

# HL7<sup>®</sup>

International

## 2019 ANNUAL REPORT



# HL7<sup>®</sup>

## International

### HL7<sup>®</sup> VISION

A world in which everyone  
can securely access and use  
the right health data when  
and where they need it.

### HL7<sup>®</sup> MISSION

To provide standards that  
empower global health  
data interoperability.

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# CHAIR REPORT

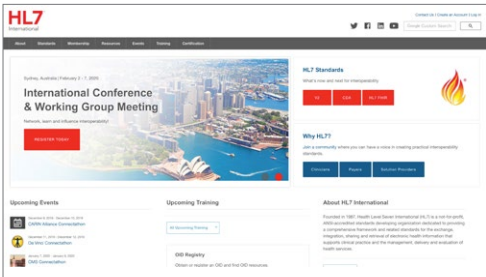


Calvin Beebe  
*HL7 International  
Board Chair*

## The HL7 International Strategic Plan identifies the core strategic goals as well as the strategic objectives for our organization.

As a member based non-profit organization, the board assumes the responsibility of establishing the goals and objectives, and challenges the executive leadership with the task of developing their action plans to support these goals on a yearly basis. The HL7 Board of Directors approved the current goals and objectives on September 17, 2019.

It can occasionally be difficult to see how these goals and objectives are being fulfilled, as they tend to be strategic and abstract. I'd like to highlight just a few of the changes that have occurred over the last few years, which are tied to the HL7 International Strategic Plan.



Other times the changes are greater, such as those made to the HL7 website. Not only was the website refreshed, new content that reaches out to those not in our community was added. There are easy links to some of our most used standards, as well links which speak to stakeholders such as clinicians, payers and solution providers.

### Image



Sometimes change can seem small. Take, for example, the new HL7 logo announced at HIMSS in 2019. The old logo was changed to one which both supports product family designations (FHIR, CDA, and HL7 V2.x) and enables easy localization by HL7 affiliates.

Did you have the opportunity to hear from the big technology players at last September's plenary meeting in Atlanta? When was the last time you heard speakers from Amazon, Google and Microsoft speak at an HL7 plenary? Of course, HL7 Fast Healthcare Interoperability Resources (FHIR®) has brought them to the table, with its ability to open up systems and make clinical information flow. As HL7's newest standard, FHIR is not only recognized by many, but is also changing the healthcare industry.

continued ►



# International

## THE HL7 INTERNATIONAL STRATEGIC PLAN

### Our Core Strategic Goals for 2019

#### Image

- Enhance the public image and achieve recognition by stakeholders as the leading SDO for worldwide health data interoperability standards

#### Organizational Vitality

- Secure long-term sustainable revenue to realize the vision and improve customer experiences (internal and external)

#### HL7 Standards

- Establish HL7 FHIR as the primary standard for global health data interoperability
- Enhance and maintain quality and accessibility to HL7 standards in current use

### Our Strategic Objectives for 2019

#### HL7's Image

- Expand c-suite image/perception of HL7 from standards to solving problems and improving the bottom line (I)
- Increase HL7 FHIR usage worldwide (I)
- Improve relevance of HL7 International with key target audiences globally and establish/strengthen relationships with key stakeholders (M)
- Enhance value of standards to target audiences globally (L)

#### Organizational Vitality

- Protect existing revenue sources (I)
- Increase the net capacity of staff and volunteer resources to meet growing demands such as implementer support (I)
- Increase sustainable, profitable revenue streams from existing and new sources such as implementers (M)
- Develop and implement a profitable business model (L)

#### HL7 Standards

- Implement strategic lifecycle tooling plan for standards (I)
- Demonstrate the value of HL7 FHIR in enabling interoperability (M)
- Ensure resources are most effectively prioritized (M)
- Increase efficiency and effectiveness of standards update process (M)
- Improve accessibility to standards (M)

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Priority Key: (I) – Immediate (M) – Mid-term (L) – Later

# CHAIR REPORT

## Organizational Vitality

Seven years ago, I was asked if I would be willing to assume the role of treasurer on the HL7 board. It was a challenging time for HL7 as the IP was free, but the organizational membership took a plunge.

Over the course of the intervening years, many attempts were made to encourage membership and increase revenue. Not all attempts were successful, but the leadership kept trying.

### HL7 FHIR DevDays

HL7 FHIR DevDays is one of the success stories. It is an educational event unlike any other that HL7 has undertaken.

We partnered with Firely to bring their program format to the US in 2018. The first event was a success, but more importantly we learned valuable lessons. So much so, that the 2019 event attracted 511 attendees and 69 speakers, with an excellent venue and program at the Microsoft campus. It also does not hurt that it generated more revenue for HL7 than any event in our history.

### HL7 FHIR Accelerator Program



The HL7 FHIR Accelerator Program can be traced back to the launch of the Argonaut Project in 2014. As a private sector initiative, this project needed HL7 to provide some services to support bringing their community together and enabling them to focus on their needs. It didn't take long before more communities were coming to the table.

The program has helped those on the outside find their way to HL7 International to work on their FHIR implementation guides.

These communities represent both an opportunity and a challenge for HL7. As more and more groups work to create the implementation guides, we are challenged to create new and improved processes and procedures to ensure quality and consistency across our standards portfolio. Under the leadership of the CEO and CTO, and with the support of the Technical Steering Committee (TSC), a number of improvements have been made or are underway.

## Standards Development

This brings us to the last goal category: HL7 standards. Wayne Kubick, HL7 CTO, and Austin Kreisler, Chair of the TSC, have worked together to streamline the HL7 processes. Some of the changes are as follows:

### Confluence

A significant move from the Wiki to Confluence has been undertaken. The tooling enables easier editing of minutes and the establishment of workflows, which will transform the project approval process. We all have benefited from this upgrade.

### UTG - Unified Terminology Governance

This new process replaces the current harmonization process for the management of HL7 vocabularies, concept domains and value sets. By providing an asynchronous and open consensus-based solution, the goal is to minimize ongoing support requirements and leverage a single solution for all of HL7's product families.



### **FHIR Jira Ballot**

The move from GForge Trackers to a new JIRA-based ballot process is in progress. The current plan calls for JIRA to be used for the FHIR ballot after the Sydney International Working Group Meeting. Other standards will follow, once the FHIR ballot process is stable and working.

## **Product Management Groups**

The three management groups strive to reach HL7's goal of providing high quality standards in an efficient and effective manner. They ensure that HL7 has the best standards available for implementers across the globe.

### **FHIR MG**

The FHIR Management Group (FMG) has been in operation for a number of years. It was put in place to provide day-to-day oversight of FHIR-related work group activities, including performing quality analysis, monitoring scope and consistency with FHIR principles, and aiding in the resolution of FHIR-related intra and inter-work group issues. It's worked so well that the TSC asked the Product Line Architecture project to look at how to extend the concept to the Clinical Document Architecture (CDA®) and HL7 Version 2 (V2) product lines.

### **CDA MG**

The Clinical Document Architecture Management Group (CDA-MG) provides day-to-day oversight of the processes related to CDA products throughout their lifecycle. This includes the following: ensuring CDA product quality; monitoring scope and consistency with the Standards Governance Board (SGB) principles; and aiding in the resolution of CDA related intra and inter-work group issues.

### **V2 MG**

The Version 2 Management Group provides day-to-day oversight of the processes related to V2 products throughout their lifecycle. This includes the following: ensuring Version 2 product quality; monitoring scope and consistency with the Standards Governance Board (SGB) principles; and aiding in the resolution of Version 2 related intra and inter-work group issues.



## **Making It Happen...**

Away from the technical meetings on standards and work on the processes, HL7 CEO Charles Jaffe, MD, PhD, has undertaken the herculean task of reaching out and building a network of contacts both nationally and internationally with leaders in health, IT industries and government agencies. With a relentless drive to support both HL7 and the work of FHIR, he has found opportunities and sources of funds which have enabled many of the projects underway at HL7. One such source of funding is the ONC grants.

## **Summary**

The strategic goals and objectives represent the changes we attempt to make each year at HL7 to positively impact the organization, its members, staff and others who engage with us. The changes I've shared only represent a small set of the work underway at HL7 International. Some changes can be difficult, others can take multiple years, but all of them are moving us forward. All members who take the time to volunteer, vote on a ballot or participate in work group calls are contributing in part to these goals.

Because, without your time and effort we could not reach them. For that reason, I want to thank you, the members of HL7 International, along with all the HL7 staff and leadership who make HL7 International what it is.

Thank You

Calvin E. Beebe



### **HL7 FHIR DevDays**

*“We partnered with Firely to bring their program format to the US in 2018. The first event was a success, but more importantly we learned valuable lessons. So much so, that the 2019 event attracted 511 attendees and 69 speakers, with an excellent venue and program at the Microsoft campus. It also does not hurt that it generated more revenue for HL7 than any event in our history. “*

*-Calvin Beebe, HL7 International Board Chair  
Strategic Report, page 4*

**A well-produced  
five minute video  
with brief interviews  
and highlights from  
HL7 FHIR DevDays  
2019 is available at:**

**<https://www.youtube.com/watch?v=rkhnoYmneXk>**





## CEO REPORT

**Like the early works of Picasso, the earliest releases of FHIR may be hard to recognize today.**

Before he turned 15, Pablo Picasso had created some of the world's most remarkable portraits. At the time of his death, he completed more than 40,000 known works. But the transformation from the classical style to the modern cubism, which he came to represent, was a gradual one, spanning nearly 90 years. By 1975, he reimagined our vision of the human experience. To some, it would not be surprising since he survived three wars and radical social upheaval.

Information technology has seen a similar transformation in just the last decade. When HL7 Fast Healthcare Interoperability Resources (FHIR®) was first introduced, the smart phone was in its infancy. Adequate cellular service was rare, and web browsers were largely incompatible from site to site. Electronic health records were struggling to share information, many radiographic images were shared on cellulose film and telemedicine was a daydream. It's fair to say that FHIR and healthcare IT have grown up together. Like the early works of Picasso, the earliest releases of FHIR may be hard to recognize today.

### Evolutionary Change

It is no overstatement to say that HL7 has been transformed by FHIR. At the same time, FHIR has emerged from its earliest stages, once considered a technical curiosity, to being widely embraced by both the public and private sectors. In retrospect, there were two moments that drove the upward curve of interest in FHIR. In the fall of 2014, the JASON

Task Force identified the principles of the open API as the future of healthcare data interoperability. It was not long afterward that the Argonaut Project was formed in order to enable those principles.

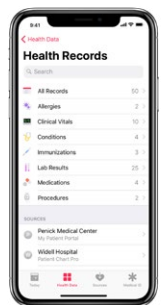
When the 21st Century Cures Act was signed into law in 2016, it empowered the Office of the National Coordinator (ONC) to define the parameters around which interoperability would be driven. Soon thereafter, Dr. Donald Rucker would write, "The Cures Act builds on the 2015 Edition of ONC's health IT certification criteria by calling for the development of modern APIs that do not require "special effort" to access and use."

In January of 2018, Apple® would announce a small pilot project of 12 academic health centers to test the feasibility of enabling patients to aggregate and view their personal medical records on an iPhone. In fact, Apple had incorporated an Argonaut FHIR implementation guide into the phone's operating system. Very rapidly, the number of health systems collaborating on that technology would grow to over 300. This became even more relevant late in 2019, when the Veterans Administration (VAH) announced that the FHIR-enabled smart phones would make health record data available to all veterans.

At the same time, the emergence of FHIR as a global initiative became demonstrable in 2019. Currently, there are more than 3,000 developer sites around the world that are changing the way healthcare data is shared. On every continent, government health agencies have identified the value of FHIR and are making broad commitments to



Charles Jaffe, MD, PhD  
HL7 International  
Chief Executive Officer



*Apple worked with the healthcare community to take a consumer-friendly approach, creating Health Records based on HL7 FHIR.*

## CEO REPORT

support development and institute programs for implementation. HL7 members from both large and small affiliate communities have significantly contributed to this process. For one, the HL7 Europe Foundation, headquartered in Brussels, has become a source of guidance and leadership.

This transformation would not have been as rapid and impactful were it not for the dramatic growth in global FHIR education. There has been significant focus on training programs developed by HL7 International, as well as those created, nurtured and expanded by affiliates worldwide. The well-established online Fundamentals Program has brought FHIR training to thousands of students and developers who would otherwise not have access to the acclaimed teachers.

FHIR DevDays, the largest international FHIR training event, was created and first produced in Amsterdam in 2016 by

a visionary company, now called Firely. Since then, it continues to serve students and developers in the Netherlands every November. Since 2018, DevDays has been produced in North America and provides a 3-day immersive FHIR learning experience to turn-away audiences. DevDays leadership has had to turn to even larger venues in 2020 (Cleveland, June 16-18), as demand grows exponentially.

In addition, FHIR Connectathons were born of the need to validate and support the unbridled growth of the platform. Initially slated before HL7 work group events, these were small gatherings of a dedicated and passionate core of FHIR developers. Now, these connectathons are provided to sell-out crowds of programmers. Even more dramatic has been the demand for connectathons held by uniquely focused developers, such as the payer community in the US, and which are produced throughout the year.

### *One of many FHIR Connectathons in 2019*



## FHIR is a Community

FHIR has become more than a technology or a technical platform; it's a community. FHIR is comprised of the thousands of individuals, worldwide, who are devoted to its development and its enhancement. The community includes those who write code as well as clinicians, policy makers, patient advocates, administrators, technology implementers and the organizations that produce software.

Early in 2018, a process emerged to support those communities with native affinities. This effort has become known as the FHIR Accelerator Program. At the very core of the initiative was a commitment to enhance FHIR development, to streamline the process of creating technical artefacts, and a demand to focus ideas along a single path. Of course, the Argonaut Project became the first accelerator.

Close behind Argonaut, now an international brand, was the Da Vinci Project. It was probably the first time that the payer and provider communities collaborated on a focused set of goals. The Da Vinci members laid aside decades of differences with an ambitious plan to develop a library of use cases that specifically address the growing commitment to value-based care. Within Da Vinci, the membership has grown to include large and small payer organizations, as well as a broad community of health systems and provider groups, along with unparalleled support from the Center for Medicare and Medicaid Services (CMS), the world's largest payer entity. In a very brief time frame, Da Vinci has utilized FHIR to transform the role of real-time clinical data into meaningful reduction in healthcare process cost and time.

More recently, the CARIN Alliance has focused upon the capabilities of FHIR to enable the enhanced exchange of patient and provider data. At the same time, CARIN has provided support infrastructure for the CMS Blue Button 2.0 program that enables Medicare and Medicaid recipients to download and manage their individual healthcare data.

In a different arena, the CodeX Project has focused on leveraging FHIR for the benefit of cancer patients and cancer research. This broad coalition of clinicians, researchers, pharmaceutical scientists and technologists has been able to reach beyond North America for support and implementation.

The Gravity Project, the most recent of the accelerators, has initially focused upon defining a coded library of terms from the social determinants of health (SDOH). As Gravity moves into 2020, plans are under way to leverage that vocabulary for addressing the needs of individuals. This is critical to the international community from which estimates arise suggesting that 40% of wellness and healthcare delivery are predicated on social determinants.

As we move into the next decade, other accelerator groups are being formed to address the needs of clinical research, public health and genomics. Many are now recognizing how the accelerator initiatives reduce the burden on FHIR standards development as well as the probability of multiple FHIR solutions for a single problem, and also improve the return on investment among these collaborators.



# CEO REPORT

## It's Not Just the API

FHIR would not have flourished were it not for many technologies and programs that supported and enhanced the core capabilities of FHIR. The first of these emerged from the research of Boston Children's Hospital and became known as SMART® a decade ago. Beyond the app store concept, the ISO standards known as OAuth 2 and OpenID provided an essential component to the FHIR stack by enabling security and authentication to the FHIR "stack". This fundamental capability transformed FHIR from an intra-system exchange paradigm to a utilitarian platform for exchanging data between health systems.

CDS Hooks was born from the need to enable external clinical decision support libraries to inform clinicians at the point of care when decisions are most critical. The process provides the clinician with a mechanism of delivering information about diagnosis, treatment and cost, without placing a demand on the end-user to know about the critical information resources. CDS Hooks offers the promise of providing information about a patient's unique genomic data, which is so critical to precision (personalized) medicine. The potential uses of CDS Hooks do not stop there, as some developers have envisioned the capability of providing clinicians with research opportunities and informing them of the unique implications of social determinants.

When first envisioned, FHIR was developed to enable the exchange of data from a single patient to a provider, lab or system. Bulk Data on FHIR, now under development through the cooperative efforts at Boston Children's Hospital, provides for access to large amounts of clinical data in near real-time. This capability is critical for research, public health, analytics and machine learning, as well as risk adjustment for value-based care.

In December 2018, HL7 published the first normative version of FHIR, now referred to as Release 4 (R4). It promises both stability and backward compatibility and will serve as a production release ANSI standard. In addition to new resources and new functionality, R4 has the promise of providing a new level of confidence in FHIR to an entire industry.

## Impact of the Public Sector

In March of 2019, both ONC and CMS published respective notices of proposed rulemaking (NPRM). These complex and interconnected rules were set to transform the means by which data is shared. The proposed rules transcended interoperability and included broad changes in transparency and access to data.

From an HL7 perspective, both ONC and CMS proposed that FHIR would become the fundamental building block of interoperability. To date, the final rule has not been published but the expected impact on FHIR adoption cannot be underestimated.

CMS and ONC provide immeasurable guidance throughout the development and implementation process. In addition to the role of CMS in the Da Vinci Project, there has been a clear and consistent focus on future FHIR development and technical deliverables. ONC has offered guidance in key implementation areas including its FAST (FHIR at Scale Taskforce) Initiative, which is tackling the infrastructure challenges necessary to enable FHIR solutions, like those being developed by Da Vinci. In addition, the ONC has supported HL7 through a cooperative agreement for the past three years, which enables the broad community to enhance existing solutions and to develop new ones.





*The Argonaut Project panel presents at HIMSS 2019.*

## Collaboration is a Beacon

There is an old African proverb that says, “If you want to go fast, go alone. If you want to go far, go together.” For over 30 years, HL7 has lived by that instruction, but now has embraced it more than ever.

Much of the collaboration originates from within HL7. Various work groups support domain expertise, technical achievement, policy guidance, research enablement, government liaison and process improvement. Broad programs are underway to support technical advances in FHIR-CDA exchange, vocabulary enablement and infrastructure support.

As a non-profit, volunteer organization, HL7 relies upon its members for technical expertise, fiscal support, and boundless

energy and guidance. The HL7 benefactors provide tangible proof. There are many other collaborators we rely upon for their experience and wisdom. More than ever, these non-profit organizations have helped to bring FHIR to prominence and support its continued development. Among these are countless health systems and universities, professional societies and technology alliances. In 2019, HL7 has produced educational programs in collaboration with AMIA, CHIME, eHI, IHE, HIMSS, HSPC (Logica), IMIA, NCQA, OMG, WEDI and others. In the very near future, HL7 will partner more closely with HIMSS to promote FHIR education, program outreach and support for global interoperability initiatives.

*Charles Jaffe*





## Vital Signs

As in prior years, HL7's volunteer community produced a wealth of new and updated standards in support of HL7's mission to provide standards that empower global health data interoperability:

- 36 ANSI standards recognized (including reaffirmations – compared to 18 in 2018!)
- 10 normative publications
- Two normative standards awaiting ANSI approval
- Seven informative publications
- 24 new STU releases, four unballoted STU updates and nine STU extensions

In addition to these publication milestones, we initiated 74 new projects and issued 23 contracts (15 of which were for ONC-funded projects).

## CTO REPORT



Wayne Kubick  
Chief Technology Officer  
HL7 International

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**After years of incremental progress in retooling and revitalizing HL7 processes, a number of the seedlings planted in past years are beginning to expand into a garden of fulfillment.**

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My wife is a respected gardener, a role that requires a great deal of vision and faith along with design aptitude and knowledge. It takes vision to look at a barren space and imagine how it will look in bloom after planting living perennials that will adapt and compete – most not realizing their full potential for months or years. While my capabilities as CTO do not match her prowess with gardens, I do have a sense of how a gardener thinks, and feel that after years of incremental progress in retooling and revitalizing HL7 processes, a number of the seedlings planted in past years are beginning to expand into a garden of fulfillment. But, to quote Voltaire's *Candide*, we must cultivate our garden – something which the HL7 community has long understood. We're not quite ready to unveil the sensational garden walk yet, but it's beginning to look like 2020 will become a tipping point year in the evolution of HL7 International.

Highlights of 2019 include further progress in process simplification and tooling, much of it driven by ONC grant funded priorities and the impact of the new FHIR Accelerator program as well as increased collaboration with key partner organizations.

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### **Simplification, Tooling and Processes for Standards Development**

We have been aspiring toward essentialism and simplification for some time; in 2019, we began to turn the corner toward realizing the benefits. Our intent is to make HL7 more welcoming to newcomers, as well as to help everyone easily find the most essential information they need to get things done at HL7 without having to dig for needles in our many haystacks.

The rise of the FHIR Accelerators in 2019 had many ripple effects throughout HL7, such as the impetus to simplify our processes so new participants would find it less intimidating to become oriented to HL7. This has sparked process improvements that should benefit all of us.

Our most visible change was a facelift for [www.hl7.org](http://www.hl7.org), offering a cleaner home page and improved access to key information. An enhanced master standards grid with additional filters, including by the current state as active (with significant ongoing development), stable, or retired. We also created an easy-to-use chronological display and search tool (Standups) for all

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# CTO REPORT



newly released standards and improved standards. This will allow newcomers to quickly access the HL7 standards they need.

In addition, significant work included improving the scalability, reliability and capabilities of the FHIR IG Publisher. In 2020, we're adding new technical support for the IG Publishing tool to help us reposition the FHIR IG Publisher to keep up with increasing FHIR demand and as the primary tool for publishing most HL7 artifacts in the future, beginning with C-CDA.

We made much progress in defining quality checklists and guidelines (for example, on best practices for creating and reviewing FHIR IGs) to increase quality and consistency of FHIR IGs.

HL7 also continued to expand its use of Confluence as the core collaborative workspace to replace the Wiki and website work group documents. By now, all work group minutes should be recorded in Confluence to provide easier access for the wider community.

In 2020 we expect Confluence to become our single source of truth for making essential information available to the community. We will be releasing a redesigned Confluence-based co-chair handbook, and we've already established an Accelerator page with essential information to help these projects hit the ground running.

But providing new information resources is only half the battle – we also need to remove or archive inaccurate or obsolete information – especially from the old HL7 Wiki and the website. This will be an ongoing effort, and we'll be working to build new habits to clean up old content whenever we create new content.

JIRA is now in wide use at HL7, having replaced Tracker for FHIR projects. In

2020, we want to make it the primary tracking system for all projects just as we want Confluence to be the primary home for all work group activities. Our transition will be catalyzed by the rollout of the new JIRA Ballot, the Unified Terminology Governance (UTG), and the new PSS Workflow systems.

We expect UTG to be implemented early in 2020, to ensure that all current HL7 terminologies are posted at [terminology.hl7.org](https://terminology.hl7.org), and to replace the historical harmonization process to deal with new needs as they arise.

The HL7 GitHub repository is now the primary source control system, though there will be some legacy materials that will remain in SVN due to legacy tooling requirements.

2019 also saw completion of our migration of HQ systems to the cloud thanks to the contribution of Amazon web services. We've also expanded HQ IT staff, and this has given us a more scalable and stable platform for supporting HL7 customers.

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## Improving and Expanding Core Processes

As the world moved toward a more tightly integrated ecosystem based on APIs, some of the traditional boundaries between individual work groups began to blur, further complicating collaboration. The challenges are multiplied by the growth in FHIR use and the advent of the Accelerator program, which is generating more projects than in the past. These factors, together with the need to make HL7 processes less burdensome on volunteers in general, have led to several new projects and initiatives.

We expect to rollout the new Project Scope Statement (PSS) workflow process early in 2020. While we began use of an



online Confluence PSS template in 2019, we recognized the need to re-engineer the PSS review and approval process as well. In the hope of making new projects more visible to the community, we're introducing a lightweight project concept form as a means of getting broader exposure and buy-in quickly. This will allow us to assess and prioritize ideas for new projects before work groups undertake the work involved for a complete PSS. For projects that proceed to the PSS stage, the new process, driven by JIRA workflow, will involve a common review period (similar to a ballot) for all parties to review and comment before proceeding to TSC approval. We believe these changes will both increase visibility of projects among the community as well as reduce cycle time for approvals. We expect to continue to adapt other essential forms with JIRA workflow in 2020.

The growth in FHIR Accelerators also called attention to our fundamental standards-based processes, which have historically been based on the path toward acquiring ANSI approval. While this ANSI focus has contributed greatly to the credibility and quality of HL7 standards, it's also been recognized (particularly among some Accelerators and other global users of HL7 standards) that ANSI approval is not always necessary for certain implementation guides (IG) and other artifacts. Thus, an effort was initiated to explore defining a new, more streamlined process to create a different class of standards that are not intended to be submitted to ANSI. The TSC will be working to introduce this alternative, more agile process in the first half of 2020.

While our main focus continues to be to support HL7 members, we also recognize that the rapid expansion of FHIR will include IGs and profiles that may originate in other venues and organizations. A new FHIR Community Process will provide

some minimal quality and conformance guidelines for these non-HL7 projects with the intent of setting minimal expectations for all FHIR publications no matter where they originate.



Finally, the HL7 Board has recognized that HL7 needs to improve its ability to engage implementers within the community, both to expand our membership and make it easier to adopt HL7 standards. The HL7 Board will be evaluating the findings and recommendations of an analysis project early in 2020, and we expect this to increase the number of educational and service offerings for a much broader community beginning next year.

## FHIR and Standards Lifecycles

While we kicked off 2019 with a bang – the publication of FHIR R4 with normative content – and saw major advances in adapting FHIR use cases particularly through the Accelerator programs, 2019 also closed with unanswered questions as the U.S. healthcare industry awaited issuance of final rules from the U.S. Center for Medicare and Medicaid Services (CMS) and Office of the National Coordinator (ONC). FHIR continues to dominate the project portfolio as HL7's most renowned current product, but 2019 also saw the publication of new, normative versions of Version 2 (V2.9), CDA (R2.1), and many other important specifications.

New projects based on Version 3 (V3) continue to decline. HL7 is no longer publishing annual releases of the normative standard edition, but individual discrete V3 artifacts will still be published or reaffirmed. Work continues within the FHIR community to facilitate migration from V2 and CDA to FHIR.

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# CTO REPORT

## With Appreciation and Thanks

During 2019, HL7 continued to benefit greatly from the ONC's generous grant support for standards-related activities and processes. Though primarily targeted at FHIR and C-CDA, the 15 ONC-funded projects in 2019 also had beneficial effects on all of HL7, including:

- Improvements to FHIR infrastructure, JIRA and publication tooling systems
- Coordination of certain FHIR IG publications and connectathons
- Support for a workshop on best practices for publishing and reviewing FHIR IGs
- UTG development
- Publication of FHIR Bulk Data IG and work on testing tools and reference servers

HL7 is very appreciative that ONC is continuing support for HL7 with additional funding in 2020 for completing rollout of UTG, JIRA balloting, improvements to the FHIR registry and other FHIR and C-CDA projects.

## Expanding Strategic Collaborations

It is impossible to truly achieve interoperability without collaboration, and as FHIR reaches into new communities and countries, HL7 continues to expand its relationships with partner organizations to help achieve our common goals.

In 2018, we established the Gemini Initiative, working with IHE on initial projects involving imaging for cancer care and computable care guidelines. In 2019,

we increased collaboration on publication tooling using a new IG templates feature and began a collaboration with IHE and HIMSS on a new consortium to advance global digital health interoperability among governments and other stakeholders. HL7 is also working with the International Standards Organization (ISO) to establish a new partner relationship that will carry us into the next decade. In addition to maintaining our agreements with many other partner organizations, we continue seek other opportunities to expand the reach of HL7 standards toward achieving our vision.

## The Path Ahead in 2020

With ongoing ONC support, HL7 plans to continue improving tooling and process. We also will continue working to update our ballot systems and will be commencing a new project to replace the association management system that supports HQ operations. Completion of these and other key projects should alleviate the most glaring remaining risk areas facing the organization, and position HL7 for future growth.

The seeds have been planted and the seedlings are being cultivated by all of you who contribute so much to the HL7 community, putting us on the cusp of becoming a more agile, flexible and efficient organization. As usual, we have much work ahead of us, but we should be well positioned to keep moving forward together.



Wayne Kubick



## HL7 COLLABORATES

HL7 formally collaborates with many organizations across the industry. The organization currently holds formal agreements with the groups below.

Accredited Standards Committee X12 - ASC-X12	GS1	Object Management Group (OMG)
American Dental Association (ADA)	Health Information Management Systems Society (HIMSS)	PCHalliance
American Immunization Registry Association (AIRA)	Health Information Management Systems Society Europe (HIMSS Europe)	Pharmaceutical Users Software Exchange (PhUSE)
American Medical Informatics Association (AMIA)	Institute for Electrical and Electronic Engineers (IEEE)	Regenstrief/Logical Observation Identifiers Names and Codes (LOINC)
America's Health Insurance Plans (AHIP)	Integrating the Healthcare Enterprise (IHE)	Smart Open Services for European Patients (epSOS) - European eHealth Project
American Society for Testing Materials (ASTM)	International Conference on Harmonization (ICH)	SNOMED International
CEN/TC 251 (European Committee for Standardization)	International Organization for Standardization (ISO)	The Sequoia Project
Council for Affordable Quality Healthcare, Inc. (CAQH)	Logica Health	TransCelerate
Digital Imaging and Communication in Medicine (DICOM)	National Council for Prescription Drug Program (NCPDP)	Web3D Consortium
eHealth Initiative, Inc. (eHI)	OASIS	Workgroup for Electronic Data Interchange (WEDI)

# TREASURER REPORT

## Net Operating Income Surpasses \$1M



Russell Leftwich, MD  
*HL7 International*  
Board Treasurer

Organizational membership revenues have increased in 2019 in spite of a continued decline in individual memberships. Revenue from education and certification has also grown. In addition, revenue from working group meetings (WGMs) and other events has increased significantly.

This report is based on projections of year end results and not on actual results. All meetings and the significant revenue and expenses associated with them are included and membership renewals and revenues extend into December. Investment results, although not final, are based on projections made in December.

The trend over the past six years of year-by-year reduction in organizational members has clearly moderated, although individual memberships continues to steadily decline. Revenues from individual memberships are proportionally small relative to total membership revenues, most of which represent organizational memberships. In 2019, revenues from organizational memberships were \$300k more than budgeted, while individual membership revenues were \$17k under budget. Beyond revenues, it has been noted as a matter of concern for the board that declining membership also means fewer individuals available to do the work of the organization. As a consequence, there is a decline in the efficiency and capacity of the various work groups to develop, publish and curate standards.

WGM attendance for U.S.-based meetings continues to show an increase with a resultant increase in revenue from registrations, although expenses have also increased. The Atlanta Plenary and WGM in 2019 attracted the largest attendance in history with 786 attendees. Revenues from the 2019 WGMs surpassed the budget by \$240k.

Educational offerings outside of WGMs continue to be a significant source of revenue. The addition of administrative support for education and marketing has been associated with an increase in revenues and net income from distance learning, webinars, onsite education and certification.

The preliminary unaudited year-end operating revenue projection for 2019 is \$7.9 million, which is \$1.2 million, or 19% above budget. The unaudited expenses for 2019 are \$6.7 million, 1.3% under budget. **Preliminary net operating income is \$1.1 million, which is \$1.3 million better than the budgeted loss.**

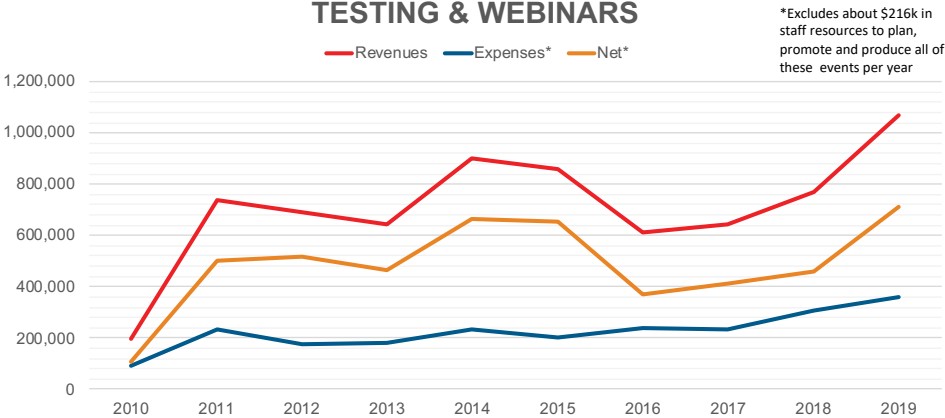
The preliminary pre-audited 2019 year-end financials projects cash reserves of \$6.9 million that equates to 12.4 months of operating expenses.

Respectfully,



Russell B. Leftwich, MD

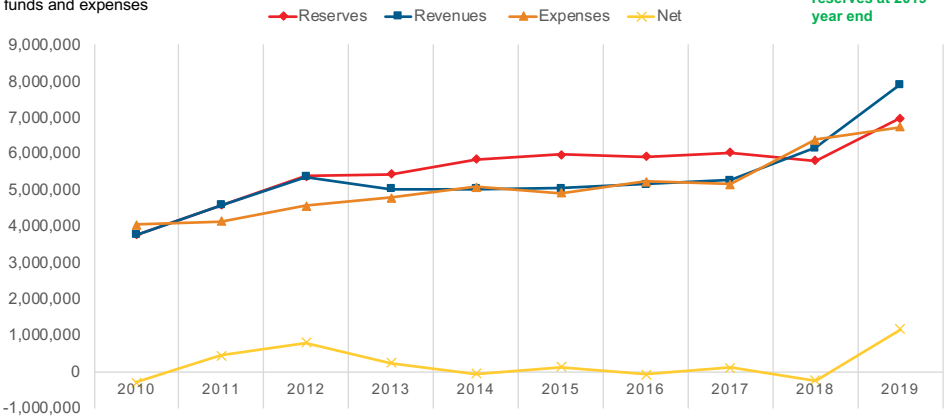
RECORD SETTING REVENUES FROM DISTANCE  
LEARNING, ONSITE WORKSHOPS, CERTIFICATION  
TESTING & WEBINARS



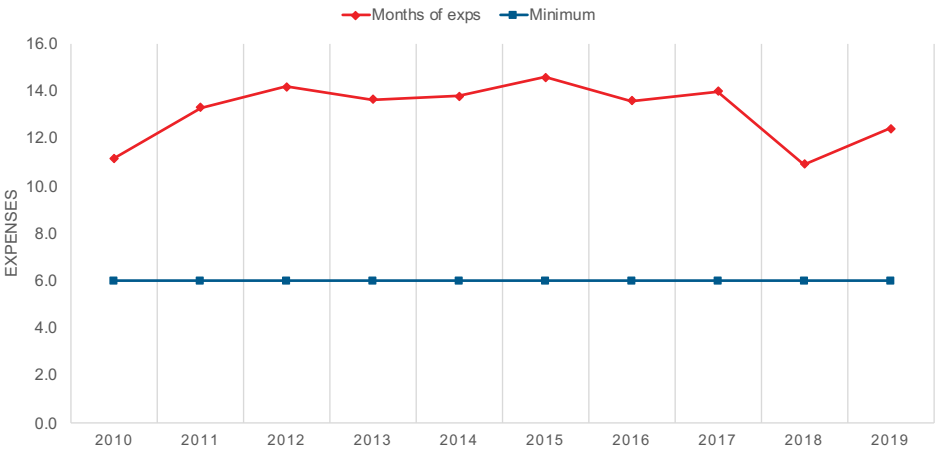
NOTE: Excludes  
ONC, DaVinci &  
Argonauts pass thru  
funds and expenses

HL7 FINANCIALS OVER TEN YEARS  
REACH ALL TIME HIGHS

All-time record  
highs in revenues,  
net income and  
reserves at 2019  
year end



HL7 RESERVES IN MONTHS OF EXPENSES



# HL7 INTERNATIONAL COMMITTEES AND WORK GROUPS

Affiliate Due Diligence	FHIR Infrastructure	Patient Empowerment
Anesthesia	FHIR Management Group	Payer/Provider Information Exchange
Architectural Review Board	Financial Management	Pharmacy
Arden Syntax	Governance and Operations	Policy Advisory Committee
Biomedical Research Integrated Doman Group	Health Care Devices	Process Improvement
CDA Management Group	HL7 Foundation Task Force / Advisory Council	Project Services
Clinical Decision Support	Imaging Integration	Public Health
Clinical Genomics	Implementable Technology Specifications	Publishing
Clinical Information Modeling Initiative	Infrastructure and Messaging	Recognition and Awards
Clinical Interoperability Council	International Council	Security
Clinical Quality Information	International Mentoring Committee	Services Oriented Architecture
Community-Based Care and Privacy	Leadership Development and Nominations Committee	Standards Governance Board
Conformance	Learning Health System	Structured Documents
Cross-Group Projects	Mobile Health	Technical Steering Committee
Education	Modeling and Methodology	Terminology Authority
Electronic Health Records	Orders and Observations	US Realm Steering Committee
Electronic Services and Tools	Patient Administration	V2 Management Group
Emergency Care	Patient Care	Vocabulary

## Membership Milestones

We are pleased to recognize HL7 affiliates who have been in operation for more than 20 years and individuals who have supported HL7 for more than 25 years. We sincerely thank the following for their incredible contributions to the industry and dedication to HL7.

### HL7 affiliates in operation for more than 20 years:

HL7 Australia  
HL7 Canada  
HL7 Finland  
HL7 Germany  
HL7 Japan  
HL7 Netherlands  
HL7 New Zealand  
HL7 UK

### HL7 members for 25-29 years:

Hans Buitendijk, FHL7  
Albert Edwards  
Ted Klein, FHL7  
Virginia Lorenzi, FHL7  
Clem McDonald, MD, FHL7  
Charles Meyer, FHL7  
Doug Pratt, FHL7  
John Santmann, MD  
Mead Walker, FHL7

### HL7 members for more than 30 years:

Gary Dickinson, FHL7  
W. Ed Hammond, PhD, FHL7

## EXECUTIVE DIRECTOR REPORT



Mark McDougall  
HL7 International Executive  
Director

**As I've stated from the podium for almost 30 years, HL7's community of incredibly talented and dedicated volunteers are HL7's most valuable asset.**

### Membership Report

HL7 had 1,483 members as of December 31, 2019, as compared to 1,486 one year earlier. The amount of benefactor members has held steady at 25. We currently have 89 gold members, which is a gain of 20 additional gold members (29%) over 2018.

#### Individual Memberships

As of December 31, 2019, HL7 had a total of 119 individual members, which represents a small gain over 117 total individual members one year earlier.

#### Organizational Memberships

There were 420 organizational member firms on December 31, 2019, as compared to 436 one year earlier. In 2019 there were 59 new organizational members and 53 organizational reactivations. This compares to 83 new organizational members and 65 organizational reactivations in 2018. For the year, there was a net decrease of 16 in organizational memberships, which compares to a decrease of nine members during 2018 and 31 members during 2017.

#### International Affiliate Members

Global participation in HL7 remains strong. In 2019, there were 38 countries with active HL7 affiliates. Please see page 31 for the full list.



*Volunteers of the Year Award winners pose with W. Ed Hammond. Pictured, from left to right: Emma Jones, W. Ed Hammond, Jean Duteau and Reed Gelzer.*

### Membership Recognition

Our community is dependent upon the service of hundreds of key members who drive the organization forward via various leadership roles such as on the board, TSC, work groups, mentors, facilitators and tutorial speakers. The co-chairs of our 50 work groups are truly the backbone of the organization. They drive HL7 forward via meetings and conference calls throughout the year. HL7 affiliates have the incredibly important role of promoting the use of HL7 standards and educating professionals on how to implement such standards around the globe. We thank all of our members in leadership positions for their invaluable contributions to HL7.

continued ►



# EXECUTIVE DIRECTOR REPORT

## Volunteers of the Year

It is amazing to realize that we are already in the twenty-third year of recognizing incredible efforts by our dedicated volunteers via our W. Edward Hammond HL7 Volunteer of the Year Award. While there are certainly dozens of individuals who merit this recognition each year, the Awards Committee is challenged to limit the annual award to only a few. This year’s recipients have contributed hundreds of hours, if not thousands, and have certainly served the organization extremely well for many years. HL7 is pleased to recognize this year’s recipients of the W. Ed Hammond HL7 Volunteer of the Year Award:

- Jean Duteau
- Reed Gelzer, MD
- Emma Jones

We are honored to recognize Jean, Reed and Emma as dedicated individuals who have made significant contributions, including in specific HL7 work groups and throughout the larger HL7 global organization. Their efforts and contributions are sincerely appreciated, and this recognition is certainly well-deserved.

## 2019 Class of HL7 Fellows

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 33rd Annual Plenary Meeting, HL7 honored the following eight well-deserving members with distinction as HL7 Fellows in the Class of 2019:

- Marivan Abrahão, MD, Brazil
- Catherine Chronaki, Greece
- Gora Datta, India/USA
- Martin Entwistle, New Zealand/USA
- Julie James, UK
- Lenel James, USA



*The 2019 HL7 Fellows take a minute after receiving recognition to pose with board chair Calvin Beebe.*

- Robert Jenders, MD, USA
- Brian Pech, USA
- Francisco Perez, Spain
- Timo Tarhonen, Finland

## Board Election Results

The new year of 2020 brings new members of the HL7 Board of Directors. During HL7’s annual business meeting in Atlanta, the results of the recent elections were announced for the HL7 Board of Director positions listed below.

- Treasurer: Floyd Eisenberg, MD
- Affiliate Director: Peter Jordan
- Director—Clinician: Julia Skapik, MD
- Director—Implementer: Viet Nguyen, MD

These board members will serve a two-year term from January 2020 through December 2021. We look forward to working with them and are happy to extend warm congratulations!

## Meetings & Education Report

### 2nd FHIR DevDays event in the US produced in Redmond WA

The second HL7 FHIR DevDays produced in the USA occurred June 10-12 on the campus of Microsoft Corporation in

Redmond, Washington. HL7 and Firely organized this event that attracted almost 600 attendees. The three pillars for DevDays are: education, sharing ideas and networking. The program featured over 100 educational sessions, impactful keynote addresses, focused hackathons and invaluable networking opportunities. FHIR experts from around the world participated to instruct, guide and discuss how best to implement the HL7 FHIR standard. DevDays attendees also enjoyed an incredible outing to the Museum of Pop Culture (MoPop) in Seattle that featured dozens of one-of-a-kind exhibits for a night to remember.

### ***January Meeting in San Antonio, Texas***

We are pleased to report that 600 attendees participated in our January 2019 Working Group Meeting activities held in San Antonio, Texas, January 12-18, 2019, at the Hyatt Regency San Antonio Riverwalk Hotel. Over fifty (50) HL7 work groups met, of which 18 conducted co-chair elections. Attendees also took advantage of 26 tutorials that week, as well as the FHIR Connectathon and the annual Payer Summit.

### ***WGM in Montreal, Canada***

We produced a productive HL7 International Conference and Working Group Meeting with 510 attendees at the Le Centre Sheraton Hotel, in Montreal, Quebec, Canada, May 4-10, 2019. Over 50 HL7 work groups, committees and steering divisions convened meetings in Montreal. Nineteen work groups conducted co-chair elections for 27 leadership positions. Attendees also took advantage of 27 tutorials, and a two-day FHIR connectathon.

### ***33rd Plenary Meeting***

Last year's plenary meeting in New Orleans established a new record by attracting 637 attendees. However, that record was short lived. Our 33rd Annual Plenary and Working Group Meeting convened September 14-20, 2019 at Marriott Marquis Hotel in Atlanta, Georgia. This meeting attracted 786 attendees, which shattered the previous attendance record by 149 (23%). Over half of these attendees also attended the FHIR Connectathon (414). We produced meetings for over 40 work groups, 30 tutorials and conducted co-chair elections for 18 work groups.

The plenary meeting featured exceptional keynote presentations from:

- Gregory Simon, JD, Former President, Biden Cancer Initiative
- Chesley Richards, MD, MPH, Deputy Director of Public Health Science and Surveillance, Centers for Disease Control and Prevention
- Brad Wolters, Director, Federal Government Relations, Marshfield Clinic Health System
- Shez Partovi, MD, Worldwide Lead, Healthcare Life Sciences, Genomics, Amazon
- Aashima Gupta, Director, Global Healthcare Solutions, Google
- Greg Moore, MD, PhD, Corporate Vice President, Health Technology and Alliances, Microsoft

### ***Online Class Report***

The HL7 online program offered 10 paid online classes on HL7 FHIR and CDA. Each webinar was also recorded live and posted to the HL7 Education Portal for on-demand, fee-based or free viewing. In addition, HL7 provided training via 19 online courses to six companies.

# EXECUTIVE DIRECTOR REPORT

Two of these organizations were located in India and Dubai. In 2019, HL7 also focused on offering more free Member Advantage webinars. This included 21 free webinars with over 6,000 registrants. The revenue from both online classes and virtual corporate training was \$110,000.

### Education On Demand

Education On Demand continues to provide a cloud-based, digital storehouse for HL7’s educational archive and is accessible on any device with no applications required. Additional features include downloadable certificates of completion and a “My Activity” area that maintains an attendance record and certificates earned for each user. During 2019, over 1,250 people accessed the free and fee-based courses from the portal, providing \$90,000 in revenue.

### Remote/Distance Fundamentals Courses

The HL7 Fundamentals Course is a web-based workshop which includes a set of guided exercises that teaches by practice and example. The course focuses on learning by doing. During 2019, HL7 produced three Fundamentals courses and three FHIR Fundamental courses that served 900 students. These courses were produced by HL7 International along with HL7 Argentina, and generated \$740,000, which reflects a 50% increase over 2018.

### Online Certification Testing Program

Computer-based testing (CBT) expands HL7’s opportunities world-wide to those seeking certification in CDA®, Version 2.8, Version 3 RIM and FHIR. Exam results, electronic certificates and electronic badges are available immediately. A certification directory is also available on the HL7 website.

A robust web page centralizes information about certification specialties, training opportunities and resources for exam preparation, and provides a gateway to registration. HL7 partners with Kryterion, a leader in test development and delivery, to administer its certification exams at over 900 testing centers worldwide. In addition, test-takers may opt for online proctored testing from their own computers anywhere in the world.

HL7’s certification program continues to attract hundreds of individuals from around the globe each year. During 2019, 232 individuals registered for the exams, as compared to 228 in 2018, 215 during 2017 and 269 during 2016.

The table below reflects the number of individuals who became HL7 certified specialists in 2019. The worldwide number of certified HL7 specialists by exam is provided below.



Certification and Proficiency Exams	# Registered in 2019	# Certified in 2019	Total # Certified
Clinical Document Architecture	26	15	786
FHIR	72	44	124
Version 2	132	87	3,885
Version 3 Reference Information Model (RIM)	2	2	381
Total	232	148	5,176



## 2019 BOARD OF DIRECTORS

### BOARD CHAIR

**Calvin Beebe, FHL7**

Mayo Clinic

### CHAIR-ELECT

**Walter Suarez, MD, MPH**

Kaiser Permanente

### CHAIR EMERITUS

**W. Edward Hammond, PhD, FHL7**

Duke University

### SECRETARY

**Melva Peters**

HL7 Canada

### TREASURER

**Russell Leftwich, MD**

InterSystems

### TECHNICAL STEERING

#### COMMITTEE CHAIR

**Austin Kreisler, FHL7**

Leidos

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**Diego Kaminker, FHL7**

HL7 Argentina

### AFFILIATE DIRECTOR

**Line Saele**

HL7 Norway

### APPOINTED

**Dave Shaver, FHL7**

Corepoint Health

### APPOINTED

**Mary Ann Slack**

Food and Drug Administration

### APPOINTED

**Andrew Truscott**

Accenture

### DIRECTOR-AT-LARGE

**Jennifer Covich Bordenick**

eHealth Information

### DIRECTOR-AT-LARGE

**Ken Kawamoto, MD, PhD**

University of Utah Health Care

### DIRECTOR-AT-LARGE

**Janet Marchibroda**

Health Innovation Action Network

### DIRECTOR-AT-LARGE

**Nancy Orvis, MHA, FHL7**

U.S. Department of Military Health System

### CHIEF EXECUTIVE OFFICER

**Charles Jaffe, MD, PhD**

Health Level Seven International

### CHIEF TECHNOLOGY OFFICER

**Wayne Kubick**

Health Level Seven International

### EXECUTIVE DIRECTOR

**Mark McDougall**

Health Level Seven International

# HL7 2019 STANDARDS SNAPSHOT

## HL7 Standards Receiving ANSI Approval in 2019



HL7 CDA® R2 Implementation Guide:  
Trauma Registry Data Submission, Release 2 - US Realm

*Date Approved: 1/17/2019*

HL7 Cross Paradigm Implementation  
Guide: UDI Pattern, Release 1

*Date Approved: 2/21/2019*

HL7 Specification: Characteristics of a  
Value Set Definition, Release 1

*Date Approved: 3/1/2019*

HL7 FHIR® R4 Infrastructure, Release 1

*Date Approved: 3/22/2019*

HL7 FHIR R4 Patient, Release 1

*Date Approved: 3/22/2019*

HL7 Version 3 Standard: Pharmacy  
CMETs, Release 1

*Date Approved: 5/24/2019*

HL7 Version 3 Standard: Pharmacy  
CMETs, Release 1

*Date Approved: 5/24/2019*

HL7 Version 3 Standard: Pharmacy;  
Medication CMET, Release 1

*Date Approved: 5/24/2019*

HL7 Version 3 Standard: Pharmacy;  
Medication Dispense and Supply Event,  
Release 2

*Date Approved: 5/24/2019*

HL7 Version 3 Standard: Security and  
Privacy Ontology, Release 1

*Date Approved: 5/31/2019*

HL7 Version 3 Standard: Identification  
Service (IS), Release 1

*Date Approved: 5/31/2019*

HL7 Healthcare Privacy and Security  
Classification System, Release 1

*Date Approved: 6/7/2019*

HL7 Version 3 Standard: Privacy, Access  
and Security Services; Security Labeling  
Service, Release 1

*Date Approved: 6/7/2019*

HL7 Version 3 Standard: Patient  
Administration; Patient Registry, Release 1

*Date Approved: 6/7/2019*

HL7 Version 3 Standard: Scheduling,  
Release 2

*Date Approved: 6/7/2019*

HL7 Version 3 Standard: Personnel  
Management, Release 1

*Date Approved: 6/7/2019*

HL7 Version 3 Standard: Retrieve, Locate,  
and Update Service (RLUS), Release 1

*Date Approved: 7/19/2019*

HL7 Version 3 Standard: Pharmacy;  
Medication Order, Release 2

*Date Approved: 7/19/2019*

HL7 Version 3 Standard: XML  
Implementation Technology Specification  
- Wire Format Compatible Release 1 Data  
Types, Release 1

*Date Approved: 7/31/2019*

Health Level Seven Arden Syntax for  
Medical Logic Systems, Version 2.10

*Date Approved: 8/1/2019*

HL7 Version 3 Standard: Clinical  
Statement Pattern, Release 1

*Date Approved: 8/1/2019*

HL7 Version 3 Standard: Regulated Studies  
- Annotated ECG, Release 1

*Date Approved: 8/1/2019*

HL7 EHR Behavioral Health Functional  
Profile, Release 1

*Date Approved: 8/1/2019*

HL7 EHR Child Health Functional Profile,  
Release 1

*Date Approved: 8/1/2019*

HL7 EHR Clinical Research Functional  
Profile, Release 1

*Date Approved: 8/1/2019*

HL7 FHIR R4 Observation, Release 1

*Date Approved: 8/9/2019*

HL7 FHIR R4 Terminology &  
Conformance, Release 1

*Date Approved: 8/9/2019*



HL7 Version 3 Standard: Context-Aware Retrieval Application (Infobutton); Knowledge Request, Release 2  
*Date Approved: 8/12/2019*

HL7 Version 3 Implementation Guide: Context-Aware Knowledge Retrieval Application (Infobutton), Release 4  
*Date Approved: 8/15/2019*

HL7 Version 3 Standard: Unified Communication Service Interface, Release 1 - US Realm  
*Date Approved: 8/30/19*

HL7 Version 3 Standard: Event Publish & Subscribe Service Interface, Release 1 - US Realm  
*Date Approved: 8/30/19*

HL7 Version 3 Standard: Transport Specification - MLLP, Release 2  
*Date Approved: 9/6/2019*

HL7 Version 3 Implementation Guide: Data Segmentation for Privacy (DS4P), Release 1  
*Date Approved: 9/13/2019*

HL7 Clinical Document Architecture, Release 2.1  
*Date Approved: 12/6/2019*

Health Level Standard Version 2.9 - An Application Protocol for Electronic Data Exchange in Healthcare Environments  
*Date Approved: 12/6/2019*

## HL7 Standards for Trial Use (STUs) Published in 2019

HL7 FHIR Implementation Guide: FHIRCast, Release 1

HL7 Health Services Platform (HSP) Marketplace Release 2 STU

HL7 CDA® R2 Implementation Guide: Public Health Case Report - the Electronic Initial Case Report (eICR) Release 1, STU Release 2.0 - US Realm

HL7 Cross-Paradigm Specification: CDS Hooks, Release 1

HL7 FHIR® Profile: Pharmacy; Medication, Release 2

HL7 FHIR R4 Profile: US-Core, 3.0.0

HL7 FHIR® Implementation Guide: Quality Measures, Release 1 STU1 for FHIR STU3– US Realm

HL7 FHIR® Implementation Guide: Data Exchange for Quality Measures, Release 1 STU 1 for FHIR STU3 – US Realm

HL7 FHIR® Implementation Guide: Clinical Genomics, Release 1

HL7 CDA® R2 Implementation Guide: Pharmacy Templates, Release 1

HL7 CDA® R2 IG: C-CDA Templates for Clinical Notes R2.1 Companion Guide, Release 2 - US Realm

HL7 FHIR Implementation Guide: Bulk Data, Release 1

HL7 CDA® R2 Implementation Guide: Ambulatory and Hospital Healthcare Provider Reporting to Birth Defect Registries Release 1, STU 2 - US Realm

HL7 Cross-Paradigm Specification: Clinical Quality Language, Release 1

HL7 Version 2.5.1 Implementation Guide: Syndromic Surveillance, Release 1 - US Realm

Electronic Long-Term Services & Supports (eLTSS), Release 1 - US Realm

HL7 CDA® R2 Implementation Guide: National Health Care Surveys (NHCS), Release 1 STU Release 2 – US Realm

HL7 FHIR® Implementation Guide: Healthcare Associated Infection Reports, Release 1 (STU 2)—US Realm

HL7 Implementation Guide(s) for CDA® Release 2: C-CDA R2.1 Supplemental Templates for Infectious Disease, Release 1, STU 1 - US Realm

HL7 CDA® R2 Implementation Guide: Birth and Fetal Death Reporting, Release 1, STU Release 2 - US Realm

HL7 CDA® R2 Implementation Guide: C-CDA R2.1 Supplemental Templates for Pregnancy Status Release 1 - US Realm

HL7 Version 3 Implementation Guide: Clinical Quality Language (CQL)-based Health Quality Measure Format (HQMF), Release 1, STU 4 - US Realm, FHIR R4

# HL7 2019 STANDARDS SNAPSHOT

## HL7 Standards for Trial Use (STUs) Extensions in 2019

HL7 CDA® R2 Implementation Guide:  
Quality Reporting Document Architecture  
(QRDA III), Release 1 - US Realm STU 2

HL7 FHIR US Core Implementation  
Guide STU 3.1.0

HL7 CDA R2 Implementation Guide:  
Quality Reporting Document Architecture  
Category 1 (QRDA 1) Release 1, STU  
Release 5

HL7 CDA® R2 Implementation Guide:  
Public Health Case Report, Release 2: the  
Electronic Initial Case Report (eICR),  
Release 1, STU Release 1.1 - US Realm

C-CDA (HL7 CDA® R2 Implementation  
Guide: Consolidated CDA Templates for  
Clinical Notes - US Realm) STU Release  
2.1 with Errata #5

HL7 CDA Implementation Guide for  
Ambulatory Healthcare Reporting to Birth  
Defect Registries

HL7 CDA® R2 Implementation Guide:  
Vital Records Death Reporting, Release 1  
STU 2.1 - US Realm

HL7 CDA® R2 Implementation Guide:  
Personal Advance Care Plan (PACP)  
Document, Release 1 - US Realm Standard  
for Trial Use

HL7 CDA® R2 IG: Reporting to Public  
Health Cancer Registries from Ambulatory  
Healthcare Providers, R1, DSTU Release  
1.1 - US Realm

## Informative Documents Published in 2019

HL7 Version 3 Standard: Health Services  
Platform (HSP) Marketplace, Release 1

HL7 Cross-Paradigm Domain Analysis  
Model: Vital Records, Release 3

HL7 Arden Syntax: Implementation  
Guide, Release 2

HL7 Domain Analysis Model: Specimen,  
Release 2

HL7 Cross-Paradigm Information Sharing  
for Electronic Long-Term Services and  
Supports (eLTSS), Release 1

HL7 EHRS-FM Release 2: Functional  
Profile; Work and Health, Release 1 – US  
Realm

BRIDG R4 (HL7 Version 3 Domain  
Analysis Model: Biomedical Research  
Integrated Domain Group, Release 5)

## COUNTRIES WITH HL7 AFFILIATES IN 2019

Argentina	Korea
Australia	Netherlands
Austria	New Zealand
Bosnia & Herzegovina	Norway
Brazil	Pakistan
Canada	Philippines
Chile	Poland
China	Portugal
Croatia	Romania
Czech Republic	Russia
Denmark	Saudi Arabia
Finland	Singapore
France	Slovenia
Germany	Spain
Greece	Sweden
Hong Kong	Switzerland
India	Taiwan
Italy	United Kingdom
Japan	Ukraine

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