



## FEDERAL EXECUTIVE FORUM: Health IT in Government 2020

### **Ben Cushing**

Field CTO, Federal Health, Red Hat

The importance of data organization and distribution has never been more apparent than during the current global health crisis. Federal healthcare agencies are increasingly challenged to innovate to mitigate the effects of the pandemic and ensure public safety.

Red Hat's Ben Cushing joined government technology executives from the Office of the National Coordinator for Health IT, Department of Health and Human Services, Department of Veterans Affairs and Military Health System to address lessons learned, challenges and solutions, and a vision for the future in healthcare IT.

### **Embracing Emerging Technologies**

The national health crisis has compounded existing infrastructure problems in healthcare systems, and patient overflow at a hospital isn't just an issue for resource constraints. Underlying systems also have to scale to meet demand and the continued adoption of technologies with smaller and smaller footprints has really started to show its value in this time, allowing for massive scaling events to meet that demand. That same technology is also being used to rapidly build out field hospitals in gyms, parks, and ships for real time flow of healthcare data and these small footprints leverage edge technologies to produce insights at the site of care, no matter how remote they might be.

A fine example can be found with a large healthcare provider that created a sepsis prediction and optimization therapy platform. It collects and analyzes clinical data and signals caregivers in real-time to initiate early sepsis care. They used open source software to design a scalable container based

platform as a service and the group also uses an automation management analytic software to support real time data collection analysis and proactive case management. It's really exciting to see that type of technology being applied anywhere, but there are many active programs across federal healthcare agencies that are using similar approaches. The broader the adoption of proven innovative technologies, the greater the impact to the quality and duration of our lives.

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### **Open Source in Action**

I'm most excited about the work we're doing at DHA right now. We're migrating legacy data systems to modern cloud-based platforms. We're doing this in collaboration with our partners and several different system integrators using a streaming platform that is actively applying data normalization, cleansing, and then providing a bi-directional longitudinal patient record using Fast Healthcare Interoperability Resource (FHIR) for data-exchange standards. Downstream of that platform, we have DHA partners using our AI platform technologies to produce predictive analysis at the population level. That's being proven out right now and then the next focus is really using

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that same technology to craft real-time situational awareness of emergent adverse conditions like PTSD, diabetes, etc. That activity is what gets me out of bed in the morning.

### Vision for the Future

AI is definitely the future for healthcare. Most AI today is used for big data analytics. This of course affects population health, simulation, value-based care, etc. That being said, I'm really excited about what happens when we use applied AI - AI that actually influences decision-making in real time. Think drug-drug, drug-allergy interactions, predictions... things like sepsis. Getting AI predictions down to the patient level, not just for precision medicine, but to react to adverse emergent conditions as they're happening, and maybe even before. We get to that state in a couple of different ways. The first is by transforming the IT culture of institutions to align with Agile and DevSecOps principles. I'm seeing more and more of that inside of the healthcare IT market, and it's really heartening to see that kind of transformation.

And then, secondly, the use of process automation as a bridge. If you have a care plan defined as a process, and that process is actively running in state, then AI can actively influence decision nodes in the care plan. And to do that, we actually have to author those care plans. There's a wonderful initiative going on right now inside of the OMG Group, which is the standards body that publishes the standards for business process notation, decision management notation, and case management for a wide variety of industries, like finance and manufacturing and supply chain. They're now applying those same concepts to health care, and they're working with some of the largest healthcare institutions and federal agencies to actually produce models of care plans. They're calling them shareable, clinical care pathways, and have built an initiative called BPM+ Health. I encourage everyone to participate and be a part of this exciting development.



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