



HL7 LATAM NEWS  
APRIL 2014

## CAIS 2014

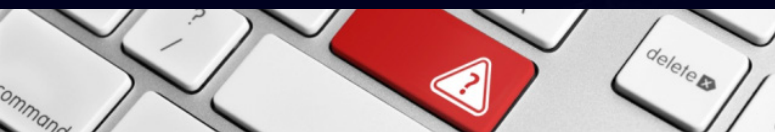
The 5th Argentine Congress  
on Informatics and Health

CAIS 2014 will take place Sept. 3-5 at the  
University of Palermo in Buenos Aires.



## FHIR is DSTU

Fast Healthcare Interoperability  
Resources, the first "trial" version  
of an HL7 standard.



HL7 Help Desk

## EDITORIAL NOTE

This is the fourth year of HL7LATAM and we continue working to disseminate the HL7 standard in Latin America and support the development of regional HL7 chapters.

Last year we redid the trilingual website (Spanish, Portuguese and English) in order to reach as many people as possible; it was not feasible to do so with the newsletter which was published last year in Spanish and English.

The goal of producing an English edition is to spread the word about our activities to other regions outside Latin America.

This year we obtained the resources to publish the newsletter in Portuguese, Spanish and English. In addition, our plans are to put out three issues in 2014; to accomplish this we expect to receive contributions of articles from the various societies that constitute HL7 Latin America.

Medical informatics is closely related to improving both patient care and the health of our region. Not only does the use of information technology represent advantages in the administrative and statistical areas, but its application in the clinical sphere brings clear improvements in quality of care.

The application of information technology in the health care area requires us to consider interoperability and establish standards so that systems can exchange information, thereby avoiding task redundancy and loss of information. In this sense the role of a standard such as HL7 is essential to achieve interoperability, but a standard is useless if it is not disseminated and made known to as many people as possible.

It is essential that the various developers and users of health informatics be aware of its scope and also be able to make their own contributions. The Latin American region has its own set of characteristics and issues, different from those of other regions, so it is important to have tools for defining our issues and making them more widely known.

Our newsletter is published on the Web site [www.hl7latam.org](http://www.hl7latam.org) and is available via various regional HL7 sites as well as on forums of social networks like Facebook, Twitter, LinkedIn, Yahoo and Google.

We hope more and more people will join this initiative and that standards and interoperability of health systems continue to be developed vigorously in the region.



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# FHIR is DSTU

Fast Healthcare Interoperability Resources, el primer estándar 'Nativo del siglo XXI' de HL7

## FHIR is DSTU

There is nothing a geek enjoys more than using two acronyms that nobody understands in a sentence only three words long. We're wondering if "is" is an acronym too, which would make it even more fun. Anyway, let's take it one step at a time. First, the end.

**What is DSTU?** Draft Standard for Trial Use: the first "trial" version of an HL7 standard. It is valid for two years. It can (and should) be modified according to the experiences of the implementers (the companies that start using it to see what should be changed).

But it was voted on (it was a two-year process) and the participants' comments were taken into account during the HL7 consensus process. It's a "draft," but it's usable.

**So what is the standard that attained the status of DSTU: [FHIR!](#)**

I can't avoid the obvious joke: Don't call the fire department! End of jokes alluding to the sound of the standard's acronym (at least for the duration of this article).

**What is FHIR?** It is HL7's first "21st century native" standard.

FHIR means Fast Healthcare Interoperability Resources.

Top Features: To look at the key features, we need a little history.

### A little history

FHIR is the response to a project of the HL7 Board called "fresh look" in which they basically wondered, "How would we tackle the problem of interoperability in health care if we were to start now?"

A group of brilliant minds discussed this for months, until an idea from Grahame Grieve – to approach interoperability via the exchange of resources using the REST paradigm – stood out for its simplicity and validity. This is currently the way most large systems and providers of online services (Twitter, Facebook, Google, Amazon)

communicate with each other and with other applications (suppliers, clients, partners, associates, etc.): through a REST-based API.

To better understand this, we should do a little exploring of the interoperability paradigms used so far by HL7:

**Messaging - 1985 to present:** We want a system (the issuer) to report to another (the receiver) that something happened (an "event") and was recorded. An example of an event would be "registered a new patient." This event that happened is transmitted through a specific transport (several options, from a TCP/IP port (sockets) to web services, file sharing, databases, etc.). The receiver does not have many defined obligations regarding what is received, beyond replying (in HL7, the reply is called "ACK" or Acknowledgement). Strictly speaking, what receivers do with the information received... is their problem. Examples of messaging-based standards: HL7 V2.x (with flat syntax - "pipes and hats" - or XML), HL7 V3 (with XML syntax). In this case, what defines HL7 are possible events to be transmitted and the structure or content of the messages in each case. And what we generally get (if we're lucky) is that the same entity (a patient, for example) is registered in the two systems with the same data.

**Documents - 2000 to present:** Instead of exchanging messages, the systems exchange CLINICAL DOCUMENTS -- documents based on the structures currently used by physicians and other health care providers: discharge reports, discharge summaries, consultation notes, test and imaging reports, etc. The receiving system should display the document to someone interested in it. Transport... again, TCP/IP, web services, etc. And only XML syntax. This is the case for the HL7 CDA R2 standard, now in version 2.0, with 3.0 being prepared for 2015. It is currently the most widely used for medical records based in document repositories.

**Services - 2005 to present:** in this case what defines HL7 are a series of functions (an API) and their parameters for specific services or domains.

Example: a terminology server. What can you ask of a terminology server and what parameters does it need in each case? Examples: From within my application, how can I ask a terminology server for synonyms for the term “diabetes” or the code for “dyspnea” in ICD-10? An example is the HL7 CTS (Common Terminology Services) which is in its version 2. Basically what defines HL7 is an API: a set of functions that can be called and their associated parameters.

FHIR

And finally we come to FHIR - Resources 2011-present. The main thing that defines HL7 is RESOURCES, and their composition. Interoperability based on resources allows information to actually be distributed. If I need a patient’s demographic data, I can request them from the server that actually contains them. The rest can store only an identifier provided by that server.

In this case both the transport and the associated security are fixed, since they use HTTP and optionally (in the case of security requirements) OAuth. The functions that we can call are also a relatively fixed set, given by the acronym CRUDS.

- [C]reate: create a new resource
- [R]etrieve: fetch a resource
- [U]pdate: update a resource
- [D]elete: delete a resource (servers are not required to truly “delete”)
- [S]earch: search for a resource

If this seems too complicated... I invite you to click on this link, or copy it into your browser:

<http://fhir.healthintersections.com.au/open/patient/?name=eve>

You just searched by name for a patient named “eve” in one of the open test FHIR servers (at the moment there are about 20 worldwide).

So easy. So fast. So simple to understand.

There are also open-source, Java and C#, and PostgreSQL server implementations (the most complicated part).

How to call these functions is defined by something called REST. This functionality (CRUDS) is a standard for any REST API.

The syntax for FHIR (“how to write resources”) is XML or JSON. What the server does with the information received is very clear. If you are creating a new patient (“Create”) then what you have to do is create a new patient and return to me the ID that was generated. Notice the difference in messaging, from having no responsibility for what is received to being responsible for a new resource.

This type of resource-based services is very useful especially when clients are less powerful, as in the case of mobile devices (mHealth).

Another feature of FHIR is that it is extensible and the way to extend a resource (add things that were not included in the standard) is standardized and documentation on the content of the extensions can be incorporated into the server, which supports extensions that clients can look up.

So, summarizing the characteristics of FHIR:

It defines a set of resources (about 50 in all). Examples: patient, laboratory results, images, medications, allergies, etc. We don’t want there to be too many more. FHIR works on the 80/20 philosophy. We will implement without extensions (what’s called the “core”) what is useful for 80% of developers. One of the problems we had in HL7 is trying to include everyone’s requirements in the basic specifications -- all the needs of everyone who stated a need. Result: endless or impossible-to-understand specifications... or a very fun combination of both. FHIR put an end to that.

Emphasis on search. The servers should be able

to search for different types of resources in the most common but useful ways (all results for a patient, all patients with certain demographics, etc.). For each resource type the search methods are precisely defined.

Testing, testing, testing: People have held connectathons from the beginning. A connectathon is a meeting where several companies and developers connect their client servers (and cell phones with apps) and see who can communicate with whom. No more standards that have never been tested. We test them first.

It defines the basic REST functionality with respect to resources: create, retrieve, search, update: Native Internet API.

FHIR is international by definition: initially created by an Australian, maintained by Europeans and Canadians. Translated into Japanese.

With many companies and even the U.S. government participating. Guess who is missing from the party... us! I dream of having an FHIR connectathon here in Latin America. Let’s see who is interested...

Why FHIR and not my application’s API: and the API of mine too, and the API of this guy over here, and the API of his application, and of that other guy’s. How many APIs do we have to implement? What happens if I stop working with those? What is the new guy’s API like?

I could keep writing about FHIR for hours... but I prefer to leave you with some references and be available to expand or discuss or whatever comes to mind.

If there are a lot of acronyms I haven’t identified... well, that’s what we’re here for -- ask!

Another thing: FHIR is free (like the rest of the HL7 standards) and there are several forums, including one on Stack Overflow. FHIR is also about to be included in the HL7 Standards Help Desk (see Fernando Campos’ piece about this).

References

First a very nice article (FHIR for Clinical Users) if the reader is a doctor and most of what I’ve written seems silly: [http://wiki.hl7.org/index.php?title=FHIR\\_for\\_Clinical\\_Users](http://wiki.hl7.org/index.php?title=FHIR_for_Clinical_Users)

The base specification (the DSTU standard): <http://www.hl7.org/implement/standards/fhir/>

- Blogs about FHIR:**
- Health Intersections (Grahame Grieve, Australia): <http://thefhirplace.com/>
  - Hay on FHIR (David Hay, Nueva Zelanda): <http://fhirblog.com/>
  - Motorcycle Guy (Keith Boone, USA): <http://motorcycleguy.blogspot.com.au/search/label/FHIR>

**Stack Overflow Forum:** [http://stackoverflow.com/questions/tagged/hl7\\_fhir](http://stackoverflow.com/questions/tagged/hl7_fhir)

Articles in Spanish on FHIR: a comprehensive article by Mario Enrique Cortés of Colombia, at <http://hl7es.blogspot.com.ar/2013/12/fhir-el-nuevo-miembro-de-la-familia-hl7.html>



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# Help Desk, HL7 gets a help desk



## HL7 has introduced its first pilot Help Desk.

As one of the many new features and benefits to members, this resource available 24/7 is designed to aid in implementing and fine-tuning projects in the works that involve resources based on HL7.

It is a quick, simple way to get experts' answers as you need them.

Among the resources available:

- A detailed database of FAQs.
- A knowledge base designed solely as a reference work, which makes it easier than reading the actual specification of the standard. Included in this first pilot are more than 50 items of articles about CDA and CCDA (Clinical Document Architecture and Consolidated Clinical Document Architecture).
- It is organized with a first line of professionals with extensive experience in interoperability, and for more challenging questions, it has an escalation system through which the working group for the topic in question will provide an answer.

While the scope of the initial pilot focused on CDA, it soon will be expanded to the following topics:

- FHIR
- HL7 Immunizations
- HL7 V2.X Orders and Observations
- HL7 V2.X Meaningful Use Stage 2 Implementation Guides

## - HL7 V2.X ADT

At any rate, and to be honest, the Help Desk team strives to answer all kinds of questions. The cases it has resolved include consultations about which HL7 standard best applies when working with adverse effects in animals and a Danish implementation guide, to name just a couple.

I invite you to try it. Anyone with questions who is a member, either directly or through your local affiliate, is able to access this service.

For more information, there are more references on the HL7 International site, [www.hl7.org](http://www.hl7.org); you can contact your local affiliate, which will provide the credentials to access the service; or you can contact me directly. While the articles and knowledge base are in English, language is no object when posing a question.



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# Upcoming online courses in Spanish

## 2014

Spanish edition  
Starts April 14 and September 22

### 16th Edition HL7 Virtual Course Introduction to HL7 standards V2.x, V3 and CDA oriented toward the exchange of information between health systems

HL7 International (Health Level Seven) is a Standards Development Organization (SDO) for the healthcare sector. Founded in 1987 as a non-profit, it is accredited by ANSI and operates internationally. Its mission is to provide standards for the clinical, patient care, administrative and logistics domains, in order to achieve real interoperability between different information systems in the area of healthcare.

#### Learning by example

The HL7 introductory course is a virtual workshop where we immerse ourselves in the world of HL7 standards. With the support of web resources, we have developed a series of guided exercises that show, through multiple examples, a model of good practice in the use of these standards.

At the end of the course participants should:

- Know how to tackle a project that requires implementing an interoperability scheme between different health information systems.
- Know how to read the specification of the most-used HL7 standards.
- Understand the need for controlled vocabularies, master files and records of entities.
- Read and write V2.X messages.
- Read and write V3 messages.
- Read and write CDA R2 documents.
- Know when to use the most appropriate interoperability format (messages and/or documents).

#### Configuration and resources

- Course in distance-learning mode with Web tutoring.
- Tutors certified by HL7.
- Material in Spanish developed by the team of tutors.
- Documentation in Spanish and English.
- HL7 Glossary of terminology in Spanish and English.
- Discussion forums and chat with the tutors

every other week.

- Self-assessment questionnaires for each module.
- Activities coordinated and evaluated by the team of tutors.
- Videoconferencing session for each module (V2.x, V3, CDA R2)

#### Agenda

1. Standards and HL7 vocabularies
2. Introducing HL7 V2.x
3. HL7 V2.x: Types of data, ACK
4. HL7 V2.x: Admission, orders and results
5. HL7 V2.x: Z Segments, messaging profiles
6. Introduction to XML - HL7 V2.XML
7. Introducing HL7 V3
8. HL7 Data Types V3
9. From the models to the message
10. HL7 CDA R2 (Clinical Document Architecture)

#### Registrations

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**Fees:**

Participants from Argentina: **ARS\$800.**

HL7 Argentina partners: **ARS\$400.**

Participants from other countries: **US\$500.**

HL7 members from other countries: **US\$250.**

Participants from Eurozone: **€500.**

Members of HL7 Spain: **€250.**

**Why?**

To exchange and share information:

- Reference models in health information systems
- Controlled clinical vocabulary
- Pharmacy orders and prescriptions
- Laboratory requests and results
- Radiology and pathology reports
- Patient Administration: Admissions, referrals and discharges
- Planning and scheduling of appointments
- Hospital discharge reports, consultations, emergency medicine and clinical course

**How?**

Using the standards: HL7 V2.x, V3 and CDA R2:

- Virtual course held over 10 weeks with exercises based on real interoperability problems; participation in a virtual community composed of students who share the same problems and the support of instructors and international experts.

- Activities in a typical week of the online course:
  - Study reading materials
  - Ask the course instructors questions

- Consolidate the knowledge acquired through the exercises

**For whom?**

Open to the community of:

- Professionals and students who need a guided immersion in the world of HL7 standards so they can apply them in their context: hospital information systems, primary care, care networks, government health services, biomedical research, public health, etc.

- No previous experience in HL7 is required.

*Editors:*

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**CAIS 2014 (Scheduled Event Details)**

CAIS 2014 (the 5th Argentine Congress on Informatics and Health) will take place Sept. 3-5 at the University of Palermo in Buenos Aires.



For quite some time there has been an Argentine health informatics event with exhibitors and at which participants from various Latin American countries present papers. Five years ago, this event took on its current form as a symposium concurrent with the Argentine Conference on Informatics (JAIIO).

Despite being “Argentine,” CAIS generally receives a significant number of scientific papers, academic committee members and speakers from Uruguay and other countries in Latin America and the Caribbean. This year is atypical because of the proximity (in time and distance) between CAIS and the INFOLAC Congress 2014 in Montevideo. For this reason, it was decided in 2014 not to call for scientific papers to be presented, only lectures and tutorials. Those interested in presenting papers are channeled to the related symposia within JAIIO or to INFOLAC.

**Organizers**

CAIS is organized by the Argentine Association of Medical Informatics (AAIM), the Medical Informatics Committee of the Argentine Medical Association (AMA), the Biomedical Informatics Group of Buenos Aires (GIBBA), the HL7 Argentina Association, the Argentine Society of Bioengineering (SABI) and the Argentine Informatics Society (SADIO).

The leadership of the organization falls to two chairs selected each year, at least one of whom is connected with academia.

HL7 Argentina accompanies CAIS in three roles: as co-organizer, with participants from the academic committee and with exhibitors, at conferences or in the always highly anticipated “tutorials.” The participation of the other organizing entities varies each year, depending on the theme of CAIS, the calendar of other conferences related to their specific interests, and other variables.

The theme of this year’s conference is “Information for continuity in health care.” The chairs of CAIS understand that information management is central to ensuring continuity of patient care, and mitigating the segmentation and fragmentation inherent in the Argentine health system.

The schedule of conference programs is not yet fixed, but it can be announced that CAIS 2014 will include a day of conferences and tutorials on standards by members of HL7 Argentina, and a conference on Computers and Health in the State is in the negotiation stage. As the rest of the activities and exhibitors are confirmed, the information on the conference will be updated on the website [www.cais.org.ar](http://www.cais.org.ar).

*(continued from previous note)*

**The Future of CAIS**

In keeping with this year's theme, the chairs are trying something that will give more continuity to CAIS, since enthusiasm wanes with the end of the conference each year, to wax again (from nearly nothing) with the new chairs the following year. Without going into details, we can say that some of the unwanted side effects of having several organizers include this "diluted responsibility" and unclear leadership of the conference. Starting in 2013, the chairs will remain in office until new ones are named, and will provide their successors with a full briefing. After all, isn't that what we want to happen to our medical records when we go from one doctor to another?



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Probably for most of you reading this article, what I'm about to say to you is not new; it might be a movie that you've already seen – or lived for yourself, depending on where you've had to deal with it. Catharsis is what moves me to write, and hopefully I will get others to reflect before they suffer by going down the same path.



You may have gone through the development process of an integration with another application, coordinating, managing, programming or testing, and the degree of discomfort you experienced will have varied depending on your relative position. BUT ONE THING IS CERTAIN: YOU ALWAYS SUFFERED.

Undoubtedly in these situations there were angry flare-ups, arguments, accusations and bad moods. Few satisfactions, fewer congratulations and no applause -- that's the reality, even if the goal of the project was achieved. Because what the customer is after is not the proper functioning of the interface, but getting their new application running. Your greatest accomplishment when the job was done was collecting your agreed-upon fee, which the client surely considered hefty.

It always starts optimistically, it's envisioned as something simple that will make you look good and add more value to the product that our client has already been using for a long time. In the beginning everything is wonderful, a new project, a new opportunity, a new challenge. Fine! To each his summer -- we are not all motivated by the same criteria and the same ambitions.

The trouble is that this summer is usually very short; it barely lasts through the first technical meeting with the new provider where the idea is to agree on the ultimate goal. But the problem isn't the "what," it's the "how" that we also are supposed to agree on. How?! Yeah, yeah, how the provider of the other application wants me to do it.

In the last twenty years I have been involved in developing many interfaces, most of them different from each other in the data exchanged and the methodology or technology used. The overall atmosphere was always the same, integrate our HIS with an RIS or a LIS. But while this environment has not always been the same, the only constant was that the other provider was always

a big player in the healthcare market and therefore defined the way.

The data packet to be sent in each integration was not the same, there were slight differences. One had to include the patient's sex, the other didn't. The patient's first and last names had to be together in one, but not in the other. In one we had to send all the information about the referring physician, in the other just some of that data. And I could go on describing differences. In the methodology too -- one interface used text files while the other used XML, etc., etc., etc...

We work with the major imaging equipment suppliers in the U.S. and Europe, which have instructions, applications and manuals from their home companies pointing them toward a particular approach. All different. We also work with a multinational provider of laboratory equipment, systems and reagents, also different. And the same thing for local software suppliers, again different from the previous ones.

We saw that every day we were trying to reinvent the wheel. We were doing the same thing over and over, but not exactly the same thing, in a different way and, worse, with more arguments than usual.

We weren't clear about what was the most appropriate or efficient approach, and this was a big question mark for us as we suffered through the process. Usually the new supplier only needed to get their application up and running as quickly as possible and with the least amount of effort (remember this) or at least not take on new costs. We are the ones who administer the data that the other party needs and therefore we are responsible for supplying it in a proper and timely fashion.

Searching for experience was what led us to HL7, and we understood its purpose. We understood that it was the answer to our big question, I don't know if it's the best, but it's what we have at our

disposal today, studied, tested, documented, and with many professionals who have experience with it. HL7 helped us standardize the data exchange between different applications and the format for it. It allowed us to have a professional response when tackling an integration project. We quickly put it into practice in a case that ended successfully.

Just in case you're thinking the story ends here ... you're wrong, you can always suffer a little more. The story of the development of interfaces goes on longer...

Our customers always aspire to something more and since we do not do everything or know everything, there are always new applications from new and different providers. New situations arise that require the development of new interfaces or updating or supplementing existing integration between the two. Thus we come to a more complex integration relationship, where it's not enough just to send data, it is necessary to notify when these data are modified (when they are updated) and we also need to know whether our counterparty correctly received what we sent.

In this evolution, we also have situations where the application that received our data today could be sending us the result of having processed it tomorrow. This will happen because of our drive to keep growing or because of new or different needs of our client. And our suffering will continue and so will that of the other provider -- we will SUFFER TOGETHER.

This more complex integration is called interoperability. Understanding this concept allowed us to grow, and we were able to do it with the help of HL7 -- learning to distinguish when we are talking about syntactic or semantic interoperability, what its domains are and what must be resolved in each.

The reality is that there are more and more appli-

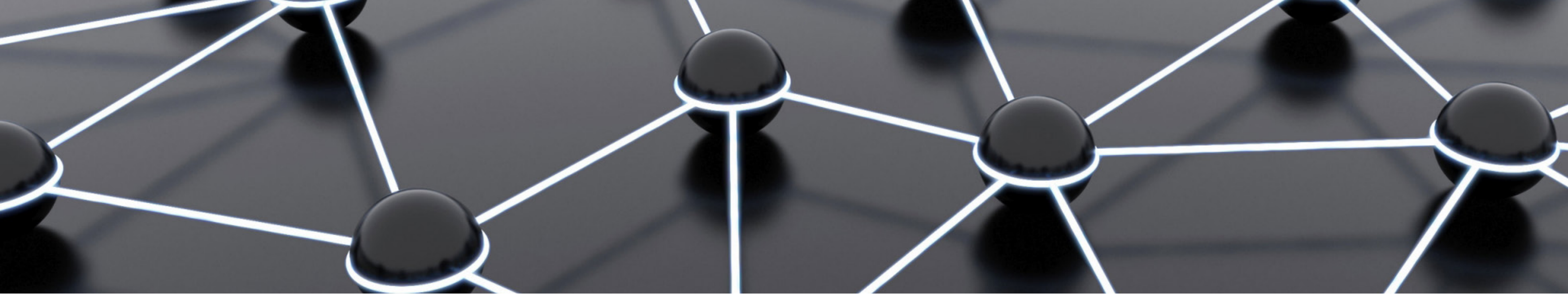
cations and providers along the health-care highway that should and must communicate with each other. Remember that medicine is a science based on knowledge, and as such, the more data it manages the better, and consequently, the higher the quality of care it is able to provide. Each application manages a set of data (sometimes small, sometimes not) within this great universe that the exercise of the medical profession requires; clearly the solution is not processing it in isolation. Every day we become more interconnected and because of this reality we need to exchange, we need to process what we have with what we receive. Ultimately we have to INTEROPERATE.

In the next issue I will continue developing this theme -- I will share several examples of how we SUFFER and I will make a comparison between them. Then you will see why I urged you to "remember this."



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# Adoption of CDA R2 as standard in Argentina (IRAM-ISO/HL7)

**Among the various activities and initiatives HL7 Argentina has set as goals for the current year, 2014, a highlight is the recent addition as an active partner of IRAM (the Argentine Institute of Standardization and Certification) for the formation of the Subcommittee on Health Informatics, which will permit the two to join their efforts synergistically to work on the translation, localization, study and interpretation of ISO/HL7 Standard 27932:2009 - Data Exchange Standards - HL7 Clinical Document Architecture, Release 2, for it to be approved and adopted as a standard norm in our country.**

For HL7 Argentina, being a member of IRAM means belonging to a civil association that has worked for more than 70 years to improve the quality of life, welfare and safety of citizens, as well as the competitiveness of organizations.

With the establishment of this new relationship, HL7 Argentina now has a direct channel of communication to all health sector institutions that share the same values and wish to contribute jointly to the development of standardization of clinical documents for exchangeability so that all the needs of the areas represented by each of these entities are covered.

In the field of standardization, IRAM is the only Argentine representative to the regional standardization organizations such as the MERCOSUR Standardization Association (AMN) and the Pan-American Standards Commission (CO-PANT), and to the international organizations: the International Organization for Standardization (ISO) and the International Electrotechni-

cal Commission (IEC), in this last case, together with the Argentine Electrotechnical Association (AEA).

It also leads national technical committees that analyze the documents being studied, channels national proposals, sets out Argentina's position before these bodies and is involved in various international technical committees.

In the field of certification, IRAM is part of international networks: the International Certification Network (IQNET) and the Worldwide System for Conformity Testing and Certification of Electrotechnical Equipment and Components (IECEE). IRAM's involvement in these organizations goes beyond the technical, as it participates in the political decision-making of most of them.

## Subcommittee on Health Informatics

The purpose of this subcommittee is to study standards in the field of health informatics

The objective of HL7 Argentina is to work with our Health Sector in developing standards that will facilitate the exchange of clinical documents in an environment of interoperability between different actors in the healthcare market, which will certainly result in higher-quality care for citizens.

and health information technology and communications (ICT) to promote interoperability between independent systems in order to facilitate compatibility and consistency of information and health data and reduce duplication of effort and redundancies. The subcommittee participates in ISO TC 215 Health Informatics.

Among the tasks of this technical subcommittee are translation and regionalization of ISO/HL7 Standard 27932:2009 - Data Exchange Standards - HL7 Clinical Document Architecture, Release 2, on which HL7 Argentina has focused its efforts in order to achieve a national standard that will serve as a set of rules for sharing clinical documents between the various health institutions in our country, both public and private.

Initially, this subcommittee's professional contribution to the work group is reported only to active members of the Executive Committee of HL7 Argentina, who volunteered to participate in the monthly meetings organized by IRAM at its headquarters (located at Perú 552, CABA) or in online meetings using the communication channels put forward by IRAM.

Even though this activity is all very recent, HL7 Argentina member companies such as Hospital Italiano of Buenos Aires, Traditum S.A., Kern-IT SRL, Duomed S.A., Biocom S.A. y Griensu S.A. are committed to actively supporting the initia-

tive, and others, such as IATREION Software SRL, have associated themselves with IRAM in order to join this Technical Subcommittee.

IRAM-ISO/HL7 27932. Health informatics. HL7 Clinical Document Architecture, Release 2 (CDA 2)

## Scope and field of application

The CDA (Clinical Document Architecture) is one of the standards of the HL7 family of protocols approved by the ISO (International Organization for Standardization) that provides a model for the electronic exchange of clinical documents.

The clinical documents that meet protocol specifications support the exchange of documents between users at different levels of technological development, promote the persistence of all information they contain and enable a wide range of applications of processes subsequent to their exchange.

The format of clinical documents outside the context of the exchange (e.g., the data format used for storage of clinical documents) is not addressed in this standard.

CDA documents can be transmitted in HL7 messages designed to transfer clinical docu-



ments. Although a detailed specification of such messages is outside the scope of CDA, this rule imposes certain requirements on the packaging of CDA documents within HL7 messages.

The CDA does not specify the creation or management of documents, only the markup language for the exchange. Although the CDA scheme can be used directly in a document creation environment, this use is not the primary purpose of the CDA standard.

Document management is critically interdependent with the CDA standard, but the specification of document management messages is beyond the purpose and scope of CDA.

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## HL7 Argentina

HL7 Argentina is starting a new period with very clear objectives and trying to raise the bar as much as possible.



The use of the standard and the awareness of the need for it are growing day by day, and that is why large organizations with considerable numbers of patients are now looking at adopting it.

**Local initiatives**

First, as active members of IRAM [the ISO member body for Argentina] we are part of the Health Informatics subcommittee that, in a joint effort between the two institutions, will work to translate, localize, study and interpret the ISO Standard/HL7 27932:2009 - Data Exchange Standards - HL7 Clinical Document Architecture, Release 2 so it can be approved and adopted as a standard norm in our country. The significance of this work is no less than that it will produce a national standard document to record and exchange clinical information.

Also, training was provided to one of the largest prepaid health services in terms of affiliates, Swiss Medical and the Hospital Alemán. Additionally, we took part in the armed forces' health informatics day, which was attended by officials of Health, Management and Informatics of the Ministry of Defense and the armed forces, developers and health professionals.

**Distance education**

In the area of e-learning, we are continuing with the coordination of all editions of HL7 International virtual courses with the added element that in this edition all the material is being reviewed and updated, so we are working with people in Australia in the process. Starting with this edition, FHIR is a compulsory module, and the introductory units now being distributed reflect its incorporation.

The course that started March 15 has more than 250 participants from over 20 countries: Canada, Czech Republic, Denmark, Estonia, Ethiopia, India, Latvia, Lithuania, Moldova, Netherlands, Pakistan (many people from a recent affiliate),

Philippines, Portugal, Russian Federation, Saudi Arabia, Sri Lanka, Switzerland, United Kingdom, Uruguay, Vietnam and of course the United States.

**Dissemination of the Standard**

This year, to ensure the best and most effective dissemination of the standard in universities and institutions, we have planned visits to locations in two provinces: Mar del Plata, on the coast of the province of Buenos Aires, and the city of Paraná in the province of Entre Rios.

At both meetings we have planned a day of training in V2x and CDA, the future of HL7 and implementation experiences.

Similarly, the plan is not only to disseminate the standard on an academic level but to extend the outreach to all areas involving health information and to obtain enriching experiences that we can then share. It is to this end that in late February we traveled to Orlando, Fla. (USA), to participate in the world's largest trade show, HIMMS 2014.

Fernando La Rosa, Secretary of the Argentina section, was our participant in the exhibition this year.

According to him, the most important issues discussed in the conference, and in the material available at the expo booths, were:

- Interconnectivity
- Mobile applications primarily based on Android and Windows technology
- Facilities oriented to patients and their care
- Information security
- Cloud Computing
- Solutions integration

In the Interconnectivity pavilion, different cases were presented that represented the operation of a health-care facility allowing monitoring of patients through the interconnectivity of neonatology, obstetrics and other areas that were displayed on a single console showing vital signs, blood gases, etc.

Mobile applications, for both smartphones and tablets, were the almost undisputed stars this year, as their aim is to make care more accessible both to professionals, to facilitate the progress of their patients, and to patients, to access their information.

Interconnectivity is no longer a novelty, it has been transformed into a commodity that is present throughout the operation of health care, whether clinical, administrative, research or management; there is virtually no system, service or application that does not assume interconnectivity. In this segment, FHIR became a permanent part of the vocabulary of interconnectivity.

There was much emphasis on patient empowerment through specific media portals to manage appointments, see lab, study and imaging reports and track the activity of health professionals as it relates to their own case history.

Cloud computing, with an emphasis on security and confidentiality of information, was another topic that came up repeatedly. At the commercial expo, most solutions ran in the cloud, allowing remote administration by those contracting services; this leads to a drastic reduction in TCO (total cost of ownership) of equipment, software licenses, etc., and a strengthening of communications.

There was a very large range of middleware to facilitate integration of application of different technology platforms, physical locations, etc.

Obviously, despite the continuing progress and the work done, there are still issues to resolve or improve, such as defining communication protocols for various medical monitoring devices, what the doctor-patient encounter should be like online as opposed to face-to-face, what laws apply when the patient and practitioner are in different states or even countries, defining the minimum information necessary to show in eHealth without going to extremes, etc.

As a final conclusion, Fernando reminded us of

HIMSS executive vice president Carla Smith's closing words at the conference: It's all about aligning "the right information with the right people at the right time." The meeting brought together about 38,000 health and informatics professionals and 1,200 exhibitors in Orlando from Feb. 23 to Feb. 27.

In Buenos Aires' spring, we will take part in Expo Medical 2014, as we have done for several years now, participating in the conferences and with an information booth.

In upcoming conference and seminar activities, the Argentine Congress of Health Informatics in the city of Buenos Aires is a definite, as is the 7th Conference on Health Informatics at the end of the year at the Hospital Italiano of Buenos Aires, with tutorials and certification exams. Finally, the entire executive committee will attend Info-lac 2014 in Montevideo on Oct. 16-17.

There is still plenty of work remaining to be done, not only in things that are already planned but in the HL7 Working Group meetings, which always give rise to new projects that keep the flame alive.



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```

if
(Five myths of software
providers about using HL7(b))
{
    return true;
}

return false;

```

I'm sure many readers have heard some fantastic stories involving HL7. The danger is in believing these stories are true.

This article aims to highlight certain myths about the use of HL7 that some providers unscrupulously employ as part of their sales strategies, taking advantage of their customers' lack of knowledge.

These myths generate confusion in the user community, create a distorted view and discourage the use of HL7 standards. Therefore we have decided to reveal them publicly.

Before we begin, I would like to clarify that this article does not constitute any sort of attack on the health-care software development industry.

If your company has invested resources and research in properly implementing certain use cases for HL7 standards and your products have statements of conformity to back them up, you won't be too concerned about a few comments that could lead to hurt feelings.

#### Myth 1: 100% HL7.

Some providers of software applications for hospitals claim that their products and software applications are 100% compatible with HL7

standards. What is the truth of this?

Reality: You should ask providers exactly what they mean when they say their products are 100% HL7.

If they mean their products properly meet an HL7 specification to support a particular interaction, it is possible that the claim is valid; it could even support a number of specifications. In such cases I would recommend using more detailed language, such as "100% compatible with the interaction POOR\_IN200901UV for the role of Placer."

If they mean their application complies with 100% of HL7 standard specifications, you should begin to doubt the veracity of their claim. HL7 is a family of health information technology standards, notably interoperability standards.

Only the HL7 v3 standard has more than 30 different domains that group different interoperability use cases (medical records, laboratory, public health, immunization, blood bank, orders, pharmacy, electronic documents, etc.), and each of these domains includes various specifications of structures and message and electronic document interactions.

There are so many specifications for HL7 standards that the software applications and infor-

mation systems that have implemented HL7 usually support an array of specifications, but NOT all that are available.

Even in certain use case scenarios it is unusual for a software application to support all HL7 specifications.

For example, it is possible that a LIS system (Laboratory Information System) is equipped with interfaces to exchange information (orders and/or results) with certain test devices (hematology, biochemistry, urinalysis, etc.) of certain makes and models using HL7 v2.x messaging.

In this case, it is possible to declare that the LIS uses an array of specifications for clinical laboratory use cases, conforming to/in accordance with HL7 standards; however, this is not sufficient to ensure that the LIS can communicate with any analysis device using HL7 or that it is able to support all types of HL7 interactions within the context of a clinical laboratory, such as electronic order exchange (HL7 V3 OR R1) between a hospital and a laboratory or sending reports of diagnostic test results via electronic clinical documents (HL7 CDA R2).

In short, if it is difficult to ensure that a LIS system supports all HL7 specifications available in the clinical laboratory setting, it will be even more difficult for a clinical information system (CIS) or a hospital information system (HIS) to support 100% of HL7 specifications.

To know for sure which specifications a software application has implemented, it is best to ask the provider for declarations of conformity.

This is not a complete guarantee that the standards are employed correctly, but it will serve as a basis for an expert to perform a compliance audit from such statements.

**Conclusion: FALSE. The fact that it uses some specifications does not mean a soft-**

**ware application or system has the capability to support all HL7 standard use cases.**

#### Myth 2: HL7 is a communication protocol for biomedical equipment.

Some providers of application software for hospitals claim that HL7 is a protocol that is limited to electronic data interchange (EDI) with biomedical devices. What is the truth of this?

Reality: Many large providers in the health-care industry have adopted HL7 standards so their biomedical devices can import and export information in standard form.

However, HL7 standards are not limited to these types of cases and their scope covers a large number of specifications that enable interoperability between information systems and software applications in in-hospital and interhospital contexts.

The fact that an application or software product uses HL7 only for communicating with biomedical devices is no reason for its provider to assert that HL7 standards are limited to such cases.

**Conclusion: FALSE. HL7 is NOT restricted to EDI with biomedical equipment; its use is much more extensive.**

#### Myth 3: An "approximation" to HL7.

Some providers of software applications for hospitals claim that their products and software applications don't exactly use HL7, they use an approximation. What is the truth of this?

Reality: The claim of using approximations to the HL7 standard is equivalent to saying that "a cat is an approximation of a hare."

It should be made clear that when HL7 standards are used it is necessary to stick to the specifications; if there is not full compliance, it is not possible to establish standard interoperability with

other information systems.

**Conclusion: FALSE. If a specification is going to be used, it has to be implemented in accordance with the standards.**

**Myth 4: I use a library that makes HL7 fully functional in my software application.**

Some providers of software applications for hospitals claim that their products and applications use certain software libraries or platforms that allow their products to be 100% compatible with HL7. What is the truth of this?

Reality: This myth is closely related to myth No. 1.

The main suppliers of the IT industry such as IBM, Oracle, Microsoft, etc., have development platforms and libraries that greatly facilitate the implementation of interactions and use cases for interoperability, in accordance with HL7 standard specifications.

The major IT platforms with HL7 libraries (WebSphere, Healthcare Transaction Base, BizTalk Server, etc.), are excellent tools (some better than others), but like any tool, how well it does a job will depend on the skill of the craftsman and the raw material used.

These platforms or libraries offer functionalities for the use of HL7 DataTypes, use of XML technology for the development of templates of HL7 v3 messages, syntax validation, implementation of transport specifications, controls, trigger events, workflow automation, etc.

Software applications that use this type of platform can implement HL7 specifications more accurately and in less time than those that do not use them.

However, it is necessary to analyze and develop each case and interaction according to the context in which they will be employed.

To say that just by using a platform or library an application can automatically support any use case for HL7 would be like saying that when using a particular development environment (IDE) the applications develop themselves.

**Conclusion: FALSE. Software platforms and libraries do a lot of the work, but not all the work.**

**Myth 5: I'm affiliated with HL7 and therefore my products meet HL7 specifications.**

Some providers of IT solutions for the health care sector are members of HL7 International or of a national chapter of HL7, and claim that their products therefore comply with HL7 specifications. What is the truth of this?

Reality: An analogy would be that simply enrolling in a school of martial arts is not enough for a person to declare almost immediately "I know kung fu!"

Membership in HL7 confers certain rights such as access to specifications standards, participation in working groups, contributing to and deciding on the development of specifications and new releases, getting discounts on books, training and activities of the Health Level Seven Inc. organization, etc.

Nowhere among the rights of HL7 members is it mentioned that their products automatically acquire conformity to the use of its standards specifications.

Some unscrupulous suppliers become affiliated with HL7 in order to lead their potential customers to believe they have implemented HL7 standards in their products.

**Conclusión: FALSE. Being a member is no guarantee that a provider has successfully implemented HL7 standards in their products.**

If you or your organization is about to acquire a software application or information system that uses HL7 standards, I hope this article has been useful in making a good decision.



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## Institute HL7 Brazil supports HIMSS LATAM 2014

The Institute HL7 Brazil is supporting the Latin American edition of HIMSS LATAM 2014, which will take place Sept. 18-19, 2014, in Sao Paulo, at the World Trade Center Events, with the slogan "Connecting Leaders Across Latin America" (<http://www.himssla.org>).

The event will feature an extensive program focused on the quality of information technologies in the field of health care (<http://www.himssla.org/14/programme/pag.aspx>).

The main speakers will be Jack Cochran, MD, FACS, executive director of The Permanente Federation, and John Hoyt, executive vice president of HIMSS Analytics, HIMSS, USA.

The Prospectus for Exhibitors and Sponsors also is now available for download: [https://www.dropbox.com/s/71acxsp57cd6n0f/HIMSS\\_LA2014\\_Prospectus.pdf](https://www.dropbox.com/s/71acxsp57cd6n0f/HIMSS_LA2014_Prospectus.pdf).

The targeted attendees for this event are executives and directors of major health-care ICT organizations in Latin America; buyers and users of health-care information technology systems; key government officials; health-care IT professionals in the public and private sectors; doctors, nurses and other health professionals; academics in the IT field; hospitals; and professional associations and teaching institutions.

### CALENDAR OF COURSES AND EVENTS FOR 2014

The HL7 BRAZIL INSTITUTE has shared its calendar of courses and events for the first part of 2014, including almost 20 courses aimed at development and education on various Health Informatics topics.

March 14- Course II online, professional training in HL7  
March 13 - International online seminar II on Information Technology and Health Standards  
April 4- Course I online, training in Open EHR  
April 8 - Course II, introduction to Open EHR  
April 15 - Course II, implementation of TISS-TUSS  
April 30 - Workshop - LOINC Brazil - ABRAMED - SBPC  
May 22 - Development course - HL7- v.2.x  
May 23 - Development course - HL7- v.3.x  
May 29 - Course I, LOINC for lab - ABRAMED/SBPC  
May 29 - Course I, introduction to Health Information Standards  
June 6 - Course I, usability for medical sites  
June 20 - Course II, basic - images - DICOM and HL7  
June 23 - Course I online, implementation for TISS and TUSS  
May 30 - Course I online, LOINC for lab - ABRAMED/SBPC  
July 4 - Development course - CDA-HL7  
July 14 - Course I online, introduction to Health Informatics Standards  
July 14 - Course I, introduction to Snomed and medical terminologies  
July 28 - Course I online, SBIS/CFM certification for health care managers

More information: <http://www.hl7.com.br/agenda>

The main objective of the HL7 Institute is to provide training in systems and standards related to the exchange, integration, sharing and retrieval of electronic information in the field of health care, in order to support medical and administrative practice, allowing greater control of health services -- more specifically, to create methodologies, standards and guidelines that are flexible and economically viable and that enable interoperability and sharing of clinical information stored electronically.

Among the courses offered, the Online Professional Development Course II in HL7 (HL7 Fundamentals ) began March 14, with a duration of 14 weeks, including a new 2-day practical classroom session at the end of the course.

We have also begun the second cycle of "Online International Seminars on Health Information Technologies and Standards," whose inaugural conference, "ADVANCES AND PERSPECTIVES FOR HEALTH INFORMATION STANDARDS," was given by Professor William Edward Hammond II, via interactive web videoconference, in the Virtual Classroom of HL7 Institute Brazil on March 13, 2014.

For more information, visit [www.hl7.org.br](http://www.hl7.org.br)



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## Challenges in Medical Informatics

Several initiatives in health information technology are having an impact this year, 2014, in Puerto Rico.

Chief among them are:

- MU S2
- ICD-10
- Pilot Project SIMP

### MU S2 ("Meaningful Use Stage 2")

Health reform in the United States, known as Obamacare, continues this year, 2014, with the second phase of "Meaningful Use." All health care providers that serve Medicare or Medicaid populations must comply with MU S2 to receive incentives related to meaningful use of electronic health records.

The ONC (Office of National Coordination for HIT) adopted the HL7 C -CDA (Consolidated CDA) for the implementation of this second phase, which is focused on the exchange of health information.

### ICD-10

Oct. 1, 2014, is the date for all medical billing services to be conducted using the ICD-10 codes, replacing the familiar ICD-9.

Although clinical information exchange will take place using SNOMED-CT, most health care providers know the ICD-9 coding.

The challenge is to ensure that the medical record documentation is conducted in a clinically accurate way, to be able to exchange this infor-

mation and to bill for these services - all this in about six months.

### Pilot Project Integrated Primary Medical Services

In the summer of 2014, the Department of Health of the Government of Puerto Rico will begin a demonstration project in Integrated Primary Medical Services. This initiative includes the component of mental health as an integral part of primary health services.

This project will take place in the northwest region, specifically in the towns of Isabela, Aguadilla, Aguada, Rincón Añasco, Moca and San Sebastián.

Law 40 of Feb. 4, 2012, created the Puerto Rico Health Information Network to support the exchange of health information in Puerto Rico. For the Demonstration Project, the UPI (Unique Patient Identifier) generated by PRHIN will be used. This will facilitate the exchange of information since the Social Security number cannot be used as the only patient identifier.



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# HL7 Chile

In 2013 the Chilean HL7 Chapter was reconstituted via two meetings open to the entire community that took place in June and September with the support of the Chilean Association of Health Informatics (ACHISA) and the Universidad Central of Chile.

These meetings were attended by representatives of more than 20 organizations and companies in the country, as well as more than 30 industry professionals.

In December, the membership request was sent to HL7 International and in March of this year the interviews were conducted, with subsequent assessment by the HL7 ADDC (Affiliate Due Diligence Committee), which decided to recommend approval. In the coming months the application will be submitted for a vote by other members of HL7 International. It is expected that during the next meeting of the Board of HL7 International in Phoenix, scheduled for mid-May of this year, the request will receive final approval.

At <http://www.hl7chile.cl/> there is a graphic that summarizes the current state of progress of the membership and constitution of the Chilean HL7 Chapter.

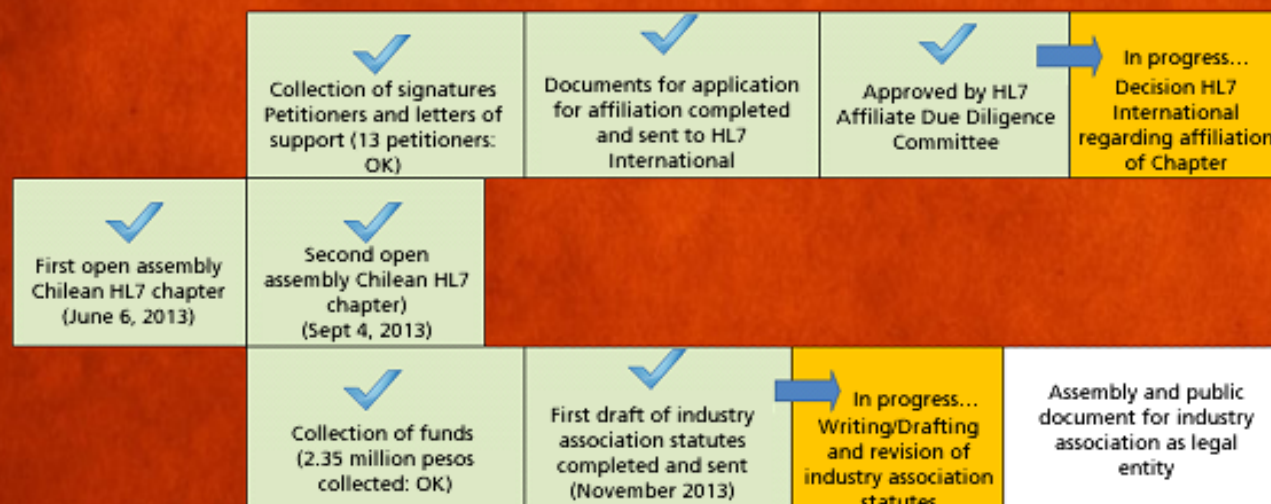
To participate and keep abreast of developments related to the process, send a subscription request to the group:

[capitulochilenohl7@googlegroups.com](mailto:capitulochilenohl7@googlegroups.com)



## PROGRESS OF REAFFILIATION OF CHILEAN HL7 CHAPTER WITH HL7 INTERNATIONAL AND ESTABLISHMENT OF NONPROFIT INDUSTRY ASSOCIATION

Last update: March 30, 2014



To participate and keep abreast of developments related to the process, subscribe to the group [capitulochilenohl7@googlegroups.com](mailto:capitulochilenohl7@googlegroups.com).

For specific questions:  
Sandra Gatica - Pro tem coordinator ([sgatica@saydex.cl](mailto:sgatica@saydex.cl))  
Maurizio Mattoli: Collector of start-up funds ([mmattoli@ingmattoli.com](mailto:mmattoli@ingmattoli.com))

Concurrently, the Chilean HL7 Chapter has collected the funds and started the open and participatory drafting of the statutes and code of ethics necessary to form the appropriate nonprofit entity in keeping with national laws and regulations. Starting in mid-2014, an open call will go out to all who wish to participate in the organization's formal constitutional assembly, thus entering as founding members of the chapter.

We would like to point out that the Chilean Ministry of Health is among the entities that have joined in signing the Chilean Chapter's application for membership in HL7 International in light of the fact that achieving the exchange of information among all providers also requires the definition of integration profiles and implementation guides that acknowledge HL7 messaging and documentation standards. Hence the importance of the role that the Chilean HL7 Chapter will play in the highest interest of the country.

Open Assembly of the Chilean HL7 Chapter last June (2013). Photo courtesy of Informática Médica magazine.



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# National Clinical History Project in Uruguay

In Uruguay, we are going through the early years of health reform, with the introduction of the Integrated National Health System (INHS).

This reform represents a change in the financial model and a change in the care model. The change in the funding of the system is in progress and is being adjusted and consolidated gradually. The transformation of the health care model involves a deeper and more complex conceptual change.

We envision a system that emphasizes prevention, with strong support for primary care, shifting the focus of the system from hospitals to the community. Access and continuity of care are prioritized.

The Academy, the Civil Society and the Ministry of Public Health (MPH) are important actors in this process, the first two because they are educating the professionals who must implement this change, at both the caregiving and management levels, and the MPH because it must establish the regulatory framework and provide the assessment and appropriate supervision to make it sustainable.

Today, information technology and communications (ITC) is indisputably among the tools needed to carry out this project. The Clinical History (CH) is the heart of the Health Information Sys-

tem (HIS) of any health care provider. Therefore, launching a National Electronic Health Record (NEHR) project is the best way to help the reform planned by the INHS take root and become sustainable.

Its development and implementation involves making the HIS consistent nationwide, supporting the achievement of basic objectives such as universal access and continuity of care, and fostering a management culture based on information that is reliable in timeliness and quality.

The healthcare institutions in our country differ significantly in the degree to which they have incorporated the EHR. Some of them are computerized in whole or in part, while at others (very few) everything is still on paper. All of them recognize that the HR is the basis of the HIS, as it reflects the activities of the users within the health system and their interaction with professionals and technicians, permitting the analysis of behaviors, risks, costs and epidemiological patterns, among other variables.

The NEHR project is being developed within the framework of a national health and ITC project, centered on the program Salud.uy.

Oversight of the Salud.uy program is provided by the Steering Committee, which is composed of:

The President of the Republic  
MSP (Ministry of Health)  
MEF (Ministry of Economy and Finance)  
JUNASA (National Board of Health)  
AGESIC (Agency for Electronic Governance and the Information and Knowledge Society)  
Directorate of the Salud.uy program

The Steering Committee works with the support of the Advisory Board, which is a working group consisting of representatives of health actors:

Users  
Workers  
Professionals

Public institutions  
Private institutions  
Funders  
University  
Scientific societies

The program receives its funding from both the Inter-American Development Bank (IDB) and the MEF. The IDB's participation in financing the project guarantees its longitudinal sustainability, safeguarding it from the inevitable changes dictated by national politics.

The program objectives are:  
1- Supporting the NHIS by incorporating ICTs  
2- Promoting the creation of an Integrated Health Services Network  
Creating mechanisms for the integration and complementation of services

The project has three defined phases:  
Phase 0 Preparation (2012-2013), which included structuring the program, defining funding and creating the team.  
Phase 1 definitions and strengthening of the Ministry of Health (2013-2016) involving the definition of standards and models, the implementation of a tele-imaging pilot and support for health-care providers involved with the project.  
Phase 2 Deployment nationwide (2016-2019) with the expected installation of a national tele-imaging system and NEHR system.

**We are currently in Phase 1.**

The NEHR is one of the macro-objectives of the program. The plan is for the NEHR to be foundational to the change in the model of care, helping to generate a user-centered system and ensure access and continuity of care.

In this phase we need to define the unified EHR model, normalize the standards that will apply, agree on the Master Tables, structure the interoperability platform, define the governance of the

system, update the rules and define the strategy for involving all the health-care stakeholders.

These definitions involve political, technical and organizational challenges. We are facing a profound change in the conception of the clinical history, in its architecture, its features and functionality and its access and ownership. As one might expect, the healthcare system needs to adapt -- politically, financially, and in regulations, technology and the human sphere. Changes at the political and human levels, which are integrally related, are inarguably the most complex and difficult.

The Salud.uy program held several public tenders for managing various aspects of the project. One of them is for a consultancy aimed at defining the strategic guidelines for the definition, design and implementation of the NEHR. This consultancy is under way and its final report is expected by the end of April 2014.

The strategy as designed is based on the participation of health actors and their involvement in decision-making, mainly based on joint work with the Advisory Committee. This aspect is vital to sustaining management of the change required to make this project a success.

Additionally, ways will be sought to standardize the situation of health care providers regarding incorporation of technology and training. Without institutional EHRs, progress in building an NEHR is impossible.

Another relevant aspect of the program is the organization of complementary activities aimed at providing the necessary technical and legal framework while maintaining the premise of participation.

**Among these are:**

Technical Conferences which have covered topics such as: HL7 - CDA, Snomed, electronic signature,

among others.  
Legal Rounds, addressing topics such as informed consent, electronic signature, framework for telemedicine, etc.  
An online forum has been implemented to keep the community informed and facilitate debates and inquiries by participants.

Moreover, within the Salud.uy program, there is an HR group working to design the minimum data set that must be present in each HR document to be shared in a future NEHR. The results from this working group composed of physicians with training and experience will be vital for future implementation.

This nationwide program will allow:  
Professionals to work in a modern management system and make decisions from high-quality information.  
Institutions to plan their own political and financial management aligned with national goals and based on traceable data and information.  
Regulatory bodies to maintain national guidelines.  
Citizens to receive better-quality health benefits uniformly throughout the country.  
The Academy to join in training personnel to address these changes.

The industry to align its technology with the requirements of the NHIS information system

This is a brief description of the process that is taking place in Uruguay.

The size of our territory and population has often been an obstacle to the advent of technology and inputs, given our limited market.

Our unitary political structure is sometimes bureaucratic and slow.

Our flat and placid geography can at times be unappealing.

Yet in this case all these things are undeniable advantages for the development and implementation of projects at a national level. There are few of us, we know each other, we share a philosophy of life, education and vision of the future. Every part of the country is geographically accessible, we have a good telecommunications network, we do not suffer natural disasters, we don't have extreme temperatures. Our centralized decision-making, used properly, facilitates and streamlines processes. We have high-quality software development.

Therefore we expect much from this project and we are counting on its implementation to generate the impetus necessary for a leap forward to 21st-century health-care delivery.



By Selene Indarte  
HL7 Uruguay/SUEIDDIS, Secretary  
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## INFOLAC 2014

It is with great pleasure and pride that we invite you to Montevideo for INFOLAC 2014, to be held this October. Before we go into details, here are some definitions: INFOLAC is the IMIA LAC Medical Informatics Conference.

IMIA LAC is the Latin American chapter of IMIA and IMIA is the World Association of Medical Informatics. The official member of IMIA in Uruguay is SUIIS (Uruguayan Health Informatics Association), which has joined forces with SUEIIDISS (Uruguayan Society of Health Standards) to organize this event.

Our purpose is to help others learn about this discipline to which we have devoted so many years and so much effort. We believe medical IT professionals must be key players in the development and sustainability of informatics systems in health-care environments. A familiarity with the needs and working requirements of health professionals and technicians, an understanding and vision of the strengths of applied ICTs and a thorough knowledge of health-care systems form the basis of this discipline.

The challenges in Latin America are numerous and it will take the joint efforts of the scientific community to meet them successfully.

Achieving properly trained human resources, getting technology projects incorporated into the institutional budgets and political definitions of our countries, interacting with the industry in ways that generate shared projects -- these are some of the challenges to be faced in the next few years as we work together to bring our health-care systems into the 21st century.

So, we invite you to come to Montevideo in October. The idea is to present experiences, discuss, listen. If we communicate, if we join forces, if we share knowledge and experiences, we will be creating the space we need to further our own development.

INFOLAC will be held Oct. 16 and 17 in the Confe-

rence Center of the Municipality of Montevideo (IMM). The name of the conference is e- health 2.0 Hyperconnected.

The official topics are interoperable HCE and mobile health, but of course all topics relating to medical informatics have a place at INFOLAC. We will have the full program shortly and will make it available online.

Some relevant data:  
Web page  
[www.infolac2014.org](http://www.infolac2014.org)

### Scientific Committee

**\*International**  
Diego Kaminker  
Lincoln Moura  
Fernán Quiros  
Fernando Portilla  
Alan March  
Javier Carnicero

**\*National**  
Guillermo Rodríguez  
Julio Leivas  
Gustavo Pérez  
Selene Indarte

### Important dates

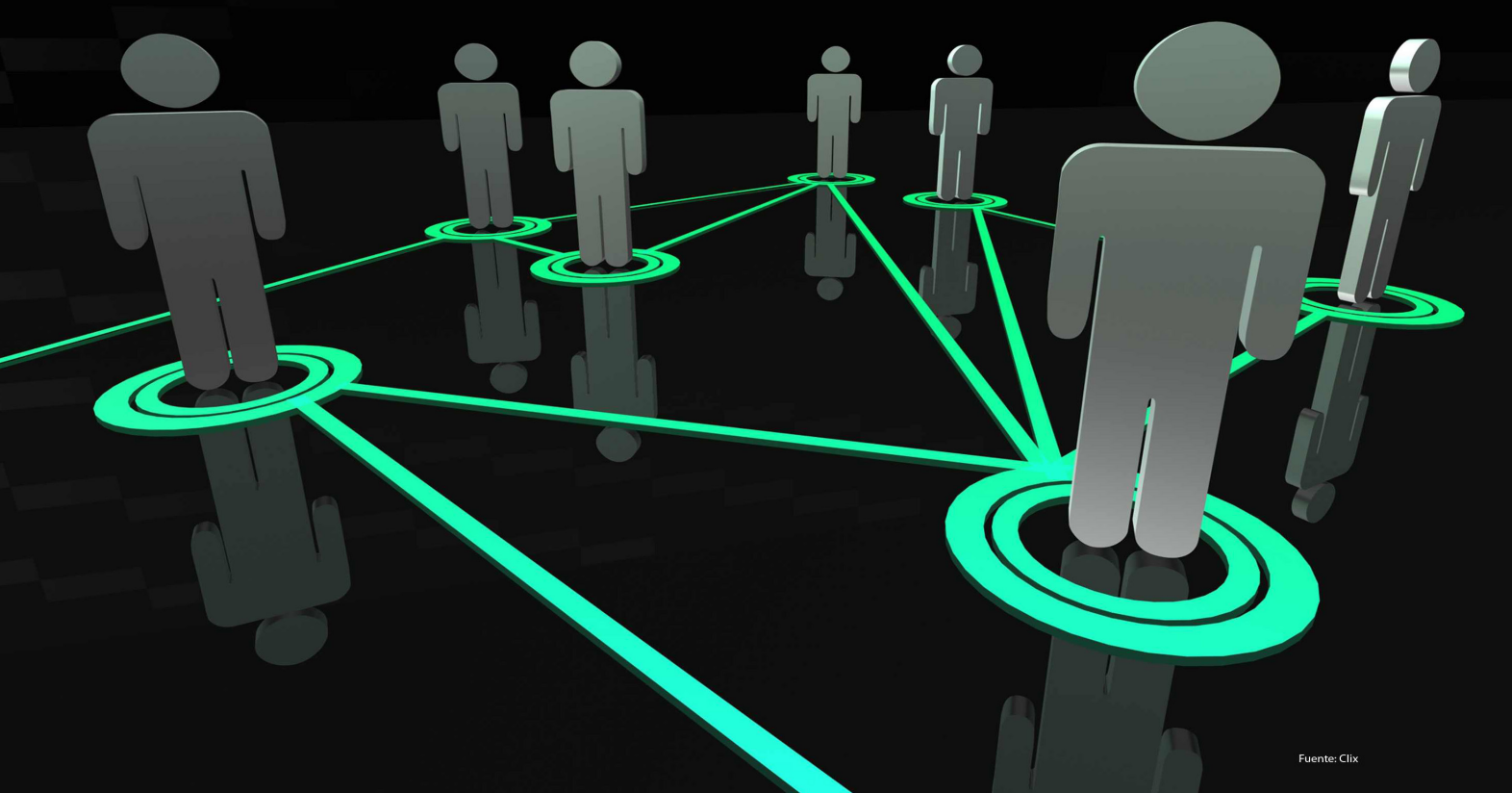
**Papers:**  
Submission dates: May 1 to July 31, 2014  
Return date by the Scientific Committee: August 31, 2014  
To submit papers, at least one of the authors must be registered for the congress.



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Por Selene Indarte





## Medical records interoperability with CDAs is now a fact

While there are already many implementations of interoperability at the messaging level, mainly those that integrate departmental systems with medical records, such as laboratories or PACS, or benefits, this year marked an important milestone in interoperability in health care: The interoperability of two medical records via shared CDAs is a reality.

### Hospital Italiano de Buenos Aires – Fresenius Medical Care

Hospital Italiano of Buenos Aires is a highly complex hospital with 650 beds - 200 of them neonatal, pediatric, cardiology and adult intensive care - which receives referrals for complex procedures and transplants from around the country, as well as patients from other countries in the region. It has approximately 45,000 discharges a year and average bed turnover is 4.7 days. It handles more than 2.5 million outpatient visits a year. Its medical records project is known as "Itálica." <http://www.hospitalitaliano.org.ar/>

Hospital Italiano of Buenos Aires is a pioneer in

the use of CDAs as a clinical documentation standard and has implemented it since 2006. It has more than 62 million CDAs in its document repository and generates CDAs for the following documents. (View chapter)

Fresenius Medical Care is the leading business providing treatments and products for the care of patients requiring renal replacement therapy, a condition that affects more than 2 million people worldwide. The company produces equipment, hemodialyzers and other essential supplies for these therapies. In the area of care, its clinics offer best practices for the care and rehabilitation of patients on dialysis. It has a network of 2,769 dialysis clinics in North and South America, Europe and Asia. In Argentina the company serves more than 8,800 patients in dialysis programs at 86 centers located in 16 provinces. Its medical records software is "Euclid" <http://www.fmc-ag.com.ar/home.html>

In the context of the computerization of the clinical records of Hospital Italiano of Buenos Aires, the objective was to achieve interoperability and portability of the records of patients who receive

treatment at Hospital Italiano of Buenos Aires, but whose clinical records are generated in the Fresenius software. An arduous interoperability task involving the Fresenius engineering team and the Software Engineering and Medical Informatics departments of Hospital Italiano of Buenos Aires made it possible for the medical records of Hospital Italiano of Buenos Aires to now access the information of dialysis patients registered in EuCLID.

This information exchange is through CDAs. The implementation guide that was established includes three types of documents: opening clinical history, professionals' case notes and dialysis treatments performed.

viewed as very far off, and today we can be proud of the work done and the goal accomplished. We also learned many lessons and gained experience in the process that will surely facilitate future implementations.



By Fernando Campos  
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This definitely is something that many of us once

Medical Report for hospitalization	Cardiac Catheterization Protocols
Referral Form	Certificate of Cardiac Catheterization Implant
Comp Studies from other institutions	Intervention Protocols
Hospitalization Report	Certificate of Intervention Implant
Informed Consent	Angiography Protocols
Anesthesia Consent	Protocols of Surgery and/or delivery or Caesarean
Clinical Duty Chart	Certificate of Implant Surgery
Nursing Duty Chart	Pre-Anesthesia Review
Admission Clinical History	Anesthesiology Chart
Hemotherapy Consent	Post-Anesthesia Recovery Chart
Progress/Consultation	Cardiopulmonary Bypass Pump Chart
Consultations	Hemodialysis Charts
Session Summary	Angiography Implant Certificate
Nursing Chart	Medication bar-code sheet
ICU Respiratory Monitoring Chart	Prescription charts
ICU Nutritional Support Chart	Nursing/Physician's orders chart
Electrocardiograms	Vital Signs Checks
Catheter Chart	Balance Sheet
Diagnostic Imaging Reports	Discharge Summary
Laboratory Reports	Admission to dialysis
Other Studies	Dialysis chart
Hemotherapy	Dialysis session
Pathology	

# New Developments from HL7 International



By any measure, 2013 was a very special year for HL7 International. 2014 should prove to be even more rewarding.

For many, the decision to make HL7 standards freely available was met with resounding approval. Amongst the leadership of the international community, access to HL7 intellectual property was essential to government plans for implementing eHealth solutions.

Within WHO, as well as its component organizations such as PAHO (Pan-American Health Organization), it appeared to be a salvation for low and middle income countries. In other circles, the decision was a relief from regulatory barriers that demanded unfettered access to standards. For some of the HL7 Affiliate bodies it created an unanticipated concern regarding member benefits.

## HL7 Membership Committee

The Board responded to the significant impact of the new IP Policy by creating a new entity charged with the task of redefining member benefits and dues structure. While the Membership Com-

mittee made only minor changes to the dues formulae, there have been major additions to the benefits enjoyed by members.

**Education Programs and the Education Portal**  
For nearly two decades, HL7 members have enjoyed a remarkable array of education offering, but none has been so widely utilized and with such international acclaim as the Distance Learning Program.

This program, first developed in Argentina for Spanish speakers, provides students with a comprehensive program in HL7 standards. It is now taught in 4 languages around the world.

Now, members can enjoy a wide range of educational training, 24-hours a day, without leaving their computer. In addition, many courses are archived for asynchronous viewing. Perhaps most importantly, HL7 competency certification can now be obtained by computer and at international test sites.

All of this content is currently accessible from the HL7 Education Portal. This site provides members with access to training, to webinars, and to registration for educational summits and three times per year Working Group meetings.

## HL7 Help Desk

This program was developed through the Membership Committee and now provides HL7 members with a large library of FAQs that can be accessed on line.

Although it was originally begun as a pilot program, limited to Clinical Document Architecture (CDA) specifications, it now offers help for the Immunization standards, V2 Orders & Observations, V2 Meaningful Use implementation guides, and the new FHIR draft standard (DSTU). Additional help for V2 ADT (Admission, Discharge, & Transfer) will be available in the spring of 2014.

Most importantly, questions that are not address-

sed in FAQs can be escalated for additional assistance from certified HL7 domain experts.

## HL7 Conformance Testing

In the fall of 2013, the Board established a task force to evaluate the feasibility and cost-effectiveness of establishing a program for testing of user code against HL7 standards and profiles.

This Conformance Testing program was unique in that it did not require test participants to be present during the testing procedure. In fact, the testing could be performed on-line 24-hours a day. Moreover, the test platform provides much more than just a pass-fail status report. In fact, testers of code that is not compliant receive explicit documentation of the code failure as well as advice regarding changes to the code to achieve compliance. In short, it is an iterative process for both the specification authors, the software developer and the parties responsible for implementation.

The pilot Conformance Testing program allowed EHR vendors, implementers, and providers against a specific Immunization Registry profile. The test phase was highly successful and completed in March 2014. Now additional profiles, including a testing program for FHIR conformance are under way.

In the coming months additional profiles are expected to be completed before the September Working Group meeting. At that time, a fully-implemented platform and program are expected to go live.

## User Groups

In the summer of 2013, the Membership Committee evaluated the potential for domain-specific User Groups. As planned, these groups will focus on a limited area of interest rather than a national or regional level.

These affinity groups are subsequently expected

to meet annually at a Working Group meeting, but the most significant work will be accomplished on line and in teleconferences.

The initial User Group will coalesce around Immunization Registry standards and implementation. With assistance from Registry Societies and from national government agencies, these User Groups will discuss a range of topics from implementation best practices to demands for new areas of standards development.

## A new family of standards: FHIR

The FHIR (Fast Healthcare Interoperability Resources) program began in 2011, from the recognition by some HL7 members that some standards were increasingly difficult to implement. Since then, the FHIR development group has created "resources" that are based upon the HL7 RIM (Reference Implementation Model), but do not require the users to understand the modeling principles to be able to develop new solutions and new software.

FHIR was developed through a series of real-time connectathons held during Working Group meetings, as well as countless hours of activities on listservs and wikis. Today, the FHIR servers, accessed by developers around the world, contain thousands of lines of code and numerous resources, available free of charge to members.

FHIR became a draft standard (DSTU, Draft Standard for Trial Use) in January of 2014, but has become an international phenomenon. FHIR has been developed using modern web-based technologies and RESTful services. As of March, more than three dozen articles about FHIR have appeared in the technical and the popular press.

One highly regarded expert on interoperability called FHIR "the HTML of healthcare". A revised draft standard is expected by January 2015, and it is hoped that a normative standard will be balloted in January 2016.



### **Looking ahead to 2014**

The announcement of freely available standards has created many challenges and many opportunities. Some unintended consequences have impacted the business models of HL7 Affiliates world-wide.

The indisputable impact of this decision has been repeated by national bodies and even by the World Health Organizations during its 2014 Healthcare Interoperability Summit.

All of us look forward to the development of 2014 with great anticipation and excitement. I encourage all of you to join me on this journey.



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