35th Annual Plenary & Working Group Meeting

Virtual Event

Monday, September 20, 2021
Monday

HL7 Annual Plenary Meeting
Welcoming Comments

HL7 CEO
Charles Jaffe, MD, PhD
20 September 2021
Change management was identified by the Board as a critical component of the Re-envisioning process.

An RFP for change management was made publicly available. 3 companies submitted proposals.

A detailed evaluation process was approved by the Executive Committee, based upon specific success elements, including:

- High quality planning and tooling, maintainable by staff.
- Built in measurement and analytics
- Support for the global reach of HL7, by addressing the needs of an international stakeholder community
- Capabilities both durable and scalable.

The Change Management contract, approved by the Board, has been awarded to Root.
Public Health FHIR Accelerator

• CDC and ONC are collaborating with HL7 to establish a FHIR Accelerator for Public Health.

• The Accelerator will help promote rapid, nationwide adoption of FHIR-based solutions focused on real-world needs to promote equitable and effective use of data for public health.

• **Membership is open** to implementation partners from Public Health agencies, private sector, philanthropic organizations, and others.

• By providing the **resources and technical support** through the Accelerator, the public health community will work with the FHIR Community and other HL7 FHIR Accelerators to extend current FHIR artifacts in a manner that is flexible and reusable.

• Please help to **name the Accelerator** through the survey in the left navigation in Whova.

• Join the discussion during the **Public Health WG meeting** on Friday Q1.
FAST FHIR Accelerator

• FHIR at Scale Task Force (FAST) will transition from an ONC convened initiative to a FHIR Accelerator in 1Q22.

• For 3 years FAST has worked to replace core infrastructure barriers with consensus-based, scalable FHIR solutions.

• Currently FAST Implementation Guides are under development through HL7, have been tested at Connectathons, and are on the path to balloting.

• FAST will continue to evolve under the FHIR Accelerator model, with continued support from ONC, CMS and the current FAST community.

• Please join the discussion during the FAST Birds of a Feather to be held on Tuesday from 12-1:30.
HIMSS Accelerate: HL7 Education

• HL7 and HIMSS Accelerate have entered into a collaborative, non-exclusive partnership to distribute HL7 education resources.

• Accelerate will provide a purpose-built digital platform connecting health professionals to content from peers and thought leaders, and that includes professional development tools, networking opportunities and curated content.

• HL7 International will be an inaugural partner of Accelerate, providing continuing education and on-demand content, jointly managed by HL7 and HIMSS.

• Accelerate will be available to all HL7 International members, HIMSS members and individual users, as well as to enterprises, organizations and associations.

• Expected go-live date: Fourth Quarter 2021
Health Data Management: HL7 Channel

• HL7 and Health Data Management have entered into a collaborative, non-exclusive content partnership providing HL7 with a dedicated publication channel hosted within HealthDataManagement.com.

• Content will be jointly managed and provided by HL7 and HDM.

• HDM has curated a network of partners leveraging combined brand recognition, audiences and content to better inform the healthcare community.

• This Channel Partnership will allow HL7 to share its thought leadership and subject matter expertise with core audiences, as well as extend to new strategic audiences, and to support our promotional goals.

• Expected launch date: November 2021
RAND Partnership

- RAND, a global organization with offices in Europe and Australia, has approached HL7 with opportunities for collaboration across the realm of standards implementation.

- RAND has proposed to share its considerable expertise in standards implementation, digital health, and health research.

- RAND has offered its support in obtaining grants and developing other funding opportunities through its active relationships with public agencies and private organizations interested in advancing healthcare interoperability.

- RAND has specifically proposed to conduct environment scans, gap analyses, and effectiveness studies of implementation best practices.

- RAND is staffed with a large workforce of informatics professionals who will provide technical and strategic support on a pro bono basis.

- HL7 will address this opportunity with our traditional commitment to openness, transparency, and non-exclusivity.
The creation of an HL7 Implementation Division was unanimously approved and embraced by our Advisory Council and the Board of Directors.

The Division will draw upon expertise of the HL7 community for governance and support.

The Division will be fully integrated with HL7 standards development processes and governance to provide testing support during specification development.

The Division will collaborate with the implementer community to create and manage a standards ecosystem to support testing.

The Division will develop program management services to support Accelerators and other global collaborative groups.

Everyone is encouraged to participate in a Birds of a Feather meeting to discuss the Implementation Division today 5:30-7 PM EDT.
Some Final Thoughts

• The establishment of an HL7 Implementation Division will ultimately require the contributions of all of you.

• The underlying rationale for the new Division is to divide work, not people.

• There will be a trajectory in the maturation of this new vision that will require time, innovation, remarkable collaboration, and patience.

• The Implementation Division is, first and foremost, a means to provide better and more focused implementation support critical to achieving of our vision.

• Please join the New International Structure Task Group Birds of a Feather event to be held this evening, which will be the first of many opportunities to share your ideas and perspective.
Monday

Panel: The Use of Artificial Intelligence (AI) in Healthcare

Moderator: Walter Suarez, MD, MPH, FHIMSS
Chair, HL7 Board of Directors
Monday Plenary

- 9:10 – 10:40 AM ET
  - Panel Presentation: The Use of Artificial Intelligence (AI) in Healthcare
    - Moderator: Walter Suarez, MD MPH, HL7 Board Chair
    - Panelists:
      - Xihong Lin, PhD, Professor of Biostatistics & Coordinating Director of the Program in Quantitative Genomics, Harvard University
      - Jennifer Hall, AI Senior Data Scientist, NHSX, London, England
      - Sonia Benitez, MD, PhD, Internal Medicine Specialist, Hospital Italiano, Buenos Aires, Argentina
      - Julian Sham, MD, Healthcare Lead, Asia Pacific & Japan, Amazon Web Services, Singapore
Monday

Topic: AI in Genomics & Population Health

Panelist: Xihong Lin, PhD
Professor of Biostatistics & Coordinating Director of the Program in Quantitative Genomics
Harvard University
Monday Plenary

- 9:10 – 10:40 AM ET
  - Panel Presentation: The Use of Artificial Intelligence (AI) in Healthcare
    - Moderator: Walter Suarez, MD MPH, HL7 Board Chair
    - Panelists:
      - Xihong Lin, PhD, Professor of Biostatistics & Coordinating Director of the Program in Quantitative Genomics, Harvard University
      - Jennifer Hall, AI Senior Data Scientist, NHSX, London, England
      - Sonia Benitez, MD, PhD, Internal Medicine Specialist, Hospital Italiano, Buenos Aires, Argentina
      - Julian Sham, MD, Healthcare Lead, Asia Pacific & Japan, Amazon Web Services, Singapore
Monday

Topic: Overview of AI Lab, Ethics, Skunkworks & Developments in Clinical Care

Panelist: Jennifer Hall
AI Senior Data Scientist
NHSX, London, England
Overview of AI Lab, Ethics, Skunkworks & Developments in Clinical Care

Jennifer Hall September 2021
Talk Today

- Overview of the AI Lab and the AI Lab Skunkworks Team
- How the skunkworks approach allows the lab to experiment with new ideas
- Examples of AI developments in Clinical Care
Introduction to NHSX

Digitise
Level up NHS and adult social care services to ensure they have a core level of infrastructure, digitisation and skills

Connect
Join services together through technology, allowing health and care providers to share information with one another and take a shared approach to procurement and implementation

Transform
Using the platform of a digitised, interoperable, connected health and care system to deliver services more effectively and productively, and with the citizen at the centre
The NHS AI Lab has a clear mission: to enable the development and adoption of safe, ethical and effective AI-driven technologies in the UK health and care system.
How the NHS AI Lab fits together

- Regulation Ecosystem
- AI Ethics Initiative
- Skunkworks
- Imaging
- AI in Health and Care Award

Strategy and policy

Collaboration and engagement

Programme management office (PMO)
A **small team**, working on a **well-defined problem**, trying to apply **innovative AI thinking** in an agile, **iterative**, and rapid delivery model.

**Purpose**

Share AI knowledge and hands-on expertise by “doing” rapidly

**Goals**

- Demonstrate Potential
- Promote a needs based approach
- Upskill workforce
AI Lab Skunkworks Process

**Identify Problems**
- Applications to problem sourcing rounds
- Community

**Support**
- ACE
  - 12 week programme working with suppliers
- Advisory Role with Senior Data Scientists and/ or Tech Leads
- SWAT Team
  - Contractors supporting Trusts

**Deliverables**
- Open Source Code
- Case Studies
- Pilot Deployments
- Lunch and Learn Sessions
AI has potential to improve health and care

AI-driven technologies can **change the way we work**. It can help people **do more** and **do it better**.

Below are examples of AI currently being used or experimented with in the health and care system.

- **Natural Language Processing**
  - To help read unstructured doctors notes

- **Computer Vision**
  - To support diagnosis of diseases and conditions using X-rays or CT Scans

- **Classification**
  - To identify patients most at risk from specific conditions

- **Forecasting**
  - To make best use of capacity and resources
“Long stayers at the Gloucestershire Hospitals Trust occupy an average of 278 beds per day, which is around 4% of all admissions but accounts for 34% of bed use. The ability to identify and intervene early could make a real difference to these patients.”

In this context, a long stay is regarded as any stay longer than 21 days.
Identify patients at risk of long term hospital stays

**Data**
- 7 years of admissions information

**Model**
- GAN Model to predict length of stay
- Risk Stratification Model

**Impact**
- A model that successfully detects two-thirds of long stayers
This proof-of-concept risk identifier will enable hospital staff to look closely at whether the patients identified as having a high probability of a long stay could benefit from earlier interventions and changes to their care pathway.
Get involved!

1. Join the **NHS AI Lab Virtual Hub** via the **FutureNHS Collaboration Platform**

2. Find out more about our work on the **NHS AI Lab website**

3. Join us on **LinkedIn** and **Twitter @NHSX**
Monday Plenary

- 9:10 – 10:40 AM ET
  - Panel Presentation: The Use of Artificial Intelligence (AI) in Healthcare
    - Moderator: Walter Suarez, MD MPH, HL7 Board Chair
    - Panelists:
      - Xihong Lin, PhD, Professor of Biostatistics & Coordinating Director of the Program in Quantitative Genomics, Harvard University
      - Jennifer Hall, AI Senior Data Scientist, NHSX, London, England
      - Sonia Benitez, MD, PhD, Internal Medicine Specialist, Hospital Italiano, Buenos Aires, Argentina
      - Julian Sham, MD, Healthcare Lead, Asia Pacific & Japan, Amazon Web Services, Singapore
Monday

Topic: AI in Argentina: Lessons Learned at Hospital Italiano de Buenos Aires

Panelist: Sonia Benitez, MD, PhD
Internal Medicine Specialist
Hospital Italiano, Buenos Aires, Argentina
Monday Plenary

- 9:10 – 10:40 AM ET
  - Panel Presentation: The Use of Artificial Intelligence (AI) in Healthcare
    - Moderator: Walter Suarez, MD MPH, HL7 Board Chair
    - Panelists:
      - Xihong Lin, PhD, Professor of Biostatistics & Coordinating Director of the Program in Quantitative Genomics, Harvard University
      - Jennifer Hall, AI Senior Data Scientist, NHSX, London, England
      - Sonia Benitez, MD, PhD, Internal Medicine Specialist, Hospital Italiano, Buenos Aires, Argentina
      - Julian Sham, MD, Healthcare Lead, Asia Pacific & Japan, Amazon Web Services, Singapore
Monday

Topic: AI: Its Positive Impact on Health Outcomes in Asia Pacific, Japan and Beyond

Panelist: Julian Sham, MD
Healthcare Lead, Asia Pacific & Japan, Amazon Web Services, Singapore
Monday Plenary

- 9:10 – 10:40 AM ET
  - Panel Presentation: The Use of Artificial Intelligence (AI) in Healthcare
    - Moderator: Walter Suarez, MD MPH, HL7 Board Chair
    - Panelists:
      - Xihong Lin, PhD, Professor of Biostatistics & Coordinating Director of the Program in Quantitative Genomics, Harvard University
      - Jennifer Hall, AI Senior Data Scientist, NHSX, London, England
      - Sonia Benitez, MD, PhD, Internal Medicine Specialist, Hospital Italiano, Buenos Aires, Argentina
      - Julian Sham, MD, Healthcare Lead, Asia Pacific & Japan, Amazon Web Services, Singapore
BREAK –
WE WILL RECONVENE AT 11:10 ET SHARP
Monday

The Future of Interoperability from National Coordinators

Moderator: Lori Evans Bernstein
Co-Founder and President
HealthReveal
Monday Plenary

- **11:10 AM – 12:10 PM ET**
  - Panel Presentation: The Future of Interoperability from National Coordinators
    - Moderator: Lori Evans Bernstein, Co-Founder and President, HealthReveal
    - Panelists:
      - Micky Tripathi, PhD, MPP National Coordinator for Health Information Technology
      - Karen DeSalvo, MD, MPH, Chief Health Officer, Google and former ONC National Coordinator
      - Don Rucker, MD, MBA, Former National Coordinator at ONC

© Health Level Seven and HL7 are registered trademarks of Health Level Seven International, registered with the United States Patent and Trademark Office.
Monday

The Future of Interoperability from National Coordinators

Panelist: Micky Tripathi, PhD, MPP
ONC National Coordinator for Health Information Technology
Monday Plenary

- 11:10 AM – 12:10 PM ET
  - Panel Presentation: The Future of Interoperability from National Coordinators
    - Moderator: Lori Evans Bernstein, Co-Founder and President, HealthReveal
    - Panelists:
      - Micky Tripathi, PhD, MPP National Coordinator for Health Information Technology
      - Karen DeSalvo, MD, MPH, Chief Health Officer, Google and former ONC National Coordinator
      - Don Rucker, MD, MBA, Former National Coordinator at ONC
The Future of Interoperability from National Coordinators

Panelist: Karen DeSalvo, MD, MPH
Chief Health Officer, Google
Former ONC National Coordinator
Monday Plenary

- 11:10 AM – 12:10 PM ET
  - Panel Presentation: The Future of Interoperability from National Coordinators
    - Moderator: Lori Evans Bernstein, Co-Founder and President, HealthReveal
    - Panelists:
      - Micky Tripathi, PhD, MPP National Coordinator for Health Information Technology
      - Karen DeSalvo, MD, MPH, Chief Health Officer, Google and former ONC National Coordinator
      - Don Rucker, MD, MBA, Former National Coordinator at ONC
Monday

The Future of Interoperability from National Coordinators

Panelist: Don Rucker, MD, MBA
Professor of Clinical Emergency Medicine & Biomedical Informatics, Ohio State University
Former ONC National Coordinator
Monday Plenary

- 11:10 AM – 12:10 PM ET
  - Panel Presentation: The Future of Interoperability from National Coordinators
    - Moderator: Lori Evans Bernstein, Co-Founder and President, HealthReveal
    - Panelists:
      - Micky Tripathi, PhD, MPP National Coordinator for Health Information Technology
      - Karen DeSalvo, MD, MPH, Chief Health Officer, Google and former ONC National Coordinator
      - Don Rucker, MD, MBA, Former National Coordinator at ONC
Monday

Chair’s Comments

Walter Suarez, MD, MPH, FHIMSS
Chair, HL7 Board of Directors
Something exciting is coming up in 3 minutes

After Mary Ann provides a few important announcements, HL7’s favorite celebrity has a fun announcement for HL7
Key Announcements

Mary Ann Boyle
HL7 Director of Meetings
Navigating Whova

- Check the schedule on the Whova app and be sure to view in your local time zone
- Refresh your screen every so often
- Sort by day, Work Group or Filter by Track
- To ask questions during your session, use the chat in Zoom
- Network with other attendees in the Community section
- For technical assistance, contact WGMHelpDesk@HL7.org or by using the Ask the Organizers Anything link in the community section of Whova
- All General Session recordings will be available within 48 hours in Whova
Monday

HL7 Meme Contest

Stephen Tobolowsky
Actor from Silicon Valley, Groundhog Day, The Goldbergs
Submit your best HL7 meme and you could be a winner!

- Upload memes to our Dropbox link posted on Whova
- Each day WGM participants will vote on winner and will elect a grand prize winner on Friday
- Daily prize is $50 for HL7 swag
- Grand prize is $100 for HL7 swag plus a registration to the January 2022 WGM!
HL7 Meme Contest

Harry Potter and the Goblet of FHIR

Man on FHIR

One hospital is about to learn the importance of interoperability.
Interoperability you must have

my young Padawan
Have a great day!

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

Virtual Event

Tuesday, September 21, 2021
Welcome

Mark McDougall
HL7 Executive Director
Reminder to co-chairs

Schedule Changes

Please notify Mary Ann of any schedule changes
(email WGMHelpDesk@HL7.org)
Join us at cookie break!

Today at cookie break…
Special 10\textsuperscript{th} Anniversary FHIR celebration
HL7 Meme contest winners
Tuesday

- CTO Report
- TSC Report
- International Council Report
CTO Report
Wayne Kubick
HL7 CTO
CTO Report
September Plenary Meeting

Wayne Kubick
wkubick@hl7.org

21 September 2021
Focus on Finishing Key Projects

- **JIRA**
  - Tracking
  - Balloting
  - Affiliate use

- **Workflow Forms**
  - Proposal
  - PSS
  - Withdrawals & Reaffirmations…

- **Publishing**
  - IG Publisher
  - Terminology Server
  - C-CDA/CDA

- **UTG**
  - Bug fixes
  - Usability
  - Periodic THO releases

- **Core Operations**
  - Replace AMS
  - Content Mgmt
  - Cloud & Disaster Recovery

© Health Level Seven and HL7 are registered trademarks of Health Level Seven International, registered with the United States Patent and Trademark Office.
Process Improvement Roadmap
September 20, 2021

https://confluence.hl7.org/display/HL7/CTO+Updates
Other Highlights of Current or Coming Attractions

- **OHDSI-OMOP-FHIR Collaboration**
  - Free workshop Sept. 29 10am ET; Sept. 30 4pm ET)
- **Retirement/Archive of HL7 Wiki and GForge**
- **Project work-in-progress Dashboard prototype underway**
- **JIRA tracking and balloting for Affiliates in 2022**
- **Migration to Atlassian Data Center recently completed**
  - Confluence upgraded to 7.13.0
  - Jira Update coming next week
  - Increased storage capacity – criteria coming soon
Welcome to the HL7 Essentials Space

This is the place to find information about HL7, HL7 processes and other information that is relevant to your work as an Co-Chair, Facilitator, Accelerator or anyone with an interest in gaining a basic understanding of the HL7 organization and its processes.

Quick Links

- HL7 Orientation Station
- HL7 Leadership Announcements
- Participating at HL7
  - HL7 Community Chat
  - Subscribe to List Serves
- Create JIRA and Confluence Account
- Submit a Change Request
- HL7 Recently Published Standards

HL7 FHIR

The following links provide information about participating in the FHIR Community.
> Click for more content...

FHIR Accelerator Programs

The following links provide information about HL7 FHIR Accelerators
> Click for more content...

New Project? - Start Here

The following links provide information relevant to Co-chairs for managing the activities of Work Groups.

- Co-Chair Handbook
- New Co-Chair Training Material
> Click for more content
CTO Report
September Plenary Meeting

Wayne Kubick
wkubick@hl7.org

21 September 2021
Tuesday

- CTO Report
- TSC Report
- International Council Report
Tuesday

TSC Report

Austin Kreisler

TSC Chair
TSC Report

- Work Group Health
- PBS Metric Issues
- Welcoming a New Work Group
- Formation of the Terminology Services Management Group (TSMG)
- TSC Election Results
23 Work Groups qualify for Gold Stars cycle!

- Arden Syntax, Biomedical Research and Regulation, Clinical Decision Support
- Clinical Quality Information, Community-Based Care and Privacy
- Conformance, Cross-Group Projects, Devices, Electronic Health Records
- FHIR Infrastructure, Financial Management
- Implementable Technology Specifications, Infrastructure and Messaging
- Mobile Health, Modeling and Methodology, Orders & Observations
- Patient Administration, Pharmacy, Public Health, Security
- Service Oriented Architecture, Structured Documents, Vocabulary

All Work Groups were in the Green this cycle
PBS Metric Issues

- There is a single work group that had a serious PBS Metrics dumpster fire breakout this cycle:
  - Patient Care
- Please work with Dave Hamill to put this PBS Metrics fire out
Welcome to a New Human Services Work Group!

- **Mission:**
  - The mission is to provide a space for human services sector stakeholders and HL7 experts that focus on non-clinically oriented social risks and needs to define requirements, design, and validate HL7 Implementation Guides for interoperable human services data exchange.

- The Mission and Charter that was approved is the most detailed ever submitted. This was done at the request of other work groups whose own M&C’s don’t go that this level of detail!
Terminology Services Management Group

- The TSC has approved the formation of a Terminology Services Management Group (TSMG)
  - The TSMG mission is to provide terminology related services to support the efforts of HL7 participants and the overall HL7 mission to provide standards that empower global health data interoperability.
  - Some of TSMG Services:
    - Management of the Unified Terminology Governance (UTG)
    - Management, oversight, publication and operation of HL7 Terminology / terminology.hl7.org (known as THO)
    - Input into HL7 operations of a terminology service including its technical infrastructure i.e., a FHIR-based Terminology Server
    - Development of whole-of-HL7 terminology policies to support the above services
The TSC approved the following individuals as the initial members of the TSMG:

- Peter Jordan, Reuben Daniels, Rob McClure, Bryn Rhodes
- Michael Faughn, Lisa Nelson, Jess Bota, Davera Gabriel
- Uma Gowder, Carol Macumber
TSC Election Results

- TSC Elections were held in July for 1 Implementer and 3 Working Group representatives

- Implementer Rep:
  - Rick Geimer

- Working Group Reps:
  - Riki Merrick
  - AbdulMalik Shakir
  - Gora Datta

- Terms start at on January 1st, 2022
Last week, TSC members elected the following individual as TSC Chair Elect:

Jean Duteau
Jean will serve a 4 year term, starting January 1\textsuperscript{st} 2022

- 2022 – TSC Vice Chair (aka. TSC Chair Elect)
- 2023 & 2024 – TSC Chair
- 2025 – TSC Vice Chair (aka. TSC Past Chair)
John Quinn Celebration of Life

- John Francis Quinn, Jr
  - July 16, 1949 – May 25, 2020

- Funeral Mass
  - Wednesday, September 22, 2021
  - 10:00 AM Pacific time
  - American Martyrs Catholic Church
  - 624 15th Street, Manhattan Beach, CA
  - Live stream: https://www.americanmartyrs.org/livestream-funerals-memorials/
Tuesday

- CTO Report
- TSC Report
- International Council Report
Tuesday

International Council Report

Ron Parker
Chair, HL7 Canada
Co-Chair, HL7 International Council
There are 40 HL7 International Affiliates represented on the International Council.
Every Affiliate signs a binding Affiliate Agreement
- 20% of annual affiliate revenue goes to HL7 International
- International Council has 1 voting member per Affiliate
- Each affiliates get 1 vote on HL7 International Ballots per 10 affiliate members

2 International Affiliate Directors on the HL7 Board

Affiliate Due Diligence Committee
- On-boarding & engaging with lapsing Affiliate members

Approximately 40 Affiliate members hold WG Co-Chair or Facilitator positions within HL7
International Council Updates Since May WGM

- Recent orientation on Affiliates given to the HL7 Board
- Since last WGM, one Virtual IC meeting on Sept 15th
  - 18 member countries represented
    - 5 virtual meetings a year alternating across international time zones
  - Updates on Affiliate perspectives of the HL7 Re-envisioning Task Groups
    - Re-envisioning will impact HL7 Affiliate agreements for 2022 - 2023
    - An Affiliate Maturity model and assessment tool are under development
  - Proposal for IC members to actively contribute to HL7 Blog “The Standard”. This will be a standing IC agenda item.
  - Next out-of-U.S. HL7 international meeting likely in 2023
THANK YOU!
HL7 Meme Contest

Stephen Tobolowsky

Actor from Silicon Valley, Groundhog Day, The Goldbergs
Vote on today’s selection in Whova – winner announced at Cookie Break!
View Memes in Resources
Vote in Polls

Since all of my HL7 events have been virtual, I don’t yet have swag. I decided to give Bernie some swag and a visit from Sparky.
Thanks to Our Sponsors

Social / Networking Hour Sponsor
IBM

Sliver Sponsor
axway
Have a fabulous day!

Tuesday, September 21, 2021
Virtual Event

35th Annual Plenary & Working Group Meeting

Wednesday, September 22, 2021
Happy 10th Birthday HL7 FHIR
Welcome

Mark McDougall
HL7 Executive Director
Recognition and a sincere thanks to our mentors, facilitators, TSC members and all co-chairs…

the **backbone** of HL7
Recognition of Very Long Time Members

HL7 members for 25-29 years include:

Thomas Curtin  
Hans Buitendijk  
Mark Gathers  
Freida Hall  
Stan Huff  
Ted Klein  
Virginia Lorenzi  
Paul LoRusso  

Christopher Melo  
Charles Meyer  
Doug Pratt  
AbdulMalik Shakir  
Mickie Tisdale  
Siu Wing Tong  
Mead Walker
Recognition of Very Long Time Members

HL7 members for more than 30 years include:

Gary Dickinson, Ed Hammond & Clem McDonald
Recognition of Long Time Affiliates

Affiliates for more than 20 years include:

- HL7 Canada
- HL7 Finland
- HL7 Germany
- HL7 Japan
- HL7 Taiwan
Recognition of Long Time Org Members

Organizations for more than 20 years include:

Accenture
Intermountain Healthcare
Quest Diagnostics
U.S. Department of Veteran Affairs
Computrition, Inc.

National Library of Medicine
New York-Presbyterian Hospital
Contra Costa County Health Services
XIFIN, Inc.
FHIR’s 10th anniversary: Salute the FHIR Starters

1. Grahame Grieve, Creator of FHIR
2. Jean Duteau
3. Eric Haas
4. Rob Hausam
5. David Hay
6. Ewout Kramer
7. Austin Kreisler
8. Joginder Madra
9. Josh Mandel, MD
10. Lloyd McKenzie
11. Rene Spronk
FHIR’s 10th anniversary:
Thanks to several additional key FHIR Supporters

1. Kirk Anderson
2. Woody Beeler, PhD
3. Ricky Bloomfield, MD
4. Aneesh Chopra
5. Melanie Combs-Dyer
6. Carl Dvorak
7. Doug Fridsma, MD, PhD
8. John Halamka, MD
9. Stan Huff, MD
10. Chuck Jaffe, MD, PhD
11. Jocelyn Keegan
12. Wayne Kubick
13. Dave McCallie, MD
14. Viet Nguyen, MD
15. Steven Posnack
16. Don Rucker, MD
17. Mark Scrimshire
18. Micky Tripathi
19. Sandy Vance
20. Rien Wertheim

And many more!!
Wednesday

- FHIR Accelerator: CodeX
- FHIR Accelerator: Da Vinci
- FHIR Accelerator: Vulcan
- Announcements
Wednesday

FHIR Accelerator: CodeX

Steve Bratt,
Program Manager
Update on mCODE™ and the CodeX™ HL7 FHIR Accelerator

Steve Bratt, Program Manager (sbratt@mitre.org)

HL7 Plenary & Working Group Meeting

September 22, 2021
A **minimal Common Oncology Data Elements**

A FHIR-based core set of common data elements for cancer that is standardized, computable, clinically applicable and available in every electronic health record for patients with a cancer diagnosis.

**A standard health record** for oncology

The **minimal set of data elements** applicable to all cancers, and collected for:

- **Standardized information exchange**
- **Use-case driven and targeted use**

Oncology data element domains: **patient, disease, treatment, outcomes, genomics, lab/vital**

mCODE Release 1 STU1:
http://hl7.org/fhir/us/mcode/

**STU 2 to be published in October 2021**
HL7 FHIR Accelerator

A Member-driven community accelerating interoperable data modeling and implementation around the FHIR and mCODE HL7 standards, leading to substantial improvements in cancer care and research.

http://hl7.org/CodeX
Data are collected and shared via the mCODE standard, and CodeX extensions.
## CodeX™ / mCODE™ Community of Practice

(through Sep 2021, 150+ orgs have joined)

A public meeting of health systems and supporting organizations, working together within the CodeX™ HL7 FHIR Accelerator.

[https://confluence.hl7.org/display/COD/mCODE+Community+of+Practice](https://confluence.hl7.org/display/COD/mCODE+Community+of+Practice)

### Recent external speakers:

<table>
<thead>
<tr>
<th>Month</th>
<th>Title</th>
<th>Speaker</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr</td>
<td>ICAREdata Implementation at Mass General Brigham</td>
<td>Vivek Upadhyay</td>
<td>Mass General Brigham</td>
</tr>
<tr>
<td>May</td>
<td>Small Data — for Big Data: mCODE and Genomics</td>
<td>James Chen</td>
<td>Ohio State University</td>
</tr>
<tr>
<td>Jun</td>
<td>Epic and mCODE: Current and Future State</td>
<td>Ryan Bernard</td>
<td>Epic</td>
</tr>
<tr>
<td>Aug</td>
<td>Oncoclínicas: mCODE Implementation and Experience</td>
<td>Rodrigo Dienstmann</td>
<td>Oncoclínicas</td>
</tr>
<tr>
<td>Sep</td>
<td>UPenn’s mCODE Implementation Process</td>
<td>Peter Gabriel</td>
<td>University of Pennsylvania</td>
</tr>
<tr>
<td>Sep</td>
<td>Trial Matching Phase 1 Results and Phase 2 Pilots</td>
<td>Use Case Leaders</td>
<td>Am. Cancer Soc. UT and others</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Department of Health and Human Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dana Al Inc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Duke University Health System</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elekta</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elsevier</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Emerson Collective</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Epic</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ERS</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Federal Electronic Health Record Modernization (FEHRM)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ferrous Oncology</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flatiron Health</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Food and Drug Administration Foundation Medicine</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Frederick Health</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Genentech</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>GenesicsCare</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>GenomOncology</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Georgia Tech</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Growing Good Inc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>GetWell</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hartford HealthCare</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Harvard Medical and Business Schools</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health Catalyst</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HIQ Analytics</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HonorHealth</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Imaging and Radiation Oncology Core</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ohio</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Independence Blue Cross</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>INFOTECH Soft</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inspirata</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>IntegraConnect</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intermountain Medical Center</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Johns Hopkins</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jitterbit</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>JKM Software</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kaiser Permanente</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Karkinios Healthcare</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>LabCorp</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lantana Consulting Group</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Learning Health Community</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Massachusetts General Hospital</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Massachusetts Health Data Consortium</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mathematica</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ManneHealth</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mayo Clinic</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>McKesson</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medical Marketing Economics</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>MedInfodic LLC</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>MEDITECH</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Memorial Sloan Kettering Cancer Center</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mettle Solutions</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Microsoft</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>MiraMedix, LLC</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Missouri Baptist Medical Center</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>mTuitive, Inc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Multiple Myeloma Research Foundation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Myriad Genetics</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Myndidian</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>MXGEN</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NantHealth</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>National Cancer Institute</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>National Comprehensive Cancer Network</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>National Institutes of Health</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>National Marrow Donor Program</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nebraska Medicine</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NeuroFrame</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NextGen Healthcare</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>nAnalytics</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Novartis</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Office of the National Coordinator</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>for Health Information Technology</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ohio State University, Comprehensive Cancer Center</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oncoclínicas Group</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OncLens</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oncology Analytics</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oncology Nursing Society</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ontada</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Palanir</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pancreatic Cancer Action Network</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PatientLink</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pfizer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Philips Research</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Point-of-Care Partners</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Princess Margaret Cancer Center</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Principia Health Sciences</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Project Ronin</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PursueX</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PxQuad</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>QOMPLEX</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quantum Leap Health Collaborative</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raysearch Labs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>RMA Consultants Inc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Roche Diagnostics Information Solutions</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rush Health</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Saint Joseph Mercy Hospital Ann Arbor</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Samvit Solutions, LLC</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sigmoid Health</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Simovation, LLC</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stanford Cancer Institute</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stoneface Ventures</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SWOG Cancer Research Network</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Telligent</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>The Synergist</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Theda Care</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tidewater Physicians Multispecialty Group</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trinity Health/Saint Joseph Health System</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unicancer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>UnitedHealthcare</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>University Health Network</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>University of California, Los Angeles</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>University of California, San Francisco</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medical Center</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>University of Chicago</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>University of Michigan Medicine</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>University of North Carolina</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>University of Pennsylvania School of Medicine</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>University of Texas MD Anderson Cancer Center</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>University of Texas Southwest Medical Center</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>University of Washington</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vanderbilt University Medical Center</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Varian</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ViVitlcs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wemedoo</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yale School of Medicine</td>
<td></td>
</tr>
</tbody>
</table>
CodeX Members
(September 2021) ★ CodeX Founders

Premier

American Association of Physicists in Medicine
Alliance for Clinical Trials in Oncology Foundation
American Cancer Society
ASTRO
HL7 International

Benefactor

MITRE
Pfizer
Syntropy
UnitedHealthcare

Government Agency

CIBMTR
CDC
MSP

Sponsored Member

Trajectory
Cancer Prevention Centers
Center for Disease Control and Prevention
Michigan Cancer Surveillance Program

Developer/Implemenetr

Comp
Learning Health Community
Siim

Cancer Insights
MassiveBio
Mettle Solutions
NeuralFrame

Patientlink
Principia Health Sciences
QLHC
Quantum Leap Healthcare Collaborative
Varian
Wemedoo

CodeX
Common Oncology Data Elements Initiative
Building a **Trusted** Network of Health System Solutions

Brigham and Women’s Hospital
City of Hope
Dana Farber Cancer Institute
Duke University
Heartland Cancer Research
Massachusetts General Hospital
Mayo Clinic
MD Anderson Cancer Center
Metro-Minnesota Community Oncology Research Consortium
Northwell Health
Rush University Medical Center
Virginia Commonwealth University
Washington University in St Louis

Saint Joseph Mercy Health System
The Ohio State University
The University of Chicago Medicine
ThedaCare
Trinity Health
UNC Lineberger Comprehensive Cancer Center
University of California San Francisco
University of Michigan
University of Pennsylvania
University of Texas Southwestern
Veterans Health Administration

circles:
- **Active** – Committed or actively participating in planning, design, development, piloting
- **Engaged & Interested** – Engaged in multiple conversations and/or in the process of being Active
## Vendor Implementations around mCODE

**Status**

- First mCODE release for ICAREdata elements (March 2020) and included mCODE update in August 2020 release of Epic
- Initial Implementation in Dragon Medical One
- Patient data management and trial matching services
- Radiation oncology systems
- Registry reporting systems
- Provider – Payer systems, including prior authorization support

**Discussions underway with many other vendors**
CodeX Use-Case-Based Projects

Discovery -> Planning -> Execution

https://confluence.hl7.org/display/COD/CodeX+Use+Cases

- 0. mCODE++ Extraction
- 1. EHR Endpoints for Cancer Clinical Trials (future extensions of ICAREdata)
- 2. Integrated Trial Matching for Cancer Patients and Providers
- 3. Cancer Registry Reporting
- 4. Radiation Therapy Treatment Data for Cancer
- 5. Oncology Clinical Pathways
- 6. Prior Authorization in Oncology
- 7. Genomics Data Sharing
Example: Integrated Trial Matching for Cancer Patients and Providers

Problem
• Providers do not have tools built in their workflow to allow for efficient clinical trial matching

Solution
• Leverage the mCODE data standard and APIs that enable an interoperable, scalable, and accessible clinical trial matching

Desired Impact
• Patients and providers can easily identify lifesaving clinical trials much faster with tools that leverage structured data from the EHR
• Trials researchers can find more patients for their clinical trial more quickly
Health Equity is the attainment of the highest level of health for all people. (NCI)

Health Disparities: Although cancer incidence and mortality overall are declining in all population groups in the United States, certain groups continue to be at increased risk of developing or dying from particular cancers.
Contact Steve Bratt, CodeX Program Manager
(sbratt@mitre.org)

Leveraging the mCODE™ standard (minimal Common Oncology Data Elements), CodeX will expand around this core to encompass additional use cases, accelerating opportunities to create a learning health system based on interoperable data and improved patient care.

https://www.hl7.org/codex/
https://confluence.hl7.org/display/COD/CodeX+Home
Wednesday

- FHIR Accelerator: CodeX
- **FHIR Accelerator: Da Vinci**
- FHIR Accelerator: Vulcan
- Announcements
Wednesday

FHIR Accelerator:
Da Vinci
Dr. Viet Nguyen,
Technical Director
Da Vinci

Key Projects

- **DEQM/GIC**
  - STU3 Publication 6/2021
- **Risk Adjustment**
  - Now engaging community on public calls
  - Thursdays 3PM ET
  - 1st Connectathon at HL7 Connectathon 28
- **Patient Cost Transparency**
  - Now engaging community on public calls
  - Fridays 11AM ET
- **Burden Reduction (CRD/DTR/PAS)**
  - Implementer Support
  - Phase 2 Work
- **PDex, Formulary, PlanNet**
  - Implementer Support for CMS Interoperability Requirements
  - Phase 2 Work
- **Member Attribution**
  - Phase 2 Work - Support for CMS DPC, Add/Change
- **CDex**
  - Moving toward STU1 publication post Ballot

Milestone Dates

Expected January 2021 Ballots

- PDex STU2
- PDex Formulary STU2
- PDex PlanNet STU2
- Risk Adjustment STU1
- Member Attribution STU2
- Patient Cost Transparency STU1
- Burden Reduction (CRD/DTR/PAS) STU2

Expected Publications

- CDex and HRex- expected 10/21
- PAS STU 1.1.0 Update- expected 11/21
- Formulary STU 1.1 Update- expected 11/21

Resources

- Da Vinci Welcome
- Da Vinci Calendar
- Da Vinci Implementer Support Page
Wednesday

- FHIR Accelerator #1
- FHIR Accelerator #2
- FHIR Accelerator #3
- Announcements
Wednesday

FHIR Accelerator: Vulcan
Hugh Glover
Technical Director

® Health Level Seven and HL7 are registered trademarks of Health Level Seven International, registered with the United States Patent and Trademark Office.
Vulcan Update

22nd September, 2021
The need for standards in clinical research

- Health data is used for both Clinical Research and Clinical Care purposes
- However, Clinical Research has lagged behind other clinical care functions in the definition and use of Standards
- On the positive side, both share many common standards such as consent (to treatment, to research) and identity management
- Unique clinical research standards include candidate identification, clinical trials and phenopackets (to name a few) that rely on health data curated by clinical care processes
The Goals of Vulcan

**BRIDGE EXISTING GAPS**
Work to close gap between clinical care and clinical research to improve patient lives, decrease costs and improve efficiency

**STRATEGICALLY CONNECT COLLABORATORS**
Coordinate strategy between stakeholders and leverage existing work within HL7 and other groups including FDA, NCATS, NLM, SCDM, TransCelerate, and academic research sites

**MAXIMIZE COLLECTIVE RESOURCES**
Leverage shared community and resources to be able to communicate the return on investment and return on value that a unified network could realize to various parties, and provide comprehensive recommendations to global regulators

**DELIVER INTEGRATED TOOLS AND SOLUTIONS**
Develop necessary FHIR Research Resources to maturity. Vulcan will handle identified and prioritized use cases for secondary use of EHR data that meet interested parties needs and goals
Current Member Organizations of Vulcan

- Accretion
- Accretion Federal Services
- ACRO
- CDISC
- CROHN’S & COLITIS FOUNDATION
- LÆGEMIDDELSTYRELSEN
- National Institute of Allergy and Infectious Diseases
- Duke University School of Medicine
- Epic
- FDA
- HL7 International
- InterSystems
- Johns Hopkins School of Medicine
- medidata
- Medtronic
- Microsoft
- MITRE
- National Cancer Center Hospital East
- NIH
- National Center for Advancing Translational Sciences
- NIH
- U.S. National Library of Medicine
- Oregon Health & Science University
- Parexel
- Pfizer
- Phuse
- Roche
- TransCelerate Biopharma Inc.
- UAMS
- UT Health San Antonio
- WCG

* indicates a convening member of Vulcan
Vulcan Structure and PMO Team Membership

Leadership

Rob Goodwin
Vulcan co-Chair

Amy Cramer
Vulcan co-Chair

Project Management Office

Michael van Campen
Program Manager

Madeleine Brennan
Project Manager

Hugh Glover
Technical Director

Stacy Tegan
Membership Program Manager

Advisory Council

Steering Committee

Operations Committee

Project Teams
## Vulcan Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule of Activities (SoA)</td>
<td>Have a reference implementation that can load a schedule of activities to FHIR from a spreadsheet. It can also read a schedule from FHIR and display it as a Gantt chart. Other implementations should be able to read or write the same.</td>
</tr>
<tr>
<td>Real World Data (RWD)</td>
<td>Extract data from EHRs in a standardized format to support clinical research.</td>
</tr>
<tr>
<td>Phenopackets</td>
<td>To increase the availability of high-quality standardized phenotypic information for genomic research and genomic medicine.</td>
</tr>
<tr>
<td></td>
<td>Phenopacket: A standard to represent a collection of clinical &amp; genetic information about a patient, data not typically captured in EHRs in code-able formats, for rare symptoms and observations.</td>
</tr>
<tr>
<td>Electronic Product Information (ePI)</td>
<td>Define a common structure for product information (monographs) that support cross-border exchange of data for patients. Expand the use of the HL7 Structured Product Labeling (SPL) standard.</td>
</tr>
<tr>
<td>Adverse Events (AE)</td>
<td>Support standardizing the reporting and format of an adverse event.</td>
</tr>
</tbody>
</table>
Use Case Proposals

- Vulcan actively seeks new use case proposals – contact us at Vulcan@HL7.org or use the form shown here
- Form is at: https://confluence.hl7.org/display/VA/Vulcan+Use+Case+Submission+Form
- Proposals are initially considered by the Project Management Office and we may seek further input from you, particularly if the suggestion appears to overlap with an existing proposal.
- New proposals are then discussed at an Operations Committee meeting and may be recommended to the Steering Committee.
- Adoption of new projects depends on priority and availability of resources.
Vulcan Server
Adverse Events Round Table

Roundtable #1, June 1, 2021

- Projects we knew in this space were invited to present (opposite)
- Key objective: **Raising Awareness**

  ![Raising Awareness](image)

- Key Output: Landscape Map (opposite)
  - Link: [https://confluence.hl7.org/display/VA/AE+Landscape](https://confluence.hl7.org/display/VA/AE+Landscape)
- Observations:
  - Some use of ICSR, but US focused

**Use Case Approval Process**

- Proposed to Steering Committee; seeking approval in July

- **ICAREdata Initiative**
- **TransCelerate: Intelligent Automation Opportunities in Pharmacovigilance**
- **UNICOM**
- **FDA BEST: AE Detection and Reporting**
- **PatientLink**
- **Serious Adverse Event Interoperability Between Epic and OnCore (Epic, Advarra, Yale)**
- **Clinical Data Interoperability Between Epic and REDCap**
To learn more or to get involved, please visit our website (HL7.org/Vulcan), our HL7 Confluence page, or email us at Vulcan@HL7.org.
Thank you!
Wednesday

- FHIR Accelerator: CodeX
- FHIR Accelerator: Da Vinci
- FHIR Accelerator: Vulcan
- Announcements
Vote on today’s Movie Meme selection in Whova – Winner announced at Networking Reception!

*View Memes* in Resources     Vote in Polls

© Health Level Seven and HL7 are registered trademarks of Health Level Seven International, registered with the United States Patent and Trademark Office.
Social Networking Hour

Join us at 5:30 PM ET for our Social Networking Hour that is sponsored by IBM. Winner of the Meme Contest will be announced.
Have a wonderful day!

Wednesday, September 22, 2021
ANNUAL BUSINESS MEETING
Welcome and Chair’s Report

- Class of 2021 HL7 Fellows
- Secretary’s Report
- Treasurer’s Report
- Volunteers of the Year Award
Welcome and Chair’s Report

Walter Suarez, MD, MPH, FHIMSS
Chair, HL7 Board of Directors
Moment of Silence

Please join us for a moment of silence to remember those from the HL7 community who have passed during the last 12 months…
Honoring HL7 Members

- Laurie Burckhardt
  - 1962 – July 25, 2021
  - 35 years at WPS Health Solutions
  - Financial Management & Payer/Provider Information Exchange work groups
William (Bill) Majurski
- Passed on November 14, 2020
- US National Institute of Standards and Technology, Software Interoperability Group
Honoring HL7 Members

- John Quinn
  - 1949 – May 25, 2020
  - Former HL7 Chief Technology Officer
  - Retired in 2016
Honoring HL7 Members

- Libor Seidl
  - Passed on March 29, 2021
  - Chair of HL7 Czech Republic since 2008
Honoring HL7 Members

- Jan Wittenber
  - 1945 – May 20, 2021
  - Device Interoperability Architect
Annual Business Meeting

- Welcome and Chair’s Report
- Class of 2021 HL7 Fellows
- Secretary’s Report
- Treasurer’s Report
- Volunteers of the Year Award
Recognition of the Class of 2021

HL7 International Fellows

Walter Suarez, MD, MPH, FHIMSS
Chair, HL7 Board of Directors
The purpose of the HL7 Fellows Program is to recognize outstanding commitment and sustained contribution to Health Level Seven International.

Contributions to HL7 may be reflected through serving as a working group or committee co-chair, serving on the board, receiving the W. Ed Hammond Volunteer of the Year award, serving as an Ambassador, making a presentation or publishing a paper about HL7, or other visible activity.

At a minimum, all Fellows have been HL7 members for at least 15 years. More details are available at: http://www.hl7.org/about/hl7fellows.cfm

… and the members of our Class of 2021 HL7 Fellows are…..
Class of 2021 HL7 Fellows

Lorraine Constable
Jean Duteau
Jamie Ferguson
Paul Knapp
Galen Mulrooney
Ron Parker
Melva Peters
Rik Smithies
Michael Tan
Annual Business Meeting

- Welcome and Chair’s Report
- Class of 2021 HL7 Fellows
- Secretary’s Report
- Treasurer’s Report
- Volunteers of the Year Award
Annual Business Meeting

Board Election Results

Virginia Lorenzi
Secretary, HL7 Board of Directors
Board Election Results

- Treasurer: Floyd Eisenberg, MD (re-elected unopposed)
- Directors: Julia Skapik, MD and Viet Nguyen, MD (re-elected)
- Affiliate Director: Peter Jordan, MSc LLB (re-elected unopposed)
International Council Results

- International Council Co-Chair: Ron Parker
TSC Election Results

- TSC Chair-elect: Jean Duteau
- Affiliate Representative: Giorgio Cangioli
- Implementer Representative: Rick Geimer
- Work Group Representative: Riki Merrick
- Work Group Representative: AbdulMalik Shakir
- Work Group Representative: Gora Datta
Co-Chair Election Results

- Arden Syntax - Peter Haug, MD
- Biomedical Research and Regulation - Maryam Garza
- Clinical Decision Support - Robert Jenders, MD, Ken Kawamoto, MD, Bryn Rhodes
- Clinical Genomics - Robert Freimuth, PhD, Kevin Power, Patrick Werner
- Clinical Information Modeling Initiative - Stan Huff, MD, Richard Esmond
- Clinical Interoperability Council - Bruce Bray, MD, Laura Heermann Langford, RN, PhD, Russ Leftwich, MD
- Clinical Quality Information - Paul Denning, Yan Heras, Stan Rankins, MIS, MSIT
- Community Based Care and Privacy - David Pyke
Co-Chair Election Results

- Conformance - Ioana Singureanu, Robert Snelick
- Cross-Group Projects - Floyd Eisenberg, MD
- Devices - Chris Courville, other position unfilled
- Electronic Health Records - Steve Hufnagel, Mark Janczewski, MD, MPH, John Ritter
- Emergency Care – Dr. Jim McClay
- FHIR Infrastructure - Josh Mandel, MD, Lloyd McKenzie, Yunwei Wang
- Financial Management - Kathleen Connor, Celine Lefebvre, JD, Mary Kay McDaniel, Andy Stechishin
- Imaging Integration - Jonathan Whitby

© Health Level Seven and HL7 are registered trademarks of Health Level Seven International, registered with the United States Patent and Trademark Office.
Co-Chair Election Results

- Implementable Technology Specifications - Paul Knapp
- Infrastructure and Messaging - Unfilled
- Learning Health Systems - Bruce Bray, MD
- Mobile Health - Matthew Graham
- Modeling and Methodology - Grahame Grieve, Jean Duteau
- Orders and Observations - Lorraine Constable, Rob Hausam, MD, Ralf Herzog, John David Nolen, MD, PhD
- Patient Administration - Cooper Thompson, Alex de Leon
- Patient Care - Laura Heerman Langford, RN, PhD, Emma Jones, Michelle Miller, Michael Padula, MD Michael Tan
Co-Chair Election Results

- Patient Empowerment - Abigail Watson
- Payer/Provider Information Exchange - Alberto Llanes
- Pharmacy - John Hatem, Melva Peters, Scott Robertson
- Public Health - Erin Holt, MPH, Craig Newman, Laura Rappleye, Danny Wise
- Publishing, Electronic Services and Tooling - Brian Pech, MD, MBA, other 2 positions unfilled
- Security - Kathleen Connor, Alex Mense
- Services Oriented Architecture - Jerry Goodnough, Stefano Lotti
- Structured Documents - Gay Dolin, MSN, RN, Benjamin Flessner, Austin Kreisler, Russ Ott, Matt Szczepankiewicz
- Vocabulary - Jess Bota, Rob Hausam, MD, Rob McClure, MD
Annual Business Meeting

- Welcome and Chair’s Report
- Class of 2021 HL7 Fellows
- Secretary’s Report
- Treasurer’s Report
- Volunteers of the Year Award
Annual Business Meeting

Treasurer’s Report

Floyd Eisenberg, MD
Treasurer, HL7 Board of Directors
Treasurer’s Report

HL7 Annual Business Meeting
September 22, 2021

Floyd Eisenberg, MD
Treasurer’s Report

- Highlights of 2021 yearend financial forecast
- Preliminary insight to the 2022 budget that is under development
Highlights of 2021 Yearend Forecast

1. Membership revenues (ORGs and INDs) received to-date including funds not yet booked, have surpassed the 2021 budget by $183k.

2. Yearend forecasted revenues are $374k, or 6% more than the budgeted amount of $6.127M.

3. Yearend forecasted expenses are $9k below budgeted amount of $6.578M.

4. Forecasting a net loss of $67k, which is $383k better than the budgeted loss of $450k.

5. Forecasting yearend balance of $8.327M, or 15.2 months of operating expenses based upon 2021 burn rate (with no in-person events, only virtual events).
## Highlights of 2021 Yearend Forecast*

<table>
<thead>
<tr>
<th></th>
<th>2021 Budget</th>
<th>Yearend Forecast</th>
<th>Variance</th>
<th>Variance %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>6,127,977</td>
<td>6,502,367</td>
<td>374,391</td>
<td>6%</td>
</tr>
<tr>
<td>Expenses</td>
<td>6,578,315</td>
<td>6,569,284</td>
<td>-9,301</td>
<td>-0.1%</td>
</tr>
<tr>
<td>Net Income</td>
<td>-450,338</td>
<td>-66,917</td>
<td>383,421</td>
<td>85%</td>
</tr>
<tr>
<td>2021 Yearend Reserves</td>
<td>7,943,890</td>
<td>8,327,311</td>
<td>383,421</td>
<td>+5%</td>
</tr>
<tr>
<td>Reserves in months of operating expenses</td>
<td>14.49</td>
<td>15.21</td>
<td>0.72</td>
<td>+5%</td>
</tr>
</tbody>
</table>

Notes: * Excludes ONC and FHIR accelerator pass through revenues and expenses.
Anticipate membership revenues to be similar to 2021 in 2022; dues likely to remain stable in 2022.

Plan to produce one virtual WGM and two in-person WGMs
- Virtual FHIR Connectathon January 10-12 & WGM January 18-21, 2022
- May 7-8, 2022 FHIR Connectation and May 9-13, 2022 WGM at the Renaissance Dallas Hotel, Dallas, Texas
- September 17-18, 2022 FHIR Connectathon and September 19-23, 2022 WGM at the Renaissance Harborplace Hotel, Baltimore, Maryland
Anticipate additional investments for positions to support the HL7 organization based on progressing re-envisioning plans. Request for such positions and recommendations for their long-term funding will be evaluated by the Finance Committee and the Board of Directors as requirements become clear. Such positions may address:

- Implementation Division Director
- Standards Technical Executive
- Chief Financial Officer
- Assistant FHIR Product Director

Finance Committee will present its recommended 2022 budget to the Executive Committee in Oct. and to the Board on November 1st.
Treasurer’s Report

- Should you have any questions, please contact me at feisenberg@iparsimony.com
- Thank you!
Annual Business Meeting

- Welcome and Chair’s Report
- Class of 2021 HL7 Fellows
- Board Election Results
- Treasurer’s Report
- Volunteers of the Year Award
25th Annual Volunteers of the Year Award

W. Ed Hammond, PhD
25th Annual Volunteers of the Year Award

John D’Amore
25th Annual Volunteers of the Year Award

Janet Marchibroda
25th Annual Volunteers of the Year Award

Pele Yu, MD
25th Annual Volunteers of the Year

John D'Amore
Janet Marchibroda
Pele Yu, MD
Annual Business Meeting is adjourned

- Welcome and Chair’s Report
- Class of 2021 HL7 Fellows
- Board Election Results
- Treasurer’s Report
- Volunteers of the Year Award
Thanks to Our Sponsors

Social / Networking Hour Sponsor

Sliver Sponsor
Have a smashing day!

Wednesday, September 22, 2021
35th Annual Plenary & Working Group Meeting

Virtual Event

Thursday, September 23, 2021
Welcome
Mark McDougall
HL7 Executive Director
Thursday

- FHIR Accelerator: Gravity
- FHIR Accelerator: Argonaut
- FHIR Accelerator: CARIN Alliance
- Announcements
FHIR Accelerator: Gravity
Bob Dieterle, Technical Director
Evelyn Gallego, Program Manager
Consensus-driven Standards for Social Determinants of Health

HL7 WGM  September 23, 2021

Robert Dieterle, CEO EnableCare, LLC
Why SDOH are Important

There is growing awareness that SDOH information improves whole person care and lowers cost. Unmet social needs negatively impact health outcomes.

- **Food insecurity** correlates to higher levels of diabetes, hypertension, and heart failure.
- **Housing instability** factors into lower treatment adherence.
- **Transportation barriers** result in missed appointments, delayed care, and lower medication compliance.

Addressing SDOH is a primary approach to achieve health equity.

1. [https://www.cdc.gov/nchhstp/socialdeterminants/faq.html](https://www.cdc.gov/nchhstp/socialdeterminants/faq.html)
Project Scope

In May 2019, the Gravity Project was launched as a multi-stakeholder public collaborative with the goal to develop, test, and validate standardized SDOH data for use in patient care, care coordination between health and human services sectors, population health management, public health, value-based payment, and clinical research.

Gravity Project Scope: Develop data standards to represent patient level SDOH data documented across four clinical activities: screening, assessment/diagnosis, goal setting, and treatment/interventions.

https://confluence.hl7.org/display/GRAV/The+Gravity+Project
HL7® FHIR® Accelerator Program

• Designed to assist implementers across the health care spectrum in the creation of FHIR Implementation Guides or other informative documents

• Gravity Project became an official Accelerator in August 2019:

http://www.hl7.org/documentcenter/public_temp_3840821C-1C23-BA17-0C64E3ACBE05D630/pressreleases/HL7_PRESS_20190820.pdf

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

Gravity has convened over 2,000+ participants from across the health and human services ecosystem:

- Clinical Provider Groups
- Community-based Organizations
- Standards Development Organizations
- Federal And State Government
- Payers
- Technology Vendors

Public Calls  4-5:30 EST every other Thursday

Project Founders, Grants, and In-Kind Support To-Date

https://confluence.hl7.org/display/GRAV/Gravity+Project+Sponsors
Gravity Overview: Two Streams

- Terminology (SDOH Domains)
  - Coding Gap Analysis & Recommendations
  - Data Set Identification
  - Publication in NLM VSAC & ONC ISA

- Technical (HL7 FHIR)
  - New Code Submissions
  - FHIR IG Testing

CODED VALUE SETS

- FHIR IG Ballot & Publication
- FHIR IG Development
- Community & FHIR Coordination


FHIR IG Testing → Technical (HL7 FHIR) → 2. FHIR IG Development → Community & FHIR Coordination → 1. FHIR IG Ballot & Publication → 4. Terminology (SDOH Domains)
Gravity Overview: 2021 Roadmap

<table>
<thead>
<tr>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Terminology**
- Inadequate Housing
- Transportation Insecurity
- Financial Insecurity
- Unemployment
- Education
- Veterans

**Gravity FHIR IG Ballot**
- IG V2 (new functionality and feedback from testing activities)

**Technical**
- Reference Implementation Development
- Reference Implementation Update
- HL7 FHIR Connectathons
- SDOH FHIR IG Pilots

**Pilots**
- LOINC Code Submissions (MAR/OCT)
- SNOMED Code Submissions (MAY/DEC)
- ICD-10 Code Submissions (JUN/DEC)

**Major Milestone**
- SDOH IG Published by HL7 as STU1

**WE ARE HERE**
- CMS Connectathon
- HL7 FHIR Connectathons

**Goals/Interventions**
- Social Connection
- Stress
- Material Hardship
- Elder Abuse
- Intimate Partner Violence (IPV)
- Unemployment
- Education
- Veterans

**SDOH FHIR IG Pilots**
- 3/2021

**SDOH FHIR IG Ballot**
- 9/2021

**Final updates/ IG Ready for Publication**
- 12/2021

**Gravity FHIR IG V2 Ballot**
- 12/2021

**SDOH IG Published by HL7 as STU1**
- 9/2021

**Terminology**
- January 2021

**SDOH FHIR IG Pilots**
- February 2021

**SDOH FHIR IG Ballot**
- March 2021

**Final updates/ IG Ready for Publication**
- April 2021

**Gravity FHIR IG V2 Ballot**
- May 2021

**SDOH IG Published by HL7 as STU1**
- June 2021

**SDOH FHIR IG Pilots**
- July 2021

**Final updates/ IG Ready for Publication**
- August 2021

**Gravity FHIR IG V2 Ballot**
- September 2021

**SDOH IG Published by HL7 as STU1**
- October 2021

**SDOH FHIR IG Pilots**
- November 2021

**Final updates/ IG Ready for Publication**
- December 2021
Terminology Workstream
Goal - Develop consensus-driven data standards to support use and exchange of social determinants of health (SDOH) data.

Domains grounded by those listed in the NASEM “Capturing Social and Behavioral Domains in Electronic Health Records” 2014
Terminology Workstream

Data Element and Coding Gap Analysis

• All data are sorted across four activities into a master set.
• For data within each domain, we ask:
  o What concepts need to be documented across the four activities?
  o What codes reflecting these concepts are currently available?
  o What codes are missing?
Food Insecurity Terminology Build

**PROCEDURE:** Education about Child and Adult Food Program SNOMED 464201000124103

**PROCEDURE:** Provision of food voucher SNOMED 464411000124104

**REFERRAL:** Referral to Community Health Worker SNOMED 464131000124100

Q. Within the past 12 months we worried whether our food would run out before we got money to buy more. **LOINC 88122-7**
A. Often true, Sometimes true, Never true, don’t know/refused. **LOINC LL4730-9**

**Food Insecurity Observation:** Food Insecurity SNOMED 733423003

**Food Security,** Has adequate number of meals and snacks daily, Has adequate quality meals and snacks*

**ICD-10 Diagnosis:** Food Insecurity SNOMED 733423003

**ICD-10 Diagnoses**

*Proposed. Not final.*
# SDOH Data Elements and Status

- Links to spreadsheets with all current released and implementable code
- Updates after every terminology release (LOINC, SNOMED, ICD-10-CM)

[Table]

<table>
<thead>
<tr>
<th>Domain</th>
<th>Activities (Aligns with USCDI SDOH Data Class)</th>
<th>Select Codes Present</th>
<th>Comprehensive List of Codes Present</th>
<th>Link to Codes to Date Spreadsheet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FOOD INSECURITY</strong></td>
<td>Screeners (LOINC)</td>
<td>x</td>
<td></td>
<td>Food Insecurity Terms with Currently Available Codes 6/30/2021</td>
</tr>
<tr>
<td></td>
<td>Diagnoses (SNOMED CT, ICD-10)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Goals (LOINC, SNOMED CT)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interventions (SNOMED CT)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HOUSING INSTABILITY</strong></td>
<td>Screeners (LOINC)</td>
<td>x</td>
<td></td>
<td>Housing Instability Terms with Currently Available Codes 6/28/2021</td>
</tr>
<tr>
<td></td>
<td>Diagnoses (SNOMED CT, ICD-10)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Goals (LOINC, SNOMED CT)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interventions (SNOMED CT)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HOMELESSNESS</strong></td>
<td>Screeners (LOINC)</td>
<td>x</td>
<td></td>
<td>Homelessness Terms with Currently Available Codes posted 6/28/2021</td>
</tr>
<tr>
<td></td>
<td>Diagnoses (SNOMED CT, ICD-10)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Goals (LOINC, SNOMED CT)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interventions (SNOMED CT)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>INADEQUATE HOUSING</strong></td>
<td>Screeners (LOINC)</td>
<td>x</td>
<td></td>
<td>Inadequate Housing Terms with Currently Available Codes posted 6/28/2021</td>
</tr>
<tr>
<td></td>
<td>Diagnoses (SNOMED CT, ICD-10)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Goals (LOINC, SNOMED CT)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interventions (SNOMED CT)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[Link]: https://confluence.hl7.org/display/GRAV/SDOH+Data+Elements+And+Status
Technical Workstream
HL7 SDOH Clinical Care FHIR Implementation Guide

1. This is a framework Implementation Guide (IG) and supports multiple domains

2. IG support the following clinical activities
   - Assessments
   - Health Concerns / Problems
   - Goals
   - Interventions including referrals
   - Consent
   - Aggregation for exchange/reporting

3. Completed January 2021 ballot as a Standard for Trial Use Level 1 (STU1)

4. Published as STU 1 in August 2021

   http://hl7.org/fhir/us/sdoh-clinicalcare/STU1/
**Gravity FHIR IG Scope**

1. Document SDOH data in conjunction with the patient encounter and define Health Concerns / Problems.
2. Patient and provider establish SDOH related goals.
3. Plan, communicate, and track related interventions to completion.
4. Measure outcomes.
5. Establish cohorts of patients with common SDOH characteristics for uses beyond the point of care (e.g., population health management, quality reporting, and risk adjustment/ risk stratification).
6. Manage patient consent

http://hl7.org/fhir/us/sdoh-clinicalcare/STU1/
Enabling Survey Instruments

1. **Survey**
   - LOINC Panel (Survey Instruments)
     - Include Health Concern Algorithm

2. **Conversion to FHIR Questionnaire**
   - (enhanced NLM LHC-Forms Widget)

3. **Execute FHIR Questionnaire**
   - (enhanced NLM SDC Questionnaire App)

4. **QuestionnaireResponse**
5. **Observation**
   - (survey question-answer pair)
6. **Condition**
   - Health Concern

**Value Sets** – based on SDOH Domain Definitions

**Condition Problem/ Diagnosis**

**Provider Evaluation**

**Goals Interventions**

**Other “clinical” findings**

Note: Survey instruments may produce Health Concerns with Gravity defined value sets
Consent Exchange for SDOH Clinical Care IG

Provider's EHR

Consent

Providers

FHIR API

Exchange based on Consent

Consent Resource

FHIR API

Community Based Referral Organization (CBRO)

Business Associate

Exchange based on Consent

FHIR API

Community Based Organization (CBO)

Exchange based on Consent

Patient

FHIR API

Community Based Referral Organization (CBRO)

KEY

FHIR based Information Exchange

Physical Interaction

Variable

Consent Exchange based on Consent

Consent Resource

Exchange based on Consent
Coordination Platform (CP) – Typically CPs are based on referral platforms such as UniteUs, Aunt Bertha, NowPow, 211 (this is not an exhaustive list)

Community Based Organizations (CBO) -- Typically CBOs provide the services to address social risk and need (e.g. food pantry)

Both CPs and CBOs may provide a number of services that overlap and differ substantially by community.

Interaction with a patient or caregiver may required alternative methods if internet access is not available.
Plan for SDOH FHIR IG STU2

1) Support for patient/client application and workflow (patient closed loop referral and patient reported outcomes)
2) Support for CBO application and workflow (multiple patients/clients)
3) Support for automatic synchronization for applications with multiple referral sources
4) Support for social services terminologies / taxonomies
5) Support for value set filtering
6) Connectathon in September and additional testing of new functionality in early November
7) Plan to ballot STU2 in the January ballot cycle
Interoperability Glide Path: Domain Data Sets & Implementation Guides

SDOH Data Sets

Develop and test coded value sets for use in FHIR

Refine, test, and ballot HL7® FHIR® SDOH Implementation Guide

- Regulators
- EHR Vendors
- Payers & Providers
- Patients
- Clinicians
- Registries/Researchers

http://www.hl7.org/about/fhir-accelerator/
Accomplishments & Success Factors
Policy Integration: Gravity USCDIv2 Submission

- The Gravity Project formally made a submission to the ONC U.S. Core Data for Interoperability (USCDI) version 2 in October 2020.
- On April 15, 2021, HITAC approved and forwarded recommendation to ONC.
- On July 9, 2021 ONC included the SDOH data elements in the USCDI V2 publication.

https://www.healthit.gov/isa/united-states-core-data-interoperability-uscdi#uscdi-v2
On January 7th, CMS released guidance for states on opportunities under Medicaid and CHIP to address SDOH.

The guidance acknowledges that states can leverage Medicaid resources to support data integration and data sharing to assist state health systems to identify individuals with SDOH needs and link them to appropriate medical and social supports.

States are required to design technical infrastructure for Mechanized Claims Processing, Information Retrieval Systems, and care coordination hubs that are interoperable with human services programs, HIEs, and public health agencies, as applicable.

States must ensure alignment of the claims processing and IRS systems with CEHRT.

States are encouraged to review ISA SDOH standards and review and participate in the Gravity Project.

Grants Integration: ACL Challenge Grant & ONC LEAP Grant

• Administration of Community Living (ACL) Social Care Challenge Grant:
  o All 12 will demonstrate use of Gravity defined data elements

• ONC Leading Edge Acceleration Projects (LEAP) in Health IT Notice of Funding Opportunity: Referral Management to Address Social Determinants of HealthAligned with Clinical Care
  o Awarded to University of Texas at Austin on August 11, 2021; UT Austin will be incorporating Gravity Project uses cases for the collection of SDOH data
How to Engage!
Join the Gravity Project!

Birds of a Feather

- Gravity BOF Thursday 5:30 to 7:00 pm ET

Learn More

https://confluence.hl7.org/display/GRAV/Join+the+Gravity+Project

- Workgroup meets bi-weekly on Thursdays’ 4:00 to 5:30 pm ET
- SDOH FHIR IG Workgroup s. 3:00 to 4:00 pm ET

Help us find new sponsors and partners

Partner with us on development of blogs, manuscripts, dissemination materials

Help us with Gravity Education & Outreach

Use Social Media handles to share or tag us to relevant information

- @thegravityproj
- https://www.linkedin.com/company/gravity-project

• Give us feedback on the Data Principles:
  https://confluence.hl7.org/display/GRAV/Gravity+Data+Principles

• Submit SDOH domain data elements (especially for Interventions):
  https://confluence.hl7.org/display/GRAV/Data+Element+Submission
Thursday

- FHIR Accelerator: Gravity
- **FHIR Accelerator: Argonaut**
- FHIR Accelerator: CARIN Alliance
- Announcements
FHIR Accelerator: Argonaut

Brett Marquard
Project Manager and SME
Argonaut Project Timeline

JASON Task Force Recommendations

Call to action for APIs and FHIR

Launch of Argonaut Project

EHR certification includes API requirement

Data Query Implementation Guide published

Jun 2017

May 2018

Nov 2019

2020 and beyond

CDS Hooks Implementation Guide

Provider Directory Implementation Guide published

CDS Hooks Implementation Guide

Argonaut R4 + Clinical Notes + Provenance added to US Core!

Clinical Data Subscriptions

Oct 2014

Dec 2014

Oct 2015

Dec 2016

S&I Initiative Data Access Framework

Bulk Data

SMART on FHIR Granular Controls

Patient Lists
Prior Initiatives

SMART on FHIR support
Data Query and Document Query
Provider Directory
Scheduling
CDS Hooks support
Bulk Data
Questionnaire and Questionnaire Response
Clinical Provenance

SMART Web Messaging
Clinical Data Subscriptions
US Core Argonaut R4
SMART on FHIR Granular Controls
Patient List
FHIR Write

Goal is to provide a standard approach in FHIR

Potential use cases
  • Unsolicited data submitted by the patient
  • Provider is actively monitoring a patient due to a specific problem list item
  • Provider is interested in being notified of abnormal observations

Device Ordering and Provisioning
  • Health-system-provided devices
  • BYOD (e.g., Fitbit, BP cuff, glucometer)
## FHIR Write

<table>
<thead>
<tr>
<th>Period</th>
<th>Primary Focus of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>March-April</td>
<td>Initial Scope and Use Case</td>
</tr>
<tr>
<td>May-June</td>
<td>Draft Implementation Guidance/Ref Implementation</td>
</tr>
<tr>
<td>July-Sept</td>
<td>Refine Guidance/Prep for September Connectathon</td>
</tr>
<tr>
<td>Oct-December</td>
<td>Review address implementation issues/Edits to Guidance</td>
</tr>
<tr>
<td>Jan 2022</td>
<td>Connectathon</td>
</tr>
<tr>
<td>Feb 2022</td>
<td>Final draft/&quot;publish&quot;</td>
</tr>
</tbody>
</table>

[Argonaut Write Confluence Page](#)
Subscriptions

When
Argonaut 2019; 2021 - ...

What
“Tell me when the data changes”
The Subscriptions Framework is a mechanism designed to allow clients to ask for notifications when data changes. It is an active notification system; a FHIR server actively sends notifications to clients as changes occur.

Outcomes
• Defined two new resources (SubscriptionTopic, SubscriptionStatus) and a new Bundle type.
• Updated existing Subscription resource to add clarity and flexibility.
  • 6 trackers remain! Will publish with FHIR R4B
• Latest build: https://argonautproject.github.io/subscription-backport-ig/
## Subscriptions

<table>
<thead>
<tr>
<th>Period</th>
<th>Primary Focus of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>March-April</td>
<td>Set Project Goals, Work Through Existing Jira Tickets</td>
</tr>
<tr>
<td>May-June</td>
<td>Address tickets, new additions for 2021, Connectathon 27</td>
</tr>
<tr>
<td>July-Sept</td>
<td>Finalize 2021 additions (event triggers, notification shape, new operations), improve documentation, Connectathon 28</td>
</tr>
<tr>
<td>Oct-December</td>
<td>Complete documentation and publish: IG, R4B Resources, R5 Resources</td>
</tr>
<tr>
<td>Jan 2022</td>
<td>Connectathon 29, R5 Ballot Reconciliation, Project Wrap Up</td>
</tr>
</tbody>
</table>

[Argonaut Subscriptions Confluence Page](#)
2021 Initiatives

FHIR Write
- Currently, very little guidance is provided on writing and updating data in the context of USCDI Core profiles in FHIR
- Provide a standard approach in FHIR, and propose to US Core
- Wed 1-2 PM US Eastern (Zulip: Argo Write)

Subscriptions
- Promote adoption of the Subscription framework (R4 & R5)
- Discuss implementation questions / issues / challenges
- Build out testing and reporting
- Wed 2-3 PM US Eastern (Zulip: Subscriptions)

‘others’ under consideration:
- Native App Security best practices
- Electronic Health Information (EHI) Export
- USCDI v2 design and testing...
Participation

• Review existing designs and comment using HL7 JIRA
• Zulip Chat Channel - Argonaut
• Argonaut Confluence Page

• Contacts
  • Gino Canessa
  • Dan Gottlieb
  • Eric Haas
  • Josh Mandel
  • Brett Marquard
Thursday

- FHIR Accelerator: Gravity
- FHIR Accelerator: Argonaut
- FHIR Accelerator: CARIN Alliance
- Announcements
FHIR Accelerator: CARIN Alliance
Mark Roberts
2021 CARIN IGs
2021 status of the CARIN HL7 IGs

1) CARIN IG for Blue Button®

**Purpose:** This implementation guide 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 part of the CMS requirements related to the Patient Access API.

**Latest update:** STU1 published in November 2020. Minor technical corrections were published in early July 2021 as STU1.1.0. At the September HL7 Connectathon a number of clients and servers successfully connected and exchanged the oral and vision types for the first time. Implementers will have another opportunity to test at the October Da Vinci Connectathon in October. We plan to ballot STU2 in January 2022.

IG page: [https://build.fhir.org/ig/HL7/carin-bb/index.html](https://build.fhir.org/ig/HL7/carin-bb/index.html)

2) CARIN IG for Consumer-facing Real-time Pharmacy Benefit Check

**Purpose:** Provide a patient with real-time pharmacy information associated with their benefit and formulary information, out of pocket costs, therapeutic alternatives, and cash price options.

**Latest Update:** Published the IG in August 2020. Will be testing with the 5 major PBMs in Q1 2022 after they’ve built out their support for FHIR by 7/1.

IG page: [https://build.fhir.org/ig/HL7/carin-rtpbc/index.html](https://build.fhir.org/ig/HL7/carin-rtpbc/index.html)

3) CARIN IG for Digital Insurance Card

**Purpose:** This guide will develop artifacts (FHIR implementation guides, code mappings, reference implementations, etc) to enable the digital exchange and digital rendering of the elements found on a person’s physical insurance card. The primary use case is to support insurance members who wish to retrieve their proof of insurance coverage digitally via a consumer-facing application. Images, barcodes, and QR codes from the physical card will be considered as optional fields for representation within FHIR, but these elements will be optional and up to the implementer to decide whether they want to provide them. The scope of this IG does NOT address eligibility checks between health providers and the insurance company.

**Latest update:** The FHIR IG proposal was submitted on September 14 and will be reviewed with the FHIR Management Work Group on 9/23. CARIN held an information session at the September HL7 Connectathon, where we heard from a number of organizations who have not previously been involved in the discussion and were able to provide some education around the IG. Ballot scheduled for January 2022. Publication in Q1/Q2 2022.

The CARIN Alliance

Key Projects

**CARIN IG for Blue Button®**
- Minor technical corrections were published in early July 2021 as STU1.1.0.
- At the September HL7 Connectathon a number of clients and servers successfully connected and exchanged the oral and vision types for the first time. Implementers will have another opportunity to test at the October Da Vinci Connectathon in October.

**CARIN IG for Consumer-facing Real-time Pharmacy Benefit Check**
- IG published in August of 2020. Actively engaging PBMs to implement
- Additional testing will occur in Q1 2022

**CARIN IG for Digital Insurance Card**
- The FHIR IG proposal was submitted on September 14 and will be reviewed with the FHIR Management Work Group on 9/23.
- CARIN held an information session at the September HL7 Connectathon, where we heard from a number of organizations who have not previously been involved in the discussion and were able to provide some education around the IG.

Milestone Dates

**January 2022 Ballots**
- CARIN IG for Blue Button® STU2 ballot submission.
- CARIN IG for Digital Insurance Card ballot submission.

**CARIN IG for Blue Button®**

**CARIN IG for Consumer-facing Real-time Pharmacy Benefit Check**
[https://confluence.hl7.org/display/CAR/RTPBC+Project](https://confluence.hl7.org/display/CAR/RTPBC+Project)

**CARIN IG for Digital Insurance Card**

**All CARIN IG meetings are public. Any HL7 member who wants to join any of these IG discussions can subscribe to the CARIN Listserve ([http://www.hl7.org/myhl7/managelistservs.cfm](http://www.hl7.org/myhl7/managelistservs.cfm)) where we will send out the conference call information and calendar invitations.**
Thursday

- FHIR Accelerator: Gravity
- FHIR Accelerator: Argonaut
- FHIR Accelerator: CARIN Alliance
- Announcements
Vote on today’s Meme selection in Whova – Winner announced at Networking Reception!

View Memes in Resources  Vote in Polls
Vote on today’s Meme selection in Whova – Winner announced at Networking Reception!

View Memes in Resources    Vote in Polls
Be sure to attend the Cookie Break!

Flaming celebration…

at 3 PM Eastern
Thanks to Our Sponsors

Social / Networking Hour Sponsor

Sliver Sponsor

IBM

axway
Have an excellent day!

Thursday, September 23, 2021
Virtual Event

35th Annual Plenary & Working Group Meeting

Friday, September 24, 2021
Friday

- FHIR Dancing Video Placement
Welcome
Mark McDougall
HL7 Executive Director
Woody Beeler Scholarship

- Final application day is October 29
- Committee reviews applications in November
- Recipients are notified by December 1
- Scholarships can be applied to the WGMs during 2022

HL7.org/about/beeler_scholarship.cfm
Friday

- Upcoming Education & Meetings
  - WGM survey reminder
  - All Memes Submitted
  - Grand Prize Memes
HL7 Education Report & Upcoming Meetings

Sadhana Alangar, PhD
HL7 Director of Education
Agenda

- 2021 Education Revenue
- Listening Sessions & HL7 Education
- Certified Educator Program
- 2021 Online Synchronous Classes
- 2021 Asynchronous (Self-Paced) Classes
- HL7 HIMSS Accelerate Partnership
- Upcoming Meetings
2021 Education Revenue

- Fourth successive year
- Year end target achieved
- September 1st
Listening Sessions & HL7 Education

- LATAM
- ASIA
- Europe (October 14)
- Australia, New Zealand & the Indian Sub-Continent
- HL7 Education Around the World
- HL7 Education Africa
Certified Educator Program

- To be launched in January 2022
- Marketing starts in October
Application

- Application and supporting documents
- Approval valid for 3 years
- Resubmit application after 3 years
- Certification directory
- Initial Fee = $400, Renewal (years 2 & 3) = $200
An HL7 Certified Educator

- Must be a current HL7 member in good standing
- Adheres to the HL7 Education Provider Code of Conduct
- Holds current related required certification
- Has completed the HL7 Train the Trainer Course
- Demonstrates strong verbal communication skills
- Continues professional education and development
- Uses HL7 Certified Education materials properly
Train the Trainer Course

- Michelle Hall
- Director for Programs & Services
- Columbia University CTL
- Course created – Nov 30
- HL7 Faculty & Tutors – free access
- Live 2-hour session in 2022
## 2021 Synchronous Online Classes

<table>
<thead>
<tr>
<th>Course</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Quality &amp; Decision Support on FHIR</td>
<td>October 12-14</td>
</tr>
<tr>
<td>HL7 FHIR for Healthcare Analysts</td>
<td>Oct 16, 17, 23, 24</td>
</tr>
<tr>
<td>HL7 FHIR Profiling</td>
<td>Oct 19-21</td>
</tr>
<tr>
<td>Applied Questionnaire &amp; Date Capture</td>
<td>Nov 2-4</td>
</tr>
<tr>
<td>FHIR Bootcamp</td>
<td>Nov 9-11</td>
</tr>
<tr>
<td>HL7 FHIR Terminology</td>
<td>Nov 30 – Dec 2</td>
</tr>
<tr>
<td>HAPI FHIR</td>
<td>Dec 7-9</td>
</tr>
</tbody>
</table>
2021 & 2022 Asynchronous Courses

- **2021**
  - HL7 FHIR Fundamentals – Oct. 28, 2021
- **2022**
  - HL7 Fundamentals – Feb 10, May 28, Sep 8
  - HL7 FHIR Fundamentals – Mar 11, Jul 14, Oct 27
  - HL7 FHIR Intermediate – Feb 17, Jun 2, Sep 15
  - HL7 FHIR Exam Prep – Mar 3, Jun 16, Sep 29
HIMSS Accelerate

- HL7 will be an inaugural partner of the Accelerate platform providing on-demand content
- First course – Understanding the HL7 Organization from Process to Governance.
2022 WGMs & FHIR Connectathons

- **January 2022 Working Group Meeting (CST)**
  - Virtual events in US Central Standard Time zone
  - Monday, Jan 10 thru Wednesday, Jan 12 - FHIR Connectathon
  - Tuesday, Jan 18 thru Friday, Jan 21, 2022 - WGM
May 2022 in-person events at Renaissance Dallas Hotel
Saturday thru Sunday, May 7-8 – FHIR Connectathon
Monday, May 9 thru Friday, May 13 – Working Group Meeting
2022 WGMs & FHIR Connectathons

- September 2022 in-person events at Renaissance Harborplace Hotel, Baltimore, Maryland
  
  Saturday thru Sunday, September 17-18 – FHIR Connectathon
  
  Monday, September 19 thru Friday, Sept. 23 – Working Group Meeting
2023 WGMs & FHIR Connectathons

- **January 2023 in-person events at the Hilton Lake Las Vegas Resort**
  - Saturday thru Sunday, January 14-15 – FHIR Connectathon
  - Monday, January 16 thru Friday, January 20 – Working Group Meeting
2023 WGMs & FHIR Connectathon 

• May 2023 in-person events at the Hilton New Orleans Riverside Hotel
  Saturday thru Sunday, May 6-7– FHIR Connectathon
  Monday, May 8 thru Friday, May 12 – Working Group Meeting
HL7® FHIR® DevDays
June 6-9, 2022 - Hybrid event, both virtually and in person
Huntington Convention Center of Cleveland
Cleveland, Ohio
HL7 FHIR and OMOP Workshops

- Two sessions to accommodate participants from as many global time zones as possible
  - September 29: 10:00 am – Noon US ET
  - September 30: 4:00 pm – 5:30 pm US ET
Friday

- Upcoming Meeting & Education
- WGM survey reminder
- All Memes Submitted
- Grand Prize Memes
WGM Attendee Survey

https://www.surveymonkey.com/r/Sept2021WGM

Don’t forget to fill out the survey to be eligible for drawings for $500 towards HL7 Education and Virtual Events!
Friday

- Upcoming Meeting & Education
- WGM survey reminder
- Revisiting This Week’s Memes
- Grand Prize Memes
When people ask why you use HL7 FHIR:

- Setting the HL7 standard for matching outfits
- This is the way

Since all of my HL7 events have been virtual, I don't yet have swag. I decided to give Bernie some swag and a visit from Sparky.
Mini Me
What is going On?

HEALTHCARE
DATA
EXCHANGE
IN PROGRESS

HOPE
LIFE

KNOWLEDGE
INFORMATION

ALL US PATIENTS

NOW HAVE HEALTH API'S

HALT AND CATCH FHIR
Vote on today’s Grand Prize Meme selection in Whova – Winner announced at Cookie Break!

View Memes in Resources
Vote in Polls

Finalist Memes
I WAS TOLD THERE WOULD
BE A COOKIE BREAK?
SETTING THE HL7 STANDARD FOR MATCHING OUTFITS
Advancing healthcare interoperability

Submitting memes to the HL7 meme contest

HL7 members
Vote on today’s Grand Prize Meme selection in Whova – Winner announced at Cookie Break!

View Memes in Resources    Vote in Polls

© Health Level Seven and HL7 are registered trademarks of Health Level Seven International, registered with the United States Patent and Trademark Office.
Thanks to Our Sponsors

Social / Networking Hour Sponsor

Sliver Sponsor
FAREWELL!

Friday, September 24, 2021