



Healthcare IT Industry Analysis

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Interoperability Planning
Data Quality Improvement
HL7 Data Standards
Clinical Terminologies
Data Architecture
FHIR App Design
FHIR Development Support



THE HL7 DA VINCI PROJECT: PAYER AND PROVIDER COLLABORATION

What it Could Mean for Your Hospital

MINING PAYER DATA FOR BETTER PATIENT CARE COORDINATION

Clinical information must move to best serve the needs of patients and providers. In all the Healthcare IT ecosystem, it is often the payers that possess access to complete patient treatment data in their claims. No one provider has all the patient data. To increase the secure sharing of clinical data between payers and providers, an initiative called the Da Vinci Project was formed under the umbrella of HL7.

Initially, an impressive array of 27 commercial firms and organizations came together in a privately funded initiative under the HL7 umbrella with the vision of making needed patient care data available in a timely manner. **This project addresses the needs of the Value-Based Care (VBC) Community** by leveraging the HL7 FHIR® platform to gain access to payer clinical data. Among other things, this payer and provider collaboration will accelerate processes such as Prior Authorizations (PA), Medication Reconciliation Post-Discharge (MRP), and coordinate the display of relevant alerts to providers in EHR systems.



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HL7 DA VINCI USE CASES

Data Exchange for Quality Measures (DEQM): Medication Reconciliation Post-Discharge (MRP)

Coverage Requirements Discovery (CRD)

Documentation Templates and Coverage Rules (DTR)

eHealth Record Exchange: Clinical Data Exchange (CDex)

eHealth Record Exchange: Payer Data Exchange (PDex)

Alerts/Notifications: Admit/Discharge Notifications, Clinical and Administrative Events

Risk Based Contract Member Identification, aka Attribution

Prior Authorization Support

Performing-Laboratory Reporting

WHAT IT COULD MEAN: RELEVANT ALERTS WHEN YOU NEED THEM

The HL7 Da Vinci project is a private sector initiative that addresses the need for cost savings in the Value-Based Care Community by leveraging the HL7® FHIR® platform.

By giving providers access to previously unavailable plan insurance provisions, existing Lab test results, and other data, a patient's existing clinical data can get to the next provider in the longitudinal care plan. HL7's FHIR is an international data standard for the formatting of messages for the transmission of clinical data that will lead to better and faster processes in healthcare.

Currently many more firms than the original 27 are active in Da Vinci standards development and Use Case project work. Each payer and provider contractually agree on the data they are willing to share.

THE CONCEPT

At HIMSS19 in the Interoperability (IOP) showcase, the Da Vinci project demonstrated the ability to exchange information between payers and providers using HL7® FHIR® and CDS Hooks®. It was one of the most popular conference booths in this unique HIMSS Healthcare IT venue. An interoperability showcase booth demonstrates data exchanges between several organizations by following a patient's story from symptoms of chest pains to diagnosis, treatment and follow up to demonstrate how technology can securely move needed clinical data between providers and payers according to prescribed and precalculated work flows, thereby improving interoperability and patient safety. Clinical Decision Support systems (CDS) need high quality data fed to them in a timely manner.

THE DA VINCI USE CASES

Out of thousands of possible initial Use Cases, the ones selected were prioritized around those which increased interoperability. The current Use Cases are geared to solve immediate pain points in the industry. Each Use Case will have Implementation guides produced for them. As HL7 standards are international, an Implementation Guide (IG) is needed to document exactly how you will utilize the HL7 standard in your organization. The IG then maps **how** an EHR would give an end user the ability to invoke various services and API's for a Use Case. For example, automating workflows

Gaps in Care and Information

Chronic Illness Documentation for Risk Adjustment

Patient Cost Transparency

Patient Data Exchange

Payer Coverage Decision Exchange



WHO IS HSPC?

The Healthcare Services Platform Consortium (HSPC) was founded in 2013 by Intermountain Healthcare, Louisiana State University and the Veteran's Administration to refocus how healthcare applications are developed. Since HSPC launched, more than 270 contributors have joined their cause — including leading healthcare and government organizations, healthcare technology vendors and a venture-led group of investors supporting HSPC-centric portfolio companies.

As a provider-led consortium, HSPC applies the same teamwork approach to delivering quality patient care to solving the interoperability challenge. Our Consortium includes hundreds of active organizations focused on developing a healthcare services platform community that will enable an economy for interoperable applications in a SOA and knowledge-enabled model. Through HSPC's interoperable marketplace and services platform, they seek to foster a new level of provider-vendor collaboration and

and provider notifications surrounding a 30 day Medication Reconciliation Post discharge (MRP) will allow MRPs to be done faster when all parties involved are in the loop. The payer can inform the Primary Care Physician (PCP) that a hospitalization has been completed. **If a PCP had referred a patient to a Cardiologist, they might not even have known that the patient had been hospitalized.**

In the standards development process, in addition to an Implementation Guide, a Reference Implementation (RI) or sample software program is developed for each use case. This RI is a sample implementation to be used by the IT staff as an example or pattern for creating their own software like it.

MEMBER FIRMS

The number and strength of the [member firms](#) participating in the HL7 Da Vinci project work is more than impressive. It now includes sponsors and members such as Anthem, United Healthcare, Humana, Epic, Allscripts, Cambia Health Solutions, Cerner, CMS, InterSystems, Cognosante, many Blue Cross Blue Shield networks, Optum, Cigna, Sutter Health and HCSC.

Please note that this HL7 sponsored Da Vinci project is unrelated to the Federal jointly funded DOD and VA JIF Da Vinci project.

METHODOLOGY

Digital Health uses technology to help improve individuals' health and wellness. This requires a great deal of planning and data architecture. To provide context for requirements to guide the development of HL7 international data standards, the Da Vinci projects defines Use Cases. This allows its standards developers to focus on the core data exchange requirements which surround various types of treatment protocols. The objective is to minimize the development and deployment of unique solutions between trading partners (e.g. a payer and provider). To promote interoperability across value-based care stakeholders and to guide the development and deployment of interoperable solutions on a national scale, the industry needs common standards (HL7 FHIR) and common Implementation Guides. Here we will briefly discuss a few of the Da Vinci Use Cases and what they could mean to your hospital and to Payer / Provider collaborations in general.

innovation to meet one of the industries' greatest needs: accelerating the creation, sharing and delivery of promising software applications at the point of care. "HSPC's efforts to create an interoperable HIT ecosystem are divided into a group of initiatives. Each initiative is a combination of people, projects, and resources that together help to achieve a specific aim."

Through HSPC's interoperable marketplace and services platform, they seek to foster a new level of provider-vendor collaboration and innovation to meet one of the industries' greatest needs: accelerating the creation, sharing and delivery of promising software applications at the point of care.

Their SOA is based on existing work done at the VA in its effort called the "SOA Suite," which consists of IBM WebSphere/iLog/CA components that have been architected to support a highly componentized architectural model.

See HSPC's [Da Vinci Sand Box](#)



USE CASE: COVERAGE REQUIREMENTS DISCOVERY

A second Da Vinci Use Case of insurance [Coverage Requirements Discovery](#) was precipitated by the frustration experienced by administrative staff when trying to obtain authorizations for medical procedures. Each plan from a payer can differ unpredictably. Payers need to discover the documentation requirements, the rules for determining needs for treatment, and requirements of Prior Authorizations (PA) or other approvals for payer covered services and devices. A Da Vinci FHIR software app can find out in real time what the payer requirements are that could affect the ability to have services or devices covered by the payer. **Thus informed directly by the payer, the providers do not have to guess at what they need to send for an authorization to be finalized.**

DA VINCI LEADERSHIP

Dr. Viet Nguyen, the technical director of the Da Vinci Project, is an extremely capable FHIR educator and a facilitator at the HL7 'Clinicians on FHIR' sessions at the HL7 Working Group Meetings. His 'Clinicians on FHIR' sessions at the HL7 meetings are one of the highlights of the entire conference. For Da Vinci, Dr. Nguyen works across all the uses cases, each of which has an entire project dedicated to it.

The regular virtual meetings used to develop use cases have upwards of 20 to 30 people on them. For efficiency, they are leveraging the existing US FHIR core, SMART on FHIR and CDS hooks. Dr. Nguyen is joined by a who's who of the HL7 data standards world including:
Eric Haas, Health eData Inc
Bryn Rhodes
Jocelyn Keegan, Point of Care Partners
Robert Dieterle, EnableCare
Lloyd McKenzie, Gevity
and last but never least, Grahame Grieve.

WHAT IS A CDS HOOK?

"A [CDS hook](#) is a technology from SMART on FHIR that allows third-party Clinical Decision Support systems to register with an EHR using a "hook" pattern. The third-party CDS system is then able to provide the EHR with information in the form of "cards" that the EHR may use to show the end-user or otherwise interweave into the workflow. The HSPC Bilirubin



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system is able to use CDS Hooks to alert the EHR of babies that are at risk of Kernicterus."

In general, a [CDS Hooks API](#) supports:

- Synchronous, workflow triggered CDS calls returning information and suggestions
- Launching a user-facing SMART app when CDS requires additional interaction

(Source the Health Services Platform Consortium) The cards may act as alerts to a needed step.

Bilirubin Levels is in High-Intermediate Range

Source: *HSPC Bilirubin Monitor*

Bilirubin levels are in **High-Intermediate** range, intervention is required.

- **Birth date/time:** Thu Feb 25 00:00:00 UTC 2016
- **Age in hours:** 44.34
- **Most recent bili level:** 13.00
- **Risk:** High-Intermediate

[Order Bili Lights](#)

According to Josh Mandel, M.D., a research scientist in biomedical informatics at Harvard University and lead architect for SMART Health IT: "If you want to run an app that is going to perform a check on some aspect of the clinical data, **you have to know when to run that particular app**, so the advice is relevant. "CDS Hooks is an attempt to help clinicians know what they should be running by running checks automatically for them ahead of time, and then providing information within context within the EHR." (Source: [interoperability-hie/blog/](#)). The EHR sends off notifications as relevant events happen and a card like the Billirubin alert image is displayed to the user as a helpful suggestion. The user can control display and governance of the cards to opt to not see cards like this in the future, so they are not overwhelmed by alerts.

For more information on creating or using HL7 FHIR apps, CDS hooks, or Da Vinci payer and provider communications in your organization, please contact Orstell Barnett at J P Systems, Inc. at the email: Sales@jpsys.com or by phone at 1 703 973-0305. Visit <https://dqdoc.com/> to request a meeting and schedule consultation with J P Systems, Inc.