Apps showcase the benefits of FHIR on the front lines of care

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The HL7 FHIR standard and applications that use it have generated a lot of excitement. What's the big idea here?

There are really two big ideas. The first is that unlike previous health information standards, FHIR is based on the same web technology as the social media, e-commerce, travel, search and other online services you use every day. This gives FHIR an advantage in real-time access to healthcare data about individuals that is scattered across multiple IT systems.

The second big idea is that healthcare data can be represented once in FHIR and then used without modifications in diff erent information-sharing paradigms — REST, web services, HL7 messages or documents. FHIR packages the meaning of the data along with the data itself. So via FHIR, for example, you can take lab readings from one system as an HL7v2 message and then send them out in a discharge summary without transformation.

How will FHIR help improve care processes and outcomes, and make me a hero with the clinical staff?

Thirty years ago, interoperability was about exchanging data between two IT systems. Now it's about accessing data across many systems as a single, concordant view and presenting it to clinicians in a way that is easily understood. Once an electronic health record (EHR), health information exchange, or other data source supports FHIR, FHIR apps can pull that data into actionable presentations that drive improved care and outcomes.

A great example is that primary tool of pediatricians, the growth chart. It used to take expensive and time-consuming customization to get advanced functionality out of an EHR. But now there are apps on the market that can be called from within the EHR and, through FHIR, take fundamental EHR data to populate an interactive growth chart. It can run on a smartphone or tablet for easy access by the physician and sharing with the parent. Unlike a paper chart, the interactive chart can display different growth curves — the standard for full-term children, or another for those born prematurely, for example. The chart can toggle to show standard deviations and other information, such as growth velocity, as well as display information tailored for parents so they can more easily understand the health status of their child.

Decision support is another area with outstanding, innovative FHIR-based apps connecting EHR data to clinician thought processes in new ways.

Imagine giving clinicians access to an app store where they can download FHIR-based solutions. Each solution interacts with EHR data to address the clinician's specific needs. Not only will this help them improve job performance and deliver better outcomes for their patients, but it will also enable your organization to enhance your EHR without expensive and time-consuming custom development.

We have invested a lot in standards built over the past three decades. What happens now? Do we need to redo everything for FHIR?

The quick answer is no. As FHIR is built out over the coming years so that it supports a broader range of healthcare data elements, it will become the data access and interoperability tool of choice. But for now, a FHIR-only interoperability approach isn't going to meet all of your needs. Most legacy systems will not be upgraded to support FHIR. Lab systems and EHRs exchanging data using the older standards, for example, are doing their jobs quite well.

It's going to be a hybrid world for some time. FHIR will serve as a common language, giving you the ability to translate between it and standards such as HL7v2, HL7v3 and C-CDA. Support for FHIR is essential as you go forward and acquire new systems, but they should continue to support the older standards, including IHE interoperability profiles, to protect and extend the life of older systems.

One of the best things about FHIR is its potential to disrupt the slow, top-down, big-bang interoperability paradigm, where a multitude of standards, people and systems had to be coordinated for success. Instead, we will see a more agile and effective bottom-up approach. With EHRs and health information exchanges supporting FHIR, we'll start to see more 'pop-up' interoperability. Health systems and clinicians will be able to combine the data and function of FHIR-based "app store" solutions into interoperability at the scale that's best for them at that moment.

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