International Patient Summary In Disaster Medicine

Plus...

DaVinci Project Poised for Accelerated Growth in Second Year

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Update from Headquarters

By Mark McDougall,
HL7 Executive Director

32nd Annual Plenary & Working Group Meeting Breaks Attendance Record

Earlier this year, HL7 established a new record by attracting 624 attendees to our January Working Group Meeting (WGM) New Orleans. However, that record was short-lived as our October Plenary & WGM in Baltimore attracted 637 attendees!

HL7 held its 32nd Annual Plenary & Working Group Meeting in at the Hyatt Regency Inner Harbor Hotel in Baltimore. The week's highlights included 23 tutorials along with meetings for 60 work groups and committees.

The plenary meeting theme was "Collaborating Toward Global Interoperability" and featured an impressive series of keynote presentations:

- *Update from the National Coordinator* by Donald Rucker, MD, Office of the National Coordinator (ONC) for Health Information Technology, U.S. Department of Health and Human Services

- *A Payer's Perspective to Interoperability* by Sagran Moodley, Senior Vice President, UHC Clinical Data Services & Technology at UnitedHealth Group

- *What is CIMI up to and How Does it Fit in?* by Stan Huff, MD, Chief Medical Informatics Officer, Intermountain Healthcare

- *Interactive 3D Visualization in the Wide Web of Health* by Nicholas Polys, PhD, Director of Visual Computing at Virginia Tech University

The HL7 Bow Tie SIG gathers for a group photo at the 32nd Annual Plenary & WGM in Baltimore.

HL7 board chair Calvin Beebe poses with 2019 newly elected board members (from left to right) Diego Kaminker; Kensaku Kawamoto, MD, PhD; Melva Peters, Walter Suarez, MD, MPH, and Calvin Beebe.

Board Election Results

2019 brings new members to the HL7 Board of Directors. The results of the board elections were announced during HL7's annual business meeting in Baltimore. Except for the Chair-elect, each position will serve a two-year term from January 2019 through December 2020.

Chair-elect: Walter Suarez, MD, MPH, Kaiser Permanente (will serve as Chair-elect in 2019, as Board Chair in 2020-21, and as Vice Chair in 2022)

Secretary: Melva Peters, Jenaker Consulting

Director-External Influencer: Kensaku Kawamoto, MD, PhD, University of Utah

Director-Sales/Marketing/Fundraising: Janet Marchibroda, Bipartisan Policy Center

Affiliate Director: Diego Kaminker, HL7 Argentina

Please join us in congratulating these individuals for their commitment and valued service to HL7 as members of the HL7 Board of Directors.

HL7 Fellows Class of 2018

The HL7 Fellowship program recognizes individuals with outstanding commitment and sustained contribution to HL7 with at least 15 years of HL7 membership. During HL7's 32nd Plenary meeting, HL7 honored the following five well-deserving members with distinction as HL7 Fellows in the Class of 2018:

- David Hay, MD, New Zealand
- Beat Heggli, Switzerland
- Patrick Loyd, USA
- Rob McClure, MD, USA and Panama
- Corey Spears, USA

Meeting Sponsors

We are pleased to recognize these companies that sponsored key components of our 32nd Annual Plenary and Working Group Meeting in Baltimore:

iNTERFACEWARE – Bronze Sponsor

MOXE – Bronze Sponsor

AEGIS – HL7 FHIR Connectathon Sponsor

Corepoint Health – Tuesday night party

The additional sponsorship support provided by these organizations contributes heavily to HL7's meeting budget and is much appreciated.

The 2018 HL7 fellows pose with board chair Calvin Beebe.

Benefactors and Gold Members

We are pleased to attract impressive numbers of HL7 benefactors and gold members, who are listed on page 24. Their support of HL7 is very much needed and sincerely appreciated. Representatives from these organizations are pictured on this page during the 32nd Annual Plenary and Working Group Meeting in Baltimore. A special thank you is extended to those firms that represent our 2018 HL7 benefactors and gold members.

Organizational Member Firms

We are proud of the impressive list of HL7 organizational member companies listed on pages 24-27. We sincerely appreciate their ongoing support of HL7 via their organizational membership dues.

Volunteers of the Year

We are pleased to recognize three incredible volunteers for their dedicated service to HL7. This year marks the 22nd year that we have recognized such individuals via the W. Ed Hammond, PhD HL7 Volunteer of the Year Awards. The recipients of the 2018 HL7 Volunteer of the Year Awards included:

- Brett Marquard (WaveOne Associates)
- Riki Merrick (Vernetzt)
- Bryn Rhodes (Database Consulting Group)

We are honored to recognize Brett, Riki and Bryn as dedicated individuals who have made significant contributions on many fronts, including in specific work groups and throughout the larger HL7 global organization. We sincerely appreciate their efforts and congratulate them on receiving this well-deserved recognition. Please see the article on page 19 to read more about the impressive contributions that these dedicated volunteers have made to HL7.

In Closing

It is safe to say that HL7 is blessed with so many dedicated members who share our passion for HL7 and improving interoperability.

Simply put, HL7 is in our blood and our HL7 community is our family away from home. A sincere thank you to all of you, for being such an integral part of our family and our lives.

Mark C. McDougall

Did you know...

Every work group in HL7 is accountable to two foundational documents:

The HL7 Governance and Operations Manual (GOM), and the respective work group's Decision-making Practices (DMP)

Process Points by PIC

Every work group in HL7 is accountable to two foundational documents: the HL7 Governance and Operations Manual (GOM), and the respective work group's Decision-making Practices (DMP). Together, these documents detail how things should operate in HL7, and the rules that are to be followed to ensure that the community follows open practices. In this short article, we'll describe the DMP and how it can help your participation in HL7.

Work group level decision practices have been around HL7 for well over a decade. They originally varied substantially between work groups but are now harmonized and generally consistent across HL7. The purpose of the DMP document is to establish a set of "rights" for meeting participants, guiding not only the work group chairs but all meeting attendees. Simply put, the DMP defines the core tenets for how work groups operate: how many members must be present to make a decision, how much notice is required for agenda topics, what constitutes a "consensus" decision, how voting is conducted, and so on. While the DMP's exist across HL7, there are some common questions or misconceptions. Hopefully, this short FAQ will clarify their role and how they are used:

My work group never uses their DMP. Is that a problem?

Not necessarily. In most instances, co-chairs are following open DMP practices, but simply not referencing the document. A common example is a quorum check, which is conducted to ensure that enough attendees are present. This comes from the DMP. HL7 generally strives for lightweight, effective processes and not bogging down in details except in special circumstances.

What if I feel like the rules are not being followed?

Any member attending a meeting has the right to request the use of formal decision-practices. This is considered a "check and balance" against potential interests of a presiding chair, and it is non-debatable. If you ever feel like processes are not being followed correctly, you have the right to invoke formal processes, governed by Robert's Rules of Order. This is a well-established protocol for running groups.

How do I invoke formal rules?

Any member may make a request for process formality by declaring a "Point of Order" to the chair, requesting that the DMP is followed and/or asking for formal meeting governance. Alternatively, you should feel free to ask the HL7 Process Improvement Committee for advice, to advocate on your behalf, or to attend a particularly contentious meeting should such a need arise.

How do I find HL7's decision practices?

All DMPs are published. You can find them at: https://www.hl7.org/participate/decisionmaking.cfm

Note: This process point has been brought to you courtesy of the HL7 Process Improvement Committee. Our role is to help keep HL7 working smoothly and to advocate on behalf of the membership to help address issues and concerns that are raised. We are available at working group meetings or at pic@lists.hl7.org.
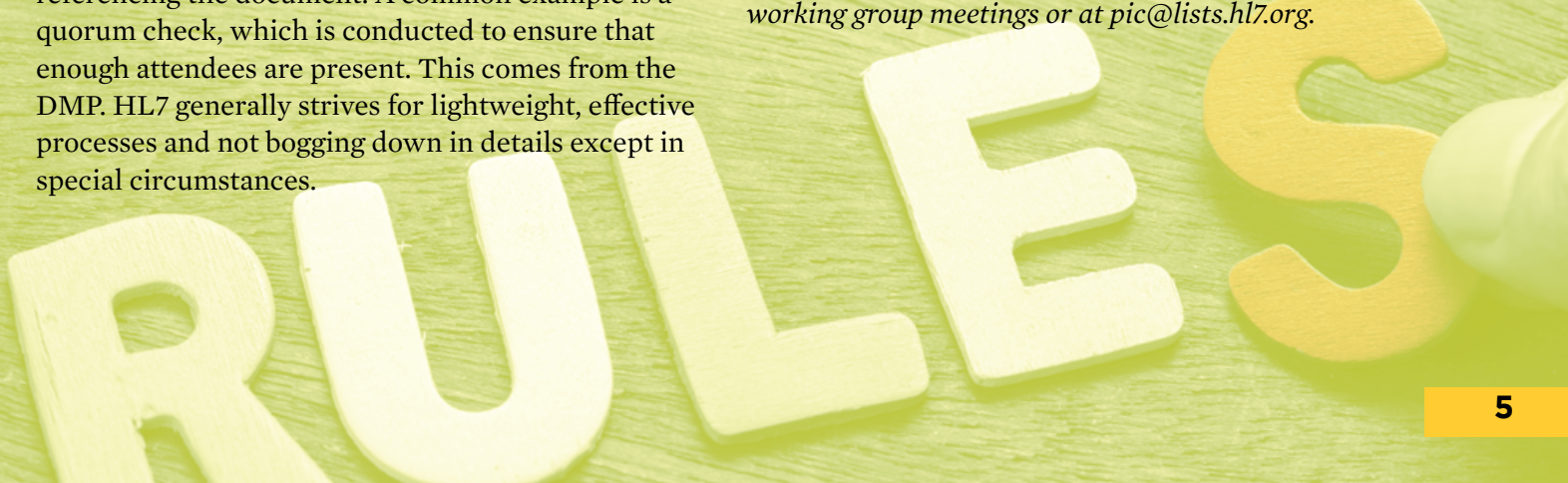
Member Spotlight on Lenel James

Career Background

Lenel James started his career in the Management Information Consulting Division of Arthur Andersen & Co. (aka Andersen Consulting). He worked on information technology (IT) and operations consulting projects, in healthcare, government and banking. He left after 10 years to grow a boutique consulting company from eight people to the third largest IT specialty consulting firm in the Midwest.

During that time, Lenel spent five years serving as the Interim Deputy Director of Health IT for the third largest public hospital in the United States. He provided operations support, training to clinicians as well as project management for major release upgrades to the HBOC/McKesson lab system, radiology system, order entry system and the NDC pharmacy system.

During his consulting career, three projects and corresponding lessons stand out:

- As part of a project on repurposing U.S. Army munitions facilities for civilian use, Lenel learned the critical lesson of not reading from slides. After witnessing the painful "dressing down" of an Army captain by a two-star general for reading from his slides, Lenel knew to avoid the same mistake.

- During the successful approval process for $6.5 million of IT projects, the hospital chief financial officer of the third largest public hospital in the U.S. ensured Lenel and his team anticipated the questions of the county board commissioners.

- During an assessment of the European operations for the third largest community college in the U.S., Lenel and his team learned the importance of impactful graphics and compelling animation to persuade the Board Chair on the value of continuing support for a military school producing a $500,000 per year profit. The teams' strategy was confirmed by the U.S. Pentagon.

Following his consulting career, Lenel joined Blue Cross Blue Shield Association where he has been for the last 15 years. He works with national electronic standards to support administrative and clinical data exchange activities of the Blue System.

In addition to his primary engagement with HL7, Lenel worked with now HL7 Board Chair-Elect, Dr. Walter Suarez, on a National Provider Identifier (NPI) outreach project with WEDI (Workgroup for Electronic Data Interchange) and a related WEDI Award of Merit for both. Lenel has also worked on projects with the HIMSS HIE Committee and the Education Work Group (WG) of ASC X12.

Involvement with HL7

At HL7, Lenel has been the most active with the Attachments and EHR WGs. He also occasionally participates in the Patient Care, Finance, Structured Documents, Clinical Quality Information and FHIR Infrastructure WGs.

During his time with the EHR WG, he was a co-author of the administrative chapter of the EHR-System Functional Model where he also served as a past co-chair along with fellow HL7 members Don Mon, PhD and Pat Van Dyke. This work contributed to Lenel's recognition as one of the HL7 Volunteer of The Year award winners in 2006.

W. Edward Hammond congratulates Lenel James on his HL7 Volunteer of the Year Award in 2006.

Personal Life

Lenel has lived and worked in Chicago, Illinois for almost 40 years. However, he grew up as an U.S. Air Force brat, traveling from South Carolina, to Tokyo,

Lenel with daughter Erica.

Lenel enjoying a trip to the movie with his daughter Erica.

Japan, to Lake Placid, New York (B-52 Bomber base), to Dover, Delaware and "landing" in southern Illinois at Scott Air Force (home to worldwide U.S. military logistics command) base near Saint Louis. He then went on to Champaign, Illinois where he obtained an MBA at the University of Illinois.

Lenel considers North Carolina his home state and Raleigh/Durham his summer vacation home. As a child in the 1960s, he spent his summers on a nearby farm where he churned butter from the cows that his grandmother milked and primed tobacco with no-nonsense directions from his grandfather. Sunday breakfast was scrambled eggs from the hen house out back, bacon from the smoke house, all cooked on a wood-fired stove.

Lenel has a lovely daughter Erica who works in the south suburbs of Chicago as an applied behavior analysis (ABA) therapist for children with autism or serious behavioral issues. Erica is currently in graduate school at the Chicago School of Professional Psychology seeking a Masters in Adolescent Psychology.

Beyond the thrill of roller coasters and reading (books, articles, and white papers), Lenel and his daughter are also avid movie buffs. Lenel especially enjoys the local IMAX theater with its reclining plush seating and 10,000 watts of 12-channel sound, plus a sub-bass for a fully immersive audio experience. He feels it is a great way to enjoy a high-octane blockbuster with cutting-edge special effect such as like *Mission: Impossible – Fallout*. ■

LENEL'S TOP MOVIE PICKS

- **Get Out,** a 2017 Oscar winning horror-genre film, as a new-age Stepford Wives with a wicked twist.

- **Crazy Rich Asians,** as a 2018 instant classic for a fun romantic comedy.

- **Interstellar,** a 2014 Sci-Fi adventure that brings to life the latest science of the universe, as detailed by Stephen Hawkins in "A Brief History of Time"—great for bedtime reading on quantum mechanics, string theory and the Big Bang.

Tooling Update
In Medias Res

By Wayne Kubick, CTO, HL7 International

Every good story has a beginning, middle and end. First, we get hooked on the opening, which drives us ultimately towards a conclusion, but the real time and effort comes along the way. While the middle is where most things happen, we can sometimes feel like we're in a holding pattern there—until something tangible finally happens that directly affects what we do.

This rings true with HL7's transition to our new collaboration tooling environment built on Confluence and JIRA. The good thing is that we're making steady progress on multiple fronts, with many more work groups in Confluence and the killer apps of JIRA Ballot and Unified Terminology Governance (UTG) becoming more palpable. On the other hand, we're clearly still *en route*, perhaps able to imagine but not yet actually taste the promised rewards. This is understandable, since the mission of HL7 is the creation of standards, not the creation of tooling to help us achieve that. However, it's tooling that directly affects us in the ways we develop HL7 standards.

Confluence

Confluence

Probably the single biggest advance in our Confluence rollout was the arrival of our new Applications Manager, Josh Procious, whom many of you may have met at the Baltimore WGM. Josh has been working with individual work groups to get them started in the new environment to help make the transition relatively seamless. As those of you who've made the leap already know, Confluence is a breeze once you go all in, but it really helps to have a coach get you started. Josh continues to improve the standard templates, release new tips and techniques webinars as well as expand help guidance on a regular basis. A simplified account registration process is now available, and some of the new features currently being evaluated are expanded group authoring of documents and use of interactive polling to facilitate decision making.

Now that work groups are becoming more comfortable with Confluence, we can seize the opportunity to take a fresh look at how we can organize, present and manage essential information. Consider this analogous to packing up and moving to a new home. Even if the new home is bigger than the last, we don't want to move the things we really don't need anymore, and we want to separate the things we need right away from those that can be packed away out of sight, out of mind (or, better yet, out to the trash heap in some cases).

Over the coming year, in piecemeal fashion, the Technical Steering Committee (TSC) will be trying to pinpoint the most essential information for work groups and make that critical information about how to effectively utilize HL7 processes easily accessible in Confluence, just a few clicks away.

As more projects begin using the new online Confluence Project Scope Statement (PSS), we expect to look to adapt other necessary forms to Confluence to make it quicker and easier to find what you need, and help you navigate through HL7 with much less effort and frustration.

HL7 headquarters is already working on this, and we're looking forward to moving beyond start-up and migration and focusing instead on the world of new opportunities that are possible in a more advanced collaboration tooling environment.

JIRA

JIRA

JIRA use is also on the rise. Initial unit testing of the new JIRA-based ballot system identified the usual expected issues, but bug fixes had to be suspended for a while due to the higher priority of completing the HL7 Fast Healthcare Interoperability

Resources (FHIR®) Release 4 ballot. At the time of this writing, testing is expected to recommence before end of 2018 and we're still looking for the first set of ballots to commence in early 2019.

Ted Klein's JIRA-based UTG prototype is also expected to be ready for initial pilot testing in early 2019. We hope to replace the current harmonization process using UTG later in the year.

As HL7 work groups become more comfortable with JIRA and the advantages of its close integration to Confluence, we expect to see most work groups migrating to JIRA instead of Tracker during 2019.

Quo Vadis?

While these ongoing projects continue their way through the middle of things, we're also embarking on a new series of projects to tackle the more challenging need to improve the tooling we use for standards development, with the help of ongoing funding support from the U.S. Office of the National Coordinator for Health Information Technology (ONC). The most prominent of these projects are:

- Re-engineering the FHIR implementation guide publishing tooling so it can be run by operations with minimal manual intervention and improved integration with the FHIR registry. Ideally, we hope to leverage this work to improve publishing tools for other standards as well

- Replacing multiple feedback systems (Help Desk, DSTU) with JIRA

- Replacing the HL7 Ballot Desktop with a new cloud-based system.

I'll be providing more details on these and other tooling initiatives in the coming months.

And remember to check: https://confluence.hl7.org/display/HL7/Confluence+and+JIRA+Information+Updates for more tooling updates and details.

Until then, back to life in the middle lane. ■

News from the HL7 Project Management Office

ONC Grant Funded Project Updates

Work concluded on the projects funded by the ONC's 2018 $850,000 grant for maturing the Consolidated Clinical Document Architecture (C-CDA®) and Fast Healthcare Interoperability Resources (FHIR®) standards.

By Dave Hamill, Director, HL7 Project Management Office

Under this grant, we were able to accomplish the following:

1. Create a unified terminology governance (UTG) process and working prototype;

2. Begin work to migrate the FHIR issue/project tracking and ballot reconciliation to JIRA;

3. Provide support for FHIR Release 4 standard for trial use (STU) balloting via ballot facilitators and a coordinator;

4. Provide an administrator for each FHIR Connectathon;

5. Upgrade existing FHIR reference server implementations to more effectively support "bulk access and push" applications;

6. Hold two face-to-face C-CDA Implementation-A-Thons (IAT) and one virtual IAT;

7. Process the FHIR ballot comment spreadsheets and import them into gForge for expedited reconciliation;

8. Create bidirectional CDA/FHIR mappings along with supporting documentation;

9. Add a draft Argonaut Clinical Notes design to the draft US Core R4 artifact;

10. Make improvements to FHIR publication process, including:

    a. Enhance the build tools for the core FHIR specification to more efficiently accommodate new features, reduce risk dependencies, improve quality and minimize need for human support;

    b. Migrate FHIR code and version management to GitHub with enhanced control processes;

    c. Design and implement additional servers and processes to expand and improve FHIR terminology services;

    d. Provide additional improvements to FHIR product management and release processes, including improved integration with registry.fhir.org.

Details and deliverables for the above ONC funded projects can be found on the HL7 Wiki at: http://wiki.hl7.org/index.php?title=ONC_Grant_Project_Page.

In September, the ONC extended the grant for another year, and with that, awarded an additional $1.36 million to HL7 for continued maturation of the C-CDA and FHIR standards. Work identified under this endeavor includes the following:

1. Continue work on the Unified Terminology Governance (UTG) process and conduct a pilot

2. Conduct a Virtual FHIR Connectathon that focuses solely on the healthcare directory

3. Conduct additional C-CDA Implementation-A-Thons (both face-to-face and virtual)

4. Continue to improve the FHIR Jira ballot process

5. Provide a FHIR implementation guide publication coordinator

6. Continue to provide administration for the FHIR Connectathons

7. Continue work on "bulk data access and push"

HL7 appreciates ONC's continued support of C-CDA and FHIR for 2019 and beyond. ◼

For the most up-to-date information on all of the ONC funded projects visit: http://wiki.hl7.org/index.php?title=ONC_Grant_Project_Page

The Patient Summary for Unplanned, Cross-border Care –
Draft European Standard 17269 Approved

SDOs Cooperate on the International Patient Summary

By Robert Stegwee, PhD, Chair, CEN TC 251

The European standard for ***The Patient Summary for Unplanned, Cross-border Care*** has been approved by the members of CEN Technical Committee 251 Health Informatics. This is a major accomplishment for both European and global collaboration.

The standard uses the European guidelines on cross-border care, as adopted by the European eHealth Network, as a starting point. These guidelines emerged from the epSOS large scale pilot and forms the basis for the eHealth Digital Service Infrastructure in Europe that is expected to come into operation toward the end of 2018. To facilitate the adoption of a common format for the patient summary across member states, the European Commission enabled CEN to create this standard and its companion implementation guide, by means of the CEN International Patient Summary project.

This work was carried out by a core team under the leadership of CEN, HL7 Europe and IHE Europe. One task of the core team was to contribute to global standards. The Patient Summary Standards Set from the Joint Initiative Council on Global Health Informatics Standardization and the HL7 International Patient Summary (IPS) project were their main venues for collaboration.

The technical specifications for implementation of the Patient Summary provide guidance on how to make it work in real life, with a focus on the HL7 IPS standard in both HL7 Clinical Document Architecture (CDA®) and Fast Healthcare Interoperability Resources (FHIR®) formats. The HL7 CDA IPS Implementation Guide was recently published. The HL7 FHIR IPS Implementation Guide ballot recently passed and will likely be published in early 2019. This will enable the use of the Patient Summary, not only in Cross-border Care, but also in national and local exchanges.

IHE International plans to update their Patient Care Coordination profiles to include these new standards, which will mean that they can also be tested by individual EHR vendors at the IHE Connectathons around the world. The countries participating in the European eHealth Digital Service Infrastructure are already undergoing a similar testing process supported by IHE Europe.

The Trillium II Project tested the HL7 FHIR IPS Implementation Guide at the HL7 FHIR Connectathon in Baltimore in October 2018 and plans to revisit tests at the IHE Europe Connectathon 2019.

The project team is currently reaching out to groups around Europe and the world to familiarize them with this important work. They also want to ensure that the IPS project can and will play its intended role to achieve better and safer care for all. CEN, HL7 affiliate members representing national competent authorities, the ICE sector service providers, regional and local authorities and civil society all play a critical role in achieving widespread adoption of the IPS. ■

Further Reading:

Draft European standard 17269: https://ilnas.services-publics.lu/ecnor/downloadPreview.ction?documentReference=220640

eHDSI: https://ec.europa.eu/cefdigital/wiki/display/EHOPERATIONS/eHDSI+Mission

eHealth Network: https://ec.europa.eu/health/ehealth/policy/network_en

Trillium II Project: www.trillium2.eu

HL7/CEN IPS dataset in ArtDecor: https://art-decor.org/art-decor/decor-datasets--hl7ips-

HL7 FHIR IPS: http://hl7.org/fhir/uv/ips/index.html

HL7/CEN IPS: http://www.ehealth-standards.eu/centc-251-hl7-international-agreement-to-collaboration-on-the-ips-projects/

HL7 IPS CDA Implementation guide STU: http://www.hl7.org/implement/standards/product_brief.cfm?product_id=483

Models of Child Health Appraised
(A Study of Primary Healthcare in 30 European countries)

A Study of Primary Healthcare in 30 European Countries
Models of Child Health Appraised

The Models of Child Health Appraised (MOCHA) project is a large-scale Horizon 2020 research project funded by the European Commission which concluded with its findings and recommendations in November 2018. The remit of MOCHA has been to look at the totality of primary care services for children (including school health services and child-facing e-health).

MOCHA has reviewed all aspects, ranging from patterns of provision, user access and co-payments, the varied structure and education of the child health workforce, rights, autonomy of the older child as well as risks of unregulated e-health.

The MOCHA project website is located at www.childhealthservicemodels.eu.

MOCHA's primary objective was to map the different ways in which European countries provide primary care services to children, and to assess which had better outcomes.

By Michael Rigby, PhD, Visiting Professor, Imperial College London

and Catherine Chronaki, Secretary General, HL7 Foundation

This ranged across the full spectrum of childhood from birth to eighteenth birthday, thus spanning infancy, the pre-school years, school health and adolescence. Children develop radically during

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The project's work on e-health was based on the principle that data and information are key to healthcare delivery and to citizen co-production of health.

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this personal life trajectory, and need support with their health, including defense against illness, accidents and other health threats. Continuity of information through that period, and across settings and locations, is vital.

The project's work on e-health was based on the principle that data and information are key to healthcare delivery and to citizen co-production of health. The project examined underlying factors, including the use and style of unique record identifiers (URI). This revealed that while currently 25 of the 30 countries have a national URI, only nine issue it at birth. This creates record linkage challenges in 21 of the counties studied. In some countries, the URI is specific to health and care, while for other countries, it is a public service number or a national ID number. The construct varies between countries, and in several it contains personal information in coded form.

All but five countries report EHR systems being used by more than 50% of primary care practitioners. However, most systems are commercially provided and may not be strong in the special data sets and processes related to children. Seventeen countries also have a case-based child public health record system – in six countries this actively schedules appointments

for preventive health processes, in eight countries it advises health professionals of children with overdue protections, and the rest are passive. Patterns of approved linkage between primary care records, secondary care, school health services and other service providers vary considerably. There are only five countries in which children have a right to see their own records. Conversely, there are also five countries where children hold full power to prevent their parents from seeing their medical record if they sought sensitive confidential help.

MOCHA has established links with the European Centre for Disease Control (ECDC), which has researched similar questions on a similar timescale, and the results closely match.

MOCHA also analysed whether children's specific record needs are mentioned in national e-health strategies. They found that half of the countries do not mention children at all. Conversely, some referred to specific innovation to benefit children.

Today, many children use social media or apps for health advice. However, such platforms can be malicious, or at best, offer unvalidated evidence. Some also surreptitiously collect user data. Only eight countries have systems to validate websites, while just seven have

systems to validate apps. This indicates that three quarters of the children of Europe have no such protection.

MOCHA investigated whether countries used standards in their EHRs in primary care for children. Most referred to national standards, but almost none to international standards.

This concern led to constructive engagement between MOCHA and the Trillium II project led by the HL7 European office. The ECDC had expressed a similar need for standards within immunization recording systems. At a workshop held in the CEN Brussels office, a joint group looked at what data is needed in various situations in children's primary care, and whether underpinning standards exist. Other related issues important in child public health, but often omitted in immunization initiatives, such as accessibility to immunization centers, and reasons for non-immunization (which may be temporary or transient) were highlighted. Attention was also drawn to child autonomy and child consent.

The MOCHA work is now being followed up with a workshop hosted by the WHO Regional Office for Europe in a drive to create an action plan to promote standards in child health data, and to enrich the European Patient Summary to better serve children. ◼

White Paper Goal to Result in Development of Implementation Guides

ADA-HL7 Launch Joint Dental Interoperability Initiative

By Todd Cooper,
Project Lead, ADA-HL7
Dental Interoperability and
Executive Director, Trusted
Solutions Foundry, Inc.

and Jean Narcisi,
Director of Dental
Informatics, Practice
Institute

"But you guys are just a fringe profession..." Ouch! This was a physician's tongue-in-cheek response to a frustrated dentist's don't-forget-about-us pleadings during a workshop that was focused on healthcare information exchange across broad regions. Like all humor, though, it did have a kernel of truth: though significant gains have been made around the seamless exchange of information inside and between healthcare organizations, very little attention has been paid to those "fringe" areas of health that the vast majority of people around the world experience throughout their life time, namely dental care[1].

The American Dental Association (ADA) and HL7 have jointly developed a number of standards around dental care, namely Clinical Document Architecture (CDA®) attachments for periodontal and orthodontic care and an EHR System Dental Functional Profile project[2]; however, they are primarily focused on the business aspects of dental informatics, especially supporting payment for services rendered, but not the granular information related to oral health and dental care.

Dental informatics standards include the SNODENTÒ[3] terminology for dental care, supporting integration with EHRs and other informatics systems. The ADA

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1   Related areas include vision care, chiropractic, social care and mental health services. This includes the emerging "social indicators" research and standardization activities.

2   HL7 projects #1274, #1402 and #1406, respectively.

3   Systematized Nomenclature of Dentistry; see https://confluence.hl7.org/display/TA/SNODENT and https://www.ada.org/en/member-center/member-benefits/practice-resources/dental-informatics/snodent/snodent-license-application (last accessed 2018.11.18)

is publishing a new specification defining the core data elements for an Oral Health – CCD[4], but even with that, the primary question remains: Who are the ecosystem stakeholders and what are the value propositions that will drive the actual interoperable exchange of dental health content to improve care quality and to realize needed efficiencies?

Clearly this question impacts everyone, everywhere. It cuts across demographics and geographies. Even international patient summary standards pay little, if any attention, to dental informatics, even with the availability of numerous content standards.

At the same time, research has long confirmed the crucial role that oral health plays in early determination of a person's overall state of health – including early indicators of significant trends – and the need to better coordinate care so as to eliminate redundant procedures and to achieve improved efficiencies. With digital health technology rapidly moving toward knowledge-based technologies for predictive analytics, decision support, precision medicine and artificial intelligence, the availability of highly granular information is a necessity, including for dental care.

The potential value of interoperable dental information is not a hard argument to make. However, as in other applications of standardized information exchange, its realization remains elusive, even with the foundational dental informatics standards in place, including both parametric information and images[5].

To address this question, HL7 and the ADA have initiated a joint Dental Interoperability Investigative Project[6] to develop a white paper that details a representative set of storyboards and use cases. Identifying the stakeholders and value propositions around oral health and dental care information exchange will help focus the development of one or more implementation guides, factoring in multiple architectural approaches, including Version 2 messaging, CDA documents and Fast Healthcare Interoperability Resources (FHIR®)-based exchange.

Though the HL7 Patient Care Work Group is the primary sponsor of this project, it touches many groups including Attachments, Clinical Decision Support, EHR, Health Care Devices, Imaging Integration, Mobile Health, Orders & Observations, Pharmacy, Structured Documents and others. It also has a strong multi-national component, with project interest from Canada, Norway, South Korea, and the U.S.

When the project was kicked off during the September 2018 HL7 Working Group Meeting (WGM) in Baltimore, several use cases were proffered, including:

- Simple porting of a person's dental information when they change geography or payers[7];

- Care coordination between hospitals, HIE/EHR systems and dental care professionals[8], including pre/post-surgery care requiring dental care coordination;

- Automated assessment of a soldier's dental treatment and determination of their readiness to return to service;

- Geriatric care, especially with dementia patients and "visiting" dentists who are time limited and often time challenged by a lack of information and patients who are obviously in pain but unable to describe what they are experiencing;

- School-based nursing and dental care, where historic care information is rarely available.

A dental interoperability community of interest is being created within HL7, engaging a broad set of stakeholders and subject matter experts, that will help develop a first draft of the white paper by the end of 2018 for review at the January 2019 HL7 WGM in San Antonio. This will target one or more implementation guides that will be initiated soon after the January 2019 WGM, leveraging the storyboards and use cases that clearly indicate value propositions that will be supported internationally.

The Confluence "Dental Interop Home" page[9] includes a link to the Dental-Interop Listserv, as well as information as it is developed for the white paper. A FHIR Zulip stream has also been created (#dental). For more information, contact the project leaders:

- Todd Cooper (*ToddCooperAFC@gmail.com*)

- Jean Narcisi (*narcisij@ada.org*) ◼

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4   ADA Technical Report No. 1084: Reference Core Data Set for Communication Among Dental and other Health Information Systems.

5   For dental imaging, see https://www.dicomstandard.org/wgs/wg-22/ (last accessed 2018.11.18).

6   HL7 Project #1482.

7   Typically due to the lack of information or non-interoperable information, exams and imaging are repeated, driving up overall healthcare cost with little if any benefit to the patient.

8   Note: some healthcare providers include dental along with vision and similar care services. Having access to up-to-date mediation and allergy lists is a clear benefit.

9   https://confluence.hl7.org/display/DI/Dental+Interop+Home (last accessed 2018.11.18).

International Patient Summary in Disaster Medicine

The Case of EU MODEX-Ro Disaster Readiness Exercise

The Trillium-II project (www.trillium2.eu) participated in the 5th European Union Module Exercise (EU MODEX-Ro) to evaluate the International Patient Summary (IPS) in the context of a disaster management and emergency response exercise.

By Catherine Chronaki, Secretary General, HL7 Foundation

EU MODEX-Ro took place in sites around Bucharest on October 14-18 2018, hosted by the Ministry of Internal Affairs of Romania. EU MODEX-Ro was the largest medical exercise in the history of the European Union with more than 3,500 participants. It was the largest medical module exercise within the framework of the Union Civil Protection Mechanism in terms of number of teams and participants, with representatives from all member states including 600 role players and 2,000 medical injects.

EU MODEX-Ro Exercise Scenario

The EU MODEX-Ro exercise scenario involved a devastating earthquake of 7.5 magnitude in Bucharest, Romania. Saturday morning at 8:37 am, Romania declared Status of Emergency and requested international assistance. The EU responded by sending a large and highly skilled emergency medical team (EMT), merging on location with an Israeli team.

The EU MODEX-RO was led by Johanniter Germany and included a consortium of 10 civil protection partners. It focused on the coordination and collaboration of medical modules, namely emergecy medical team (EMT) 1-3, advanced medical post (AMP), and medical evacuation (MEDEVAC).

Trillium II evaluated the use of the International Patient Summary (IPS) in the EMT-3 operations. An EMT-3 is a fully operational mobile field hospital. Trillium also solicited feedback from EMT-2 team members, which offers some but not all hospital departments.

During the EMT-3 shifts on October 16, 2018, 20 earthquake victims (role players) arrived in groups with other medical cases to the mobile field hospital for treatment.

The value of the IPS available in the smartphone of a victim, in the aftermath of a disaster, was assessed at different levels of disaster management. The IPS comprises key elements of a person's health profile including critical problems and conditions, allergies, medication and vaccinations. It aims to serve as a window to a person's health prior to the disaster.

During the EMT-3 shifts on October 16, 2018, 20 earthquake victims (role players) arrived in groups with other medical cases to the mobile field hospital for treatment. The victims had the IPS on their smartphones and showed it to the EMT team.

The visual presentation of specific medical case injects was assessed on three different apps developed by Gnomon (eHealthPass), SPMS (MySNS), and SRDC (Care Planner of the C3Cloud project) as well as in free text in discussions with the Italian, Austrian, and Israeli medical teams.

eHealthPass enables the patients to carry their medical information (medical record, vaccination list, prescriptions calendar, appointments with doctors, etc) on their smartphone and empowers them to gain control of their own data by determining who will have access to which piece of information. In the context of the Bucharest exercise, eHealthPass facilitated the demonstration of the IPS on the victims' smartphones and incorporated the produced encounter report on the victims' medical record.

MySNS developed by SPMS in Portugal, is available to all Portuguese citizens. It presents IPS-related information through specific cards with each card corresponding to one type of health information such as vaccinations and allergies, among others.

The SRDC adaptive care planner reads the IPS and can assist health professionals with formulating a care plan based on the most recent professional guidelines covering the care of patients already suffering from chronic diseases including diabetes, heart failure and renal failure. This is a technology that will be tested in the C3C Cloub project. It could appeal to social workers that deal with earthquake victims in the period following the disaster, while still in the hospital or evacuation camp. The adaptive Care Planner also allows medical professionals to quickly review the medical summary of a patient by processing and visualizing the IPS.

The HL7 FHIR IPS format used during the exercise was the result of collaboration between CEN and HL7 and provides a refined representation of the IPS used in the Connecting Europe Facility (CEF) eHealth Digital Services Infrastructure (eHDSI).

According to the original plan, at the end the shift(s) when the exercise section medical cases had played out, the Trillium-II team discussed the IPS experience with two groups:

1. The members of EMT about potential benefits and how the IPS affected their medical decision-making, care management, and patient safety

2. The role players (victims), about their patient experience of carrying the IPS on their smartphone or tablet.

Earthquake incident medical cases were evaluated both with and without IPS information. In this way, Trillium-II will assess the advantage of having an IPS or its parts (e.g. medications, allergies, etc.) in real emergency situations:

- EMT experience: feasibility / acceptance / usability

- Quality and safety: added value/effectiveness

- EMT Care management and productivity: Increase/ decrease of efficiency

In-depth interviews conducted onsite reflected the importance of keeping a photo in the patient summary as a means of identification and supporting the language of the country where the disaster occurs. They also illustrated the importance of the user interface design. Depending on the setting where information is used and the specific medical case, different elements of the IPS were considered of higher importance. Whereas, in the emergency room, physicians stated the medical background is of lesser importance, physicians at the field hospital's ward believed their work could benefit the most from the IPS.

The Case of EU MODEX-Ro Disaster Readiness Exercise

Additionally, the information will be provided as part of the integration with the EUMFH Electronic Health Record system (EHR). The IPS will then be imported to the EUMFH in the HL7 FHIR IPS format in cooperation with Professor Thomas Neumuth's team at Leipzig University. EUMFH is an EMT-3, which can provide long-term medical relief to the earthquake victims. After treatment and discharge, the relevant information such as procedures, medication, other medical actions, will be made available to the team as an encounter report which will accompany the patient and can also be imported to GNOMON's eHealthPass Application.

Initial efforts to assess the IPS concept in disaster medicine were positive and rewarding but leave several questions unanswered. For example:

- Can we use IPS information to assess the pharmaceutical needs of the evacuation camp?

- How would the IPS fit in a situation where an epidemic develops in an evacuation camp?

- Should we recommend different designs for the presentation of IPS information depending on the background and information needs of a health practitioner?

- Could care plans for chronic disease members be adapted to disaster situations?

- What guidance should be given to paramedics that see a smartphone in a victim's pocket?
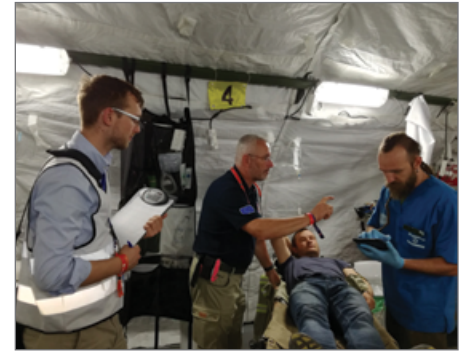
Participants engage in hands-on role-playing during the EU MODEX-RO exercise.

- Should IPS information be used to adjust second level triage protocols?

Trillium-II hopes to continue its collaboration with EU-MODEX to be able to further explore similar questions about the IPS in upcoming exercise scheduled in Estonia. ◼

Further Information:

Trillium II Project
www.trillium2.eu

HL7/CEN IPS dataset in ArtDecor
https://art-decor.org/art-decor/decor-datasets--hl7ips-

HL7 FHIR IPS
http://hl7.org/fhir/uv/ips/index.html

GNOMON eHealthPass
https://www.gnomon.com.gr/ehealthpass

SPMS MySNS
https://comunidade.mysns.pt/

SRDC Adaptive Care Planner - C3Cloud
http://c3-cloud.eu/home

HL7/CEN IPS
http://www.ehealth-standards.eu/centc-251-hl7-international-agreement-to-collaboration-on-the-ips-projects/

EU MODEX:
https://www.facebook.com/eumodex/
http://eu-modex.eu/w/RedCMS/event/bucharest/ https://www.youtube.com/watch?v=HBhCV3PLFPQ

Trillium II team with honorary plaque commemorating participation in the EU MODEX Disaster Management Exercise in Bucharest, Romania.

Recognizing Volunteers as HL7's Most Vital Asset
HL7 2018 Volunteer of the Year Award Recipients

HL7 honored three members with the 22nd annual W. Edward Hammond, Ph.D. Volunteer of the Year Award. Established in 1997, the award is named after Dr. Ed Hammond, one of HL7's most active volunteers and a founding member as well as past board chair. The award recognizes individuals who have made significant contributions to HL7's success. The 2018 recipients include:

- Brett Marquard, principal, WaveOne Associates, Inc.

- Ulrike Merrick, lead specialist, informatics terminology, APHL – Association of Public Health Laboratories and public health information specialist, Vernetzt, LLC

- Bryn Rhodes, owner, Database Consulting Group and chief technology officer, HarmonIQ Health Systems Corporation

Volunteers of the Year Award Winners pose with W. Ed Hammond. Pictured, from left to right: Brett Marquard, Bryn Rhodes, W. Ed Hammond, and Ulrike Merrick.

About the Volunteers:

Brett Marquard has been a member of HL7 since 2008. Marquard has held several positions throughout his 10-year tenure at the organization. For seven years, he co-chaired the HL7 Structured Documents Work Group. In addition, Marquard has served as the vice chair of the HL7 US Realm Steering Committee since 2016 and has chaired the newly established CDA Management Group since 2017. He is active in the effort to advance HL7 Fast Healthcare Interoperability Resources (FHIR®) and works with the ONC within the context of addressing their HL7 requests. Finally, Marquard has been instrumental in the standards development process as the primary editor of the Consolidated CDA (C-CDA) and US FHIR Core implementation guides.

Ulrike Merrick has been an active member of HL7 since 2008. She has served as a co-chair of the Orders and Observations Work Group since 2014 and was recently appointed to HL7's newly established Version 2 Management Group. In addition, Merrick was elected to serve on the HL7 Technical Steering Committee beginning in January 2019 as the co-chair of the Administrative Steering Division. Much of her involvement in HL7 is focused on lab testing and reporting, and she has used her background in this area to engage the CDC in HL7 initiatives. Merrick has leveraged her broad network in the laboratory community to provide input from subject matter experts in relevant HL7 specifications, such as the HL7 Specimen Domain Analysis Model.

Bryn Rhodes has participated in HL7 for several years and joined as a member in 2018. He serves as an interim co-chair of the Clinical Decision Support Work Group. Rhodes has also been involved in the efforts to extend HL7 FHIR into the clinical decision support and clinical quality measurement domains. He is the co-author of several HL7 specifications including the following: Clinical Quality Language (CQL), FHIRPath, FHIR Clinical Reasoning Module, QI Core/Quick and the CQL-based HQMF. In addition, Rhodes oversaw the transfer of the CMS electronic quality measure (eCQM) work using the CQL across multiple measure developers. Finally, he was instrumental in the Centers for Disease Control and Prevention (CDC) Adapting Clinical Guidelines for the Digital Age project's incorporation of FHIR clinical reasoning and FHIR resources into the CDS L3 output and operationalizing the process by use in a CDC opioid management clinical guide. ■

Project to Advance Value-based Care by Leveraging HL7 FHIR®

Da Vinci Project Poised for Accelerated Growth in Second Year

The future is bright for the Da Vinci Project. Da Vinci is an industry-driven initiative to create a sustainable model of collaboration across competitors to remove barriers and unleash the bidirectional data necessary to fuel value-based care. The overarching goal is to improve appropriate clinical data sharing and metrics among providers and payers. Da Vinci leverages HL7's Fast Healthcare Interoperability Resources (FHIR®) platform.

By Jocelyn Keegan, Manager, Da Vinci Project, and Lead, Point-of-Care Partners Payer Practice

Accomplishments

We have several accomplishments for 2018. They include:

- In January 2018, stakeholders approved the formation of the Da Vinci Project and work began on the initial use cases. Da Vinci members identified payer/provider trading partners to develop and validate the artifacts and tools for two targeted use cases in 2018.
    - Data Exchange for Quality Measures (DEQM): aka Medication Reconciliation Post-Discharge (MRP)
    - Coverage Requirements Discovery (CRD)
- In the summer of 2018, the membership added two additional use cases:
    - Document Templates and Rules (DTR)
    - eHealth Record Exchange in Support of HEDIS/STARS and Clinician Exchange (eHRx)

- In the fall of 2018, the initial two use case implementation guides were balloted through HL7. Both guides and reference implementation materials are available on http://confluence.hl7.org.
- There are currently 27 organizations participating in the Da Vinci Project. They include 12 payers, three electronic health records (EHR) vendors, 10 health information technology products vendors and a growing number of providers. To see the complete list of members, please visit: http://www.hl7.org/about/davinci/members.cfm.
- Da Vinci is a sustainable model. Members have established a governance model that will ensure equal representation from stakeholders and offer transparency. On the business side, Da Vinci runs lean and smart. About two-thirds of membership dues go directly to project costs. Each project member organization staff participant averages 10-15 hours per week per project. In- kind space and support are provided by HL7, HIMSS and Optum Labs.

What's on Deck for 2019?

The Da Vinci Project plans to build on the successes in 2018, support existing FHIR versions and adopt existing profiles where possible (Argonaut, US-Core, QI-Core). Planned activities include:

- Continue to test, pilot and refine our first two use cases and ballot a second version of the Implementation Guide in May of 2019.
- Complete the work we have started on DTR and eHRx and take implementation guides to ballot in May of 2019.
- Complete the initial version of standards on four new use cases: prior authorization support; computable gaps in care; alerts; and attribution of members to providers. ■

Want to learn more?
Contact jocelyn.keegan@pocp.com
Follow the Da Vinci page on the HL7 website at: www.hl7.org/about/davinci/

Upcoming International Events

Date / Event	Website	Location
February 11-15, 2019 HIMSS19–HL7 Booth #4849	www.himssconference.org	Orlando, Florida
February 18-22, 2019 GS1 Global Forum 2019	www.gs1.org/events/488/gs1-global-forum-2019	Brussels, Belgium
February 22-24, 2019 HEALTHINF 2019	www.healthinf.biostec.org	Prague, Czech Republic
March 5-7, 2019 World Healthcare Congress Europe	europehealthcare.org	Manchester Central, UK
March 4-10, 2019 HL7 International Conference & Working Group Meeting	www.hl7.org/events/workgroupmeetings.cfm	Montreal, Canada
May 26-29, 2019 e-Health Canada 2019	www.e-healthconference.com	Toronto, Canada
June 10-12, 2019 HL7 FHIR DevDays	www.fhirdevdays.com/	Redmond, Washington
August 26-30, 2019 MedInfo 2019	www.medinfo-lyon.org/en	Lyon, France

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FHIR for Architects	Online	4/23-24/2019
FHIR Tutorials at Working Group Meeting	Montreal, Canada	5/4-10/2019
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Advanced CDA	Online	5/22-23/2019
HL7 Fundamentals Course	Online	5/30-8/22/2019
Hitchhikers Guide to HL7	Online	6/18-19/2019
HL7 FHIR Fundamentals	Online	7/18-8/15/2019
C-CDA 2.1	Online	8/6-7/2019
C-CDA on FHIR	Online	8/8-9/2019
HL7 Fundamentals Course	Online	9/12-12/5/2019
FHIR Tutorials at Working Group Meeting	Atlanta, GA	9/14-20/2019
FHIR Profiling	Online	10/9-10/2019
Understanding & Using Terminology in FHIR	Online	11/6-7/2019
HL7 FHIR Fundamentals Course	Online	10/31-11/28/2019

Visit HL7.org/events for more information

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National Council for Prescription Drug Programs

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NC Division of Public Health

NCQA

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Nebraska Health Information Initiative (NeHII)

New York eHealth Collaborative

New York State Department of Health

New York State Office of Mental Health

NJ Division of Developmental Disabilities

NJDOH

NYS DOH, Office of Quality and Patient Safety

Object Management Group (OMG)

Oklahoma State Department of Health

Oregon Public Health Division

OSEHRA

PA Dept of Health

PCHAlliance

PCPI

Pharmaceuticals & Medical Devices Agency

Radiological Society of North America

Ramsey County Public Health

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Rhode Island Quality Institute

RTI International

SAMHSA

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Social Security Administration

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The Sequoia Project

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United Network for Organ Sharing

United Physicians

University of AL at Birmingham

University of Miami

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WorldVistA

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Ulas Bayraktarj

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Jose Alfonso Lara Campos
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Certified RIM Version 3 Specialist

SEPTEMBER 2018

Ulas Bayraktar

OCTOBER 2018

Xueting Lyu

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PHI Medical Office Solutions
Physician Compass
PNT Data Corp. (formally Post-N-Track Corporation)

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Premier Healthcare Alliance
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Prometheus Research, LLC
Pulse Systems Inc.
QS/1 Data Systems, Inc.
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Qvera
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Roche Diagnostics International Ltd.
Roji Health Intelligence LLC
Rosch Visionary Systems
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HL7 Standards Approved by ANSI, Since September 2018

Name	Designation	Date
HL7 Version 3 Standard: Master File/Registry Infrastructure, Release 1	ANSI/HL7 V3 MFRI, R1-2006 (R-2018)	10/19/18
HL7 Version 3 Standard: Core Principles and Properties of Version 3 Models, Release 2	ANSI/HL7 V3 CPPV3MODELS, R2-2018	11/1/18

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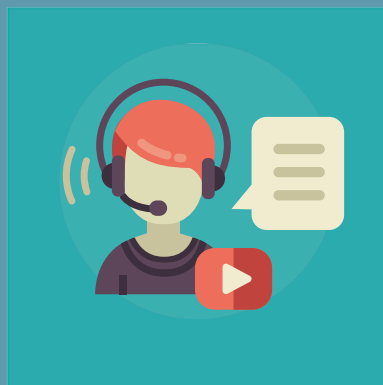
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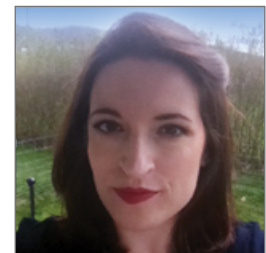
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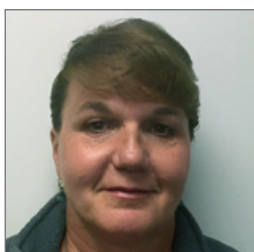davidj@HL7.org

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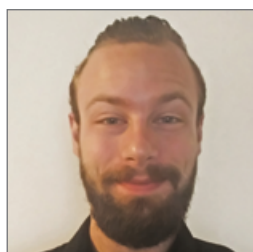+1 906-361-5966
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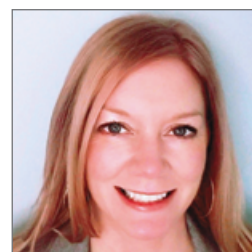+1 734-677-7777 x106
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February 11 - 15, 2019
Orlando, Florida

Join us in the HL7 Booth (#4849) at the HIMSS19 Exhibit!
http://www.himssconference.org/

HL7 will offer a variety of education sessions covering HL7 standards such as FHIR, C-CDA and current industry topics like precision medicine and the Argonaut and Da Vinci Projects. Visit our booth to learn more about how HL7 is advancing healthcare IT interoperability across the globe.

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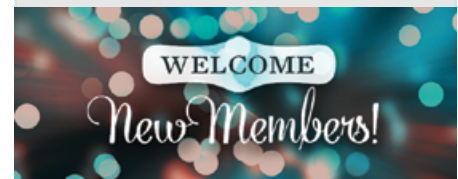
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Montreal, Quebec,
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June 10–12, 2019
HL7 FHIR Dev Days

Microsoft Conference Center

Redmond,
Washington

September 14-20, 2019
33rd Annual Plenary & Working Group Meeting

Atlanta Marriott Marquis

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February 1-7, 2020
International Conference & Working Group Meeting

To be announced

Sydney, Australia

May 16-22, 2020
Working Group Meeting

Hyatt Regency San Antonio on The Riverwalk

San Antonio, TX

September 18-25, 2020
Working Group Meeting

Baltimore Renaissance Harborplace

Baltimore, Maryland