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Senior Vice President/Chief Information Officer
Cook Children's Health

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Most Powerful Women in Healthcare IT

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June 2018
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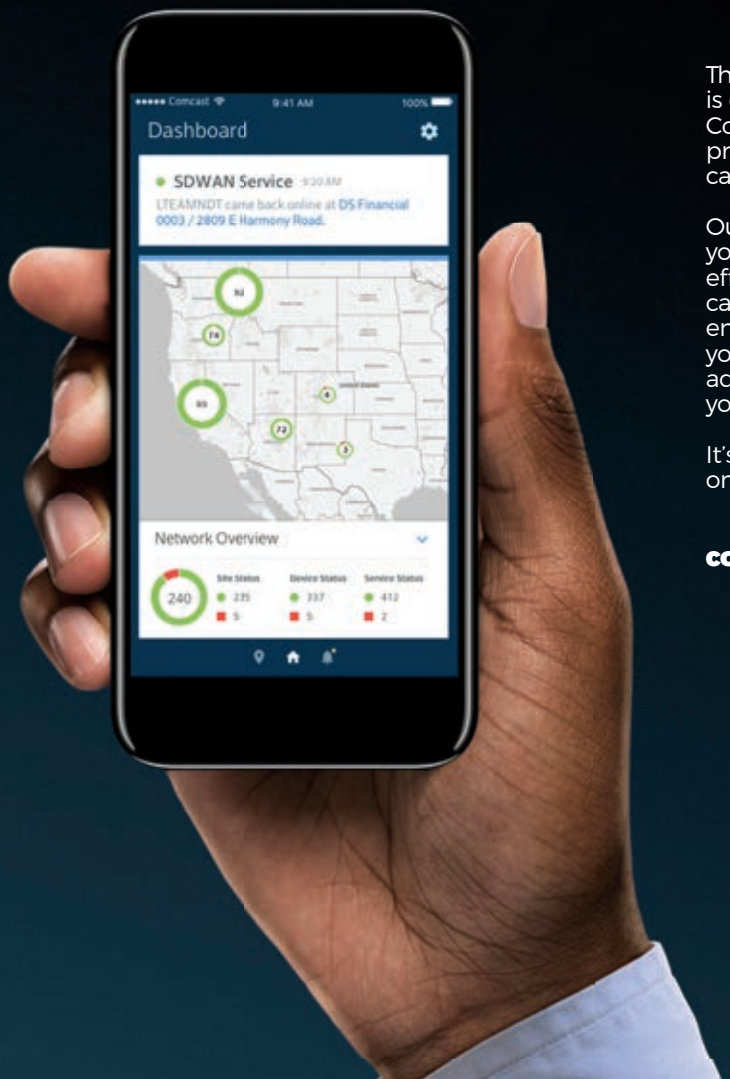

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Most Powerful Women in Healthcare IT

These leading IT execs are playing an increasingly strategic role in implementing technology in their healthcare organizations.

BY FRED BAZZOLI

PHOTOGRAPH BY HOYOUNG LEE

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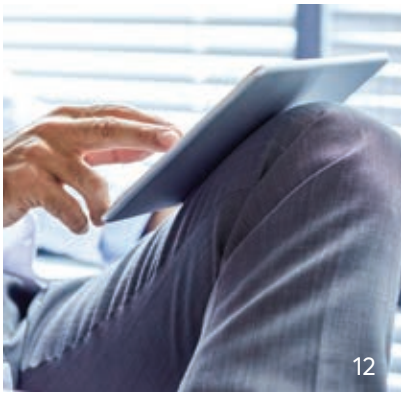
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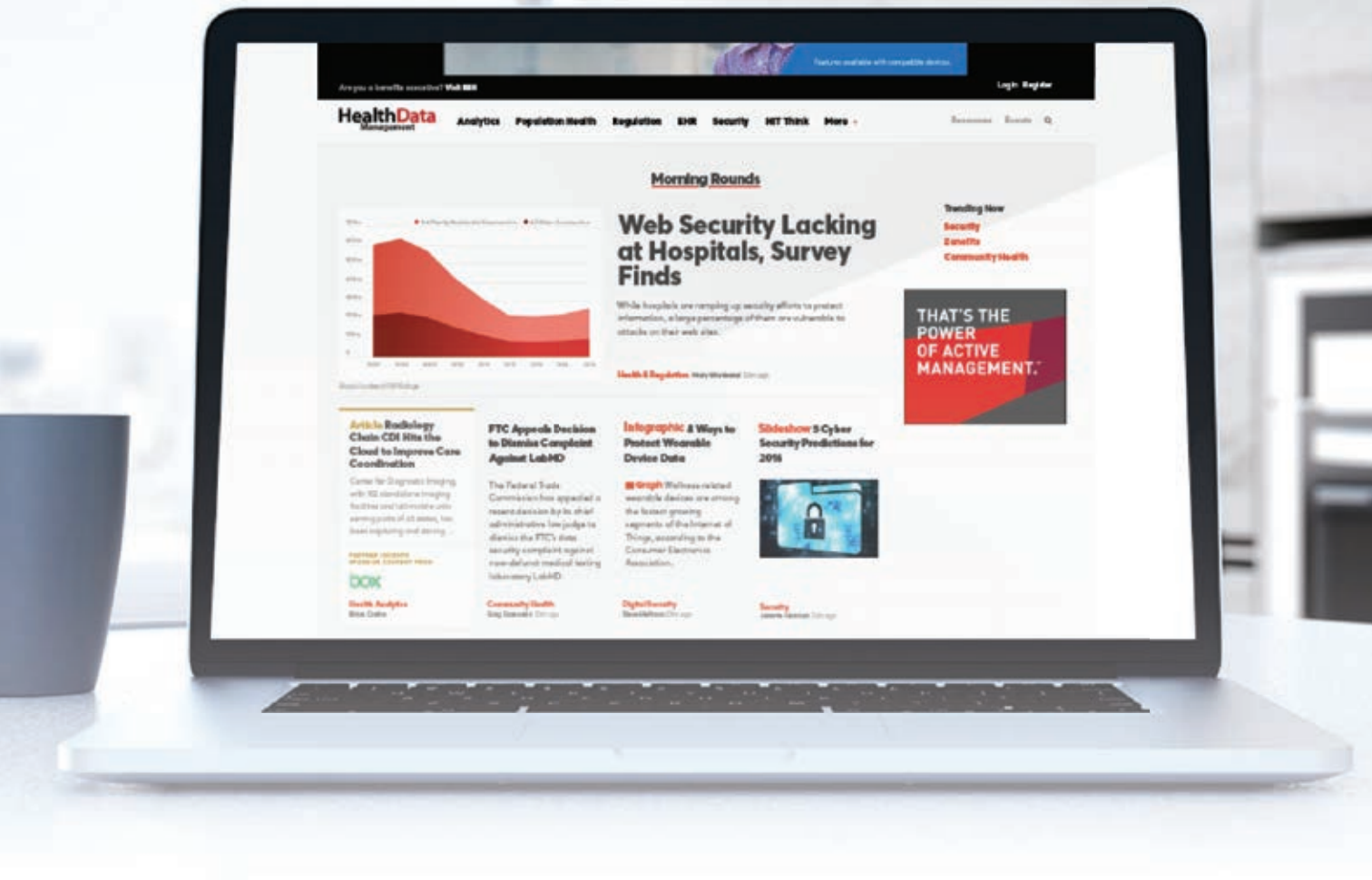

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Editor's View

Changing roles for HIT execs

The Most Powerful Women in Healthcare IT see new demands ahead as the industry evolves.

A healthcare IT executive's job is always challenging; it's also ever changing.

That's the sense of Deanna Wise, executive vice president and CIO for Dignity Health, an integrated delivery system. "Healthcare is never static," she says. "I believe that a CIO's job isn't just about deploying technology. I'm always looking for creative and innovative ways to accomplish ambitious goals" of improving patient care.

Wise is one of the 50 honorees recognized in Health Data Management's 2018 Most Powerful Women in Healthcare IT, which starts on Page 14. Many of these accomplished women are finding that their roles are growing and evolving now that the vast majority of providers have electronic health record systems in place.

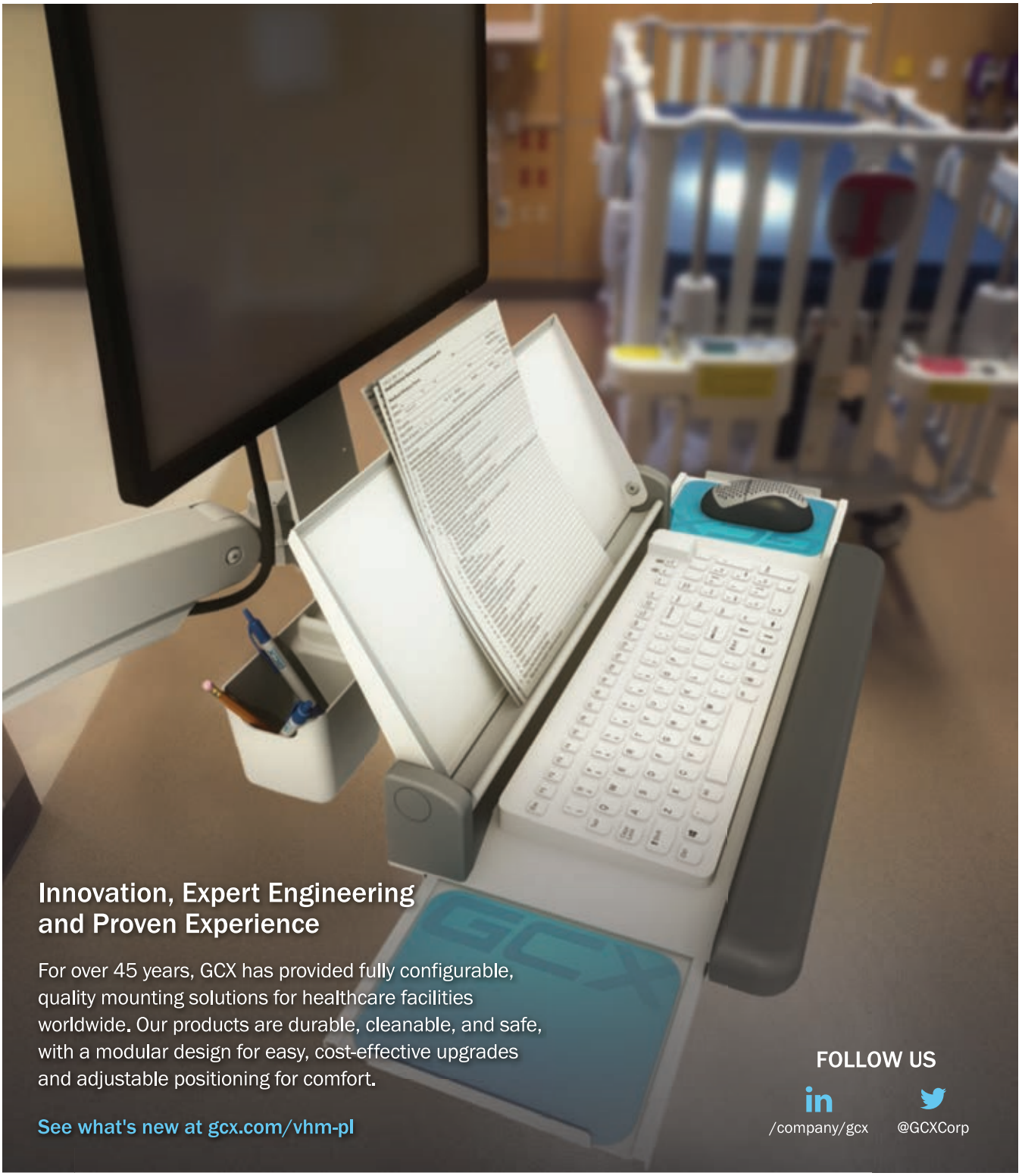
These HIT executives—as well as the industry's thought leaders and HIT vendor executives—are integrating technology into the transforming landscape of care, which is reemphasizing the importance of high value and high quality.

HIT executives now are interacting with senior executives on how to use technology to achieve these strategic missions. They need to be visionary and inspirational, says Pamela Saechow, associate CIO at the Cleveland Clinic. "They need to focus on removing complexity and going to simplicity," she adds. "We need 'high touch' skills—caregiver and patient experience must be in our mindset for what we do."

But new waves of technology and associated challenges also require technical acumen. Cybersecurity is a key challenge, and new initiatives such as mobile health technology, the Internet of Things and blockchain will be among the new capabilities that will grow in importance in the coming years.

In any event, the industry needs HIT leaders who can adapt to rapid change.

—Fred Bazzoli



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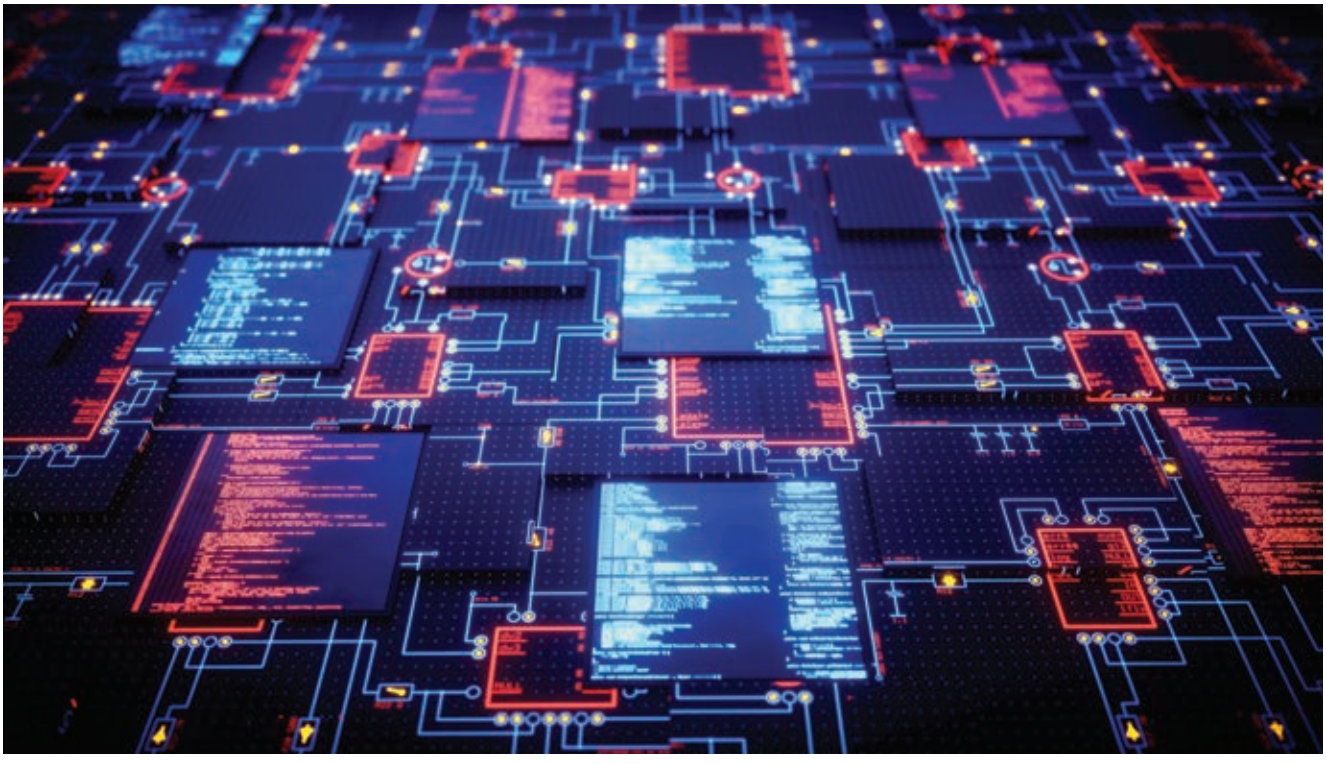

Disaster data sharing plan created

Sequoia Project effort underscores need to get information to doctors during crises.

By Joseph Goedert

A new initiative from the Sequoia Project, working with multiple healthcare industry stakeholders, aims to get electronic health records to emergency medical professionals and healthcare providers, regardless of where patients and evacuees are being treated when a disaster strikes.

The initiative aims to build the Patient Unified Lookup System for Emergencies, or PULSE, modeled after a demonstration program in California.

The effort, led by Sequoia, which operates the eHealth Exchange nationwide network to securely share clinical information using a standardized process, is getting financial and technical support from the Centers for Medicare and Medicaid Services, the Office of the National Coordinator for Health IT, the HHS Assistant Secretary for Preparedness and Response, the California Association of Health Information Exchanges, research firm Mitre and an advisory council for PULSE.

"PULSE is a public-private collaborative to ensure our cities, counties and states are ready for when the next disaster strikes," says Mariann Yeager, CEO at Sequoia.

"There are always going to be disasters, and we are always seeking new ways to help people affected."

As help starts arriving following a disaster, PULSE will authenticate EMS personnel, physicians, physician assistants, nurses, nurse practitioners, pharmacists and other emergency workers, such as registration clerks and those who set up field hospitals and evacuation centers, so patient continuity of care documents can be shared to inform the best treatment options for patients during the emergency.

Sequoia's role in the program is to support a broader deployment of PULSE. The organization has a presence across all 50 states serving the Departments of Defense and Veterans Affairs, CMS and Social Security Administration. □

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Rural healthcare

Plan steps up rural HIT

The Centers for Medicare and Medicaid Services has unveiled a new rural health strategy that includes supporting information technologies, improving interoperability of health information and increasing the use of telemedicine.

Initial goals of the strategy, announced by CMS Administrator Seema Verma, include applying a rural perspective to CMS programs and policies, improving access to care through provider engagement and support, advancing telehealth and telemedicine; empowering rural patients to make decisions about their care, and leveraging partnerships to reach strategic goals.

CMS further seeks to reduce provider burdens, improve quality of care and focus on the opioid epidemic that afflicts many rural residents.

CMS views telemedicine as a technology to better meet the needs of underserved individuals, particularly specialist care, and to improve access and quality while reducing readmissions and unnecessary emergency department visits.

The agency acknowledges it needs to reduce barriers that have impeded use of telemedicine in rural America—it's aiming to reduce such barriers as reimbursement, cross-state licensure issues, and administrative and financial burdens to implementing the technology.

CMS will work with the Office of the National Coordinator for Health Information technology and other federal officials to promote interoperability and increase the use of electronic health records in rural communities, as well as working with health insurers to increase rural health plan options. —*J.G.*

Patient-centric access

Feds push interoperability

Interoperability is a top priority for the Centers for Medicare and Medicaid Services and the White House, according to Kate Goodrich, MD, chief medical officer and director of the CMS Center for Clinical Standards and Quality.

There's "lots of ongoing work around interoperability," including coordination with the Office of the National Coordinator for Health IT and the Department of Veterans Affairs, she said at an HIT Advisory Committee meeting in Washington.

"We are looking very broadly at all of the levers we have within CMS around how we can promote interoperability," she added. "There were a number of roundtables held at the White House around this topic, which actually gave us a lot of terrific ideas that we are actively exploring. You will see some provisions intended to enhance the ability for folks to have access to their data from a patient-centric point of view."

Goodrich said the Trump administration's framework for interoperability is based on ensuring patients have access to their health information in a secure, timely and valuable manner. "You will start to see more from us—as well as from ONC—over the coming months around this."

John Fleming, MD, deputy assistant secretary for health technology reform, said the approach will involve enhancing "data liquidity" and giving patients access to their health information so they "can shop for cheaper, more valuable care." He added that, with clinicians spending more time entering data into electronic health records and less time engaged in direct patient care, the role of policy is intended to help reduce the documentation burden on providers.

As the HITAC makes policy recommendations, he noted, it should consider "how they apply to the independent practitioner—if you can fix it for him or her, then everybody else will be fine as well." —*Greg Slabodkin*

NIST seeks IoTsecurity

Cryptography experts specializing in secure communications at the National Institute of Standards and Technology are looking for ways to protect data created by tiny networked devices being used in Internet of Things applications and projects. These tiny IoT devices, which include sensors, actuators (components of a machine that move or control a mechanism or system) and other micromachines will need a new class of defense mechanisms against cyberattacks. A major challenge to using the devices is that current encryption methods may demand more electronic resources than the devices can hold, experts say. NIST has sent out a call for a project to develop ways to secure data in a constrained environment and seeks help in developing requirements and guidelines.

Privacy

Facebook raises data worries

Fueled by Facebook's failure to safeguard the data of users of its social media platform, lawmakers in Congress are looking to protect the online privacy of Americans through wide-ranging legislation that could have significant effects on the handling of health information.

The Balancing the Rights of Web Surfers Equally and Responsibly (BROWSER) Act would require both Internet service providers (ISPs) and "edge service" vendors—such as Facebook—to give consumers opt-in or opt-out rights for sharing certain sensitive data, including health information, with third parties.

Introduced last year by Rep. Marsha Blackburn (R-Tenn.), chair of the House Communication and Technology Subcommittee, the BROWSER Act defines edge service as one provided over the Internet for which the provider requires the user to subscribe or establish an account in order to use the service—including social media.

According to Blackburn, Federal Communications Commission privacy and data security rules have unfairly focused on ISPs even though edge service providers such as Facebook collect just as much consumer data—if not more. However, the BROWSER Act would designate the Federal Trade Commission as the nation's sole online privacy enforcer and treat ISPs and edge providers equally. A vote hasn't been set.

"This bill creates a level and fair privacy playing field by bringing all entities that collect and sell the personal data of individuals under the same rules," said Blackburn. "What this would do is have one regulator (FTC), one set of rules for the entire ecosystem." *—Greg Slabodkin*

Radiology

Imaging supercomputer eyed

A new initiative aims to make the power of supercomputing available to legacy imaging scanners currently being used by healthcare organizations.

Called Project Clara, the effort was started by NVIDIA. It is intended to develop a virtualized data center that would be available on a remote basis, able to handle the images from multiple modalities and by several users at the same time, using a medical imaging supercomputer.

Executives at NVIDIA, a developer of graphics processing unit (GPU) technology, say the idea is to address the obsolescence of older imaging scanners that can't be updated with newer generations of GPU or supercomputer technology. Because these modalities can't be updated, they have limited access to new developments in imaging, such as artificial intelligence and image processing technologies that are easily incorporated into new systems.

The company says it's building on 10 years of medical imaging research and is working with development partners to "reimagine how computing can improve medical imaging." The partners include research hospitals (including Massachusetts General Hospital and Johns Hopkins), healthcare companies and startups in imaging technology.

The technology is intended to be virtual and universal, performing computations for a variety of imaging equipment, such as CT, MR, ultrasound, X-ray or mammography.

"New technologies are transforming healthcare," says Greg Zaharchuk, MD, founder of Subtle Medical, one of the companies partnering on the project. "NVIDIA's vision for a virtualized imaging supercomputer is an exciting new chapter that will revolutionize our ability to deliver AI-powered healthcare."

—Fred Bazzoli

Hackers hit imaging devices

Data security vendor Symantec is warning of a new and significantly dangerous hacker ring targeting large healthcare organizations in the United States, Europe and Asia.

It identified a previously unknown group called Orangeworm that has been observed installing a custom backdoor called "Trojan.Kwampirs," the vendor notes. Orangeworm is looking for targets to engage in corporate espionage in healthcare and other industries. Targets are chosen carefully and deliberately with extensive planning before an attack is made, Symantec experts contend. Data from the security organization suggests that healthcare is the hackers' top target—it says 39 percent of attacks have been aimed at healthcare organizations.

Precision medicine

Intermountain studies genomics

Intermountain Healthcare is launching a long-term prospective study to help physicians and researchers unlock the potential value of genomic data in order to advance precision medicine.

The system-wide study, called PRECISE, will enable the serial collection of tissue and blood specimens from healthy individuals, as well as patients with diseases treated at Intermountain Healthcare, and then attempt to link the genomic data to clinical outcomes in the future.

"The general collection protocol allows us, in a very broad fashion, to collect leftover specimens from patients that would normally be discarded," says Bryce Moulton, clinical research director for precision genomics at Intermountain Healthcare. "We have a large electronic health record, and we have access to clinical data as well, along with these samples."

The tissue storage and analysis for PRECISE will be conducted at Intermountain's Translational Science Center in St. George, Utah, which leverages the power of next-generation sequencing and state-of-the-art genomics and is capable of sequencing thousands of genomes annually. Recruitment, enrollment and sample collection for the study will take place across the health system's hospitals and clinics.

Intermountain also recently announced it is building a new global DNA database based on electronic health histories from people around the world, which the research community will use to determine who might be at risk for developing genetic diseases. —*Greg Slabodkin*

Population health

Geisinger turns to sequencing

Geisinger is expanding its population health genomics program beyond research and into routine clinical practice, effectively enabling the healthcare organization's patients to be the first in the nation to have the sequencing of their DNA as part of standard care.

"Understanding the genome warning signals of every patient will be an essential part of wellness planning and health management," said David Feinberg, MD, president and CEO of Geisinger. "Geisinger patients will be able to work with their family physician to modify their lifestyle and minimize risks that may be revealed. This forecasting will allow us to provide truly anticipatory healthcare."

According to Feinberg, Geisinger will launch its clinical DNA sequencing initiative with a 1,000-patient pilot program over the next six months. Once the pilot is completed, the program will then be rolled out throughout its sites in Pennsylvania and southern New Jersey.

Geisinger's MyCode Community Health Initiative—a precision medicine research effort launched in 2007 by the Danville, Penn.-based health system—will serve as the model for integrating genomics and data science into everyday preventive care at the provider organization.

The MyCode Community Health Initiative, which has enrolled more than 200,000 participants, has identified more than 500 patients who are at increased risk and has uncovered previously undetected cases of cancer and heart disease, enabling its physicians to treat them much earlier than they could have otherwise.

Geisinger has partnered with Regeneron Genetics Center, a biopharmaceutical company in Tarrytown, N.Y., to generate clinical reports with testing results. that are put into the EHR and provided to patients, who are then offered genetic counseling. —*G.S.*

BIDMC starts tech center

Boston's Beth Israel Deaconess Medical Center has launched a new Health Technology Exploration Center to accelerate research and innovation in the field of healthcare IT. The HTEC will explore new and emerging technologies, including ambient listening, blockchain, deep learning, the Internet of Things and telemedicine, which will be tested in-house at BIDMC leveraging its database of deidentified patient data that is HIPAA-compliant and mitigates compliance issues for rapid testing.

The center, the first of its kind at a Harvard teaching hospital, will also tap cloud services to support clinical decision-making and mobile apps that will enable patients to manage their own health, while improving communication between patients and providers.

Behavioral EHR payments eyed

Senate bill allows agency to try demo program with incentives for record systems.

By Greg Slabodkin

The U.S. Senate has passed a bill authorizing the Centers for Medicare and Medicaid Services to provide incentives to behavioral healthcare providers to promote their adoption of electronic health records.

Currently, federal rules prevent behavioral health providers treating mental and substance abuse disorders from receiving incentive payments for implementing EHR systems.

However, the Improving Access to Behavioral Health Information Technology Act—introduced last year by Sens. Sheldon Whitehouse (D-R.I.) and Rob Portman (R-Ohio)—authorizes the Center for Medicare and Medicaid Innovation to implement a demonstration program that offers incentive payments to behavioral health providers for adopting and using EHRs.

"Electronic records help doctors and other providers make better decisions about their patients' care. Americans who receive substance abuse and mental health treatment should benefit from that technology, too," said Whitehouse in a written statement. "This bill would test the use of electronic health records by mental health providers to care for patients who too often are left behind."

Whitehouse said the federal government has paid $38 billion in incentive payments to healthcare providers to adopt EHRs. Yet psychologists, community mental health centers, psychiatric hospitals and others that specialize in treating addiction and behavioral health conditions do not qualify for this funding. A variety of behavioral health organizations have lobbied for provider inclusion in the EHR incentive program.

That disparity has resulted in a substantial gap in the rates of EHR adoption by specialists in behavioral health, he said. The bill now goes to the House of Representatives, where companion legislation has been introduced by Reps. Lynn Jenkins (R-Kan.) and Doris Matsui (D-Calif.). □

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Military Health Platform

Coast Guard tabs Cerner EHR DoD

The U.S. Coast Guard will implement the same Cerner electronic health record system that the Department of Defense has so far installed at four military sites in the Pacific Northwest.

A branch of the U.S. armed forces, the Coast Guard had been considering both government and commercial-off-the-shelf EHRs as possible solutions to replace its current paper-based records. But in the end, the agency decided to opt for the DoD's system, called MHS GENESIS, which leverages the Cerner Millennium platform.

"The Coast Guard plans to adopt the MHS GENESIS system to all its clinics and sick bays," said Rear Admiral Michael Johnston, the Coast Guard's director of acquisition programs and program executive officer. "Approximately 6,000 active duty Coast Guard members receive their medical care and dental care at DoD hospitals and facilities."

Johnston noted that the Coast Guard's concept of operations, a document describing the characteristics of the proposed system, mirrors DoD's EHR requirements.

"We've done the analysis, and this is the best way forward," he added. "In February of 2016, the Coast Guard's Electronic Health Record program was established to acquire this enterprise EHR capability. The Coast Guard determined the best possible solution for satisfying our requirement is to join DoD as an integrated partner for MHS GENESIS."

According to Stacy Cummings, program executive officer for Defense Healthcare Management Systems, the Coast Guard and DoD will together set the standard for seamlessly sharing health data across the federal government.

—G.S.

Cost Concerns

Price for VA EHR nears $16B

The Cerner electronic health record system the Department of Veterans Affairs plans to implement over 10 years was estimated to cost a total of $15.8 billion, according to VA data provided to Congress.

The VA's 10-year cost estimate for the entire EHR modernization program includes $10 billion for the Cerner contract (which was still awaiting a final decision), $4.6 billion for infrastructure improvements and $1.2 billion for contractor program management support services; the VA has already awarded the main contract in this category to Booz Allen Hamilton.

Of the $15.8 billion, the agency says it plans to ask for $10 billion of new appropriations from Congress and to internally reprogram $5.8 billion over the 10-year system implementation period. But members of Congress started balking at the costs involved in replacing the agency's decades-old Veterans Health Information Systems and Technology Architecture (VistA) with Cerner's Millennium EHR platform.

Rep. Debbie Wasserman Schultz (D-Fla.), ranking member of the House Military Construction and Veterans Affairs Appropriations Subcommittee, noted at a hearing that the VA is asking for $1.2 billion in its FY19 budget request "to continue the massive implementation, preparation, development, interface management, rollout and maintenance" of the new EHR.

She added that proper oversight must be put in place "to guard against abuses and mismanagement, which can and do occur in projects of this magnitude." In particular, Wasserman Schultz voiced concerns that the implementation of the Cerner system may result in increased, costly customization.

—G.S.

CMS has new tool for info access

The Centers for Medicare and Medicaid Services is leveraging HL7's Fast Healthcare Interoperability Resources standard and OAuth 2.0 security profiles so Medicare beneficiaries will be able to access and share their claims data in a universal digital format.

"CMS is going to be releasing Medicare claims data, and what's different about Blue Button 2.0 is its going to be using the open API FHIR protocol as well as OAuth 2.0," said National Coordinator for Health IT Don Rucker, MD. "It will be the first of a number of efforts there with the ultimate goal of getting everything on people's smartphones."

Blue Button 2.0 is available as part of the MyHealthEData initiative, a CMS effort to put patients in control of their own healthcare information.

MOST POWERFUL WOMEN IN HEALTHCARE IT

50 executives who are leading the shift to achieve healthcare organizations' strategic missions.

By Fred Bazzoli

Healthcare IT executives and thought leaders are making a transition within their roles. In the past, they've been called upon to manage very technical responsibilities—in the last decade, that's primarily involved getting electronic health records systems rolled out.

Now, these executives are taking it up a notch. They're being asked to keep increasingly complex information technology systems running, as well as to help fulfill the missions of healthcare organizations.

That's a common theme among those named to Health Data Management's 2018 third annual list of the Most Powerful Women in Healthcare IT. A total of 50 leaders in healthcare information technology were named to the list. To determine which executives to honor, HDM solicited nominations from its readers; HDM editors then submitted their own recommendations, based on their knowledge of the industry. The editorial staff then reviewed each candidates' qualifications and decided on the final list.

The roles of healthcare IT leaders have expanded—they're increasingly demanding, growing in complexity.

The speed of innovation has risen dramatically, contends Sheree McFarland, a repeat honoree. "Business leaders and consumers are more educated than ever, with increasing expectations," says McFarland, CIO of the West Florida Division for HCA Healthcare. "In response, technology companies are advancing their capabilities rapidly."

That's a challenge, too, McFarland says, because there's an growing number of solutions, both products and platforms. "The proliferation of IT can lead to multiple solutions trying to solve similar problems, creating a more fragmented user experience and a more complex IT environment."

The rising number of healthcare IT solutions is adding challenges for IT executives who are trying to make diverse systems exchange information and work together, says Theresa Meadows, senior vice president and CIO at Cook Children's Health Care System, Fort Worth, Texas.

"Now that the majority of healthcare organizations have EHRs deployed, the focus is how do we ensure interoperability with other third-party systems and other organizations," Meadows says. "The ability to have reliable information about the patient across care transitions is extremely important. We also now have the ability to begin using the data collected by the EHR to make strategic decisions that will impact patient outcomes."

Deanna Wise, executive vice president and CIO at Dignity Health, believes similarly. "A CIO's job isn't just about deploying technology—I'm always looking for creative and innovative ways to accomplish ambitious goals that serve to improve the quality and safety of patient care," she says. "Our IT team continues to create new strategies to meet our most foundational technical and strategic challenges."

Those diverse challenges mean increasingly incorporating new types of technologies. "Data management, analytics and data governance are going to be skills that all CIOs must master over the next several years," Meadows says.

Data science capabilities will grow in importance, McFar-

PHOTOGRAPH BY HOYOUNG LEE

Among the Most Powerful Women in HIT: Theresa Meadows, SVP/CIO, Cook Children's Health Care System; Pamela McNutt, SVP/CIO, Methodist Health System; and Liz Johnson, CIO of Acute Care Hospitals and Applied Clinical Informatics, Tenet Healthcare.

land asserts. CIOs and the thought leaders that support them will need to understand how initiatives such as the clinical data warehouse and predictive analytics can serve broader organizational initiatives, she says. "HIT leaders must be able to produce rapid value as the landscape of products and business needs change rapidly."

HIT executives—and the vendors and consultants that support them—also are under pressure to provide a measurable return on investment for technology, she adds. "Although technology can be applied to various business challenges, as financial pressure is applied, it's important that IT investments yield clinical and financial benefits."

HIT executives also must expand their skill sets to deal with cybersecurity threats, working to inform the executive suite of emerging challenges as well as ensure that security professionals are in place to protect the information systems on which healthcare organizations are increasingly dependent.

"The threats against healthcare organizations will continue," Meadows says. "It is important that CIOs take an active role in educating their peers, the board of directors and the organization around cybersecurity. Risk management and cybersecurity incident preparedness are key skills for CIOs."

Powerful IT executives and thought leaders also will find themselves communicating with more diverse audiences, and being called upon to lead larger workforces. Emerging leaders will need to develop skills to manage workers in complex healthcare environments, the executives believe.

"The modern CIO must function like a COO who oversees the end-to-end daily operations and engages with the business to prepare for the future," says Wise. "I've found that employees create the best solutions and make their most significant contributions when they're in the right work environment, one where they are trusted to perform and they feel valued and empowered. One of the most important parts of my job is to foster that environment by consistently sharing the IT strategy and the big picture."

And that bleeds over into a renewed focus on the "customers" of healthcare IT, who are the front-line users, says Pamela Saechow, associate CIO at the Cleveland Clinic.

"We're moving into digitization to create a seamless and optimal caregiver experience, as well as one for our patients," she says. "My areas of focus now are to build a high-performance team, provide excellent customer service and increase velocity—focus on speed to value. And there's a renewed focus on removing complexity and going to simplicity. This needs to be a mutually beneficial partnership with strategic and tactical partners to drive value, create standardization and automation, and reduce costs."

Pamela Arora

Title: SVP/CIO

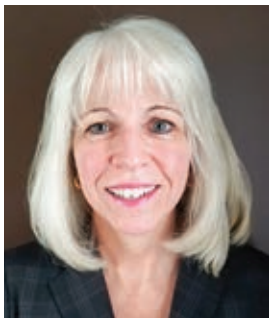
Organization: Children's Health

Years in HIT: 15

Previous Positions: Senior Vice President and CIO, UMass Memorial Health Care; Founder and Interim CEO, Liquidagents Healthcare; various positions and CIO for Perot Systems.

Significant Achievements: Arora has helped to guide her organization to a leading role among children's hospitals and within the state of Texas. The facility was the first in the state to achieve HIMSS Stage 7 designation on the EMRAM scale. The facility was named a HIMSS Enterprise Davies Award winner.

Impact on HIT: She currently serves on the HITRUST board and AAMI board; she recently served on CHIME's board of directors and the CHIME Education Foundation board.



Julie Berry

Title: CIO

Organization: Steward Health Care System

Years in HIT: 20+

Previous Positions: VP and CTO, Steward Health Care System; Corporate Director of Technical Services and Operation, Partners HealthCare System; Vice President of IT Operations and Security Delivery at Blue Cross Blue Shield of Massachusetts.

Significant Achievements: While at BCBSMA, Berry led the introduction of new technology and reduced business outages by 40 percent; she also designed and implemented a three-year PC refresh cycle.

Impact on HIT: Berry is chairwoman of the Health Data Consortium Technical Advisory Board and a member and adviser on several other boards.

Linda Bund

Title: Director of Medical Informatics, Chief Health Informatics Officer

Organization: James J. Peters Veterans Administration Medical Center

Years in HIT: 30

Previous Positions: Various roles within the Veterans Administration at its care facilities.

Significant Achievements: Bund oversees a group of clinicians responsible for the facility's computerized patient records system, including decision analysis tools that help optimize the facility's performance. She also developed a VA-funded program for vets.

Impact on HIT: Bund's VA facility is one of only a few that have developed a standalone data analytics program, helping to position it to be able to use data for clinical and administrative decision-making.

Bobbie Byrne, MD

Title: SVP/CIO

Organization: Advocate Health Care

Years in HIT: 17

Previous Positions: CIO, Acute Care Hospitals and Applied Clinical Informatics, Edward-Elmhurst Health; Executive Vice President, Healthlink.

Significant Achievements: Byrne moved over to Advocate, a large Chicago-area integrated delivery system after several years leading efforts at Edward-Elmhurst.

Impact on HIT: In her previous role at Edward-Elmhurst Health, Byrne completed full implementation of inpatient, outpatient, ambulatory clinical, revenue cycle and departmental systems within 16 months from contract signing to hospital go live. She helped achieve 82 percent physician computer order entry in a community hospital setting in the first week after going live.

Mitzi Cardenas

Title: SVP/Chief Strategy and Information Officer

Organization: Truman Medical Center

Years in HIT: 23

Previous Positions: Director, Information Systems, Children's Medical Center Dallas; Senior Systems Engineer/Data Standards and Configuration Management Consultant, Axiom Resource Management; Director, Systems Integration, Baptist Health System; Manager, Special Projects, Baptist Health System; Regional Director of Operations, Kinetra LLC/IMS MEDACOM Networks.

Significant Achievements: Cardenas was instrumental in creating the TMC and ITWorks (now KCOne) Partnership with Cerner. She led a systemwide electronic health record rollout, with significant clinical and financial benefits.

Impact on HIT: Cardenas is active in local and state efforts related to the use of technology to improve care while reducing cost. She has served as chair of the AHA Interoperability Workgroup.

Myra Davis

Title: SVP/CIO

Organization: Texas Children's Hospital

Years in HIT: 15

Previous Positions: Vice President, IS, Texas Children's Hospital; Assistant Vice President, IS, Texas Children's Hospital; Director, Customer Support, Texas Children's Hospital.

Significant Achievements: Davis launched an enterprise data warehouse, porting data to the EDW over a four-month timeframe. She is partnering with clinical and quality leaders to drive data-based projects that are improving patient outcomes and reducing costs.

Impact on HIT: Davis has orchestrated the implementation of a systemwide EHR, electronic data warehouse, data analytics platform and other key IT projects at Texas Children's Hospital.

Liz Devereux

Title: IT Director, Infrastructure Design and Support

Organization: Banner Health

Years in HIT: 21

Previous Positions: Director, Enterprise Virtual Infrastructure, Banner Health, and a variety of other roles within Banner Health.

Significant Achievements: She helped Banner become an early adopter of the Information Technology Information Library (ITIL) methodology. She worked with radiology, technology management teams and IT professionals to revamp the support model and architecture of picture archiving and communication services. The PACS centralization reduced the rate of lost patient films to nearly zero.

Impact on HIT: Devereux has led a series of IT efforts to reduce operational expenditures.

Tina Esposito

Title: Vice President, Information and Technology Innovation

Organization: Advocate Health Care

Years in HIT: 19

Previous Positions: Vice President, Center for Health Information Services; Director, Center for Health Information Services; Manager, Business Analytics; Manager, Clinical Decision Support Services, all with Advocate Health Care.

Significant Achievements: Esposito created a big data technical and analytics platform that interfaces with more than 50 data sources; developed and implemented an enterprise master patient identifier strategy.

Impact on HIT: Esposito is advancing the use of analytics and serving as executive leader over the Advocate Cerner Collaborative, which supports the study of the shift to accountable care.

Liz Johnson

Title: CIO of Acute Care Hospitals and Applied Clinical Informatics

Organization: Tenet Healthcare

Years in HIT: 37

Previous Positions: Executive Vice President, Healthlink.

Significant Achievements: Johnson provides the strategic vision and tactical planning for all clinical, patient management, imaging, productivity and supply chain systems used across Tenet Healthcare's acute care hospitals nationwide.

Impact on HIT: Johnson has been a key influencer through leadership roles including serving as the 2017 Board Chair of CHIME, a board member for Health Level 7 International, and an appointee to the Health Information Technology Standards Committee of the Office of the National Coordinator for Health IT from 2009 to 2016.

Beverly D. Jordan

Title: VP and Chief Information and Transformation Officer

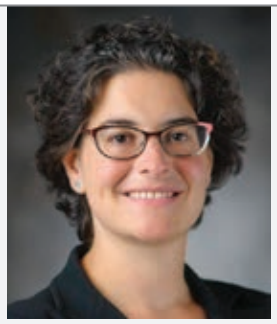
Organization: Baptist Memorial Health Care

Years in HIT: 15

Previous Positions: Chief Nursing Officer for Baptist Memorial Hospital-Memphis; VP/Chief Nursing Executive for Baptist Memorial Health Care.

Significant Achievements: In 2012, Jordan led the Baptist health system's conversion of paper records into EHRs. In addition, Jordan united both the Baptist OneCare EHR team and the information systems group into one team called Baptist Technology Services.

Impact on HIT: At Baptist, Jordan recently led the technology and EHR implementation for the merger between Baptist and Mississippi Baptist Health System.



Rebecca Kaul

Title: Chief Innovation officer

Organization: University of Texas MD Anderson Cancer Center

Years in HIT: 17

Previous Positions: Healthcare IT Consultant; Chief Innovation Officer and President of the University of Pittsburgh Medical Center's Technology Development Center (UPMC Enterprises); President, A-Life Hospital; Senior Director, Strategic Business Initiatives at UPMC.

Significant Achievements: Kaul built a 200-person innovation operation at UPMC. Through the UPMC center, Kaul created several joint ventures and spinoffs for UPMC, including A-Life Hospital, of which she served as president.

Impact on HIT: At UPMC, Kaul forged partnerships, invested in startups and created new companies as part of her work with UPMC's innovation center.

Jennifer Liebermann

Title: Senior Director, Garfield Health Care Innovation Center

Organization: Kaiser Permanente

Years in HIT: 16

Previous Positions: Practice Leader, National Patient Care Services, Kaiser Permanente; Product Marketing, iScribe, CVS/Caremark; Health Care Policy/Labor Market Analysis, UCSF Center for the Health Professions.

Significant Achievements: Liebermann has been involved with the Garfield Innovation Center since January 2005, when Kaiser Permanente leaders asked her to research how to create a "Unit of the Future" at Kaiser Permanente, enabling the organization to test how new technologies could impact its front-line staff.

Impact on HIT: She led the crossfunctional team to develop, fund and launch the innovation center, with a multidisciplinary focus that also includes testing Kaiser Permanente's new facility designs.

Sheree McFarland

Title: CIO

Organization: HCA, West Florida Division

Years in HIT: 29

Previous Positions: IT Division Director, HCA; IT Director, HCA Regional Medical Center, Hudson, Fla.; Director of IT, Lenox Hill Hospital; Consultant, E.C. Murphy, Yuhasz Consulting.

Significant Achievements: Coming in as the IT director of one HCA facility in 1996, she now has executive IT responsibilities for 16 hospitals in HCA's West Florida division.

Impact on HIT: McFarland has led the organizations in her division to implement electronic health records, while managing a wide range of other tasks for HCA's West Florida Division. She also is involved in a number of professional associations, particularly CHIME and HIMSS.

Pamela McNutt

Title: SVP/CIO

Organization: Methodist Health System

Years in HIT: 39

Previous Positions: Director of Information Systems, Hermann Hospital; programmer analyst, Whittaker Medicus.

Significant Achievements: McNutt leads a team of IT and biomedical professionals that helped the organization beome an early adopter of electronic health records. She led efforts to implement patient safety measures and to use technology to achieve operational efficiency at Methodist Health.

Impact on HIT: She is an active participant in CHIME, including playing leading roles on its policy committee. She is one of the leading authorities on dissecting HIT regulations and explaining their impact.

Theresa Meadows

Title: SVP/CIO

Organization: Cook Children's Health Care System

Years in HIT: 25

Previous Positions: Regional Director at Ascension Health; Director of Clinical Systems at St. Vincent's Health System; Engagement Manager at McKesson Provider Technologies; Senior Project Manager at WebMD.

Significant Achievements: At Cook Children's Health Care System, she developed and implemented a technology strategy to support an integrated delivery network that includes acute care, ambulatory care, home health and the organization's own health plan.

Impact on HIT: She served on the HHS Healthcare Cybersecurity Task Force and was given the role of Co-Chair of the Task Force.

Karen Murphy

Title: Chief Innovation Officer

Organization: Geisinger

Years in HIT: NA

Previous Positions: Secretary of Health, Pennsylvania Department of Health; Director, State Innovation Model Initiative, CMS; CEO and President, Moses Taylor Health Care System.

Significant Achievements: Murphy came to Geisinger from her role as Secretary of Health for the state of Pennsylvania. She leads the Steele Institute for Healthcare Innovation at Geisinger.

Impact on HIT: In her role as founding director of the Steele Institute for Healthcare Innovation at Geisinger, Murphy is aiming to incorporate technology and other care delivery advances to improve care for patients while cost-efficiently delivering care.

Jamie Nelson

Title: SVP/CIO

Organization: Hospital for Special Surgery

Years in HIT: 35

Previous Positions: SVP and CIO, Norwalk Hospital; VP of Customer Care at Innovatix; VP of Outsourcing Services at First Consulting Group; VP of Information Systems at New York Presbyterian Hospital.

Significant Achievements: Nelson developed and implemented an IT strategy in support of the HSS strategic roadmap. She led the hospital's decision and implementation process to completely replace its best-of-breed legacy systems with the Epic EMR across inpatient and ambulatory settings for all clinical and revenue cycle applications.

Impact on HIT: Nelson's career has spanned academic medical center, multihospital system and community hospital system settings as well as management consulting and IT outsourcing.

Stephanie L. Reel

Title: SVP, Vice Provost and CIO; Assistant Professor in the Division of Health Sciences Informatics

Organization: Johns Hopkins University and Johns Hopkins Medicine

Years in HIT: 37

Previous Positions: Director of IT, Johns Hopkins Hospital, Johns Hopkins Health System; CIO, Johns Hopkins Hospital, John Hopkins Health System; CIO, Johns Hopkins University.

Significant Achievements: Reel has worked on data center, infrastructure and staff consolidations; designed and deployed shared-service centers; and led resource planning activities for the enterprise.

Impact on HIT: Reel has contributed time and effort to the healthcare information technology industry, particularly by participating in federal policymaking initiatives.

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Betty Jo Rocchio

Title: VP, Perioperative Performance Acceleration

Organization: Mercy

Years in HIT: 13

Previous Positions: Director, Surgical Services, Mount Carmel East Hospital; System Director, Surgical Services, Mount Carmel Health System; Vice President and Chief Nursing Officer, Mount Carmel New Albany Surgical Hospital.

Significant Achievements: Rocchio designed and implemented a systemwide preference card reorganization and cleanup with an automated, centralized maintenance process that produced savings of $1.2 million.

Impact on HIT: Rocchio has bolstered her experience as a transformative surgical services executive with the successful management of HIT projects for community hospitals and physician practices.

Pamela Saechow

Title: Associate CIO

Organization: The Cleveland Clinic

Years in HIT: 20

Previous Positions: Senior Assistant Vice President for electronic medical record implementation and support, NYC Health + Hospitals; Director of Implementation and Project Management Office, Acute Care Product Manager, Senior Project Manager, Senior Applications Analyst and Pharmacy Technician, all at Sutter Health, Sacramento, Calif.

Significant Achievements: Saechow led a successful Epic EHR implementation at Sutter Health.

Impact on HIT: Saechow came into the high-profile job at NYC Health + Hospitals after years of EHR challenges at the health system. She changed the culture to prioritize workflow over technology and to foster teamwork and collaboration.

Pat Skarulis

Title: SVP/CIO

Organization: Memorial Sloan Kettering Cancer Center

Years in HIT: 28

Previous Positions: Vice President and CIO, Rush Presbyterian Medical Center; Vice President and CIO, Duke University; Director of Administrative Services and Information Services, Princeton University.

Significant Achievements: Skarulis led Rush Presbyterian Medical through early implementations of clinical systems. At Sloan Kettering, Skarulis has helped engage physicians in IT initiatives.

Impact on HIT: Skarulis has played a vocal and leading role in the healthcare IT community, participating in CHIME, HIMSS and other industry initiatives. She was recognized for her contributions with the John Gall Jr. CIO of the Year award in 2008.

Laura Smith

Title: CIO

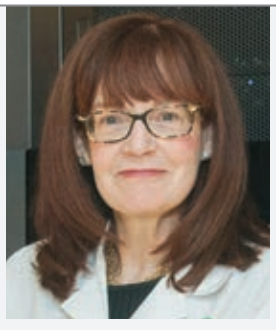
Organization: UnityPoint Health

Years in HIT: 19

Previous Positions: Various roles within UnityPoint Health.

Significant Achievements: Smith has led her IT team at UnityPoint Health through multiple large-scale implementations, new affiliate integrations, leadership shifts and team restructuring. In 2014, Smith helped manage the affiliation of UnityPoint Health and Meriter.

Impact on HIT: Smith takes an active role in mentoring new female leaders who are joining UnityPoint Health, coaching them for six to 12 months to ensure they have the support they need to succeed. She uses a personal touch in managing her staff, which numbers 600 across the three states in which the system operates.



Terri Steinberg, MD

Title: SVP, Vice Provost and CIO; Assistant Professor in the Division of Health Sciences Informatics

Organization: Christiana Care Health System

Years in HIT: 26

Previous Positions: Chief Medical Information Officer, Christiana Care Health System; Clinical Systems, Nemours; Product Manager, Siemens Medical Solutions; Physician, SUNY Stony Brook.

Significant Achievements: At Christiana Care, Steinberg's team was awarded a Health Care Innovation grant to implement a novel IT integration architecture. Steinberg is actively involved in the Delaware Health Information Network.

Impact on HIT: As a clinician as well as a software developer, Steinberg has used her experience to guide the optimal implementation of clinical systems in a manner that is well accepted by doctors and nurses. She has lectured and consulted extensively on methods to ensure successful technology adoption by physicians and nurses.

Lisa Stump

Title: SVP/CIO

Organization: Yale New Haven Health System and Yale School of Medicine

Years in HIT: 10

Previous Positions: Various roles, Yale New Haven Health System.

Significant Achievements: Stump's role is shared between the health system and the school of medicine and has driven collaboration beyond the implementation of the electronic medical records system to include data analytics, precision medicine, a digital web presence and unified communications. She is responsible for the HIT strategy, security and services across the health system, which operates five hospitals and more than 300 ambulatory sites. Yale New Haven has achieved Stage 7 on the HIMSS Analytics EMRAM scale.

Impact on HIT: She has been appointed to Connecticut's Health Information Exchange Legislative Advisory Committee. She participates on several advisory boards for HIT vendors, using those roles to advance interoperability initiatives.

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Deanna Wise

Title: EVP/CIO

Organization: Dignity Health

Years in HIT: NA

Previous Positions: SVP and CIO, Vanguard Health Systtem; CIO, Maricopa Integrated Health Systems; Director of Applications, St. Vincent's Hospital.

Significant Achievements: At Maricopa Integrated Health System, Wise in-sourced the IT department while cutting costs and increasing customer satisfaction. At Dignity Health, her largest achievement has been developing the strategy and roadmap for implementing the Cerner EHR across the system.

Impact on HIT: She's led the push to implement Cerner at Dignity's 40 facilities; the vast majority have reached Stage 6 of HIMSS Analytics' model of EHR adoption. The project is expected to be completed soon.

Laura Adams

Title: President/CEO

Organization: Rhode Island Quality Institute

Years in HIT: 29

Previous Positions: Founder, President and CEO of Decision Support Systems; faculty member for the Institute for Healthcare Improvement, Boston.

Significant Achievements: At RIQI, Adams leads her teams' information technology innovation projects to transform care delivery in the state. The organization has launched designee alerts of loved ones' conditions, and it's revamped the statewide provider directory to aggregate and normalize provider data from multiple sources.

Impact on HIT: In 2006, she led development of Rhode Island's Statewide Health Information Exchange.

Dana Alexander

Title: Executive Director

Organization: EY

Years in HIT: 15+

Previous Positions: Vice President, Clinical Advisory Services, Divurgent; Vice President, Integrated Care Delivery and Chief Nursing Officer, Caradigm; Vice President and Chief Nursing Officer, GE Healthcare; Senior Consulting Executive, Cerner.

Significant Achievements: Alexander is working to advance the nursing profession, serving as the voice of nursing at the board level. She also influences public policy through advocacy.

Impact on HIT: Alexander continually builds bridges and leverages professional connections to impact policy and improve quality outcomes and patient safety. She consistently pushes for patients and consumers.

Kelly Barnes

Title: Leader of the U.S. Health Industries Practice

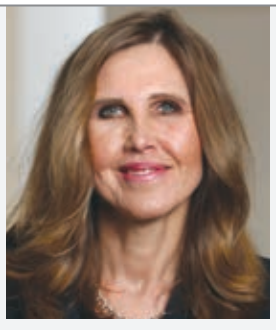
Organization: PricewaterhouseCoopers

Years in HIT: 11

Previous Positions: Barnes has spent her entire career at PricewaterhouseCoopers.

Significant Achievements: Under Barnes' leadership, PwC announced the launch of DoubleJump Health, an accelerator for consumer healthcare applications.

Impact on HIT: Barnes' leadership of the PwC healthcare practice began during the lead-up to the passage of the Affordable Care Act, allowing her to set forth a new strategy based on the changing dynamics of the industry. "The money was going to be moving differently, and every time that happens, the game changes," she says.



Helen Figge

Title: Senior Advisor

Organization: National Health IT (NHIT) Collaborative for the Underserved; various roles in other organizations

Years in HIT: 14

Previous Positions: Vice President, Global Clinical Integrations Accountable Care Solutions, Alere; Director, Clinical Integrations, Alere; Senior Director, Career Services, Professional Development, HIMSS.

Significant Achievements: Figge helped to create unique patient engagement opportunities and healthcare best practices that support LumiraDx's health IT solution sets, ultimately facilitating the empowerment and education of healthcare consumers.

Impact on HIT: Figge strives to encourage critical thinking of current health IT industry trends. Figge authors, presents, mentors and voices her opinions on critical healthcare issues through various social media venues as well as extensive committee involvement, helping to shape the way healthcare is practiced.

Halee S. Fischer-Wright, MD

Title: President and CEO

Organization: Medical Group Management Association

Years in HIT: NA

Previous Positions: Chief Medical Officer, St. Anthony North Health Campus, Centura Health, Westminster, Colo.; President, Rose Medical Group, Denver; Consultant, CultureSync, Los Angeles.

Significant Achievements: Fischer-Wright has positioned MGMA to become a marquee tenant at the Catalyst Health-Tech Innovation Center, slated to open this year. The association's new space is being created as part of a strategy to make MGMA a leading voice in shaping the future of digital health and HIT.

Impact on HIT: Through speeches, panel discussions and collaboration with other organizations, Fischer-Wright has worked to raise MGMA's profile and voice in discussions about the role of IT in delivering safe and effective patient care.

Rachel Hall

Title: Executive Director, U.S. Health Advisory-Performance Improvement

Organization: EY

Years in HIT: 24

Previous Positions: Vice President of Product Management, Global Healthcare Exchange; Senior Associate of Healthcare Point B, Consulting; Associate-Healthcare, Booz Allen Hamilton.

Significant Achievements: Hall has brought EY solutions for IT to market and trained 150 individuals on their use through methodology training and hands-on experience, and by providing leadership in digital health, health supply chain and population health management.

Impact on HIT: Hall is frequently expected to solve what others can't, and is often called upon to resolve clients' challenges that require original and inventive solutions.

Wylecia Wiggs Harris

Title: CEO

Organization: American Health Information Management Association

Years in HIT: 1

Previous Positions: CEO, League of Women Voters of the United States; COO and Chief of Staff, American Nurses Association; Executive Director, Center for American Nurses; Executive Director, Sister to Sister Foundation; Senior Vice President and Executive Director, American Heart Association.

Significant Achievements: Harris raised the presence of the LWV and plans to similarly strengthen AHIMA's membership and foster internal and external partnerships.

Impact on HIT: Harris is known for her ability to bring organizational change. She maintains an increased focus on continuing education and exploration of new roles in health IM.

Sita Kapoor

Title: Co-founder and CIO

Organization: HealthEC

Years in HIT: 25+

Previous Positions: Co-founder and CIO of IGI Health, a provider of IT solutions and BPO services, where she built the Med-Link clearinghouse; various consulting roles.

Significant Achievements: Kapoor directs HealthEC's research and development team, which applies mathematical and computational models to develop large-scale data integration and analytics solutions to help providers identify risky patients who require close medical attention. She played a key role in developing its analytics engine.

Impact on HIT: While at HealthEC, Kapoor built a data warehouse that enabled DC Medicaid to benefit from population health management.

Margaret E. O'Kane

Title: President

Organization: National Committee for Quality Assurance

Years in HIT: 27

Previous Positions: Respiratory therapist.

Significant Achievements: O'Kane has served as president of the National Committee for Quality Assurance since 1990. She was named Health Person of the Year in 1996 by the Journal of Medicine and Health. She received a 1997 Founder's Award from The American College of Medical Quality, recognizing NCQA's efforts to improve managed care quality.

Impact on HIT: Under O'Kane's leadership, NCQA developed HEDIS to measure quality. HEDIS is widely used to shape health IT incentives, including meaningful use and measures under the Merit-Based Incentive Payment System.

Robecca Quammen

Title: CEO-Founder

Organization: MyConsultQ, Quammen Health Care Consultants

Years in HIT: 30+

Previous Positions: National executive role, HBOC, now McKesson; Dorenfest & Associates; Adventist Health System.

Significant Achievements: Quammen has worked with many of the leading academic, for-profit and community hospitals in America, providing expert IS professional, technical and outsourcing services, allowing them to successfully deploy information systems for clinical and business operations.

Impact on HIT: Quammen has helped countless physicians, clinicians and care delivery systems deploy technology, infrastructure and electronic health systems. At HBOC, she pioneered a repeatable implementation methodology that was new to the healthcare industry.

Sue Schade

Title: Principal

Organization: StarBridge Advisors

Years in HIT: 35

Previous Positions: Interim CIO, University Hospitals in Cleveland; CIO, University of Michigan Hospitals and Health Centers; CIO, Brigham and Women's/Faulkner Hospital; Senior Manager, Healthcare IT Practice, Ernst & Young.

Significant Achievements: Schade has leveraged new technology in healthcare with lean principles to improve care delivery and efficiency. She also advanced the use of electronic health records in her roles as CIO of various organizations.

Impact on HIT: Schade is an active member of both CHIME and HIMSS. She writes a weekly blog and is a frequent speaker committed to developing the next generation of HIT leaders.

Carla Smith

Title: Executive Vice President, North America

Organization: Healthcare Information and Management Systems Society

Years in HIT: 26

Previous Positions: CEO of the Center for Healthcare Information Management; Director of the Michigan Modernization Service.

Significant Achievements: Smith helped to make HIMSS a major voice in healthcare. She is an influencer of health laws, including the meaningful use EHR adoption incentive rules, Affordable Care Act, Medicare Access and CHIP Reauthorization Act of 2015 and cybersecurity provisions in 2016 legislation.

Impact on HIT: Smith serves as a health sector thought leader on the best use of IT as a tool to improve health.

Sheri Stoltenberg

Title: CEO

Organization: Stoltenberg Consulting

Years in HIT: 30+

Previous Positions: Director, Ancillary Systems, Shadyside Hospital; Advisory Installation Director, Shared Medical Systems.

Significant Achievements: In 1995, Stoltenberg founded Stoltenberg Consulting, a healthcare IT consulting firm that employs more than 180 professionals.

Impact on HIT: Stoltenberg is committed to innovation, supporting women in leadership and fostering the knowledge of HIT workers to eliminate healthcare system inefficiencies through reinvented HIT support. She was the first to establish a CHIME education foundation scholarship for CIO career development, to which she pledged $50,000.

Seema Verma

Title: Administrator

Organization: Centers for Medicare and Medicaid Services

Years in HIT: NA

Previous Positions: Founder, SVC. a consulting organization serving state Medicaid programs.

Significant Achievements: Through her health policy consulting company, Verma established her reputation for her work on Indiana's redesigned Medicaid program. She also worked with Ohio and Kentucky to change those states' programs.

Impact on HIT: Verma is now affecting HIT policy, and healthcare policy more broadly, through changes being implemented through CMS. The agency recently issued proposed regulations that would ease the burden on providers to report on efforts to implement EHR systems.

Mariann Yeager

Title: CEO

Organization: The Sequoia Project

Years in HIT: 26

Previous Positions: Nationwide Health Information Network Initiatives, Office of the National Coordinator for Health IT; Certification Program Director, CCHIT; Vice President, Healthcare Practice, TruArx.

Significant Achievements: Yeager leads The Sequoia Project, the nonprofit home of one of the nation's largest health data sharing networks, the eHealth Exchange, and the leading, national-level interoperability framework for trusted exchange between and among networks, Carequality.

Impact on HIT: Yeager has been a leading figure in expanding both health IT interoperability capabilities and connectivity capacity nationwide.

Lindy Benton

Title: CEO and President

Organization: Vyne

Years in HIT: 31

Previous Positions: CEO and President, MEAINEA; COO, healthcare division, The Sage Group.

Significant Achievements: Benton is a speaker and activist working to mentor, support and help caregivers understand how to utilize available services to improve patient health.

Impact on HIT: At MEAINEA, a company founded to exchange unstructured documentation for dental practices, Benton led efforts to expand the platform and apply the same technology to managing unstructured data for healthcare providers. The company was renamed Vyne in 2016 after acquiring The White Stone Group, a provider of secure healthcare communication management solutions.

Joanne Burns

Title: Chief Strategy Officer and SVP

Organization: Cerner

Years in HIT: 30

Previous Positions: CIO and VP, Executive Director, University of Missouri Healthcare and the Tiger Institute for Health Innovation; Various positions and VP, Product Development, Cerner.

Significant Achievements: Burns led the Tiger Institute from a HIMSS Analytics EMR Adoption Level 3 to a Level 7 within three years. Her team at Missouri Healthcare was honored with the Missouri Quality Award as well as a "Most Connected Hospital" by U.S. News and World Report.

Impact on HIT: Burns serves on the Management Board for SNOMED, the clinical decision committee for the First Hand Foundation.

Chris Chapman

Title: Vice President, TrakCare

Organization: InterSystems

Years in HIT: 30+

Previous Positions: Meditech, various positions; healthcare IT consultant.

Significant Achievements: Chapman sets the strategic agenda and course for InterSystem's TrakCare EHR, which is sold outside the United States. In this position, she has worked in a variety of countries to implement clinical records systems.

Impact on HIT: Chapman got her start in healthcare IT in the 1970s and has held the titles of engineer, developer, manager and programmer. She also serves as an informal mentor to those in the engineering field, and has played a continued role as a teacher throughout her career.

Judy Faulkner

Title: CEO and Founder

Organization: Epic

Years in HIT: 40+

Previous Positions: Software developer.

Significant Achievements: Faulkner has expanded Epic without venture capital or going public. The company's software was built in-house with no acquisitions. It is ranked by healthcare providers as the No. 1 overall healthcare software suite.

Impact on HIT: Faulkner founded Epic in 1979 as the original software developer, creating one of the first databases organized around a patient record and designed for clinical information. Epic is now a leading provider of integrated healthcare software, used by an increasing number of integrated delivery systems.

Nancy Ham

Title: CEO

Organization: WebPT

Years in HIT: 25

Previous Positions: CEO, Medicity; President and CEO, MedVentive; President, Sentillion; President and COO, ProxyMed; GM, Institutional and Connectivity Services, Healtheon/WebMD; SVP, Business Development, ActaMed.

Significant Achievements: In her position at WebPT, Ham has helped the company reach 10,000 clinics, guiding the company through several product rollouts.

Impact on HIT: Ham has held multiple leadership and C-level roles at various companies and has worked with some impressive teams to develop new and innovative systems for results reporting, eprescribing and performance analytics for providers.

Tina Joros

Title: Vice President and General Manager, Open Business Unit

Organization: Allscripts

Years in HIT: 15

Previous Positions: Meditech, various positions; healthcare IT consultant.

Significant Achievements: Joros is responsible for managing Allscripts Developer Program, API connectivity with Allscripts solutions and driving the company's interoperability strategy.

Impact on HIT: Joros has helped Allscripts—and the industry—move toward utilizing open platforms and interoperable solutions. Her efforts to build the Allscripts Developer Program—the first open API program of its kind for an electronic health records vendor—has led to many other EHR vendors creating their own versions of the program.

Lauren O'Donnell

Title: Global Vice President

Organization: IBM Watson Health Life Sciences Industry

Years in HIT: 35+

Previous Positions: Global General Manager,Life Sciences Industry, IBM; VP Healthcare and Life Sciences, IBM.

Significant Achievements: O'Donnell leads the transformation of patient safety, forging a collaboration with Celgene, a biopharmaceutical company. The companies aim to evolve patient safety from a reactive manual process into a proactive source of safety insight, enabling providers to give better care.

Impact on HIT: O'Donnell and her team are helping life sciences executives advance their capabilities by using IBM tools to support researchers and the patient populations that depend on them.

Lisa Pettigrew

Title: General Manager Healthcare Americas

Organization: DXC Technology

Years in HIT: 17

Previous Positions: CSC General Manager-Global Health; CSC National Director-Health Services Australia; Accenture Partner and Director, Asia Pacific.

Significant Achievements: Pettigrew launched CSC's Chronic Care Management service, designed to help providers improve the quality of life for seniors with chronic conditions.

Impact on HIT: Pettigrew has driven a wide range of innovation into healthcare systems that are now moving to value-based care. She has focused on fostering commercial health models to improve patient care and health consumer experiences.

Helen Waters

Title: Executive Vice President

Organization: Meditech

Years in HIT: 27

Previous Positions: Various positions with Meditech.

Significant Achievements: Waters is leveraging her deep understanding of consumers' needs and concerns to educate existing customers on products, capabilities, pathways and other corporate initiatives.

Impact on HIT: She is helping to make strategic decisions that affect Meditech's future.

Billie Whitehurst

Title: SVP of extended care solutions and care operations

Organization: Change Healthcare

Years in HIT: 20+

Previous Positions: Various roles, McKesson.

Significant Achievements: In her current position, Whitehurst leads the group of Change Healthcare that develops clinical and agency management solutions for home health and hospice providers. In prior roles, she has led various business units and divisions in healthcare IT.

Impact on HIT: Whitehurst has worked to develop healthcare IT solutions that have improved patient outcomes, throughput and care transitions during her career. In her roles, she has led many types of clinical automations that have changed patient outcomes and nursing workflows.

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Top Revenue Cycle Management Vendors

Providers turn to automation as pressures mount to improve billing and payment collection processes.

By Diana Manos

Improving the revenue cycle continues to be a challenge for healthcare organizations, as pressures mount to efficiently collect payment for services.

As healthcare delivery continues to evolve, provider organizations are continuing to struggle in maximizing their revenue-collection operations. That's where revenue cycle management (RCM) technology comes in—to attempt to automate the process of requesting payment.

The shift to value-based care, increased patient pay and a flurry of mergers are creating new challenges for health systems, and many organizations are looking for ways to improve their revenue cycle operations. The complex payment environment is causing providers to use multiple RCM products, according to a recent survey by HIMSS Analytics, conducted in partnership with Dimensional Insight, a developer of analytics and data management solutions. Among the findings, 68.9 percent of healthcare organizations use more than one vendor solution for RCM.

What follows is a listing of some of the larger companies providing RCM solutions in the healthcare market.

AdvantEdge Healthcare Solutions

AdvantagEdge is a medical billing company that applies its billing experience to aid providers in the development of RCM software. It serves physician groups, hospitals, surgery centers and behavioral health agencies, and provides software solutions for medical billing, certified coding, analytics, practice management and compliance.

athenahealth

The company provides scalable healthcare RCM solutions via a cloud-based network, with real-time visibility into revenue cycle operations. The scope of its tools and services spans electronic health records, practice management and RCM software, patient engagement, care coordination and software to improve population health services.

Change Healthcare

Rebranded in 2015 from Emdeon to Change Healthcare, the company offers technology solutions for providers that include government and private payers, physicians, dentists, pharmacies and laboratories. Emdeon Payment Manager, an electronic payment and reconciliation solution, increases visibility of remittance data and facilitates electronic transfer of funds from the largest payer networks in the industry.

Conifer Health Solutions

Conifer provides technology-enabled healthcare performance improvement services. With more than 30 years of healthcare operations management experience, it offers value-based healthcare solutions to enhance consumer engagement, drive clinical alignment, manage risk and improve financial performance.

Convergent

Convergent manages business process outsourcing, revenue cycle and receivables management, with 14 North American operating centers across all four time zones. The company has more than 60 years' history serving a diverse industry customer base, including contact center solutions, receivables management outsourcing, commercial receivables management and healthcare RCM.

Drchrono

A provider of EHRs, practice management and RCM tools, Drchrono's platform is built for iPad, iPhone and Apple Watch. Last year, it partnered with TriZetto Provider Solutions, a technology company that helps healthcare practices simplify business processes and improve medical billing.

Experian Health

The company is a provider of RCM, identity management, patient engagement and care management solutions. Experian Health provides services to some 3,100 hospitals and health systems and 7,000 other healthcare providers.

GE Healthcare Partners

GE Healthcare Partners purchased billing advisory firm the Camden Group in 2015, and now provides client problem-based solutions, long-term strategic partnerships and advanced analytic capabilities. It offers medical billing software and RCM solutions for all types of care settings.

Healthcare Resource Group

HRG specializes in medical cost containment and fraud management solutions. It offers infrastructures for utilization review, case management, discharge planning, clinical chart audit, bill review, pharmacy management, chronic disease management and fraud management implementation for use across complex healthcare systems.

Huron Consulting Group

Huron Consulting Group is a global firm that aims to help clients improve and sustain growth, performance and leadership. It provides expertise in access to care, patient engagement, liability collections, denials management and prevention, payer contracting and strategic pricing, and clinical documentation improvement.

McKesson

McKesson provides resources, support and technology to help healthcare organizations strengthen their businesses, control costs, develop efficiencies and improve quality. Its interoperable health IT systems help customers scale, streamline and automate complex value-based reimbursement models such as bundled payment. The company offers end-to-end RCM solutions.

MedAssist
MedAssist, which offers solutions in eligibility and enrollment, accounts receivables and hospital business office management, is now partnering with Connance, a healthcare predictive analytics firm. MedAssist will use Connance's AR Management Platform and Denial and Underpayment Analytics to enhance its insurance follow-up operations.

MedeAnalytics
With more than 20 years' experience in helping healthcare organization improve clinical, financial and operational outcomes, MedeAnalytics offers decision-making analysis via a cloud-based platform.

NextGen Healthcare
NextGen Healthcare's services include assistance in improving financial and clinical performance, maximizing opportunities to increase revenue, correcting operational inefficiencies and elevating outcomes across the revenue cycle. The company's team of more than 1,300 billing, claims and practice management experts help deliver full-service, scalable, end-to-end RCM solutions.

NueMD
The company offers practice management medical billing software, cloud-based EHR and patient portal software, mobile charge capture and medical billing service, as well as on-demand claim information and custom reports.

Ontario Systems
Ontario provides software and solutions to help healthcare providers recover revenue efficiently and in compliance with market and government standards. Its Artiva HCx provides advanced data analytics and product solutions that streamline and automate insurance and self-pay operations.

Optum360
The company's 7,700 performance experts provide revenue cycle leadership, innovation and operational assistance to help eliminate inefficiencies in healthcare and prepare for value-based reimbursement. Its RCM expertise includes margin performance, payer-provider collaboration, patient experience, compliance and transparency.

Parallon
Parallon is a revenue cycle company with more than 15,800 employees serving more than 600 hospitals and 3,000 physician practices. Its services include revenue cycle specialty solutions, eligibility and advocacy services, delinquent account collections and more.

Patientco
Patientco is a payment technology company that brings together payment infrastructure with intuitive consumer payment tools backed by analytics. It offers easy-to-use technology that ensures that health systems maximize patient payments.

Vizient
Vizient, which acquired MedAssets in 2016, is a member-based provider of performance improvement platforms. It offers advisory, clinical, operations, pharmacy and supply chain solutions.

Revamping the Revenue Cycle

More analytics and IT expertise are being applied to keep dollars flowing to healthcare organizations.

By Linda Wilson

In accounts receivable, cash has always been king. Now so is data.

Value- and quality-based reimbursement contracts are becoming more common, making the revenue cycle ever-more complex and potentially squeezing margins. In response, revenue cycle managers are loading up on data to try to improve every facet of the revenue cycle and squeeze more cash flow out of operations.

To do so they are aggregating and analyzing information to drive workflow changes throughout the revenue cycle—from appointment scheduling to denials management. They are also automating routine workflows, such as processing claims and preventing payer denials.

Ultimately, they'd like to utilize artificial intelligence and predictive analytics for their efforts. However, those tools are not on the short-term radar of most revenue cycle operations.

First things first: To glean really useful insights, revenue cycle managers need to work with aggregated data from disparate information systems deployed in both the financial and clinical realms. But many hospitals and health systems have not reached that level of integration. As they merge and buy physician practices and other healthcare entities, the number of disparate information systems they manage is rising. Incorporating data from outside sources—such as health information exchanges—also contributes to interoperability challenges.

"The inability to get a complete holistic view of a patient record—including the patient billing cycle, the financial picture of the patient—makes it very difficult to perform large-scale analytics," says Blain Newton, executive

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vice president of HIMSS Analytics. "It is really across many platforms."

RCM mishmash

And lots of different types of data is being pushed through a mishmash of revenue system technologies. Many organizations use multiple software products even within the revenue cycle area, according to a 2018 survey of 95 hospital and health system leaders conducted by HIMSS Analytics. A total of 29.5 percent of survey respondents reported using an electronic health record with three or more other systems; 18.9 percent relied solely on an EHR vendor's business modules to manage the revenue cycle.

Meanwhile, other organizations reported using multiple solutions from non-EHR vendors in revenue cycle management: 13.7 percent used three or more vendor products, 6.3 percent used two or more products, and 13.7 percent used a single solution.

Given the number of information systems both inside and outside of the revenue cycle area, it is not surprising that survey respondents cited interoperability (75.8 percent) and data stuck in silos (66.7 percent) as the key challenges they face.

Sharp HealthCare, for one, would like to automatically feed data from a commercial coding product to its enterprisewide data warehouse. So far, the vendor of the coding product has not complied with the health system's request. Instead, Sharp uses the vendor's proprietary report writer to pull data and then join it with data from other information systems, such as payroll, for specific projects—evaluating coders' productivity, for example.

"It makes us jump through extra hoops," says Melanie Betancourt, director of system integration for revenue cycle operations at Sharp HealthCare. She did not disclose the name of the vendor.

Lack of control

Another challenge to corralling all the data is inadequate control over the data and dashboards necessary for revenue cycle management, limiting managers' flexibility to respond to problems quickly, contends Jerica Hopkins, research director for Healthcare Business Insights, a research and training organization, which is part of Decision Resources Group, a research firm. "Revenue cycle leaders actually

want to access the data in real time, so they need to have more access or more ownership over the data."

In a 2018 survey, Healthcare Business Insights found that most respondents had set up a formal structure to dedicate personnel with data expertise to revenue cycle operations. Many embedded analysts in the revenue cycle department; others assigned analysts from the IT department to revenue cycle projects.

But respondents used a variety of reporting structures. Some analysts reported to both IT and revenue cycle managers, while others reported only to managers in one of these areas or the other.

Analytics assemble

Messy data and reporting structures aside, revenue cycle managers are making headway in their efforts to analyze and act on increasingly large data sets.

For example, Betancourt and others at Sharp HealthCare analyzed how much it costs the health system to code each claim. This enabled Sharp to assess the relative productivity of each coder and led the health system to develop standardized coding procedures.

The University of Pittsburgh Medical Center also analyzed staffing issues and made changes to improve performance. Staff in its central scheduling operation have been organized into pods based on medical specialties, which has streamlined end-to-end operations. "This allows us to more effectively handle patient demand as the schedulers become highly efficient in their assigned pod while also allowing the management and analytics teams to better manage results," says Lucas Foust, senior director of revenue cycle system development.

Foust, who reports to the vice president of revenue cycle at UPMC, said the total number of calls these staff members handle per day increased 53 percent from April 2017 to April this year.

The University of Iowa Hospitals and Clinics is using analytics to track reimbursement from payers and patients, process claims faster, and reduce and manage denials.

Chris Voss, revenue cycle manager in patient financial services at University of Iowa Health Care, which includes University of Iowa Hospitals and Clinics, and others in the department are using electronic dashboards to pinpoint trends and help automate the process of tracking accounts.

The dashboards display metrics related to outstanding accounts receivable, payments, transactions and denials. The health system pulls data directly from Epic's billing system, writes queries using SQL, and creates the dashboard visualization using Tableau.

In self-pay accounts specifically, Voss and his team use the information reported in the dashboards to improve how they manage patient balances.

For example, the team identifies patient balances that occur when an insurer denies a claim because it doesn't know if it is the primary payer on an account. In addition to denials, the self-pay team also focused on aging accounts and those with large balances.

The combination of these strategies has led to significant performance improvements. Voss predicts the effort will have reduced days in accounts receivable for self-pay accounts by half a day for the current fiscal year, which ends June 30. He also expects the number of accounts sent to collection agencies to be down by 10 percent.

Dealing with denial

As is the case for University of Iowa Health Care, denials are a priority for many health systems' analytics efforts. In the HIMSS study on revenue cycle management, 73 percent of respondents said coping with denials is the biggest challenge for their operations.

Denials certainly are a priority at Sharp HealthCare, where staff in revenue cycle management have automated the billing process to decrease the number of denials and increase the number of clean claims.

The health system programmed rules around the claims-processing requirements for each payer into software that alerts billers to situations where the information entered from staff members earlier in the revenue cycle process does not follow the rules. Examples include an enrollee identification number that doesn't conform to an insurer's standard numbering system or a missing diagnostic code or modifier. Staff members then fix the issues highlighted by the software before the claim is transmitted to a payer, reducing the risk of a denial.

Gerilynn Sevenikar, vice president of revenue cycle management at Sharp HealthCare, says the health system is continually updating the software as payers add new requirements to the coding and billing process. "Every time we talk about something that has caused a delay in the transmission of a claim, our first question is: Can we build a rule?"

Sharp is revising the software to prevent staff members from overriding exceptions. The software "really lends itself to standardized work and highly reliable outcomes," notes Betancourt, the director of system integration for revenue cycle operations. □

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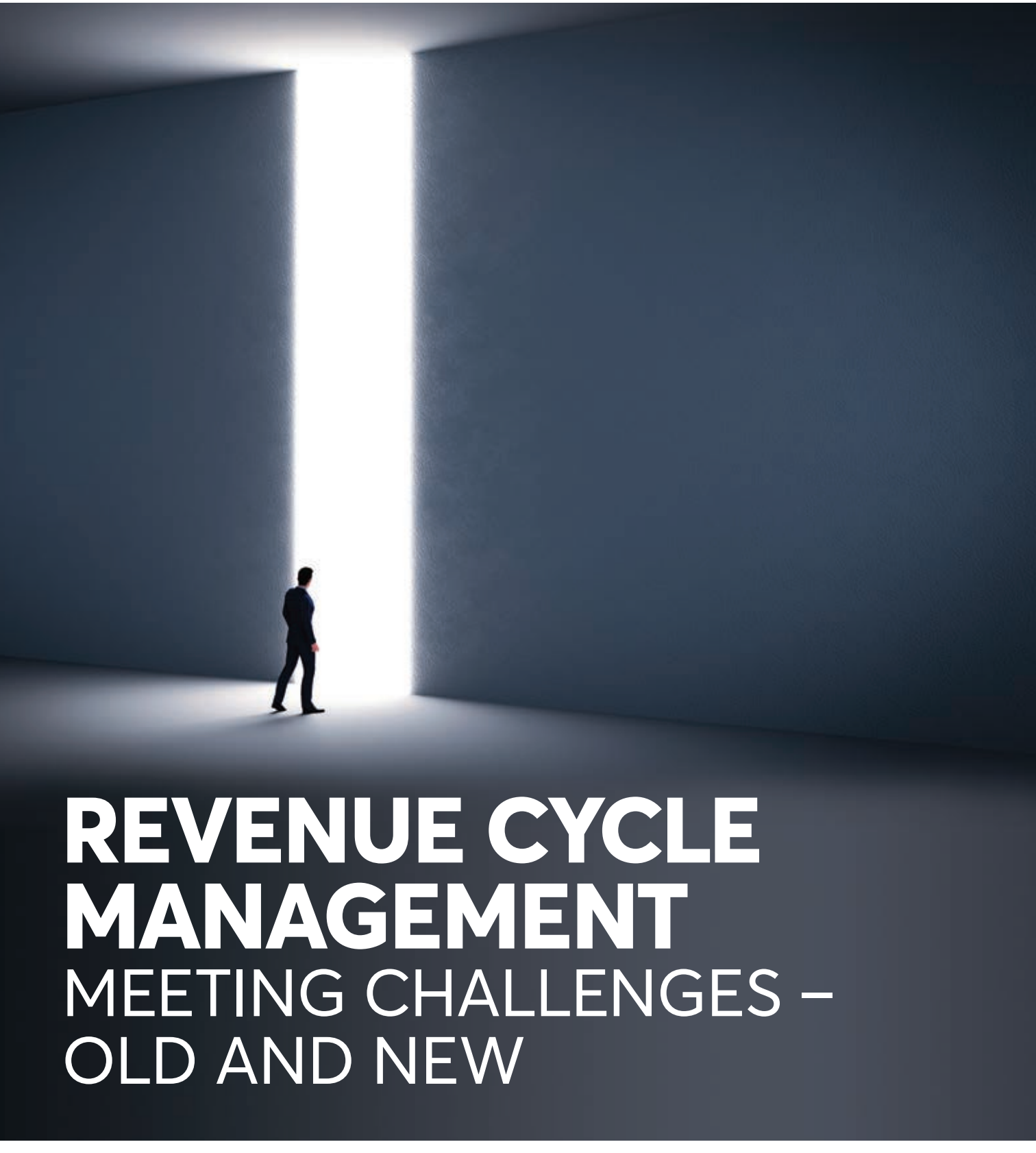

REVENUE CYCLE MANAGEMENT

MEETING CHALLENGES – OLD AND NEW

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REVENUE CYCLE MANAGEMENT:
Meeting Challenges – Old and New

Healthcare organizations have their work cut out for them when it comes to optimizing their revenue cycle management functions to provide the efficiency and customer service needed to succeed today while also forging ahead to add the capabilities required to support emerging value-based care models. The journey is a formidable one – and could require significant technology investments.

Part of the challenge could emanate from the fact that healthcare organizations are still struggling to reign in revenue cycle costs, even after implementing electronic health records. A study published in the February 20, 2018 issue of the Journal of the American Medical Association showed that even though a large academic medical center was using a certified electronic health records system, the estimated costs of billing and insurance-related activities were still substantial. In fact, the estimated costs of billing and insurance-related activities ranged from about 3% to 25% of professional revenue. More specifically, estimated processing time and total costs for billing and insurance-related activities were 13 minutes and $20.49 for a primary care visit; 32 minutes and $61.54 for a discharged emergency department visit; 73 minutes and $124.26 for a general inpatient stay; 75 minutes and $170.40 for an ambulatory surgical procedure; and 100 minutes and $215.10 for an inpatient surgical procedure.

For many years, Minnie Hamilton Health System, a federally qualified health center that owns and operates a critical access hospital and rural health center in Grantsville, West Virginia, outsourced its revenue cycle management responsibilities to a third party – because the staff at the hospital couldn't efficiently leverage its EHR to successfully manage revenue cycle management. When the healthcare provider recently transitioned to a new EHR with more robust functionality, it brought the revenue cycle management functionality back in house. The EHR makes it possible to put relevant information in front of the hospital's billing and coding staff members – making it easy for them to take action and move the revenue cycle management process along.

"We're a small rural, critical access hospital, so talent acquisition is quite a bit of a challenge for us. That's why we originally went with the third-party outsourcing," said Eric Ritchie, COO. The new EHR, however, "allowed us to bridge that gap a little bit by putting the knowledge right on the computer screen. So, all staff members have to do is read it, interpret it, and then take action on it."

Bringing the revenue cycle in-house has enabled Minnie Hamilton to reduce days in accounts receivable by about 30% within about fourth months. In addition, "by bringing revenue cycle management back in house, you eliminate the overheard of the third party vendor," Ritchie said.

Perhaps more important, Minnie Hamilton has been able to improve its customer service by relying on its own employees to provide revenue cycle management services. "Our revenue cycle staff members are from the area. So, they are more familiar with who qualifies for benefits under our sliding fee program. They can have a more meaningful conversation with a patient when setting up payment plans. Patients just have an instilled trust when they are dealing with someone that they recognize as being from the area," Ritchie said.

The value proposition

In addition to making the billing process more cost efficient and patient friendly, healthcare organizations are also tasked with strategically reinventing their revenue

(Continued on page A4)

Health Data Management – Revenue Cycle Q&A with Marty Callahan, RevSpring

RevSpring is a leader in patient communication and payment systems that tailor engagement touch points to maximize revenue opportunities in acute and ambulatory settings. Since 1981, RevSpring has built the industry's most comprehensive and impactful suite of patient engagement, communications and payment pathways backed by behavior analysis, propensity-to-pay scoring, intelligent design and user experience best practices.

Marty Callahan, President of Healthcare Markets

How can healthcare organizations best balance the need to move toward value-based models – while still addressing long-established revenue cycle concerns such as days in A/R and collections?

Balancing moving to new value-based reimbursement models while managing self-pay receivables is essential to maintain the financial health of any health system or provider. This is especially true as consumer financial responsibility for healthcare expense continues to rise and the pressures of lower reimbursements increases. We see savvy healthcare providers relying on vendor partners that can provide relief for A/R management in the form of analytics, advanced technology, and employee efficiency that improves payment performance. By using these vendor partner technologies and solutions, healthcare providers can allocate more resources to determine how to best comply with new reimbursement models.

What technologies can healthcare organizations use to more effectively deal with emerging risk-based contracts?

For Healthcare providers to effectively manage value-based contracts and reimbursements they need to have viable data and analytic technologies to store and track data pertaining to patient diagnoses, treatment modalities and outcomes, and analyze the data at an aggregate and individual perspective. The challenge for providers is not only in the technology to support value-based pricing and reimbursements but also the expertise to analyze and support these new strategies and reimbursements.

What strategies and technologies can healthcare organizations adopt to improve pricing transparency?

Most estimation models that are used to provide cost transparency to patients are based upon the payer contract with this hospital. This methodology typically doesn't consider a patient's contribution towards their annual deductible or co-pay. It can also be inaccurate if the model is using the prior year's contract information with that payer (in other words, not updated based on current contract). A best case scenario would allow the patient to make a deposit against the estimate and then the technology would automatically adjudicate the balance with the credit card information on file.

Do you expect the federal government's focus on reducing administrative burdens to have an impact on revenue cycle practices? If so, how?

As the federal government gains administrative standardization around electronic healthcare records and billing processes it seems that healthcare providers will have fewer administrative burdens and lower operational costs regarding compliance with these revenue cycle programs. Overall, efficiencies should be gained that will affect revenue cycle operations across the country.

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(Continued from page A2)

cycles to support the move to value-based care. Unfortunately, many organizations are struggling to handle this transition. A survey of 117 hospital financial executives, conducted by the Healthcare Financial Management Association (HFMA), shows that respondents do not view their organizations as highly capable in most areas that support value-based payment.

"Many healthcare organizations do not currently have the infrastructure that is needed to be successful under the various value-based payment and care delivery models. Investments in building the infrastructure such as technology and personnel is critical, in addition to organizational alignment and clinical redesign. Strong partnerships with health plans and physician buy-in is key," said Susan Horras, director, Healthcare Finance Policy, Health Plan and Population Health, HFMA. "Healthcare organizations need to analyze, identify and manage the trends impacting the quality and total cost of care. Some organizations are still faced with the challenges of having timely, actionable information that impact cost and quality outcomes."

One of the most difficult – and pressing – challenges for healthcare organization is to implement the integrated information systems that are needed to support value-based models. Indeed, according to the HFMA study, 24% of respondents said their organizations are "not capable" of supporting external interoperability and 59% said their organizations are only somewhat capable of handling external interoperability while 2% said they are "not capable" of supporting interoperability and 57% said they are only "somewhat capable."

"There are challenges with both internal and external interoperability. Internally, some organizations have disparate systems across the organization that presents challenges in exchanging meaningful clinical and financial data. For example, all physicians may not be on the same EHR and an interim solution may need to be implemented in order to exchange and share information across primary care, specialists, pharmacy, etc.," Horras said. "Externally, the industry still lacks national data definitions and standards that ensure consistency across software functionality. Patient matching is a significant challenge with no room for error when exchanging medical record information. Information needs to be in a consistent meaningful format that can be used across the continuum to improve patient safety, manage cost and build efficiencies."

While many organizations do not yet have this interoperability in place, healthcare leaders recognize its value – as more than 70% anticipate an extremely important need for capabilities around interoperability and 50% around external interoperability in the next three years (see Project Needs Chart).

With all of these projected needs, healthcare organizations are expected to invest more heavily in revenue cycle management systems. In fact, the healthcare revenue cycle management market is expected to hit $100 billion by 2024, according to a report from Global Market Insights Inc. This growth is expected to emanate from not only the government and private insurance shift from volume to value-based healthcare but also form the demand to reduce billing errors, the implementation of big data analytics, the need to address government compliance requirements such as ICD-10 and HIPAA v5010 and increased fraudulence screening, according to the report.

Projected Needs, Importance in 3 Years

Need	Not important	Somewhat important	Highly Important	Extremely Important
External Interoperability	0	9%	41%	50%
Care Standardization	0	7%	42%	51%
Assessing ROI	1%	8%	39%	52%
Business Intelligence	0	6%	40%	54%
Real-Time Data Access	0	6%	40%	54%
Chronic Care Management	0	6%	39%	55%
Post-Discharge Follow-Up	0	4%	37%	59%
Eligibility Verification	0	2%	27%	71%
Interoperability	0	3%	24%	74%

Source: *Healthcare Financial Management Association, HMFA's Executive Survey Value Based Payment Readiness, Sponsored by Humana*

Vital Preparations for the Shift to Value-Based Models

Ingenious Med provides a best of breed mobile and web solution that increases practice revenue, measures and standardizes organizational performance, reduces unnecessary costs, and promotes care team collaboration. Created in 1999, our physician-designed application streamlines workflows and can be customized to fit the needs of any organization — regardless of where they fall on the volume to value spectrum.

Dr. Steven Liu, Founder and Chief Medical Officer, Ingenious Med

How can healthcare organizations best balance the need to move toward value-based models – while still addressing long-established revenue cycle concerns such as days in A/R and collections?

The shift to fee for value is a long and risky one. The best way to balance fee for service and fee for value now is also the best way to prepare for the transition. Organizations must optimize revenue cycle operations before the shift, baselining what services are being done, acuity, and cost. This is important because many value-based models are based on revenue cycle metrics.

Even health systems that are farther along the path to value have a surprising amount of fee for service revenue. Don't lose the fee for service fundamentals, even as you transition.

What technologies can healthcare organizations use to more effectively deal with emerging risk-based contracts?

Risk is typically associated with cost and quality behaviors focused on certain populations, so healthcare organizations should use technologies that align physicians with those goals. Tools that help reduce readmissions, facilitate collaboration between care teams, and minimize unnecessary and costly bed days should be priorities.

Measurement tools that show physicians how they are performing with respect to these key cost and quality behaviors are also critical. No matter what tools organizations select, it's important that they fit into a physician's workflow and don't interrupt care quality. Perhaps most importantly, these tools should empower physicians to make changes to their behaviors, when necessary.

What do you think is the largest blind spot for organizations currently in the transition to value-based models?

As organizations move to fee for value, you see an increased focus on population health, including chronic conditions, preventative care, and avoidance of disease progression. The goal is to keep people from getting sick, but that number will never reach zero. Another area that doesn't get as much attention — but can also have a major impact — is the cost when people do get sick.

There are many inefficiencies in the acute and subacute space that can be addressed to lower costs without sacrificing care quality. How many patients stay in the hospital longer than necessary because the results from a test didn't get back to the physician or family wasn't called to pick them up? By addressing these simple administrative costs, organizations can impact a large portion of unnecessary healthcare spending, in addition to population health initiatives.

How do you expect the federal government's focus on reducing administrative burdens to have an impact on revenue cycle practices?

Reducing administrative burden should lead to some physician time being recovered. At the same time, however, risk-based contracts require new processes, many of which will now fall on the back office.

Because of this new focus and the challenges it will bring, existing revenue cycle processes must be optimized. The optimization of coding, clinical compliance, timeliness and consistency of charge capture, productivity, and denial collections are necessary improvements organizations should focus on as costs continue to rise and the shift to value accelerates.

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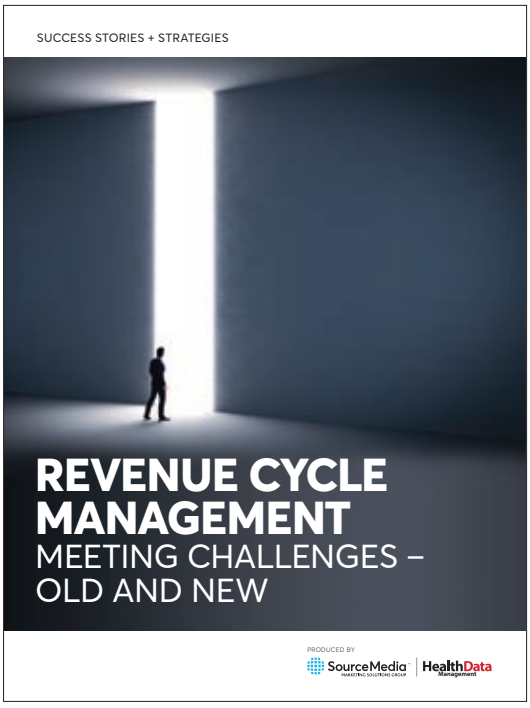

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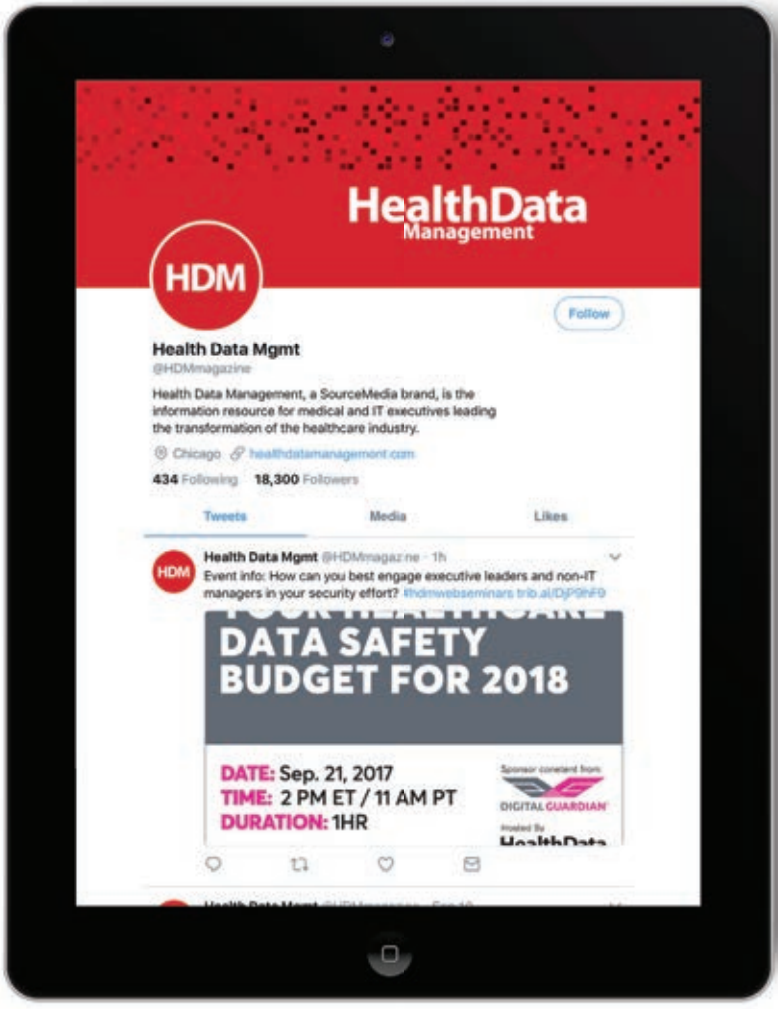

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Info Exchange Capability Comes of Age

The FHIR interoperability standard reaches a tipping point in 2018, as adoption rises and a key vote looms.

By Greg Slabodkin

2018 is shaping up as a pivotal year for Health Level 7 International's Fast Healthcare Interoperability Resources application programming interface. Significant momentum continues to build as more use cases indicate FHIR has reached a tipping point as a mature standard for the electronic exchange of health information.

In March, Apple launched an enhancement to its Health app—which leverages FHIR—enabling patients at 39 participating U.S. healthcare organizations to view their medical records on their iPhones after updating to the iOS 11.3 mobile operating system.

The enhanced Health Records section within the Health app allows patients to see medical data— encrypted and protected with their iPhone passcodes—gathered from various institutions and presented in a single, aggregated view. Patients also receive electronic notifications when their records are updated by providers.

"I'm delighted at the way FHIR has been able to transform patient access to data," says Chuck Jaffe, MD, HL7's CEO. "It's only the beginning of a new era of interoperability and transparency. It goes beyond simply accessing data because in the future there will be solutions for clinical decision support, integration of genomic data, and large-scale population health measures—all of which are supported and this is the only the first step."

Adding to the momentum, in March the Department of Veterans Affairs—the nation's largest integrated health system—launched the VA's Open API Pledge initiative in which healthcare

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organizations are voluntarily collaborating with the agency to map health data to industry standards. Specifically, the initiative calls on providers to support current and future versions of FHIR.

So far, 11 major organizations have signed the pledge, including Cleveland Clinic, Geisinger, Intermountain Healthcare, Mayo Clinic, Partners Healthcare and the University of Pittsburgh Medical Center. They have committed to working with the VA and standards community to implement the existing Argonaut Project implementation guides for the FHIR API.

The Argonaut Project is a collaboration of health IT vendors and providers seeking to accelerate the adoption of FHIR by creating "road-tested" implementation guides accessible to developers in order to build interoperability capabilities according to modern Internet architectures.

"This is an important lever that can help to move things forward in an industry that is so fragmented," says Micky Tripathi, manager of the Argonaut Project. "The VA Open API Pledge initiative could be really big. And, in the case of Apple, that's huge also because it's a validation from a technology leader outside of healthcare that the standard is mature enough.

"What Apple has done is very positive for the industry because instead of implementing a proprietary standard they have adopted the Argonaut implementation guide," adds Tripathi, who says the tech giant has in essence become a testing platform for FHIR. "Apple, then, becomes sort of the benchmark or litmus test for testing conformance with the standard."

With participants such as Accenture, athenahealth, Beth Israel Deaconess Medical Center, Cerner, Epic, Intermountain Healthcare, Mayo Clinic, Meditech, McKesson, and Partners Healthcare, the Argonaut Project has gained significant traction in developing implementation guides for their FHIR implementations. The interoperability framework leverages the latest web standards including a RESTful API, which is designed to use less bandwidth than typical access protocols and be more suitable for web use.

"It's not that the Argonaut Project

has really good subject matter experts who can write really good implementation guides," says Tripathi, who is also president and CEO of the Massachusetts eHealth Collaborative. "It's that we bring together all of those vendors and provider organizations to scale it across the industry."

As a member of the Argonaut Project, Cerner sees its EHR system emerging as a technology platform for a plethora of apps that leverage FHIR, enabling physicians to access these pluggable apps directly within their workflow to more easily visualize, interact with and transmit health data. "We're really looking at this as Cerner is a platform versus a product solution," says Zane Burke, president at Cerner. "We'll know we're there when you see a lot of apps on our platform."

The vendor is encouraging third-party developers to build Substitutable Medical Applications and Reusable Technologies (SMART) on FHIR apps on top of Cerner's Millennium EHR and HealtheIntent population health platforms. So far, it has 20 validated apps, Burke says.

With the emergence of RESTful APIs leveraged by FHIR, cloud service providers and machine learning, John Halamka, MD, chief information officer at Boston's Beth Israel Deaconess Medical Center, believes the industry "suddenly has the perfect storm for innovation."

Halamka, co-author of Realizing the Promise of Precision Medicine: The Role of Patient Data, Mobile Technology, and Consumer Engagement, contends that innovative third-party apps, modules and services will layer on top of existing electronic health records.

However, he insists that EHRs—in their own right—will not serve as the most valuable tools for personalized care tailored to individuals.

"Epic, Cerner, Meditech, athenahealth, eClinicalWorks—they're all fine, but do I believe that they are going to be the place where we see these innovations? I don't," says Halamka. Instead, he contends that "26-year-olds in a garage" will create "novel apps" that "deliver far more usability and utility."

His vision is of a thriving app ecosystem that produces "Lego building blocks" that will "sit around the EHR and provide this additional functionality," creating individually tailored programs to treat a variety of diseases.

'26-year-olds in a garage' will create 'novel apps' that 'deliver far more usability' on which to base tailored treatment programs.

"We'll leave in place the EHRs we have, but surround them with these kinds of components so our clinicians and our patients will have a similar experience with cloud-hosted services," he explains. "It's a bit like the iPhone and the App Store. The EHR is the iPhone and the iPhone is only valuable today because of the thousands of apps we can buy and add to it."

In this scenario, Halamka envisions EHRs using FHIR Clinical Decision Support Hooks to send salient patient data to cloud-hosted service providers that curate the medical literature and not only provide a library of evidence but grade the evidence for accuracy, impact and relevance.

Cerner's Burke says he is optimistic about the potential for progress in achieving interoperability industrywide in meaningful ways. "The VA, the Argonaut Project, and work that's been done with CommonWell [Health Alliance] and others is really coming together around open standards—and I think these things will continue to evolve."

APIs are included in the 2015 Edition of Health IT Certification Criteria requiring certified EHRs to demonstrate the ability to provide a patient-facing app access to the Common Clinical Data Set via an API.

"ONC didn't specify that the API has to be FHIR," notes Tripathi. However, he says based on the latest data "something on the order of 110 to 120 EHR vendors have certified their systems with a consumer-facing API—and something like 50 percent of those are FHIR-based APIs."

"The fact is that you just have to have an open API—you don't have to use FHIR," comments HL7's Jaffe. "Why you would want to do that, I don't know."

HL7 has published a US Core Implementation Guide—developed in association with the Office of the National Coordinator for Health IT—that defines the minimum conformance requirements for accessing patient data as defined by the Argonaut pilot implementations and the ONC's 2015 Edition Common Clinical Data Set.

More importantly, last year HL7 published Release 3 of its FHIR Standard for Trial Use (STU), moving closer to a normative version of FHIR.

"My aspiration is to see FHIR Release 4 come out at the end of the year—certainly we'll ballot it at the end of the year," says Jaffe. "It's an opportunity for normative resources for backward compatibility for the kind of insurances the development community requires for making investments in any technology."

Release 4 is expected to be the first normative version of FHIR "where the standard becomes stable, and breaking changes are no longer considered," notes Graham Grieve, FHIR's product director. □

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From the publishers of
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Building Engagement Tools That Actually Work

New IT and techniques seek to improve the dismal performance of patient-facing apps.

By Maggie Van Dyke

When wearable trackers were introduced, Joseph Kvedar, MD, thought the technology would solve one of healthcare's thorniest problems: Getting patients to choose healthy disease-fighting behaviors, such as walking after dinner instead of sitting on the couch.

Research on patient engagement indicates that people who are actively involved in managing their health tend to have better health outcomes than those who are less engaged. They are also less likely to visit the hospital or emergency department, spending fewer health dollars.

Patient engagement is considered a linchpin in preventing and managing chronic diseases and conditions, which account for 86 percent of U.S. health spending. But Kvedar, vice president of Connected Health, Partners HealthCare, quickly learned that enlisting patients is not as simple as recommending a one-size-fits-all fitness tracker or smartphone app. While some people are motivated by charting their daily activity or food intake, many are not.

"Most people are not wed to their step count the way I am fascinated with it," Kvedar says. "I'm one of those people who really enjoy numbers and tracking. But for most, feedback loops alone are not compelling."

According to a 2016 survey by Gartner, the abandonment rate for fitness trackers is 30 percent. Patient portals have fared even worse. While 88 percent of hospitals offered portals in 2015, only 15 percent of patients used them, found a report from the U.S. Government Accountability Office.

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Evidence is also mixed on whether these tools positively impact health outcomes. A 2018 meta-analysis found no significant impact on six outcomes, including weight and blood pressure, among patients who used remote monitoring tools.

Rather than being deterred by these less than stellar results, Partners HealthCare and other healthcare organizations pushing for increased engagement are building on lessons from behavioral psychology, user-centered design and other fields to address past mistakes and deploy second-generation engagement tools.

Make it compelling

One reason patients avoid portals and abandon activity trackers is that the tools often are not compelling enough, Kvedar says. "Every minute, our brains are focused on something," he says. "For our health to be compelling, it has to displace something else, whether that's a game of Candy Crush or something you're doing at work."

Based on years of work developing technology-enabled care programs, Kvedar has identified three factors that help make connected health tools compelling:

- **Make it about life.** "If my communication to you is, 'You'll have a heart attack in 10 years if you don't get your high blood pressure under control,' that's much less compelling than focusing on relevant, near-term goals like being more productive at your job," Kvedar explains.
- **Keep it personal.** Algorithms can pull in many types of data (e.g., location, weather, wearable data) to send personal motivational messages to patients.
- **Include a social element.** Known as the sentinel effect, most people try harder to achieve health outcomes when they know they're being monitored, particularly by someone whose opinion they care about, such as a physician or family member.

Partners Connected Health incorporated these principles into a software program that encourages people with type 2 diabetes to be more active. Initially, the algorithm incorporated four data streams: activity levels from wearable trackers; location; weather; and the patient's interest in being active, as measured by the transtheoretical behavioral model (i.e., precontemplation, contemplation, preparation, action, maintenance).

An initial study found that the software got patients walking more, which improved their blood sugar levels compared with a control group. "Each day, personalized, contextual messages were sent, encouraging enrollees to be more active," Kvedar says. "For instance, the software might send a message like, 'Tomorrow is going to be rainy, and we noticed that when it's rainy you're not as active. Here are three things you can do indoors to be more active.'"

The program continues to be tweaked. Messages initially sent by text are now pushed out via a mobile app, for example, and additional data from users' smartphones, such as song lists, are also being used to further personalize messages. Partners Connected Health is working with Samsung to develop the next generation of personalized digital and mobile solutions for health and wellness.

Location, location, location

"I think the key to engagement is really understanding where people are at," says Judith Hibbard, research professor, Health Policy Research Group, University of Oregon. "They're not all ready to be proactive about their health and take charge."

Hibbard developed the patient activation measure® (PAM®), which assesses patients' knowledge, skill and confidence for managing their health. A PAM survey, licensed by Insignia, can be given to patients to determine where they fall on a four-level activation scale:

- Disengaged and overwhelmed
- Becoming aware but still struggling
- Taking action
- Maintaining behaviors and pushing further

Hibbard believes digital health technologies are better at engaging people who are already involved in their own health management. "People who are less activated have little confidence, and you need to help them develop some basic skills," she says. "You probably want to use your staff to reach out to less activated patients."

Recognizing that patients have individualized needs, Atrium Health, formerly Carolinas HealthCare System, is combining remote monitoring using the Twine Health platform coupled with a human health coach. Patients in the health system's subscription-based primary care practice, Proactive Health, develop care plans with their physicians and meet regularly with a health coach, either face-to-face or virtually, to pinpoint personalized health goals. The plan and goals are incorporated into Twine, which sends patients reminders (e.g., to take medication) and tracks progress toward goals.

Results to date for this tailored coaching approach are promising. In a group of patients with uncontrolled hypertension, approximately 80 percent reached their target blood pressure within 30 days compared with 30 percent receiving standard care.

The customized goals are key, believes Lindsay Deneault, director of

commercialization for Atrium Health's Innovation Engine. "While the clinical care team can recommend a course of action, it's not really going to stick unless it fits into the fabric of the patient's life," she says. "The patients are the only ones who can provide information about their values, preferences, lifestyle, current knowledge about their illness and the progress they're trying to make."

Atrium Health also encourages patients in the program to set small, incremental goals (e.g., one vegetable a day), which reflects the "tiny habits" behavioral model developed by Stanford University psychologist BJ Fogg. This approach can help build confidence in those who are disengaged, says Hibbard. "It takes patience and time, but the important thing is to start people on that journey rather than just labeling them as noncompliant."

Socially proactive

Research by the United Health Foundation shows that so-called social determinants of health, including poverty, unstable housing and lack of social support, influences 50 percent of health outcomes. These factors interfere with a person's ability to manage his or her own health. "If you can't feed your family, you're not going to focus on your insulin shots," Kvedar says.

However, Kvedar believes mobile health approaches are well suited for helping patients with social and economic challenges, primarily because mobile phones have become ubiquitous across income levels. One study found that 89 percent of homeless residents had a mobile phone, and 60 percent wanted to receive medication reminders via their phones. "The mobile phone has become the new equalizer," Kvedar says.

At Chicago's Rush University Medical Center, providers are writing electronic orders for free food, clothing, housing and other resources for patients in need. The orders are automatically sent to NowPow, an electronic database of community-based resources developed at the University of Chicago. A NowPow algorithm searches for the best-matched resource and sends the Rush patient a text describing where and how to access the recommended service.

Rush has integrated NowPow into its Epic EHR using Fast Healthcare Interoperability Resources (FHIR), HL7's data exchange standard. "In the olden days, people used interfaces," says Shafiq Rab, senior vice president and CIO. "We use FHIR."

'While the clinical care team can recommend a course of action, it's not really going to stick unless it fits into the patient's life.'

The technology also tracks whether patients access the NowPow recommended resource and sends reminders when they don't. In a recent month, 218 Rush patients used NowPow, which can also connect people to smoking cessation and fitness classes as well as other health resources.

Shared decisions

Shared decision making (SDM) is an engagement technique that helps patients make treatment decisions that align with their values and preferences. "It is considered a meeting of two experts," explains Kelly Reeves, BSN, RN, clinical and quality research nurse, Department of Family Medicine, Atrium Health. "Patients are the experts on their values, goals and preferences, and the providers bring their expertise about the disease and treatment options."

Several years ago, clinicians, patients and researchers at Atrium Health began developing an SDM approach to help children and parents with decisions around asthma care. Recognizing the strain on pediatricians to incorporate time-intensive SDM during clinic visits, Atrium Health developed an interactive, digital health coaching experience called Carolinas Asthma Coach™, which collects patient-reported outcomes and provides tailored education about asthma, based on clinical guidelines, to set the stage for SDM.

"To help patients and caregivers engage in SDM and their care process, it is key to not only help them understand the underlying disease, but also translate the guidelines in a way that makes sense," says Andrew McWilliams, MD, medical director of Atrium Health's Center for Outcomes Research and Evaluation. "Then they come to their visit prepared with questions specific to their situation and values."

Carolinas Asthma Coach incorporates a sports theme, and uses animation and humor to engage young patients and caregivers. The interactive platform collects key information about a patient's symptoms, triggers, treatment goals and preferences. This enables the tool to tailor educational messages and produce a personalized "asthma visit playbook" that can be printed out before a clinic visit.

The playbook starts with a list of topics to discuss with the pediatrician, such as whether a controller medicine needs to be prescribed. It also provides an asthma medication decision aid, which pediatricians use to address a patient's or caregiver's medication concerns (e.g., side effects, costs).

Atrium Health is working to integrate the tool into its EHR and provider workflows, and partnering with others to pilot and commercialize the solution. □

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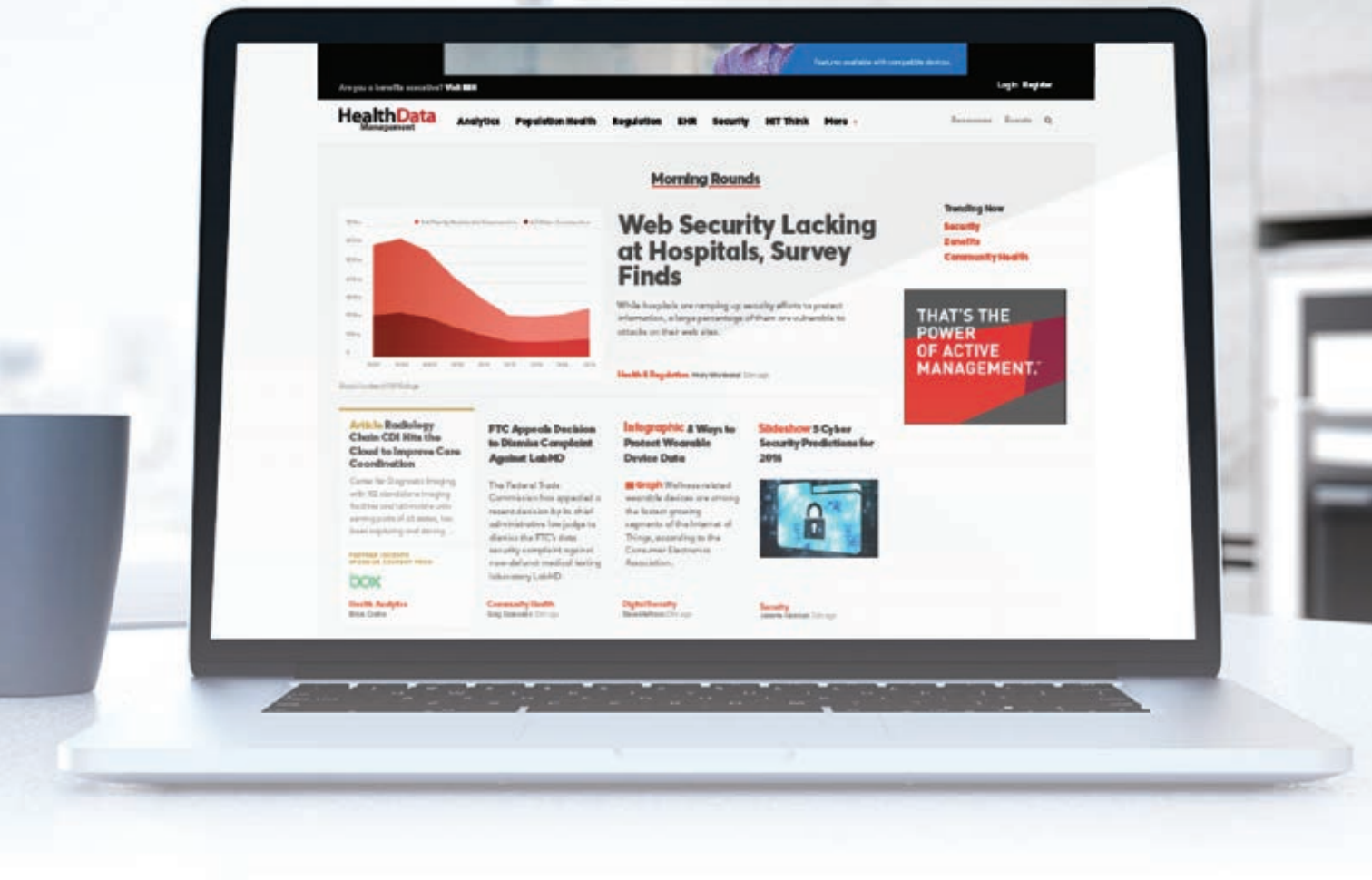

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The Perlin file

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- 2009-2014 Inaugural Chair, Health IT Standards Committee, U.S. Department of Health and Human Services
- Current Chair, Special Medical Advisory Group, Secretary of Veterans Affairs
- Former Under Secretary for Health, U.S. Department of Veterans Affairs, 2004-2006

EHRs help inform care

HCA's Jonathan Perlin, MD, feels compelled to have the company's record system support better care for patients.

By Maggie Van Dyke

When U.S. veterans in New Orleans were displaced by Hurricane Katrina, their medical records remained safe and accessible to all Veterans Affairs health providers, wherever the veterans ended up moving. That was quite an accomplishment in 2005, when integrated EHRs were rare. But the pride that former VA executive leader Jonathan Perlin, MD, felt in his health system was disrupted by an IT leader's comment: "That's great, but how are you learning?"

Thirteen years later, that question still haunts Perlin, who advocates for using EHRs not only to store and share patient information but to drive improvement. "At HCA, we didn't just want to install a new electronic health record, we wanted to be a learning organization, which means using data captured from patient care to continually inform and improve every patient interaction and system operation."

On learning organizations

Computerization and the standardization of data elements under meaningful use is allowing us to learn at a much faster pace than before. A good example was our Reduce MRSA [methicillin-resistant Staphylococcus aureus] study. We had 43 hospitals over 18 months compare three potentially equal strategies for reducing MRSA among 75,000 ICU patients. The best approach turned out to be giving ICU patients a sponge bath with an antiseptic and applying an antibiotic in the nose. This cut MRSA by 37 percent and all potentially life-threatening infections by 44 percent, resulting in a new, worldwide standard of care.

We went on to look at reducing infections on non-ICUs, following 524,000 patients at 53 HCA hospitals. We found the antiseptic sponge bath and nasal antibiotic uniquely effective in patients with implanted vascular access lines and other devices, the group in which most infections occur.

On what data to keep

Our philosophy is that we don't know what data might be important to have in the future. This is particularly important with molecular and genomic medicine. We think we understand certain single gene mutations but we don't know, for example, the relationship of those mutations to environmental factors or internal factors, such as the bacteria in our guts. So we're trying to use data science to look for patterns that aren't necessarily intuitive relationships.

On unstructured data

We're excited to be beginning to work with unstructured data, such as text and images, which make up 70 to 80 percent of the patient chart. We are using natural language processing software to read unstructured data in pathology and radiology reports. This is allowing our cancer patient navigators to work through lab reports 23 times faster. Patients often have to wait longer than they should to get results of a biopsy to rule out or confirm cancer. After the radiologist or pathologist issues a report, another human typically has to read that report. The program we're using can quickly scan reports and alert navigators of the results so they can inform patients sooner. □

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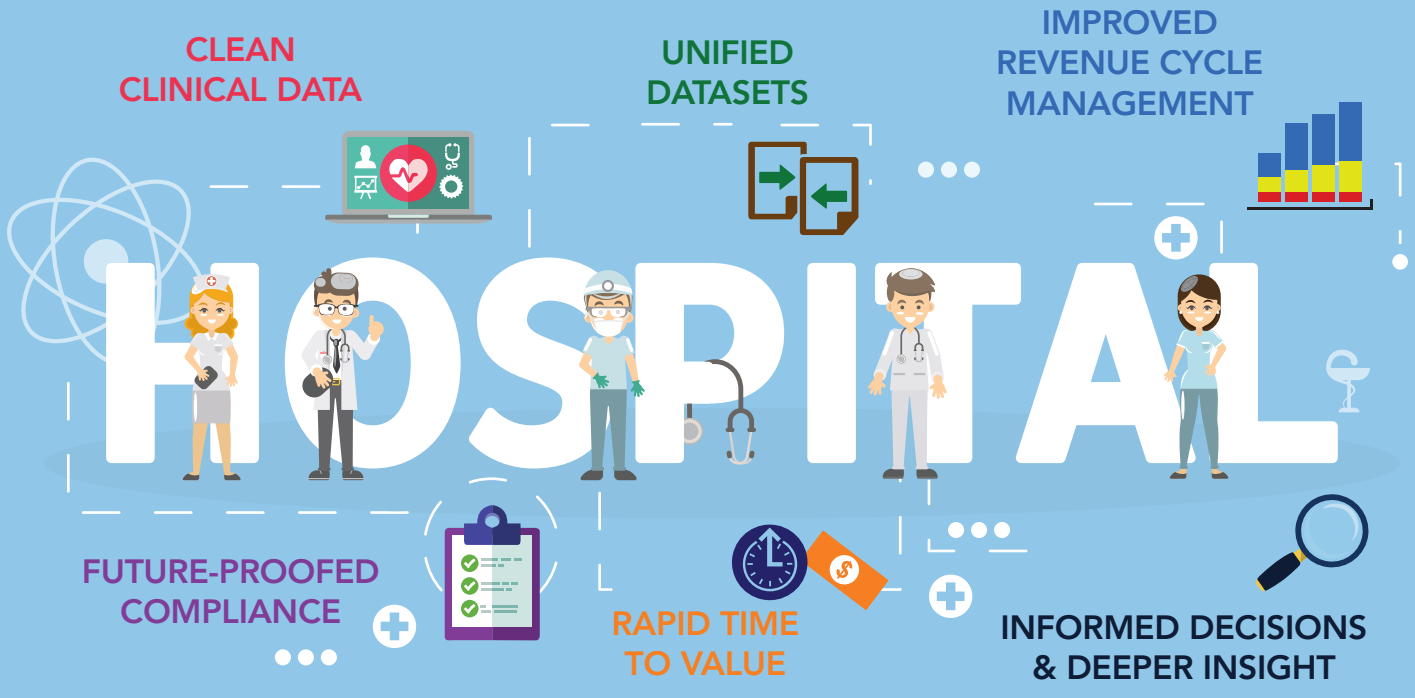

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