cardiovascular Hypertension Management Use Case, James Tcheng, MD, University of Nebraska Medical Center
- Oct. 27-28, ASCO (American Society of Clinical Oncology) Quality Care Symposium, CodeX Quality Measures for Cancer Use Case, Stephanie Jones, ASCO; Doug Williams, CetanniPark; Anthony DiDonato, MITRE
- Nov. 11-15, AMIA® (American Medical Informatics Association®) Annual Symposium, Introduction to HL7 FHIR Genomics Interoperability Standards, Robert Dolin, Elimu; Srikar Chamala, CHLA; Bret Heale, Humanized Health Consulting; May Terry, MITRE
- Nov. 15-17, AMA (American Medical Association) CPT (Current Procedural Terminology) and RBRVS (Resource-Based Relative Value Scale) Symposium, CodeX Prior Authorization in Oncology Use Case Presentation, Alison Vickman, eviCore; Kim Boyd, Point-of-Care Partners; Su Chen, MITRE

Join CodeX in its groundbreaking work. To learn more about CodeX, visit *https://www.hl7.org/codex/*. ■

Instrumental Champions

CodeX grew from its initial focus on oncology to other complex health data domains. Several champions were recently recognized during a CodeX Community of Practice for their trailblazing initiative.

The vision of Arthur Hermann from Kaiser Permanente accelerated the efforts of the Clinical Genomics Working Group. His understanding of the interconnectedness of the genomics world was essential in building the momentum and setting the course for the domain. From initially convening key stakeholders and multiple viewpoints, to driving the development of the first two use cases, his collaborative work set the course for this area of interest.

"CodeX is incredibly grateful for his unwavering commitment in establishing the foundation of the GenomeX domain and for his continued support in developing GenomeX into the incredible community that he envisioned, said Elizabeth Canzone, director of operations and deputy program manager of CodeX and principal human factors engineer at The MITRE Corporation.

In addition to the genomics work, the team at the Center for Intelligent Health Care at the University of Nebraska Medical Center advanced efforts in the realm of cardiology. James Tcheng, John Windle and team, Tom Windle, and Melissa Christian brought their expertise as clinicians and scientists in support of CodeX. Led by Tcheng, the team championed the creation of CardX, the new domain focused on cardiology. They led the development of the first use case, hypertension management, through a FHIR Implementation Guide focused on self-measured blood pressure monitoring.

"Due to CIHC thought leadership, CardX has garnered support from diverse stakeholders, including key medical associations, representation from government, healthcare IT companies, life science industries, and academia; thus, enhancing the impact of CardX and growing the CodeX community at large," Canzone noted.

Interoperability with Social Services is Essential

Achieving Health Equity

Just 20% of a person's health is determined by having access to healthcare and the quality of that care, which underscores the importance of employing a whole person approach to health and wellness. Of the remining 80%, 40% consists of socioeconomic factors such as education, income, job status, family/social support, and community safety. This is where we can make a high impact in population health with some focused efforts.

While the importance of clinician-led healthcare cannot be underestimated, social determinants of health (SDOH) play an oversized role in health outcomes. That's why initiatives are underway to bring social services organizations into the healthcare ecosystem by expanding the HL7 Fast Healthcare Interoperability Resources (HL7 FHIR®) standards.

Ensuring that terminologies and use cases of social service providers are built out and adopted within the FHIR standard allows for point-of-care SDOH data to help guide clinicians in healthcare settings, as well as impact community-based organizations (CBOs) as they work to meet each person's individual SDOH needs.

Data interoperability is critical for health equity, tracking the patient from care setting to social services organization. To be truly effective, community service organizations need interoperable, low-cost tools to join the data exchange ecosystem.

Social Services Disconnected from the Patient Experience

Racial and ethnic health disparities that can be partly explained by SDOH issues cost the U.S. economy $451 billion, according to a 2018 study funded by the National Institutes of Health (NIH), a 41% increase over a 2014 study (*https://www.nih.gov/news-events/news-releases/nih-funded-study-highlights-financial-toll-health-disparities-united-states*).

Physicians find their inability to handle SDOH issues as part of a patient visit extremely frustrating, according to a survey from The Physicians Foundation. Nearly all physicians (94%) indicated that the health outcomes of at least some of their patients were affected by SDOH factors, including 23% who said their entire patient population faced such issues (*https://physiciansfoundation.org/surveys/*).

In the same survey, 80% of physicians agreed that United States could not improve health outcomes and reduce expenses without addressing SDOH issues. Pain points for physicians include:

- Limited time to discuss SDOH issues during a patient visit (71%)
- Lack of workers to help patients navigate community resources (64%)
- Community resources that are unavailable, inadequate, or difficult to access (57%)

When asked how to solve SDOH challenge for patients, eight in 10 physicians support investments in the following strategies:

- Increase community capacity to address a person's SDOH needs
- Enhance technological and human capacity to connect people with the community resources they need
- Screen patients to identify social needs
- Reduce payer reporting requirements and other administrative burdens to provide time to address SDOH
- Introduce financial incentives for physician-directed efforts to address SDOH

Michelle Zancan RN, BSN, Co-Chair, Human and Social Services Work Group, HL7 International; Senior Clinical Analyst, Zane Networks

Adopting technologies that can share meaningful SDOH data with physicians and appropriate health data with CBOs will go a long way toward helping patients find the appropriate resources when they are needed. This will improve healthcare outcomes, improve the wellness goals of the individual, and reduce the overall cost of healthcare.

Efforts Underway to Incorporate Health Equity

The industry is moving toward widespread interoperability among physicians and hospitals through the Trusted Exchange Framework and Common Agreement (TEFCA) that supports interoperability of health records. In February, the Office of National Coordinator approved the first six qualified health information network (QHIN) candidates to implement TEFCA.

One significant issue is how data in one system maps onto another system. Adding social services to this mix would further muddy the waters, as each type of entity likely has its own language and rules around what the same terminology means.

The Centers for Medicare & Medicaid Services (CMS) increasingly has been specifying HL7 standards for data interchange. HL7 FHIR builds and expands on earlier versions and is specified as the medium for data exchange in the 21st Century Cures Act.

One HL7 push is the FHIR Accelerator, Gravity Project, launched in 2019 as a public collaborative effort to develop, test, and validate standardized SDOH data for use in patient care and care coordination among health and human services sectors, population health management, public health, value-based payment, and clinical research.

The goal is to develop common standards so the same word or phrase means the same thing across the care ecosystem. For example, if someone at a food bank enters an adverse event with a client, it would have the same meaning at a hospital or a physician's office.

The Gravity Project is mapping terminology around these SDOH issues:

- Food insecurity
- Housing instability/Homelessness
- Inadequate housing
- Transportation
- Financial strain
- Demographics
- Material hardship
- Stress
- Intimate partner violence
- Social isolation

A second HL7 push is the establishment of the Human and Social Services Work Group. The primary focus of this group is to extend the capabilities of the FHIR standard, enabling the incorporation of social services data. Among their initial projects, they sought stakeholder input from the social services community to create the Implementation Guide for Humans Services Directories. This guide aims to standardize the community-based services utilized by Community Resource Inventories. By fostering collaboration through the exchange of meaningful digital data, this initiative will allow for comprehensive whole-person care.

Health Equity Requires Two-Way Data Exchange

Data exchange with social services shouldn't be just one way. Social workers and other services organizations should also be able to refer people directly to a federally qualified health center (FQHC) or other provider, meeting people where they are to get them the services they need. Because of potential language issues, illiteracy, forgetfulness, fear, and other factors, a direct referral is much better than handing a client a piece of paper.

True health equity won't be achieved until social services agencies gain access to the healthcare data exchange infrastructure.

Achieving health equity means getting everyone on the same page, including social services agencies. The goal is better outcomes, lower physician frustration, time and documentation savings, reduced healthcare costs, and—most of all—whole-person care for every individual.■

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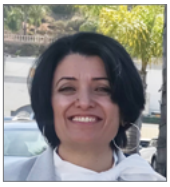

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