



## INSIDE EDGE

### Healthcare Services Platform Consortium: An Initiative for Provider-driven, Vendor-supported Interoperability

#### Introduction

You know when healthcare CEOs and CFOs start citing lack of interoperability as a top organizational challenge that it has risen to an industry strategic imperative. That's been our experience in talking to top executives for our annual Outlook editions of *Inside Edge* as well as in hearing keynoters at SI's annual Spring Conference like Premier President and CEO Susan Devore. She stressed the absolute need for interoperability in order to gather the comprehensive patient data required for population health. [<http://www.scottsdaleinstitute.org/conferences/spring/2014/materials-21weio2.asp>]

Interoperability is certainly not a new issue in healthcare, but joining the voices above is an increasing variety of web forums and industry collaboratives focused on the topic. A promising initiative is the **Healthcare Services Platform Consortium (HSPC)**, which was launched a year ago to create a next-generation IT platform with the support of a consortium of not-for-profit healthcare delivery systems, IT vendors, systems integrators and venture-led firms. HSPC's goal is to help providers achieve interoperability by emphasizing open systems, keeping it provider-led and creating a market-driven solution.

#### Shoulders of IT giants

HSPC starts with several benefits including the fact its two co-founding organizations are Intermountain Healthcare, a trail-blazing organization in clinical IT and founding member of SI, and Harris Healthcare Solutions, an SI Sponsor and part of Harris Corp., a Fortune 500 company that is the oldest technology firm in America.

Executives from both organizations are driven by the desire to leave a positive legacy to the healthcare industry.

"We want to be in a position to create software on a vendor platform without the vendor," says Stan Huff, MD, CMIO at Intermountain. "And we want our software to be interoperable

#### Scottsdale Institute Conferences 2014/15

Fall Forum 2014	Spring Conference 2015
Oct. 23-24, 2014	April 29-May 1, 2015
Hosted by Adventist Health System at Florida Hospital Celebration, Florida	Camelback Inn Scottsdale, Arizona



**Stan Huff, MD, CMIO** at Intermountain Healthcare, discusses HSPC's modeling initiatives and organizational bylaws at its recent meeting in Scottsdale.

with other vendors' systems and accessible by providers using other systems. We want to build it in a way that it can be used at the Mayo Clinic, Stanford or Regenstrief Institute, regardless of which vendor they use. We also see value in an AppStore in healthcare because it would give greater choice at lower cost."

A major HSPC aim is to leverage the tremendous IT-integration advances developed by Intermountain over decades—it has developed more than 1,000 apps that support care, including a decision-support module for bilirubin that saves the organization \$20 million a year in litigation—and melding them with the Services Oriented Architecture (SOA) developed by Harris for enormous government clients like the VA, Military Health System, the intelligence community and others.

At the least, Intermountain will contribute—and be able to reuse—the vast knowledge it has acquired in its development of clinical decision support (CDS). "The actual code or software will be totally rewritten or modified to be able to access data via a standards-based series layer," says Huff. "But certainly to reuse the knowledge related to community-acquired pneumonia, management of methacycline, ventilator disconnect, blood ordering and on and on. And we expect to benefit from the Consortium by selling apps or from in-kind payment like an app. The main benefit is software at a lower cost."

### It's all about semantics

Traditional interoperability initiatives like HL7 and health information exchanges (HIEs) make

it possible to conduct simple data interchange among different systems, says Oscar Diaz, VP and General Manager at Harris. "However, to date the healthcare industry has not been able to achieve true semantic interoperability that supports the standards required to support new models of risk-sharing for Accountable Care Organizations, the patient-centered medical home and health and wellness programs."

Semantic interoperability is loosely defined as being able to exchange information with the inferred meaning that is contextual and consistent with the disease process of the patient. It becomes even more important given that new models of care and financing require integration of financial



**Oscar Diaz**, VP, Harris Healthcare Solutions, updates attendees on HSPC's progress at the Scottsdale gathering.

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and clinical information across disparate systems and geographic regions. “As you get into big data and analytics, you need to get information real-time based on a semantic relationship to workflow,” he says.

Robert Greenes, MD, PhD, professor and Ira A. Fulton Chair in Biomedical Informatics at Arizona State University (ASU), which is slated to run the “sandbox” or testing lab for new apps conforming to HSPC, says the Consortium is responding to a gap in the market not met by EHRs. “We’re seeing new challenges that vended systems can’t address, including care coordination across multiple vendors as well as integration of inpatient and outpatient information and workflows. Patient-centered care is a challenge because it requires linking to the home, the patient and family participation. Mobility, big-data analytics and the development of new visual methods, trend and graphics are other challenges.”

### SOA what?

Semantic interoperability relies on SOA, a services architecture foundation that incorporates standard clinical-data models and terminologies that enable software application developers—vendors, integrators, providers and researchers—to create apps that work across the diverse information systems used by the new partners brought together under accountable care. These new SOA-based apps will be able to aggregate data from new and legacy systems, deliver advanced clinical decision support and analytics as well as support workflow and business interoperability.

Using a common vocabulary, software services get built once instead of many times. For example, once an ADT function is built, it’s not necessary for every vendor to recreate its own, an expensive process that in some cases can take years. By taking advantage of these workflows, developers can focus on creating applications at a higher level of functionality.

The Consortium’s goal is to create the framework and incubator for this development, but to leave it to entrepreneurs and others to create the products. “HSPC is not producing software,” says Huff. Instead, the multi-stakeholder consortium aims to create a powerful combination of aligned

incentives and collaborative innovation to accelerate open-services software development that integrates financial, technical and clinical information in order to achieve improved outcomes for healthcare organizations.



**Bob Greenes, MD, PhD**, professor of biomedical Informatics at ASU, provides an “Appworks” overview.

### Like iTunes

Key to the vision: creating an “AppStore” or “Marketplace” like iTunes for sale of software, services and other solutions to Consortium members and the industry at large.

ASU will provide the sandbox to make sure the new apps work seamlessly not only with Cerner, Epic and other EHR vendors, but also with other apps. “I’d like to see this as a growing test-bed environment, but more than just a test bed,” says Greenes. “It will be integral to evolving new combinations of apps.”

ASU’s role in the Consortium will be:

- Usability testing
- Rapid-cycle app development
- Middleware prototyping
- Test-bed implementation
- Product refinement
- Conformance testing





## A provider-led not-for-profit

Last month, more than 50 executives and technical experts from health systems, the VA, market-leading IT vendors as well as startups, consultants and venture firms met in Scottsdale to cover a wide range of consortium issues, from organizational by-laws, to operational plan, governance, demo and overview of the SOA-based platform, an ASU-developed “appworks” application-development tool, and driving clinical use cases.

“Appworks provides a web-based development environment, with the ability to use an expanding library of ‘widgets’ (small app components like a lab-result viewer, patient problem-list picker, and so on) to create apps that are compositions of such components, to rapidly generate and refine useful applications,” says Greenes. “Ideally much of this work can be done by non-technical individuals, reducing the need for an expensive programming effort.” The SOA platform will be delivered as a Platform as a Service (PaaS) model.

If things go according to plan, founding members or “Benefactors” like Intermountain, the VA, LSU Health System and Harris—all of whom attended the May Consortium meeting—would pay \$200,000 each in initial fees and then annual fees of \$20,000, which could be in in-kind contributions, to develop the HSPC as a not-for-profit organization. There will also be an ongoing revenue stream from certifying that a given service or app has been tested and conforms to HSPC standards.

## Provider-led

“This needs to be a provider-led effort or it will fail,” says Diaz, adding that it must also be vendor-agnostic and provide capital when needed from a venture-based community of investors.

If an interoperability collaborative is vendor-led, it can hamper progress. However, vendors are welcome. The Consortium meeting included representatives from major providers like Intermountain, VA, LSU, Dignity Health as well as vendors like Cerner, IBM, Allscripts, ClearData and others. Scottsdale Institute staff also attended the meeting to explore if SI might have a role in advancing the Consortium’s interoperability goals among SI member organizations.

HSPC plans two meetings this summer:

- July 7-8 in Salt Lake City, hosted by Intermountain, a technical meeting about FHIR Profiles and SMART (authorization, authentication, context passing)
- August 21-22 in Washington, DC, hosted by IBM, a general meeting with technical as well as governance and operational sessions

For more information on the meetings or the Consortium in general contact Stan Huff, MD at [Stan.Huff@imail.org](mailto:Stan.Huff@imail.org).

## Benefits of membership

Huff says the goal is to create a tipping point in the industry to move it to a next-generation open services oriented architecture. The catalyst: a three-tiered model of leading healthcare delivery organizations, systems integrators that are EHR-vendor-neutral, best-of-breed vendors and top venture firms. The technical benefits include:

- Clinical decision support enabled by data integration across multiple-vendor clinical repositories and other data sources
- Real-time analytics that support workflow and reinforce best practices
- Collaborative development of knowledge bases and applications that accelerate application development and delivery at the lowest possible cost
- More efficient patient care
  - Up-to-the-minute information across all encounters
  - Improved decision support enabling clinicians to focus on critical factors of the patient-care life cycle
  - Support of highly refined clinical and administrative models such as Clinical Pathways
  - Cross-system analytics supporting life cycle improvements at every step of the care process.

These benefits can be achieved through SOA-based services that are consistent and provide a leverage point for developers. This environment provides a SOA-based framework





that supports collaborative innovation between providers and vendors.

### Reducing go-to-market risk

“The Consortium should be extraordinarily valuable,” says Paul White, managing partner in Muir Equity, a Livermore, Calif.-based financial firm, “not only in establishing the technical guidelines and products for a more modern, federated model for healthcare IT interoperability and innovation, but equally so in building momentum and broad support for the technologies, products and services it espouses.”



**Paul White**, managing partner at Muir Equity, discusses HSPC as a market-driven solution from an investor perspective.

The more the Consortium specifies the highest-priority needs in the market— among the buyers of products and services in the Consortium at the least—and proactively seeks and purchases products that support the HSPC framework and address these urgent needs, the more it will reduce the go-to-market risk for startups and growth-stage companies that develop HSPC-supportive products and increase their attractiveness to investors.

“It will take considerable work, and some early stage funding of some kind, to spin out assets from a healthcare system,” White says. That means developing a focused strategy and operating plan for a successful long-term business with these

foundational assets, putting together a strong operating team to execute the plan, and building a strong, commercially viable standalone enterprise that will then be attractive to the larger community of traditional equity investors.

This scenario represents a critical challenge—and opportunity—for the Consortium, which can facilitate more rapid adoption of the HSPC model if it can develop effective mechanisms for assisting and enabling the conversion of good technologies, products, and services into thriving independent businesses.

“It’s not clear at this stage how much investment support there might be for this type of activity among traditional equity investors. However, the availability of a common platform for interoperability, especially one with foundational layers and functions already provided, should unleash a beautiful storm of entrepreneurialism and innovation—much as it has with the advent of operating systems, the Internet and infrastructure-as-a-service offerings.”

### Conclusion

The Healthcare Services Platform Consortium is a big idea, an ambitious program arriving at a time when healthcare needs big ideas to free it from the shackles of fee for service and move it into a value-based model. But will it work? It’s only a year old and it already has a U.S. and international constituency. However, it remains a work in progress. The devil is in the details, many of which beg for resolution, starting with who will invest in this not-for-profit, develop apps under its umbrella and ultimately buy them? Still, at a time when the term “innovation” has become so common among health systems that it may become an oxymoron, the HSPC comes with leadership of unmatched industry excellence, a vault of groundbreaking IT tools and a model that keeps providers in charge of a marketplace solution. It just might become the free-market solution.

“The single-most important objective is that we have vendors willing to implement the standard services against their backend software. We’re entirely dependent on getting a large enough group of providers and vendors willing to allow standards-based development,” says Huff.



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