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BENCHMARKS: Data security. Women are scarce in the cyber workforce – and are still earning less than men. **PAGE 32**



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TELEHEALTH: HAS ITS MOMENT ARRIVED?

Virtual care has never quite lived up to its potential, for a variety of reasons. Could it finally be on the way toward wider acceptance? **PAGE 4**



Price: EHRs must do better

Health IT is important, but too burdensome for doctors, says HHS secretary Tom Price.

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Heads in the cloud

CIOs have no clue how many apps their employees use.

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BLOG

Most Americans favor a national healthcare plan according to Economist/YouGov poll

Whether the doctor or patient is a Democrat, Independent or Republican, the numbers are clear that people think healthcare coverage is important for all.


 bit.ly/coverageforall

BLOG



Consider huddles, making the invisible visible and take a gemba walk

Sue Schade reprises some of her go-to lean strategies, which hold sway in the healthcare IT realm.


 bit.ly/consider-huddles

SLIDESHOW



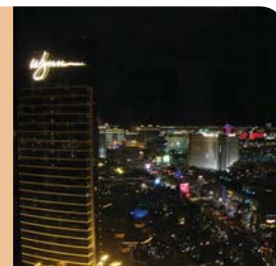
Running list: 2017 notable hires, promotions in health IT

Keep tabs on the many comings and goings, the changing roles and faces in the fast-paced realm of healthcare IT with this regularly updated gallery.

 bit.ly/notable-hires

FEATURED EVENT

Join us for HIMSS BrandHIT Marketing Summit, kicking off on May 15 in Las Vegas.



CALENDAR OF EVENTS

JUNE

4-7: HCCA Research Compliance Conference, **Baltimore**
6-8: AMIA InSpire 2017, **La Jolla, CA**
7-9: AHIP Institute and Expo 2017, **Austin**
12-13: HIMSS Media Precision Medicine, **Boston**
15-17: HIMSS BrandHIT Marketing Summit, **Las Vegas**
20-23: AMDIS Physician-Computer Connection Symposium, **Ojai, CA**
26-27: AHIMA's Long Term Post-Acute Care and HIT Summit, **Baltimore**

AUGUST

1-2: WEDI 2017 Summer Forum, **Chicago**

SEPTEMBER

11-13: HIMSS Media's Privacy & Security Forum, **Boston**
24-28: AHIP's National Conferences on Medicare, Medicaid & Duals, **Washington, DC**
25-27: ACEHP Quality and Innovation Summit, **Park City, Utah**

OCTOBER

2-3: HIMSS Media's Pop Health Forum, **Chicago**

VIDEO

CIO Spotlight: Ed Ricks on security, pop health

Ed Ricks, VP and CIO at Beaufort Memorial Hospital, outlines current initiatives for his organization around data analytics, population health management and health IT security.



 bit.ly/ricks-pophealth

WHAT'S INSIDE



Epic turnaround

In 2014, Wake Forest Baptist Medical Center in Winston-Salem was losing tens of millions of dollars, and a major cause was the costly roll-out of both an Epic EHR and Oracle's PeopleSoft human resource management system. The situation was so dire that Wake Forest posted losses of \$78.4 million that year. And that was after Wake Forest saw operating losses total \$53.6 million in 2013, and Standard & Poor's later downgraded its credit rating as a result. "When I came to Wake Forest in 2014, I was tasked with leading the institution's turnaround," said the system's CFO Chad Eckes, who originally signed on as CIO. "Much of the problems back then were rooted in IT struggles." Read about how the hospital stemmed those losses and achieved an impressive about-face.

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TELEHEALTH: HAS ITS MOMENT FINALLY ARRIVED?



Virtual care has never quite lived up to its potential, for a whole host of reasons. Could the realities of value-based reimbursement be paving the way toward more widespread acceptance?

By Healthcare IT News Staff

HEALTHCARE EXECUTIVES HAVE A sunny outlook for telehealth investing, according to a recent American Telemedicine Association survey touted at its 2017 conference and trade show this past April.

ATA's National Executive Leadership Survey polled more than 170 healthcare executives nationwide and found that a commanding majority — 88 percent — plan to invest in telehealth technology this year. Just 1 percent of execs said they weren't at all likely to invest in telehealth.

The reasons for those IT investments are almost as interesting as the newly robust embrace of a strategy whose slow adoption has long frustrated telehealth advocates. According to ATA, executive respondents see telehealth not just as a way to increase access for underserved patients but also as a competitive advantage.

A whopping 98 percent of healthcare execs said offering telehealth services could serve as a market differentiator over other organizations that don't have distance-based care capabilities.

Still, barriers that have long stymied more widespread deployment of telehealth remain. Respondents said key challenges over the next three years would continue to include reimbursement issues (71 percent); licensure and privileges (53 percent); resistance to change (50 percent); lack of evidence of financial ROI or quality gains (36 percent); provider recruitment (22 percent); legal liability (20 percent); bandwidth limitations (19 percent); and privacy and security (15 percent).

The good news is that nearly half of the execs polled say increasing consumer demand will be enough to overcome many of those hurdles, and fuel growth in virtual care in the next few years: 48 percent said consumerism will be the biggest telehealth trend between now and 2020. More than one-quarter (26 percent) said the shift to value-based care would offer further incentive for telehealth adoption.

MORE STATES REIMBURSING UNDER MEDICAID

Despite the long-standing complaint that reimbursement challenges are a hindrance to telehealth, a recent report from the Center for Connected Health Policy finds that states are getting more generous in supporting virtual visits.

The fifth edition of CCHP's State Telehealth Laws and Reimbursement Policies Report shows that 48 states and Washington, D.C., provide reimbursement for some form of live video in Medicaid fee-for-service.

Specifically, 13 states reimburse for store-and-forward delivered services in Medicaid; states that only provide reimbursement for teleradiology were not counted in this number. Twenty-two states reimburse in Medicaid for remote patient monitoring.

The report also found that 31 states provide a transmission and/or facility fee. Six states have geographic/rural restrictions. And 23 states limit Medicaid reimbursement to a specific list of facilities.

"While many states are beginning to expand telehealth reimbursement, others continue to restrict and place limitations on telehealth delivered services," CCHP said in the report. "Although each state's laws, regulations and Medicaid program policies differ significantly, certain trends are

evident when examining the various policies."

When it comes to private payer reimbursement, 35 jurisdictions have laws that govern reimbursement of telehealth, the report found. This number has remained constant since CCHP's August 2016 update, although some states have made modifications to their private payer law. Some laws require reimbursement be equal to in-person coverage; however, not all laws mandate reimbursement.

Looking to the future, CCHP noted that 44 states have already introduced some 200 pieces of telehealth-related legislation addressing reimbursement for both private payers and government agencies.

"Other noteworthy trends include the addition of the home as an eligible originating site in some states and the inclusion of teledentistry as a specialty qualifying for Medicaid reimbursement and/or required to be reimbursed by private insurers," CCHP said.



Amelia Bischoff

UC DAVIS FINDS BENEFITS BEYOND THE BOTTOM LINE

Perhaps one reason for the reimbursement expansions is that telehealth is proving its worth as a way to reduce costs. At least in one specific area, that is.

Researchers at the University of California, Davis have been looking at how telemedicine impacts patients at a more basic level: transportation costs.

Spanning nearly two decades — and undoubtedly many fluctuations in gas prices and Internet connectivity capabilities — the study, which was published in the online journal *Value in Health*, examines 18 years of UC Davis' own clinical records from 1996 to 2013, evaluating inpatient and outpatient interactive video visits for 19,246 patients.

Typically, the patient would still visit his or her primary care doctor, but they would then together consult a UC Davis specialist via video. The cost savings were measured based on patient travel to a telemedicine center near the home versus traveling to UC Davis Health in Sacramento for specialty care.

Collectively, telemedicine visits saved patients nearly nine years of travel time, 5 million miles and \$3 million in costs. Of course, on a more granular, individual level, those numbers are a little more modest: over 20 years, one person could see a cost savings of four hours of driving time, 278 miles and \$156 in direct travel costs.

The study was regional, but California is a big state, and many rural areas are underserved not just by medicine but also by adequate and reliable public transportation. As such, Principal Investigator James Marcin pointed out, the very real costs of gas, mileage and time are all measurable savings from telemedicine to patients.

"Our findings confirm the benefits of telemedicine in terms of real savings to patients and to the environment," Marcin, who is also chief of the UC Davis Division of Pediatric Critical Care Medicine, said in a statement. "Because telemedicine is cheaper and more convenient for patients in remote areas, they are more likely to seek medical care. Many patients do not have the time or resources to access healthcare many miles from home."

UC Davis has been using telemedicine since 1992 and

now offers services spanning more than 30 clinical specialties in over 150 locations, representing 56 out of California's 58 counties. The technology has advanced over the years, and Marcin expects to see more cost savings to the patient as more affordable, sophisticated tools are developed to allow for telemedicine visits to take place entirely within a location of the patient's choosing.

But there is a benefit to having consultations with primary care physicians present as well, the study noted, as they can receive valuable education from the remote specialist to improve their regular care with the patient.

"I believe that telemedicine not only results in equivalent health care for patients in remote areas but better care, particularly for those with complex medical conditions," Marcin said in a statement. "Our goal of telemedicine is not to save the health care system money but to improve patient care, and I believe it does this."

Of course, being the earth science specialty school in the heart of California's agricultural region, the Davis researchers also measured the environmental impact from all those saved car rides. For the record, telemedicine utilization saved the air almost 2,000 metric tons of carbon dioxide, 50 metric tons of carbon monoxide, 3.7 metric tons of nitrogen oxides and 5.5 metric tons of volatile organic compounds.

While this study clearly looked at more day-to-day impacts from telemedicine and found promising results, others haven't been as immediately impressed with the technology. A survey conducted by the Rand Corporation and published in the journal *Health Affairs* called into question the true cost savings of telehealth by suggesting it may actually increase costs from over-utilization.

Many telemedicine vendors and health economists, however, pointed out a few missing key points, such as measuring which specific costs were avoided in favor of telemedicine.

PALMETTO BREAKS DOWN TELEHEALTH SILOS

When South Carolina health system Palmetto Health set out to create a telemedicine program at the six-hospital organization, it found that getting all the stakeholders on the same page to launch such a thing was no easy task.

At the HIMSS Media Pop Health Forum in Boston earlier this spring, Palmetto's Chief Value and Informatics Officer Tripp Jennings and Telehealth Manager Amelia Bischoff described some of the challenges in creating a working, cost-effective system.

A lot of the issues Jennings and Bischoff described were breakdowns in communication or priorities, internally or externally. Initially, they found that physicians were excited about telemedicine — but they wanted to create it in silos, pertaining to their particular specialties.

"We're trying to get away from the one or two physicians that really want to build telehealth for one disease," Jennings said. "We cannot operate that; it's too expensive. If you let the physicians run it, that's what happens. Tele-whatever disease, Tele-another disease."

To address that problem, they worked with all the physician leaders to create a rubric of telehealth priorities for the whole organization.

"Your senior leadership needs to adopt telehealth and build it into the structure," Bischoff said. "One of the things that we do continue to struggle with is the disconnect



Tripp Jennings

The doctor will see you now: Telehealth has a flasher problem

Telemedicine is designed to expand healthcare access and is a boon to rural areas. However, there's been one surprising drawback: an influx of male patients flashing doctors.

"There was a period where it was happening to some of our doctors once a week," Bob Kocher, a Doctor on Demand investor told CNBC. However, there was no difference in frequency for male or female doctors as patients aren't notified of the doctor they will get during their visit.

Telehealth mobile apps like Doctor on Demand and MDLive require patients to sign-up and provide personal data and insurance information. However, the patients who are exposing themselves often use an alias during the sign-up process to skirt detection.

It makes it difficult to block these individuals, said Ian Tong, Doctor on Demand CMO. The company has blocked and canceled the accounts of known offenders and actually tries to connect these users to mental health services.

Doctor on Demand also no longer uses marketing campaigns that promote free trials, which exacerbated the problem.

MDLive has faced similar issues, especially when a user believes he is anonymously using the app. Mobile telehealth app Sherpa CEO Jay Parkinson told CNBC it received 30 images of male genitalia after it partnered with Vice, a company that allows anyone to text a doctor for answers to health questions.

"The exposure dilemma is really one of a few ways in which patients may use the system inappropriately," American Well CEO Roy Schoenberg said. "We have a systematic approach to managing it that in many ways is reflective of how doctors deal with problematic patients in traditional settings."

American Well is an app company that offers virtual visits. To avoid harassment, the company removes the user login and verifies identification with credit card authorization. While it prevents a second incident, it doesn't stop the initial flashing.

As the telehealth market is expected to expand to more than \$34 billion by the end of 2020, companies may need to find a better way to weed out these exhibitionist patients. ■

between our senior leaders and those people who are boots on the ground. That's built into our strategic plan, not only educating patients but our internal teams as well."

Bischoff and Jennings also ran into trouble with external politics. The health system was lucky enough to receive funding from a state grant program called the South Carolina Telehealth Alliance. But, in order to promote interoperability, SCTA put restrictions on what Palmetto could launch that sometimes proved to be more trouble than they were worth. In Jennings's words "they helped us to death."

Ultimately the health system has managed to create a few different telehealth programs, including some cart-based specialty programs and an asynchronous, direct-to-consumer telehealth platform. The problem with carts was standardizing them as much as possible — but not too much since too many carts added expense and contributed to physician burnout — but some specialties do warrant specialized equipment. Jennings thinks this problem will go away before too long, as more and more telemedicine moves away from specialized equipment to commercial mobile devices.

The direct-to-consumer program was also hampered by internal problems, this time a lack of communications with the marketing department which, after a budget cut, pulled the plug on promoting the platform.

"You can't build a plan that doesn't include marketing, especially for virtual care," Jennings said. "When you build a new building, at least people can drive by, but there's no way for them to find out about a virtual care offering. When you have something that's so consumer-focused, and you don't tell consumers about it, you screwed up."

RUSH UNIVERSITY MEDICAL CENTER LAUNCHES WEB-BASED 'HOUSE CALL'

Another health system, Rush University Medical Center in Chicago has taken a different approach to telehealth. It's among the first healthcare providers in the country to offer primary care patients the convenience of an online medical evaluation service.

Rush will begin to offer what the medical center's executives call "electronic house calls." But, to be clear, the service is entirely text-based and does not include live video chats with doctors.

Dubbed Rush SmartExam, the web-based application makes it possible for patients to choose an electronic consultation with a physician. The doctor will determine a diagnosis and treatment plan that may include prescriptions.

The visits are for minor issues, such as bladder infection, burn or sunburn, cough, cold and allergy, ear pain, flu and rashes, sinus issues and sore throat.

When patients register for the service via MyChart, Rush's secure online health records system, they will be asked to answer 25 to 75 questions regarding their symptoms. The questionnaire typically takes patients 12 minutes to complete.

Once a questionnaire is completed, SmartExam sends it to participating Rush providers, who will receive a text message alerting them that a patient is waiting. The doctor can log in from any device and review the information gathered from the patient, along with a computer-generated diagnosis based on a sophisticated algorithm.

The diagnosis uses the information gathered from the patient questionnaire and provides physicians with a thorough, personalized, and evidence-based set of information to support the diagnosis and recommended treatment.

"Patients will be able to get a medical evaluation electronically from the comfort of their home for non-urgent conditions commonly treated by a primary care physician," Anthony Perry, MD, said in a statement. "People have busy lives, and we want to create convenient and high-quality options that work."

Perry is one of the "e-visit" practicing physicians and chief medical officer for Rush University Medical Group.

"When someone doesn't feel well, it may be difficult for them to get out of bed and walk or drive to a doctor's office. Having an e-visit is a convenient way for patients to get advice for common health issues, such as coughs, colds, flu, and ear pain," said Christen Tibbs, MD, assistant professor of internal medicine at Rush and another of the e-visit participating physicians.

New telemedicine products showcase capabilities, push for wider adoption

An array of new telehealth tools was unveiled by various vendors this spring. Here are a few:

American Well launched a new enterprise tool to improve telemedicine adoption. At the ATA conference in Orlando, the company announced two developments to expand its footprint, both about consumer accessibility as well as ease of use for providers and health systems using its platform.

In a move to nudge telemedicine more firmly into traditional healthcare, American Well unveiled a new enterprise service called AW10, which contains more than 100 new features specific to providers to make their experience with American Well's platform simpler and more comprehensive. The software streamlines the enrollment and verification process for new doctors, so they can start delivering live visits within minutes. To get patients equally ready, AW10 offers automated and workflow optimization features, including insurance verification, automated scheduling, prescribing, payments and notifications. The AW10 toolset also allows for doctors to move easily between automated and manual prescribing and offers a revamped coding module to aid with consistent reimbursement.

Also, the company finally unveiled details of its partnership with Samsung, a collaboration it shared limited information on just a couple of months ago at HIMSS 17. At that time, both companies shared that the partnership would leverage Samsung's leadership position in consumer electronics with American Well's enterprise telehealth service called the Exchange. Launched by American Well last year, the Exchange is a virtual marketplace of sorts that connects payers and providers who use white-labeled American Well telehealth services to offer their care to one another. Now American Well's platform is fully embedded into Samsung's newly revamped health app, Samsung Health, and can be accessed on many Samsung devices including the Galaxy S8 and S8+, which just came out in mid-April. Under the "Experts" tab on Samsung Health, users can have on-demand video visits with any doctor who practices with American Well.

Philips released new enterprise telemedicine software for intensive care units. The most visible and utilized telemedicine tools available today are mainly geared toward primary care, but there is a growing emergence of specialty and high-touch medicine delivered through telemedicine technology. Case in point, Royal Philips debuted its enterprise-level telemedicine software designed for use in intensive care units at the American Telemedicine Conference in Orlando.

Philips' eCareManager, the company's new FDA-cleared tele-ICU software, works to alleviate critical care team shortages by offering a platform connecting regular hospital staff with intensivists — physicians trained specifically for work in the ICU — and offering actionable insights to improve outcomes for patients with the most complex cases.

The software is also source-agnostic, which allows hospitals to easily integrate the platform into their workflows and foster coordination between bedside care teams and virtual physicians, and, in turn, enabling intensivists to monitor more patients. Altogether, the eCareManager aims to help care teams intervene more quickly with the most high-risk patients.

The launch of eCareManager comes just a few weeks after a

CMS-commissioned report showed how Philips' eICU technology saved Emory Healthcare \$4.6 million and also improved outcomes across the hospital system.

PlushCare, meanwhile, has given telehealth doctors an EMR just for them. The telehealth service provider launched an electronic healthcare record for the telehealth industry called Lemur. The company says it's the first of its kind.

The platform is designed to improve interactions between the physician and patient with a "physician-driven platform." Officials said Lemur consolidates data and streamlines physician tasks to make it easier to access information during a telehealth visit. Lemur is cloud-based and HIPAA-compliant. It allows doctors to diagnose, treat, prescribe and provide ongoing treatment directly from the platform, according to officials. The platform reduces click-time for prescribing, note writing and ordering and reviewing labs.

PlushCare collaborated with health information network SureScripts, API network provider Eligible and information analytics company Elsevier. Each of the company's capabilities is fully integrated into Lemur. The platform connects patients to one of PlushCare's 50 active physicians and operates in 16 states. The company plans to expand to other states shortly.

"Traditional EMRs available detract from the overall patient experience and greatly limit physicians' ability to connect on a personal level with their patients," James Wantuck MD, PlushCare's CMO and co-founder, said in a statement. "Lemur bridges the gap by lifting the technological burden off of physicians more than any other EMR by placing all necessary patient information at their fingertips, creating the most human way to visit the doctor," he said.

Zoom teamed up with Epic to launch configurable telehealth platform. The Silicon Valley-based maker of enterprise video conferencing platforms helps equips healthcare enterprises and providers with the standard pre-configured features needed to set up telehealth operations.

This includes video, audio and content-sharing; integration with point-of-care-peripherals; virtual waiting rooms; end-to-end encryption of all meeting data and instant messages; remote camera control capabilities; and open API and SDKs to gradually bring in multiple healthcare applications.

The Epic integration (which includes versions back to 2014) also allows for context-aware links to enable the launch of Zoom video visits directly from the EHR's telehealth workflows.

"People are increasingly using telemedicine and getting reimbursed, and doctors and patients both like the idea of it," said Zoom founder and CEO Eric Yuan. "But it has to be easy to use and able to scale for huge demand, and our technology can address a lot of the issues telemedicine has been facing in terms of usability and sophistication."

Yuan estimated about 10 to 15 percent of Zoom's customer base are healthcare-focused, but he expects it to grow as Zoom for Telehealth is rolled out. As it progresses, the company plans to integrate with more platforms and even connected medical devices.

"Eventually, we want to integrate as many EMR services as possible," said Yuan. "We're not the ones creating the programs or medical devices, so we can just focus on providing the developer platform that other companies can build their solutions onto." ■

NEWYORK-PRESBYTERIAN BUILDS OUT TELEPSYCHIATRY, EXPRESS CARE

NewYork-Presbyterian recently revealed a pair of new telemedicine options for psychiatric and express care services that build out its existing NYP OnDemand telehealth suite.

NYP went live with Express Care at its NYP/Allen Hospital campus, which replaces in-person encounters with a video visit to slash admission-to-discharge times from an average 2.5 hours to 31 minutes, according to NYP Chief Innovation Officer Peter Fleischut, MD. The appointments take place on-site and enable patients to see specialists from 10 NYP hospitals.

NYP also launched a telepsychiatry service, so emergency department patients don't have to come back in for a follow-up visit; this option reduced wait times from 24 hours down to under 60 minutes.

Express Care (which NYP counts along with Urgent Care via the NYP Emergency Departments services as one prong) is one piece of NYP's five-pronged approach, CIO Daniel Barchi said. The others include Second Opinion, Virtual Visits, Digital Consults and NYP's Mobile Stroke Treatment Unit.

The second opinion service enables patients to get the viewpoint of another doctor across 80 specialties, while clinicians use the follow-up tool to conduct virtual visits

for post-surgery and other select situations.

NYP's digital consult prong, meanwhile, encompasses telepsychiatry and telestroke. Fleischut said the telestroke service could save as many as 70 minutes of treatment time or about 140 million brain cells.

When someone calls 911 from anywhere in Manhattan, NYP can send a mobile telestroke unit, which is complementary to the telestroke service, in an ambulance equipped with a CT scan machine to diagnose and, if need be, treat the patient on the spot.

"Developing people and processes and working with technology has allowed us to scale NYP OnDemand and change how to go about delivering care," Fleischut added.

For its approach, NYP takes a best-of-breed to technologies, including American Well's telehealth platform, Grand Rounds tools for the second opinions piece, Cisco products for peer-to-peer interactions, among others.

"We pick the right technology for what we're doing," Barchi said. "Technology is not the focus of the energy and efforts — that's improving patient experience and satisfaction."

Moving forward, NYP aims to make 20 percent of all visits virtual. "We've grown 100 percent in volume every month," Fleischut said, since it originally piloted NYP OnDemand in 2015. ■



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HOW WELL GETS DONE



Health IT important, but too burdensome for doctors, Price says

The HHS secretary said interoperability is needed, but pledged his office will take a '60,000-foot' view.

HENRY POWELL, Contributing Editor

TOM PRICE, U.S. DEPARTMENT OF HEALTH and Human Services secretary, on Thursday said what many doctors are thinking: "We need our physicians to be patient-facing, not computer-facing."

But that doesn't mean he's opposed to robust health information technology.

Price, speaking at the Health Datapalooza Conference, said he supports efforts to achieve true interoperability between electronic health records and other systems, but not at the expense of physician

face-time with patients.

"The promise of health IT is so great, but we must recognize that a one-size-fits-all, inflexible system for our nation's patients and physicians simply will not work," he said, according to Politico.

Price, a surgeon himself, stopped short of promising rigid government oversight over efforts to improve healthcare technology. Like many positions tied to the Trump administration, Price advocated for private-sector leadership and said HHS will "encourage interoperability from the 60,000-foot level."

Price also hinted at removing some of the reporting burden tied to the meaningful use program, which likely appealed those who have been pushing for a softer policy in dictating health IT adoption. ■



AHIMA pushes Congress to fund ONC, continue investing in EHR interoperability

The group argues that not adequately funding the ONC would undermine the 21st Century Cures Act and inhibit work toward a learning health system.

TOM SULLIVAN, Editor-in-Chief

THE AMERICAN HEALTH INFORMATION MANAGEMENT ASSOCIATION called on Congress on April 24 to fund the Office of the National Coordinator for Health IT and said not doing so would be a detriment to the bipartisan 21st Century Cures Act.

"We urge you to maintain sufficient funding for ONC to meet its statutory obligations under the 21st Century Cures Act," AHIMA CEO Lynne Thomas Gordon wrote in a letter to Sens. Patty Murray and Roy Blunt, the ranking member and the chair, respectively, of the Appropriations Subcommittee on Labor, Health and Human Services, Education, and Related Agencies in the U.S. Senate.

Gordon said that ONC plays a key role in

a number of critical areas within health IT.

The first is standards development to advance the interoperability of patient data among EHRs, personal health records, medical devices and other healthcare technologies. The second area is in convening all necessary stakeholders to create a Trusted Exchange Framework and the information governance to support that.

Gordon also pointed to ONC as a federal partner involved with patient's rights to access their data under HIPAA and otherwise.

"We understand that Congress faces difficult choices in funding a variety of priorities with limited resources. However, failure to adequately fund ONC will undermine a major tenet of the Cures Act," Gordon wrote.

Moreover, she cited an analysis of 21st Century Cures by the U.S. House of Representatives' Committee on Energy and Commerce of that tenet: "the delivery of new drugs and devices to the right patient at the right time by ensuring electronic health record systems are interoperable for seamless patient care and ... (to) fully realize the benefits of a learning healthcare system." ■

Life science expert Brett Giroir nominated as HHS asst. secretary



The Trump administration nominated Brett Giroir to become the assistant secretary of the Department of Health and Human Services. Karen DeSalvo most recently held the position. Giroir currently serves as president and CEO of ViracYTE, a biopharmaceutical company he joined in November 2016. He's also

a partner of TransBio Ventures, an oncology-focused venture capital fund, as well as an adjunct professor of pediatrics, tropical medicine, medical ethics and health policy at Baylor College of Medicine in Houston. Before these positions, he was executive vice president and CEO at the Texas A&M Health Science Center. He's also served as CMO at Children's Health in Dallas, CEO and Health Science and Biosecurity Partners, strategic advisor at TMCx Accelerator and managing director of Kirchner Group.

CMS launches repository for public health, clinical data registry info



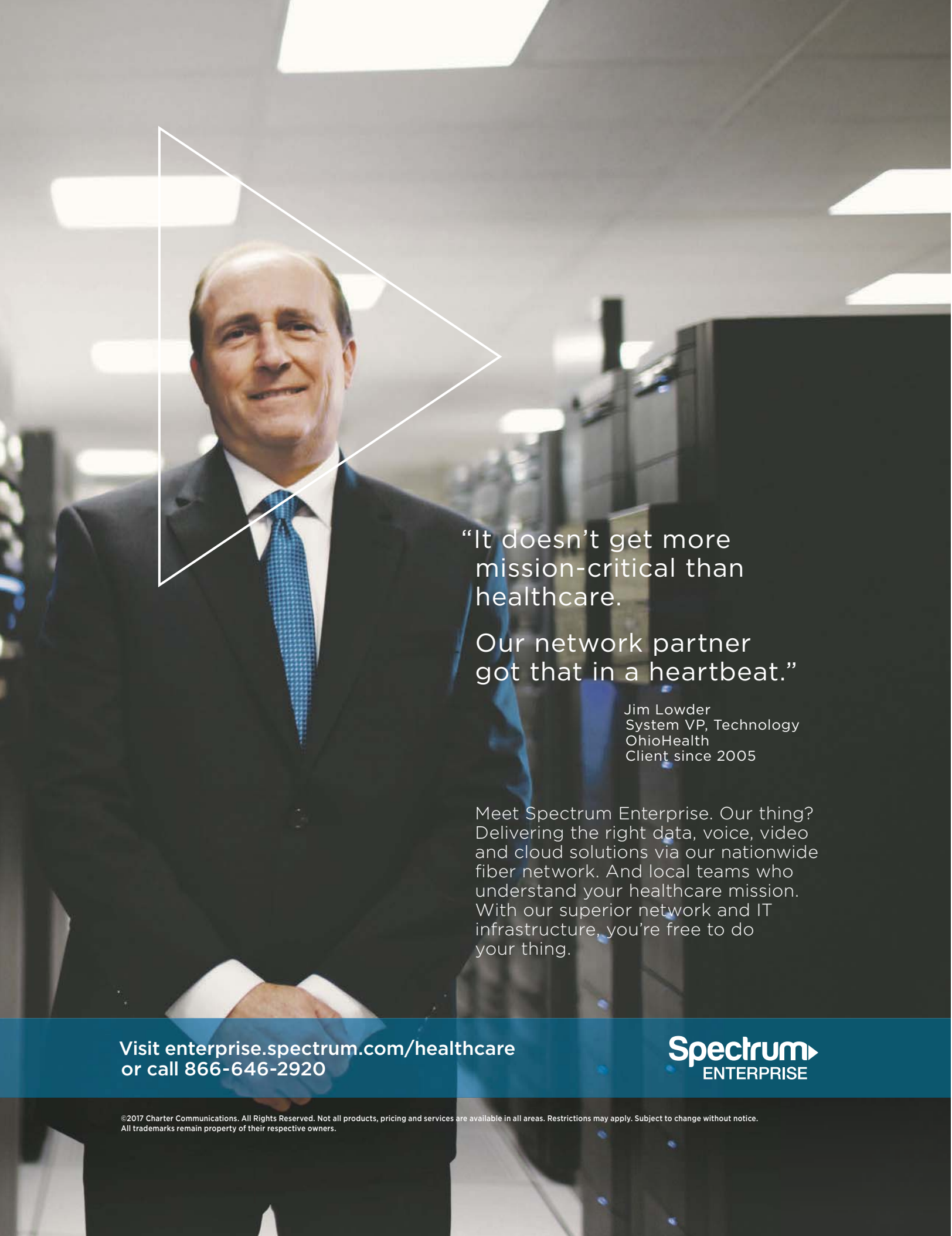
The Centers for Medicare and Medicaid Services has created a centralized repository for public health agency and clinical data registry reporting to provide an additional, centralized source of information for eligible professionals and hospitals, and for critical access hospitals. This will help organizations seeking to comply with Stage 2 meaningful use requirements. The CMS Centralized Repository is not the authoritative source of all reporting options currently available, CMS said. Participation in the repository by public health agencies, clinical data registries and specialized registries is voluntary. For the Medicare or Medicaid EHR Incentive programs, the absence of an entry on the CMS Centralized Repository is not sufficient documentation for claiming an exclusion and does not prevent a provider from attesting to reporting to a registry, CMS said.

Coast Guard seeks new EHR vendor after failed Epic implementation



The U.S. Coast Guard published an EHR acquisition RFI to FebBizOps.gov, a move effectively killing a failed Epic implementation. The RFI comes almost a year to the day after the Coast Guard terminated its EHR contract with Epic — and actually reverted to using paper records — because of significant risk and various irregularities it uncovered.

The Coast Guard is now seeking information about both on-premise and cloud-based EHRs, including the option to share a hosted electronic health record service with another federal agency as it tried to do with the U.S. State Department for the Epic installation. Coast Guard's RFI documents also include a list of use case scenarios and a capabilities checklist that suggest a strong focus on data interoperability, population health, surveillance features, mental health, patient safety, as well privacy and security functions, among others.



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FCC wants the healthcare industry to stop dragging its heels on broadband

The agency is seeking comments and data on expanding accessibility, especially to rural and underserved areas.

JESSICA DAVIS, Associate Editor

THE FCC IS ASKING THE healthcare industry to comment and provide data on ways to accelerate adoption and accessibility of broadband-enabled healthcare, especially in rural and underserved areas.

In a public notice posted on April 24, officials said the information will be used to identify methods the FCC can take to promote broadband expansion.

The agency is seeking comment and data on the regulatory, policy, technical and infrastructure issues with broadband and how it's affecting the healthcare industry and outcomes. FCC will use this information to make recommendations for improvements.

"By some estimates, broadband-enabled health information technology can help to improve the quality of healthcare and significantly lower health care costs by hundreds of billions of dollars in the coming decades,"

officials wrote. "However, the United States remains behind some advanced countries in the adoption of such technology."

FCC officials believe it plays an important role in improving the quality of healthcare and is currently evaluating broadband infrastructure to better understand the role it can play in healthcare delivery.

The Connect2HealthFCC Task Force is leading the project, which is tasked with charting the future of broadband and its role in healthcare. Connect2Health was established in 2014, but FCC has recently put the task force back to work to identify the areas that are lacking access to healthcare.

Specifically, the agency wants the healthcare industry to give information on how to promote effective policy and regulations; identify barriers and incentives to deploying RF-enabled healthcare tools; strengthen telehealth infrastructure; raise consumer awareness; enable development



of broadband-enabled health technologies; highlight successful telehealth projects; and engage stakeholders.

"The healthcare provider shortfall is likely to disproportionately affect rural and remote areas which are already

medically-underserved," officials said. "While broadband is not a complete answer, there are a growing number of broadband-enabled solutions that can play an important role in improving population health." ■



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Open source experts to VA: Keep VistA, it can be fixed



By advancing the EHR code base, rather than picking a commercial EHR, Veterans Affairs can modernize its proprietary software at a fraction of the cost, officials say.

JE SSICA DAVIS, Associate Editor

WHILE THE RESOUNDING OPINION IS THAT the Department of Veterans Affairs should replace the proprietary VistA with a commercial EHR, perhaps choosing Cerner as

the Defense Department did, that idea does not hold so true within the open source community.

"When you look at the big trends in the IT industry, open source is used everywhere. In fact, some of the most successful mega IT systems have a significant open source

component," said Seong Mun, CEO of the Open Source EHR Record Alliance. "We believe it's the right methodology to get to where we need to go."

VA Secretary David Shulkin, MD, is expected to decide in July.

Open source is designed as a community-based source software development and education. The source code is available to the general public for use or modification from the original design, Mun said. It's not just using another vendor's code but also a true collaboration such that organizations take the code, improve upon it and release those enhancements back into the community.

The VA established OSEHRA for that very reason, Mun said, and much of VistA's software has been in the public domain for years: VistA-based products are available around the world.

Indeed, that means OSEHRA's fate is at least tangentially related to VistA — as is that of Medsphere, which provides an open source EHR that leverages VistA called OpenVista.

Medsphere CEO Irv Lichtenwald, in fact, said Medsphere could potentially take the VistA code and evolve it at a fraction of the cost VA would spend on a commercial EHR.

"The answer probably lies in the VA turning over VistA code maintenance to an outside party with sufficient expertise," Lichtenwald

said. "That external technology partner will take the base code and continue to evolve it under VA specifications."

That is exactly what the VA would be doing with a commercial option, and essentially how large-scale software development projects work.

"Basically, this approach turns VistA into a commercial option itself," Lichtenwald said.

While EHR code source software is important, it's really about customizing the package to meet an organization's needs, Mun said, adding that the VA is merely soliciting views from the wider community with its recent RFIs to understand its options and assess available products, but that doesn't mean it has abandoned the possibility of modernizing VistA altogether at this point.

"VistA is a viable option," Mun said. "Often times we get focused on product X-Y-Z. But if you look at reports, it's more about how to manage the software product over the long term. No matter whom you buy in the industry, it's not a solution. You have to evolve whatever you buy."

While Mun and Lichtenwald favor the open source model, it's up to Shulkin and the VA to wrestle with the choice between open source and a commercial EHR.

"Open source," Mun said, "can be the way to modify for the enterprise." ■



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VA weighing multiple platforms, cloud-based options for VistA replacement



The agency filed two RFIs on April 11 asking industry leaders about commercial software-as-service options and how to modernize VistA by stitching together multiple platforms.

JE SSICA DAVIS, Associate Editor

TWO FORMAL requests for information filed by the Department of Veterans Affairs on April 11 may provide insight into the agency's planned direction

for its VistA electronic health records platform.

The first RFI asks the industry for insights on how to modernize VistA and the agency's Health Management Platform, the interface platform currently being developed by the

agency's IT department.

It suggests the VA may be looking to keep VistA at the core level while stitching together both commercial and homegrown software.

"Whereas EHR or other companies are likely to develop viable products and make them available three to six years from now, VHA needs something like the Enterprise Health Management Platform (eHMP) today," the RFI reads.

"VA would like an option to license a commercial, standards-based intelligence platform, as an existing COTS or as new software, similar to eHMP that provides robust team and process management," the RFI states.

Further, the VA is looking for a commercial health IT platform to act as a bridge between existing and future EHR systems, by which to prevent issues plaguing the current, outdated EHR.

The second RFI seeks information on a commercial software-as-service model, which means the VA may be considering a cloud-based option. For example, a fully-integrated system would allow the VA to keep its current system while creating a standardized platform and increasing storage, speed and efficiency. It would also make it significantly easier to update the system.

VA Secretary David Shulkin, MD, said he plans to make his final decision for VistA by July. ■

"Whereas EHR or other companies are likely to develop viable products and make them available three to six years from now, VHA needs something like the Enterprise Health Management Platform (eHMP) today."

— An April VA RFI asking for insights on how to modernize VistA and the agency's Enterprise Health Management Platform

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INSIGHT

ACHA threatens the value of health IT advances

What good is innovation for better care if fewer people have access to it?

OUR COVER package this month showcases some of the innovative and intriguing applications of telemedicine and other distance-based and virtual care techniques. From online “house calls” to telehealth-based EHRs, telehealth – which has for so long seemed stuck in first gear – looks to be finding some considerable forward momentum as its benefits become hard to ignore.

There’s plenty of encouraging advancements being made across healthcare these days, of course, whether its artificial intelligence for better diagnosis or a more intuitively designed patient portal.

That raises an unfortunate and vexing paradox given the current political climate: All these health IT innovations are worth considerably less when fewer people are seeking care.

The American Healthcare Act, hastily passed this past month by the U.S. House of Representatives, is problematic on many different levels.

But its original sin – as the American Medical Association protested soon after it passed the House on with one vote to spare on May 4 – is that it will “result in millions of Americans losing access to quality, affordable health insurance and those with pre-existing health conditions face the possibility of going back to the time when insurers could charge them premiums that made access to coverage out of the question.”

Which is distressing most obviously on a human level.

But also from the point of view of a community of health IT stakeholders who have been working for years to develop tools and strategies to make healthcare better, safer, more efficient and more available to the Americans who need it most.



MIKE MILIARD, Editor

What good is all that hard work and innovation if the patients who have been benefiting from it – availing themselves of healthcare services since the passage of the Affordable Care Act – are now stripped of their insurance and decide they have no option but to stay home?

The AHCA (at least in the form it’s in as of this writing) takes coverage away from tens of millions of Americans, strips guarantees for pre-existing conditions, and snips away the safety net from the most vulnerable of our citizens.

It’s a bad bill that does worse for patients. And it’s probable that even its most ardent supporters secretly agree with that. Which is why many Republicans have either ducked from their constituents by avoiding Town Halls or seem to be lying abjectly about what it means for patients. House leaders were easy to spot on TV for about a week this past month freely distorting or willfully misrepresenting its most serious provisions.

“You cannot be denied coverage if you have a preexisting condition,” said House Speaker Paul Ryan, R-Wisconsin, which is not true. His former House colleague, HHS Secretary Tom Price had his own series of un- or half-truths. \$880 billion in cuts to Medicaid will “absolutely not” result in millions losing coverage, he said. “Medicaid spending under the proposal and under the budget goes up every single year,” he added. Neither are accurate.

The AHCA passed the House, barely, and then moved on to the Senate, whose Republican members all but promised to discard it (inherently flawed and inhumane as it was) to work on its own bill. As of this writing, the status of the Senate bill is unclear, but early signs were not encouraging.

In contrast with the long genesis of the Affordable Care Act – months upon months of roundtables, hearings, debate, amendments, and scoring – the GOP drafters in the upper chamber “plan to keep the legislation closely guarded until close to the vote,” according to Politico.

That sounds a lot like what happened in the House. If the results of the bill bear a similar resemblance, that will be disappointing for many reasons.

For all the political polarization of the past decade-plus or so, one seeming consensus point – a rare bit of across-the-aisle agreement – has been the value of health information technology.

Tom Price himself has paid lip service to its worth – but with a caveat.

“The promise of health IT is so great,” he said in April, “but we must recognize that a one-size-fits-all, inflexible system for our nation’s patients and physicians simply will not work.”

“We need our physicians to be patient-facing, not computer-facing,” he added.

If Price values the patient experience that much, he should work towards legislation that enables as many of them to seek care as possible. ■



Advanced threat protection vendors and hospitals must join forces to fight cybercriminals

To fend off increasingly sophisticated cyberattacks, professionals can tap into ATP tools to more effectively share threat information.

JOHNN OHUE, Associate CIO, Penn Medicine IN THE “OLD DAYS” OF HEALTHCARE information security (only about three years ago), you could slap a firewall on your network to manage external connections and sleep well at night. But those days are long gone as the “Black Hats” have become more sophisticated, more motivated and more resourceful.

The Department of Homeland Security, in fact, recently indicated that “the healthcare and public health sector will continue to

be one of the primary targets for malicious cyber actors.”

As long as the value of patient information and proprietary data remains high on the black market, healthcare organizations will be forced to invest in information security technologies in an attempt to keep pace with hackers.

One such investment that must be considered is advanced threat protection technologies.

Here’s why: The more advanced ATP companies (and there are several) leverage their global telemetry capabilities to more rapidly recognize threats from all over the globe – and the more that hospitals deploy these tools, the better able healthcare as an industry will be to combine intelligence and help put a finer point

on clear and present risks.

The Holy Grail in information security is to shift to a proactive model that uses predictive tools to identify threats early and before they can impact an organization’s systems. Because this approach is incredibly resource intensive and expensive, most organizations have not been able to completely shift to this model. Just short of that is the ability to dramatically reduce the time to identify, prioritize or eliminate threats. This can be achieved with the capabilities of an advanced threat protection tool.

When I think of advanced threat protection, I immediately think about threat landscapes that include endpoint devices.

Before ATP was available, organizations needed different tools running on different

PROTECTION SEE PAGE 17

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Want more from your EHR investment? Act like a software company

Hospitals spend so much on EHR platforms that it makes them veritable software shops, whether they like it or not. That reality creates an opportunity to deliver a better user experience for clinicians, staff and patients.

HOSPITALS SPEND tens, even hundreds of millions of dollars on electronic health record implementations. The investment can be so substantial as to change the nature of the organization.

If \$100 million sounds like an exorbitant or even unrealistic ticket for an EHR platform, consider that Kaiser Permanente, Mayo Clinic and Partners HealthCare have publicly acknowledged spending an order of magnitude more than that.

Other hospitals, such as Scripps Health, Lehigh Valley Health Network, Lahey Hospital & Medical Center and Lifespan revealed EHR budgets bigger than \$100 million. And that's just to rattle off a fistful.

"The day you made that investment you became a software vendor," said David Chou, CIO of Children's Mercy Hospital Kansas City. "We all need to think like software companies because we are both hospital and software shop."

EHR FRAME OF MIND

Thinking like a software vendor — if not technically becoming one of sorts as some hospitals are, in fact, doing today — starts with considering clinicians, administrators, executives and, really, all employees to be actual customers and then serving them as such.

When Microsoft is working on a new operating system, for instance, it gives early versions to customers willing to test the software and offer feedback that Microsoft then incorporates into subsequent incarnations, and it keeps that circle spinning through the product's development lifecycle.

The secret sauce: iterative development.

That's software-speak, but it also happens in medicine with new devices, new drugs, even new standards of care, according to Adrian Zai, MD, the clinical director of population informatics at Massachusetts General Hospital's Laboratory of Computer Science.

"Iterative technology development," Zai said. "It's the exact same model as medicine."

Indeed, Leora Horwitz, MD brings a medical perspective to innovation at NYU Langone Medical Center, where she directs its Center for Healthcare Innovation and Delivery Science.

Horwitz recommended that technologists pick the user-centered interventions that can have the biggest impact and incorporate front-line input, then offer evidence to clinicians and other users to prove that the software is working.

"Be sure you actually know what the problem is before you rush off and try to solve it," Horwitz explained.

She recounted a project to create a dashboard showing how many patients were discharged by noon every day as a shiny new object, just one entirely missing the point that better and more useful data to display would be

the urgently needed information about emergency department wait times and exactly which beds are open right now.

"Expect things to go wrong," Horwitz cautioned. "Things go wrong all the time."

That's a fair point. Not every hospital is exactly equipped to mimic a software company,

INNOVATION PULSE



TOM SULLIVAN



David Chou

according to HIMSS Analytics Global Vice President John Daniels.

"But hospitals do have to provide some level of support for those EHR users, and that takes a new thought process and resources," Daniels said. "I have even seen some create their own capabilities, build in-house software born out of a specific need they have — but couldn't find on the market or didn't want to pay for — and then turn around and monetize it through a business strategy."

Example: MGH's Zai has been building software products since 2000, including working on a system that his previous employer Partners HealthCare ultimately brought to market and Mass General licensed in 2012.

AMAZON, UBER AND YOU

Adopting a software vendor's mindset is actually not about technology for technology's sake, and, instead, hospitals should focus more on what users need than simply creating slick new systems.

"High-value technology interventions," NYU

Langone's Horwitz said, "will become sticky and last for years."

That's the hard part. IT, however, is well-suited to spearhead the metamorphosis because tech shops are in the middle of the entire hospital ecosystem enough to understand how the data flows and how it can work, better than any other department with not just the information management but also security and senior leadership that are going to be critical in establishing a software vendor mindset.

Chou of Children's Mercy recommended taking into account how people actually tap non-health technologies, such as launching Lyft and Uber on a smartphone at the same time to find the best ride for the lowest price available at a precise point in time.

"IT has to provide a great experience for doctors and all other users. Think about how Amazon makes you change your behavior; think about how Uber changes your behavior," he said. "From a healthcare perspective: How do you create that experience so that people come to you instead of a competitor?" ■

PROTECTION CONTINUED FROM PAGE 16

platforms from different vendors. Correlating threat information across these disparate systems took time and numerous resources. With a centralized ATP capability, however, an organization can manage these threats on a single pane of glass across the enterprise environment. This technology enables information security professionals to focus on prevention and remediation work rather than lengthy identification investigations. And that frees information security professionals to focus on the threats themselves.

These advanced tools can help organizations be prepared prior to a potential attack or can help them to see if they are experiencing an attack that might otherwise go undiscovered — all based on the intelligence from the ATP capabilities.

On any given day in a healthcare IT shop, the information security professionals are getting deluged with attack information.

This attack information can be coming from the firewall, the antivirus software, web filters and other sources. The ability to identify which attacks are the most dangerous and require the most immediate and

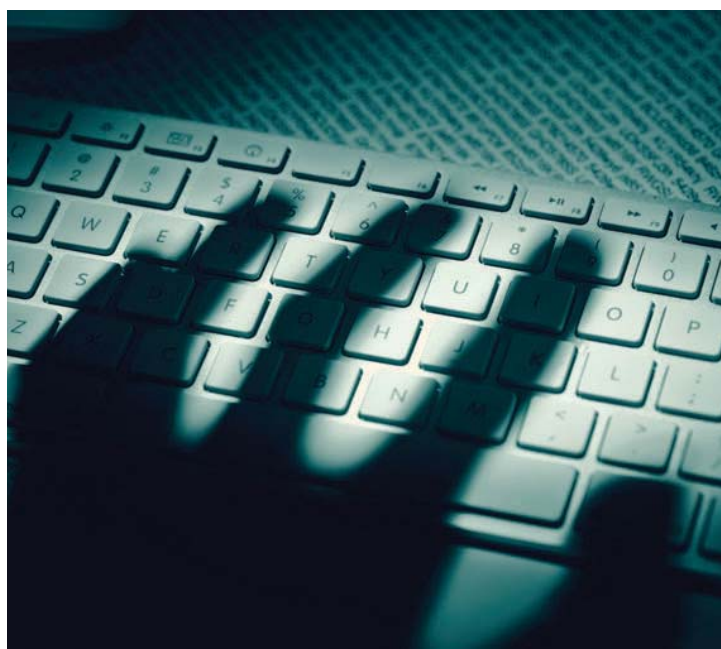
acute attention is key to avoiding a costly breach or incident.

The top ATP products have intelligent engines that can digest these information sources and quickly provide guidance on the most dangerous events. This information is incredibly useful for a healthcare organization that has finite internal-information-security resources.

If and when an advanced security attack is discovered, organizations can use ATP to quickly identify where and when the threat has occurred within their enterprise. Furthermore, organizations can use this capability to quarantine or isolate devices, email or network components to contain the spread of the attack.

Lastly, the tools can be used to remotely remediate the results of the attack, blacklist the threat from occurring again and also restore endpoints that were previously quarantined. Without an ATP capability, this is incredibly time-consuming and invasive.

Yes, deploying ATP tools will help protect your organization — and as providers and security vendors band together and share threat information, the technologies can also be used for the greater good. ■



Doctors demand extreme EHR makeover ... right now

Electronic health record vendors are making the software more user-friendly, but not nearly fast enough.

BERNIE MONEGAIN, *Editor-at-Large*

JUST ABOUT EVERY WEEK OR SO there's a new report chronicling doctors' frustrations with electronic health records. Drill down a bit, and the source of discontent becomes clear: poor usability, clunky interfaces, ineffective search and too many clicks.

So what would actually make doctors like their EHR?

"They need a tremendous makeover with lots of clinical input to make it easy to do not only the right thing but [also] the things you do all the time," said Robert Wachter, MD, a professor of medicine at the University of California, San Francisco.

INCREMENTAL IMPROVEMENTS NEEDED NOW

Wachter said that a makeover would include injecting next-generation EHRs with the ability to bolt on new applications that solve specific problems, including an advanced search function, easier copy-and-paste functionality as well as customizable views.

But Charles Webster, MD, said what doctors want most is an EHR that fits with their workflow, not disrupts it.

Webster is president of EHR Workflow, and his response is on point with widespread aggravations many physicians are expressing. What they really want, it seems, is efficient workflow — that enables them to spend less time wrangling with the software and more time focusing on patients.

"The workflow of even workflow-oblivious systems can be tweaked and made marginally better," Webster said. "However, at some point, the effort and cost of straining toward more automatic, transparent and flexible workflow within systems not specifically designed to make that possible, will be greater than the resulting improvements."

Michael Hodgkins, MD, who is CMIO at the American Medical Association,



said EHRs must stop adding to the stress of burnt-out physicians and make the so-called "desk work" spent documenting in the EHRs after the workday considerably less burdensome.

Physicians want to provide high-quality care, but tending to the EHR takes up a disproportionate amount of their time, Hodgkins said.

LONG-TERM, IT'S ABOUT INTEROPERABILITY

While nothing short of a time machine would make today's EHRs better, Webster said, vendors are improving the software today, albeit slowly.

Wachter said the Epic EHR he uses at UCSF now has moderately good interoperability with other Epic systems in that notes can be automatically imported and the software offers what he called modest decision support for conditions such as sepsis.

Indeed, EHR makers Allscripts, Cerner and Epic have been building third-party developer programs that use APIs that enable software to run on their platforms and use their data.

Wachter said that EHRs should one day take on doctors' busy work so they can concentrate on medicine and patients.

"It would learn from the user experience and customize views and actions to anticipate your moves." ■



With EHR-based sepsis detection, Epic and Cerner have different approaches

KLAS report shows that while Cerner's analytics is easy to turn on, Epic's can require a more cumbersome installation.

MIKE MILIARD, *Editor*

THE RECENT IMPROVEMENT IN HOSPITAL surveillance technology for sepsis detection is leading to longer lives, according to a new report from KLAS that examined monitoring tools from blue-chip EHR vendors and smaller standalone products.

About 69 percent of the 95 providers polled say the IT systems have led to improved patient safety outcomes, according to KLAS, with some reporting a 50 percent drop in mortality. Other benefits included lower treatment costs, shorter

lengths of stay and fewer readmissions. Still, 23 percent said it was too early in their rollout of the surveillance and treatment systems to have reliably reportable results.

Perhaps unsurprisingly, Epic and Cerner together represent the largest customer base for sepsis technology — with more clients than all other vendors combined.

Customers of both EHR giants say their surveillance tools have led to improved patient outcomes, including mortality reductions. But KLAS noted that the two vendors have quite different strategies for helping hospitals detect septic and pre-septic patients.

Cerner's "always-on algorithm and related alerting are easily deployed and available for free" to its customers, according to the report, while an advanced analytics and dashboard module are available for a fee.

SEPSIS SEE PAGE 20

Medsphere moves inpatient and ambulatory EHRs to the cloud



Medsphere Systems Corporation is branching into cloud-based IT by implementing a software-as-a-service version of its OpenVista electronic health record. Launched at both the Behavioral Center of Michigan and Samaritan Behavioral Center near Detroit, the new SaaS version of OpenVista will offer those facilities — and

soon other client sites — greater accessibility while also saving on the cost of onsite data centers. The new cloud initiative also includes physician practices using Medsphere's ChartLogic division, now in the process of migrating cloud-based components — ChartLogic EMR, ChartLogic PM and the Connect Patient portal — to a browser-based platform. Medsphere's OpenVista is a commercialized version of the Vista EHR developed by the U.S. Department of Veterans Affairs. It uses open source code, available via the Freedom of Information Act, enabling it to be deployed relatively quickly and affordably.

Maury Regional Health consolidates with Cerner cloud-based EHR



Maury Regional Health in Columbia, Tennessee, will roll out an EHR system from Cerner across three hospitals and more than 25 outpatient locations. It replaces the existing Meditech EHR in its hospitals and NextGen in the ambulatory locations with Cerner Millennium. The Cerner EHR and integrated revenue cycle management solutions combine clinical and financial

information within a single platform. Through its remote-hosting offering, Cerner will manage and support Maury Regional's EHR and deliver clinical data from its Kansas City-based data center. The provider will also adopt Cerner Transaction Services. The services provide recommended practice workflows across Cerner revenue cycle management solutions to prevent redundant tasks and manage manual intervention. "We are excited to unveil Cerner's integrated health IT platform that will support our care teams across the continuum and unleash the potential of sophisticated functionality," Maury Regional Health CEO Alan Watson said.

MidMichigan goes live with \$55 million Epic EHR



MidMichigan Health went live on April 1 with an Epic Systems EHR connecting five of its six medical centers as well as doctors' offices and outpatient care facilities. Affiliated with the University of Michigan, MidMichigan Health said the project costs \$55 million. Officials note the new EHR would replace multiple vendor systems that required maintain-

ing several custom, but now-unsustainable, interfaces. Registration, scheduling and billing would be on the same Epic platform. The new EHR would also enable patients to things electronically, such as schedule appointments online, self-check-in from home or at on-site kiosks, take advantage of virtual care options such as telemedicine and e-visits, and view and pay all MidMichigan Health bills from one account. "We've reviewed and incorporated best practices into the design of the system and have no doubt this EMR will give our patients all that they deserve and more," MidMichigan Health CIO Dan Waltz said. (150)



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Robert Green, MD, MPH, Professor of Medicine Harvard, Director, Genomes2People Research Program

Genetic Testing in Healthy Populations

SEPSIS CONTINUED FROM PAGE 18

Epic's Best Practice Alerts, meanwhile, are made available free to customers. However, KLAS reports that those providers that are live or in-process with Epic's sepsis functionality say "implementing and integrating it into current workflows requires significant in-house effort."

Other big-name EHR vendors have a limited market share: MEDITECH recently developed a sepsis tool for its 6.x platform, but KLAS says awareness about it is low. Allscripts doesn't have the sepsis-specific technology but will help its clients customize their systems with other tools.

Among the offerings that could help do that are specialty infection control and surveillance modules from vendors such as Wolters Kluwer and VigiLanz. The report quotes one CMIO's high marks for

the former, whose POC Advisor tool "pulls data out of our EHR to an engine with all of these rules and then shoots alerts to mobile devices," he said. "We are giving needed information to providers at the point of care no matter where they are," he said. "We get more of a real-time perspective versus the retrospective chart reviews that we would get three to six months later."

Other less common approaches include deploying analytics from vendors such as Health Catalyst and LogicStream. Beyond real-time alerting, those companies "leverage their analytics to provide retrospective views of clinical effectiveness and spur effective end-user change management," according to KLAS. "Customers appreciate Health Catalyst's strong partnership and focus on customer success, while LogicStream clients extol the flexibility and usefulness of their reports."

Still, the report shows that, all things being equal, hospitals would prefer to use their EHR vendor when possible, noting that Epic and Cerner are both seen as relatively more competitive on infection control than their competitors. Meanwhile, "most traditional market mainstays in infection control and surveillance have not leveraged their market presence or technology to help more than a few customers combat sepsis, and few providers look to other third-party vendors."

In addition to providers with surveillance tools in place, KLAS also polled more than 100 providers who had yet to install sepsis-detection technology: 53 percent are considering either a new EHR module or in-house developed add-on using their existing platform; 19 percent are considering third-party tech and 28 percent aren't yet in the market. ■

Epic and Cerner together represent the largest customer base for sepsis technology — with more clients than all other vendors combined.

Mass General's secret to population health: workflow, workflow, workflow

A IT-optimized changes created big improvements in chronic care management, hospital executive says.

MIKE MILIARD, Editor

A BETTER UNDERSTANDING OF HOW information technology can optimize workflow, results in improved use of data analytics and decision support, and leads to better patient outcomes, according to Adrian Zai, MD, clinical director of population informatics at Massachusetts General Hospital.

Speaking at the HIMSS Pop Health Forum in April, Zai said technology is tightly wound with actual workflow, and that close attention should be paid to how it actually interfaces with clinical processes. But it's important to ensure IT works in the service of good workflow, not vice-versa.

"We were able to engage non-MD staff, and their role has really risen. Nurses are now members of the care team, and the physicians are completely dependent on them."

— Adrian Zai, MD, clinical director of population informatics at Massachusetts General Hospital

"You need to develop new protocols and workflows before you talk to vendors," said Zai. "Technology should be there to wrap

around workflow you came up with."

Zai presented a series of case studies from Mass General that showed how rethinking workflows and IT capabilities led to improvements in chronic care management and population health.

One focused on two different strategies for managing chronic disease: with and without central coordination.

Perhaps unsurprisingly, the program that depended heavily on IT to provide coordination through a simple, centralized interface significantly increased quality measures for patients with diabetes, cardiovascular disease and hypertension over a six-month period. The technology enabled centralized population health coordinators to work closely with medical practices and led to improved outcome measures.

"It's important to have (targeted) decision support built into your system before you present it to your physicians," he said. "The idea here is to have physicians practicing at the top of their licenses, so try to take that noise away by improving CDS to reflect the true standard of care" while moving as much coordination activity to the back office as possible.

"Now that we've learned these lessons, we've adopted these systems and have care coordination everywhere," said Zai. "It all makes sense."

A second Mass General initiative developed a collaborative care model to manage patients with diabetes. It put together a multidisciplinary care team comprising primary care doctors, specialists, behavioral health professionals and others.

The project depended heavily on incorporating evidence-based strategies into the care process and made full use of practice-based teams to facilitate staff and patient engagement to improve numbers for those patients not at goal.

One benefit was a greater clout for nurses and other clinical staff.

"We were able to engage non-MD staff, and their role has really risen," said Zai.



"Nurses are now members of the care team, and the physicians are completely dependent on them."

Even better, the number of patients with high AIC counts fell dramatically. But it all depended on well-considered IT strategies to link e-prescribing with patient education and lifestyle change training, as well as improved communication and documentation across the multidisciplinary care team.

A third project at Mass General involved the use of patient navigators to enable comprehensive cancer screening. Zai pointed out that such assistance can improve rates of cancer screening in vulnerable populations, but most cancer navigator programs are located in community health centers and focus on screening for a single cancer. Many patients may be overdue for more than one screening test, he said.

To build a better patient navigation program that can help patients obtain comprehensive cancer screenings within a large academic primary care network, the initiative leveraged population health IT to identify high-risk patients and improve patient-centered navigation.

By ensuring the technology enabled the hoped-for workflow, Mass General was indeed able to increase screening rates in

that patient cohort, while better empowering navigators to decrease disparities in care and improve outcomes.

Zai said that tools that can help address equity of care should be built into population health management systems, such as algorithms to better identify vulnerable patients and improve referral and tracking of those at highest risk.

For those health systems looking to explore similar population health projects, he said that close attention to detail was essential.

"It's really important to understand that when you drive innovation, you can do it in a kind of ad hoc way without scientific rigor to do it really quickly," said Zai. "But there are potholes along the way: If you take that route, you may be measuring differences that aren't there. It's really important to get it right — to get your study, your controls, all of that correct."

There's also nothing wrong with doing quick assay cycles, he said, "but pick your measures carefully. Having a control is always a good idea. And having many little pilot initiatives that start with small populations, just to test the concept of what you want to do before you steer the ship in that direction, is really important. That will save a lot of time and money." ■

An EHR optimization that actually wins over physicians?

Baystate Health takes aim at click fatigue with mobile-optimized workflow tool.

MIKE MILLIARD, Editor

LIKE ALL HEALTHCARE CIOs, Joel Vengco, chief information officer at Springfield, Massachusetts-based Baystate Health, has no shortage of pressing projects competing for his attention.

Whether it's working to drive operational efficiencies across the \$2.5 billion health system, improving the usability of an array of applications for clinical end users, spearheading community engagement and patient outreach for population health management or working on analytics and "knowledge management," it all makes for a busy workday.

That's all in addition to the imperative of constant innovation: Beyond just being Baystate's CIO, Vengco is the founder of TechSpring, an innovation center based at the health system where IT vendors are given secure access to real patient data to speed the development of new technologies.

"So there are lots of things to focus on as a CIO — notwithstanding all the security issues we've got to focus on too," he said.

But even with so much going on across Baystate — five hospitals, an academic medical center, 90 medical groups, a health plan with about 250,000 members, "a Next Gen ACO that we manage, and we're getting into a Medicaid ACO" — Vengco has generally felt pretty on top of things.

Except, until recently, with one important initiative.

"The big project we've still yet to quite crack the nut on is: How do you optimize the EHR? How do you optimize the workflow for a clinician?" he said.

Work for providers, on a day-to-day basis, just gets more burdensome, said Vengco. "They've got to document, they've got to bill — and then they have to see the patient at some point. And then that 15-minute visit becomes a 20- or 30-minute visit because you're doing all this other work."

So Vengco posed a tall task to his IT team: Optimize the electronic health record and improve workflow for Baystate's clinicians. However, do it, crucially, in a way where the clinicians take to the new approach voluntarily because it works better for them, rather than having to be told to do so.

"That was the challenge," he said. "To leverage our current legacy EHR, Cerner, but then really enhance it without ripping and replacing it."

For help, he turned to Palo Alto, California-based Praxify, whose recently unveiled MIRA app can augment existing EHRs, integrating with legacy systems to improve workflow.

Touted as being designed by and for physicians, the app offers capabilities such as "glanceable" interfaces that can surface key patient data for faster documentation and review, and dictation tools that enable voice-activated order entry.

The app gives clinicians the "data and the functionality they need within one or two touches or clicks," said Vengco. "In our case, it's more of a mobile design, using the heuristics of swiping and all the mobile capabilities you're using in your day to day life."

To Praxify, he also had some clear instructions:



"We can't spend two years doing this; we can't spend millions of dollars putting you guys on top of Cerner. That doesn't create value. What creates value is doing it in three to five months and actually getting adoption by the providers without me mandating use," said Vengco.

"That challenge, happy to say, has been met," he said.

Praxify connects with Cerner, using APIs, in just two or three months, he said. "Now we're going full force with a production deployment to our health system. And some of the preliminary feedback is that providers, who are some of the hardest customers, are saying they definitely want to use this," he said.

"We had a hospitalist, probably one of the most vocal critics of our EHR, initially said she wasn't going to use Praxify," said Vengco. "She said it was just another technology burden."

Not long after trying it, she returned to the

CIO with glowing reviews. "She said, 'This is amazing. It's incredible.'"

Across Baystate, "we've seen efficiencies of, on average, 40 percent if you compare it to the way the EHR was previously being used," said Vengco. "They love the fact that they can get it on any mobile device. They love that, instead of taking five or seven or 10 clicks, it's a swipe or a touch. It's efficient and fast. They love the design of it. They love that they can dictate."

Because it connects directly to the EHR, there's no concern about a loss of data. "And the design is intuitive enough that we don't have to do five or seven hours of training — it's a 20-minute discussion, and they're off and running," he said.

The point, said Vengco, is that "I want them to adopt it themselves. If I give it to them and it goes viral, and they take to it, that means it's intuitive, it's optimized, and that makes me happy because the providers are happy." ■

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Siemens Healthineers buys Medicalis to bolster population health portfolio

The acquired clinical decision support and workflow tools can drive value-based initiatives by helping clients assess the appropriateness of certain imaging tests.

MIKE MILIARD, Editor

SIEMENS HEALTHINEERS ANNOUNCED THAT it is acquiring San Francisco-based Medicalis Corporation to expand the tools it can offer hospital and health systems working to manage population health initiatives and move toward value-based care.

Medicalis develops imaging decision support, workflow and referral management technologies. Siemens officials said their addition to its portfolio will help improve its clients' ability to tackle population health initiatives at cross-enterprise and departmental levels.

Specifically, Siemens said Medicalis' tools will help providers comply with the Protecting Access to Medicare Act of 2014 — slated to go into effect on Jan. 1, 2018 — which mandates consultation at the point of order to assess the appropriateness of certain

advanced imaging tests.

Beyond compliance, officials said clinicians can use the software to orchestrate and standardize imaging workflow, enabling evidence-based best practices.

"The acquisition of Medicalis will allow us to offer healthcare providers a powerful solution to define, implement, monitor and evolve their own standard of care for their diagnostic service line," says Robert Taylor, head of digital services population health management at Siemens Healthineers.

The new tools, he said, can "remove the variability from key high-impact disease states, to create standardized diagnostic pathways, which enhance outcomes, control costs, and when combined with intelligent referral management, improve the patient experience overall." ■



IBM teams with Continuum Analytics to build data science platform for machine learning

Big Blue will make Anaconda available on its PowerAI software for developers creating cognitive computing tools.

BERNIE MONEGAIN, Editor-at-Large

IBM ANNOUNCED THAT IT IS WORKING WITH Austin, Texas-based Continuum Analytics to offer the Anaconda open data science platform on its cognitive systems.

Both Intel and Microsoft have also incorporated Anaconda into their machine learning and deep learning tools and, in fact, the Python-powered Anaconda platform counts more than 16 million downloads to date.

Anaconda is considered an important capability for developers building cognitive solutions, according to IBM executives. It is now available on IBM's machine learning and deep learning platforms.

"Anaconda on IBM Cognitive Systems empowers developers and data scientists to build and deploy deep learning applications that are ready to scale," IBM senior vice president Bob Picciano said in a statement.

Developers will also gain access to the

libraries in IBM's PowerAI Platform for exploration and deployment in Anaconda Enterprise, added Travis Oliphant, Continuum Analytics co-founder and chief data scientist.

"Anaconda on IBM Cognitive Systems empowers developers and data scientists to build and deploy deep learning applications that are ready to scale."

— IBM senior vice president Bob Picciano

IBM developed PowerAI to speed enterprise adoption of the open-source machine and deep learning frameworks used to build cognitive applications.

Anaconda is designed to help businesses across industries, including healthcare, identify patterns in data to uncover critical insights and extract predictive models, the companies said. ■

Cerner adds Fusionetics benchmarking to platform



Fusionetics, a health performance platform for athletes, will collaborate with Cerner to integrate Fusionetics' assessment programming with Cerner's HealtheAthlete, the companies announced on May 1. The web-based HealtheAthlete platform provides in-depth management of athletes' health and treatment for sports

medicine staff, officials said. The platform also manages and shares athlete health-related data with the training staff. Fusionetics' tools help athletes to better understand, monitor and improve performance. Officials said the collaboration would provide athletes and sports organizations access to the company's benchmarking and analytics while providing customized training programs and treatments through HealtheAthlete. The goal of our collaboration is to support people to move better, perform greater and recover faster by using modern technology," Fusionetics COO Ben Tucker said.

EHR vendor Modernizing Medicine raises \$231M



Modernizing Medicine, maker of mobile-based EHR for specialists, has raised \$231 million from global private equity firm Warburg Pincus. "We expect this infusion of capital from Warburg Pincus to be instrumental in advancing our mission to transform how healthcare information is created, consumed and utilized to increase

efficiency and improve outcomes," Daniel Cane, CEO and co-founder of Modernizing Medicine, said. Modernizing Medicine has distinguished itself from other mobile EHR systems, and from legacy EHRs, most notably in that it focuses on catering to the specific needs of medical specialists including dermatologists, ophthalmologists, orthopedists, otolaryngologists, gastroenterologists, urologists, and plastic surgeons. The company hired practicing physicians to work with engineers to build the technology.

Not so fast, vendors, fixing VistA is not off the table



While the industry is waiting for the Department of Veterans Affairs to pick an off-the-shelf EHR to replace its legacy VistA electronic health record, the VA's Acting Under Secretary for Health, Poonam Alagh, said fixing the maligne platform isn't being ruled out yet. "It's crucial to modernize the system," she said. Technology and modernization are at

the heart of the VA's goals, evidenced by the recent launch of the Access to Care site that provides veterans transparency on wait times and clinical care quality. From keeping VistA and shifting to open source, to cannibalizing VistA and moving to Cerner, there are many viable options for the outdated system. In the healthcare industry, however, many expect Cerner will get the contract, especially in the wake of its deal to modernize the Department of Defense's system. The VA is expected to make its decision on whether to seek an off-the-shelf product in July.

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Hospital cuts costly falls by 39 percent thanks to predictive analytics technology

El Camino Hospital linked EHR, bed alarm and nurse call light data to analytics to identify patients at high risk of falls.

BILL SIWICKI, Managing Editor

THE 420-BED EL CAMINO HOSPITAL in California has seen a dramatic turnaround with its hospital fall rates, and advanced predictive analytics is getting a lot of the credit.

"We were having a lot of difficulty being able to get our falls under control and at the level we wanted them, to be in the top quartile in the nation. It seemed like a lot of the efforts we tried were not getting us to where we wanted to be," said Chief Nursing Officer Cheryl Reinking. "We had heard through different connections in Silicon Valley about this company Qventus that was able to do predictive analytics. They had done some work with us, in the operating room."

Reinking helped spearhead the effort to transform the organization's fall prevention program using prescriptive analytics to ensure patients were being proactively and optimally managed. And the successful effort involved going beyond traditional "predictive analytics" into what Reinking

calls "action-focused insights" that allow providers to immediately respond and impact patient safety.

In the beginning, Reinking said El Camino staff and Qventus staff sat down for formal talks to go over the details of their problem.

"They were able to help us come up with a methodology where we could in real-time know and understand which patients are at higher risk for falls so that we could focus our efforts clinically in real-time on those patients," she said. "We know which patients through screening at admission are at high risk for falls. We put that in their medical records, and we make sure they have yellow slippers and yellow bands and a sign on their door, so clinicians know they are at high risk of falls. And that is a lot of patients in the hospital."

Qventus pulls data from El Camino's electronic health record and looks for patients at high risk, and then looks at nurse call light data and bed alarm data.

"So this patient sets off the bed alarm

the most, uses the call light the most; Qventus does machine learning in the background, and once certain triggers are met, they send an alert to the nurse through Vocera with a report saying your patient in room X is at high risk for a fall," Reinking said. "That tells the nurse they need to go look at that patient to see if there is something else they need to do."

This is going beyond predictive analytics, Reinking said, to action-focused insights or

prescriptive analytics.

"When certain data elements line up, you take action in the moment so that your prediction does not come true," she said. "You

can change the outcome in the moment. So if a patient is predicted to fall, let's take action now so that a patient does not actually fall."

Nearly 1 million patients in the United States fall in the hospital each year, according to the Agency for Healthcare Research and Quality. Further, patients who sustain an injury from a fall add 6.3 days to a hospital stay and cost an additional \$14,000, according to the Joint Commission Center for Transforming Healthcare.

Through analytics, El Camino's care team was able to predict exactly which patients were at risk for an imminent fall and alerted nurses and case managers of at-risk patients in real-time, which was one factor that helped result in a 39 percent reduction in falls within six months, Reinking said.

"It was this effort with the use of predictive analytics, but many other things, too," she said. "We also were working on initiatives like making sure the risk assessments were really appropriate for our patients when they first came in. We also did a lot of training on the bed alarms. We got more chair alarms in place. We also did a lot of training on bathroom falls, understanding patients fall from a chair and the bathroom more than from a bed. Those were some of the other actions that were occurring during this time along with the work that was occurring with Qventus." ■



Cheryl Reinking, RN

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Artificial intelligence spending to surge in 2017, hit \$46 billion by 2020

Quality management and diagnosis and treatment systems are among top use cases for AI and cognitive computing, IDC report says.

BERNIE MONEGAIN, *Editor-at-Large*

IDC PREDICTED THAT WORLDWIDE spending on artificial intelligence and cognitive computing technologies would leap by 60 percent to \$12.5 billion this year — and then escalate to \$46 billion by 2020.

The IT consultancy's estimates span several vertical industries, healthcare included, and suggest that businesses and consumers will spend the most on cognitive applications, AI platforms, cognitive-related services, as well as dedicated storage and servers, respectively.

IDC distinguishes between cognitive applications and platforms as such: apps contain features and functionalities capable of learning and discovery to ultimately make recommendations, while platforms provide tools for accessing and analyzing both structured and unstructured data.

"Intelligent applications based on cognitive computing, artificial intelligence and deep learning are the next wave of technology transforming how consumers and enterprises work, learn and play," IDC Research Director David Schubmehl said.

"Intelligent applications based on cognitive computing, artificial intelligence and deep learning are the next wave of technology transforming how consumers and enterprises work, learn and play."

— IDC Research Director
David Schubmehl

Healthcare IT News and HIMSS Analytics published survey results just last week that found approximately one-third of hospitals intend to deploy AI technologies within two years, and more than half plan to do so within five years.

Healthcare professionals expect that AI will have the greatest immediate impact on population health management programs,

patient diagnosis, clinical decision support and precision medicine.

IDC's report the Worldwide Semiannual Cognitive/Artificial Intelligence Systems Spending Guide, which looks at banking, retail and manufacturing in addition to

healthcare, ranks the top AI uses cases for 2017 as quality management investigation and recommendation systems, diagnosis and treatment systems, automated customer service agents, automated threat intelligence and prevention systems, and fraud

analysis tools.

"Cognitive and AI systems are quickly becoming a key part of IT infrastructure, and all enterprises need to understand and plan for the adoption and use of these technologies," Schubmehl said. ■



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HHS cybersecurity center to help healthcare organizations fight emerging cyberthreats

National Cybersecurity and Communications Integration Center will educate healthcare organizations and patients about risks associated with mobile data and apps.

JE SSICA DAVIS, Associate Editor

THE DEPARTMENT OF HEALTH and Human Service is planning to launch a National Cybersecurity and Communications Integration Center by June, HHS Chief Information Security Officer Chris Wlaschin said during an ACT-IAC Mobile Health Forum panel in Washington on April 20.

The center will educate healthcare organizations and patients about the risks of using mobile data and apps, according to Federal News Radio. The center will be modeled after the Homeland Security Department's NCCIC — but with a focus on healthcare.

Initial operating capability should be achieved by June.

“We’ve provided grants to the National Health Information Sharing and Analysis Center to encourage a broad participation,” Wlaschin said. One that will not just try to reduce the noise but “analyze those and deliver best practices and the two or three things that a small provider, a small office, a doctor in a box can do to protect his patient’s privacy and information security around those systems.”

The collaborative partnership is a logical step, as many healthcare organizations lack consistent tools to identify and mitigate cyberthreats, a July Ponemon Institute report found. HHS said the health NCCIC would let the agency collaborate with developers to improve security on patient data.

The Centers for Medicare and Medicaid Services is also considering a similar concept. Mark Scrimshire, CMS’s entrepreneur in residence told Federal News Radio. ■



CIOs have no clue how many cloud apps their employees use

Chief information officers typically underestimate the number of apps in use by about 900 or so, creating opportunities for lurking hackers.

TOM SULLIVAN, Editor-in-Chief

JUST AS INFORMATION TECHNOLOGY shops are increasingly turning to hosted applications and services, so, too, are hackers and criminals eyeing the cloud as fertile territory for conducting cyberattacks.

That’s according to Symantec’s new Internet Security Threat Report. Making matters even thornier is how little grasp IT executives have on cloud usage among employees.

“At the end of 2016, the average enterprise organization was using 928 cloud apps, up from 841 earlier in the year,” Symantec noted in the report. “However, most CIOs think their organizations only use around 30 or 40 cloud apps.”

Symantec’s research included many industries, healthcare among those, and it holds that as more and more hospital employees adopt cloud applications, it becomes difficult to stay on top of unknown risky user behaviors.

The security vendor’s Symantec Cloud-SOC, in fact, determined that a quarter of all the information employees place in the cloud without IT knowing about it gets “broadly shared” among users, thereby making it more vulnerable to exposure.

Symantec’s analysis is based on investigating more than 1.3 billion emails and 176 million documents spanning 20,000 cloud apps.

The vendor also found that Microsoft’s Office 365, Google and Dropbox were the most commonly used cloud apps among enterprises during 2016. Even though those popular services are widely considered to be secure, Symantec noted that sticking with just those does not mitigate all risk and that CIOs should, instead, enforce data governance policies and then monitor how all cloud data is used.

That will only get more important as shadow IT continues gaining traction and employees increasingly adopt cloud technologies without keeping information technology shops in the loop — and as cybercriminals find new ways to launch attacks that capitalize on cloud vulnerabilities.

In its report, Symantec pointed to high-profile security incidents last year, notably the Mirai botnet denial of service against Dyn that crippled Twitter, Netflix, Spotify and others as well as attacks against cloud-based Mongo DB databases, as attacks that signal what the future might hold.

“While cloud attacks are still in their infancy,” Symantec wrote, “2016 saw the first widespread outage of cloud services as a result of a denial of service (DoS) campaign, serving as a warning for how susceptible cloud services are to malicious attack.” ■

ONC posts interoperability framework as providers’ approach vary



The Office of the National Coordinator for Health IT is requesting public comment on its proposed measurement framework for implementing interoperability standards. The ability to measure and report on the use of data exchange standards varies widely across healthcare, and ONC says the new framework could help technology developers, HIE

organizations and providers adopt a set of uniform, agreed-upon measures to assess progress on interoperability. Steven Posnack, ONC’s director of the Office of Standards and Technology, said the key question is, “Did the people who developed the health IT in use implement the same standards in the same way to solve the same problem?” This issue is at the core of ONC’s proposed measurement framework. ONC is accepting public comment on the proposed Interoperability Standards Measurement Framework until July 31.

CardioNet slammed with \$2.5 million fine for stolen laptop



Wireless health services provider CardioNet has settled with the Department of Health and Human Services for \$2.5 million stemming from a 2012 HIPAA violation, the agency announced last month. The settlement marks the first for a wireless health provider. CardioNet reported to HHS’ Office of Civil Rights in January 2012 that an employee’s laptop,

containing data of 1,391 patients, was stolen from a parked vehicle outside of the employee’s home. The following investigation found CardioNet had insufficient risk analysis and management processes, and its HIPAA Security Rule policies and procedures were in draft form and not implemented. Further, the provider was unable to show final policies and procedures for implementing safeguards for ePHI — including those found on mobile devices. As part of the settlement, CardioNet will also implement a corrective action plan.

Sequoia Project, DirectTrust tout interoperability surge



Two major interoperability groups, Sequoia Project and DirectTrust, are exchanging more health records and connecting more provider sites than ever, the companies announced last month. The Sequoia Project — whose members include Carequality, eHealth Exchange, and RSNA Image Share Validation — reported that the number

of health organizations participating in its initiatives, the size of geographic reach and the volume of data exchanged are all on the rise. The Carequality Interoperability Framework is deployed at more than 19,000 clinics, 800 hospitals and 250,000 providers. Meanwhile, DirectTrust announced that it posted steady growth in the number of participants, Direct addresses and transactions during the first quarter of 2017. DirectTrust’s membership comprises 124 organizations.



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Despite Trump health policy chaos, hospitals can count on more HIPAA audits and fines

Even as Republicans look to shrink government, they are historically strong on enforcement — and HIPAA will not be an exception.

MIK MILA RD, Editor

AMID ALL THE rhetoric about repealing and replacing Obamacare, one thing healthcare and information security executives should expect to remain constant: HIPAA audits and subsequent financial penalties.

“President Trump has indicated there are certain areas of enforcement that will either continue or ratchet up,” said Pamela Hepp, healthcare attorney for Pittsburgh-based Buchanan, Ingersoll & Rooney. “Which is not surprising: Republican administrations may be, as a general rule, in favor of smaller government, but they do tend to be stronger when it comes to enforcement.”

Indeed, this past month alone has seen three big monetary enforcements from HHS’s Office for Civil Rights — \$31,000 here, \$400,000 there, \$2.5 million over there — for infractions such as failure to have a business associate’s agreement in place, lack of security management process and impermissible disclosure of protected health information.

OCR pledged more on-site HIPAA audits in December 2016, and so far it looks like the agency has kept its promise.

“There has been an indication, from a data security standpoint, that they will remain strong,” Hepp said. “We have seen an increase in enforcement activity, and I don’t see that changing.”

Ransomware has been rampant these past couple years, for example, and cybercrooks’ ability to perpetrate and propagate those attacks is enabled greatly by healthcare organizations’ widespread lack of infosec basics such as patch management, regular updates and, of course, risk assessments to pinpoint vulnerabilities and put security controls in place that address those.

“Those are all issues that OCR has identified as part of their Phase 1 audits, and are focusing on for their Phase 2 audits,” said Hepp. “So I think that’s in keeping with what OCR has been seeing, and what you’ve been seeing with some of the breaches.”

What’s more, when OCR is notified of a breach or receives patient complaints, the agency investigates, and Hepp said she’s seeing OCR look into situations that in the past perhaps they did not.

“Right now I would say that we’re in an enhanced enforcement environment,” Hepp said. “I don’t believe that’s going to change.”

The fate of the Affordable Care Act, however, remains undecided. And even if the Republican Congress fails once more to replace the law with its retooled American Health Care Act, there’s little reason to think GOP lawmakers wouldn’t circle back around again for a third crack at ACA

Pamela Hepp



repeal. So for now, uncertainty reigns.

However, as a longtime lawyer in the healthcare space, Hepp noted that every new administration changes rules in one way or another. That’s just something that she, and her healthcare clients, have to deal with.

At any rate, her hunch is that the ACA ultimately will not be repealed.

“So much of the train has left the station with

how payment is being made that the focus is now on quality, and that’s resulted in changes in not just the delivery itself, but in the delivery system — ACOs, clinically integrated networks — all for the purpose of being able to demonstrate savings, which requires coordination of care, all of which requires access to information,” Hepp said. “And I don’t see any of that going away.” ■

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Ransomware accounted for 72 percent of healthcare malware attacks in 2016

Two new reports from Symantec and Verizon say hackers are using ransomware and phishing attacks to target the industry.

By SSICA DAVIS, Associate Editor

OF ALL THE 2016 MALWARE ATTACKS on the healthcare industry, 72 percent were caused by ransomware, according to the Verizon 2017 Data Breach Investigations Report released on April 25.

The results may not surprise you since the healthcare industry is one of the most targeted in the United States. Ransomware is one of its biggest threats, as hackers know how crucial data is to daily hospital operations. Therefore, many will pay to avoid disruption.

Ransomware attacks have doubled in frequency across all industries and are now the fifth most common specific malware variety, the Verizon report found. The healthcare industry was the second-most targeted industry at 15 percent of incidents, just behind the financial sector, which had 24 percent of total incidents in 2016.

"Healthcare has the unenviable task of balancing protection of large amounts of personal and medical data with the need for quick access to practitioners," the report authors wrote.

The report analyzed more than 2,000 breaches from 2016 and found that over 300 were related to espionage -- 62 of which stemmed from phishing emails. The healthcare industry was hit with 458 incidents, and 286 of these included improper data disclosure.

Ransomware first made its mark in healthcare in a major way in February 2016, with the attack on Hollywood Presbyterian, which caused the organization to declare an internal emergency and pay the hackers \$17,000 to regain control of its systems.

An April 24 Symantec report had similar findings: The number of detections of ransom-

ware spike last year was the introduction of Ransomware-as-a-Service. Here, criminal developers create ransomware kits that can be used to create and customize new ransomware variants tailored to a specific target. Developers provide kits to

hacks in exchange for a percentage of proceeds.

"Cyberattacks targeting the human factor are still a major issue," Bryan Sartin, Verizon Enterprise Solutions executive director of Global Security Services, said in a statement. "Cybercriminals concentrate on four

key drivers of human behavior to encourage individuals to disclose information: eagerness, distraction, curiosity and uncertainty. And as our report shows, it is working, with a significant increase in both phishing and pretexting this year." ■

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"Healthcare has the unenviable task of balancing protection of large amounts of personal and medical data with the need for quick access to practitioners."

– Verizon 2017 Data Breach Investigations Report

ware increased by 36 percent during 2016, from 340,000 in 2015 to 463,000 during 2016. The daily rate of antivirus detections for ransomware also increased during 2016, averaging at approximately 846 per day at the beginning of the year and rising to more than 1,539 a day by the end of the year.

While antivirus detections of ransomware were just a small percentage of the overall number of attacks, the notable uptick in detections during the year suggests that ransomware activity increased during 2016.

The same report found that one in 131 emails contained a malicious link or attachment -- the highest rate in five years.

Wake Forest's Epic EHR rollout was a money pit. Here's how the hospital turned it all around

Then-CIO Chad Eckes transitioned the severely outdated system to a converged infrastructure resulting in faster workflow, higher uptimes, increased speed and value.

JESSICA DAVIS, Associate Editor

IN 2014, WAKE FOREST BAPTIST MEDICAL CENTER in Winston-Salem was losing tens of millions of dollars, and a major cause was the costly rollout of both an Epic EHR and Oracle's PeopleSoft human resource management system.

The situation was so dire that Wake Forest posted losses of \$78.4 million that

year. And that was after Wake Forest saw operating losses total \$53.6 million in 2013, and Standard & Poor's later downgraded its credit rating as a result.

"When I came to Wake Forest in 2014, I was tasked with leading the institution's turnaround," said the system's CFO Chad Eckes, who originally signed on as CIO. "Much of the problems back then were rooted in IT struggles."

BROKEN HERE, COMPROMISED THERE

The Epic and PeopleSoft implementations, taken together, were a veritable money pit for Wake Forest.

"Those software projects literally broke the organization financially," Eckes said. "We were losing money at the time as a result of some of the broken pieces and systems in place."



One major problem was the core infrastructure, in which Wake Forest had underinvested as a way to afford the pricey PeopleSoft and Epic software projects.

Sixty-four percent of its data center equipment was more than seven years old and frequently broke down. Wake Forest lacked modern standardized equipment because it had previously treated IT procurements episodically, that is to say on a single project-by-project basis. As such, the IT shop would purchase hardware, implement it for a particular initiative, and then not have enough budget to upgrade when the time came.

"As a result, our system was highly compromised," Eckes said. Enough so, in fact, that even the board was concerned that if IT were to shut the system down, it couldn't be certain it would even come back online.

THE SOLUTION: CONVERGENCE

Issuing what Eckes described as an immediate call to action, the board authorized a significant investment to allow Wake Forest to find a more robust platform that ultimately would lead to a strong return on investment from a tangible basis.

Eckes and his team determined the antiquated platform needed to be replaced, as it was underperforming in terms of speed. With 4,000 to 8,000 users on the Epic system, it could take multiple seconds just to load between each click because the infrastructure wasn't correctly sized.

Wake Forest chose a converged infrastructure with a hybrid cloud, Dell EMC

virtualization also moved 16 physical servers to the new platform.

THE PLAN WORKED

Wake Forest dramatically improved data center and software uptime from the low-80 percent range to nearly 100 percent, Eckes said.

"Every transaction has improved by 30 to 40 percent," Eckes explained. "If you think about nurses and clinicians, they're doing these transactions hundreds of thousands of times a day. We gave them back 30 minutes to an hour of work time that can be used to see patients."

Eckes also highlighted an increase in speed and value Wake Forest achieved by moving from its prior episodic procurement model to constantly maintaining systems, which nearly eliminated the setup time for projects.

IT staff maintenance was down 70 percent. In the past, IT could spend 30 percent of project time on setup; now it's down to hours or, at most, a few days.

Wake Forest also eliminated the need to build out a new data center space: Rather, it replaced 45 racks of IT per data center down to 15 racks of converged

infrastructure per center.

"For the most part, transitioning to the converged infrastructure wasn't an event staff knew about," Eckes added. "We made sure it wouldn't impact staff. It made the clinician more excited as they knew it would increase uptime and performance."

The bonus: Wake Forest's most recent financial statement for the first six months of fiscal 2017 showed revenue of \$1.3 billion, 12.7 percent higher than the prior year, and operating income of \$26.7 million. ■

"We were losing money at the time as a result of some of the broken pieces and systems in place."

— Wake Forest CFO (and former CIO) Chade Eckes

Vblock, because it was exponentially faster than other options and wouldn't require more staff, Eckes said.

The majority of the project time was spent waiting for the Vblock to be installed in the factory, which took about three months, Eckes said. Once that finished, the equipment was installed in fewer than two days and ready to begin transferring to the system.

Wake Forest chose for self-service to be built into the application, which allows the IT team to create its own storage provision.

The platform is not only fully standardized, but also it moved from 2 percent virtualization to 95 to 100 percent. The orga-

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Women are scarce in cybersecurity workforce and still earning less than men

'The stagnation of women's participation in the workforce is noteworthy because the workforce gap continues to grow,' the 2017 Global Information Security Workforce Study finds.

BERNIE MONEGAIN, Editor-at-Large

AT 11 PERCENT, WOMEN AROUND the world are underrepresented in the cybersecurity profession, much lower than the representation of women in the overall global workforce, according to "The 2017 Global Information Security Workforce Study: Women in Cybersecurity."

Other key findings include:

- Globally men are four times more likely to hold C- and executive-level positions, and nine times more likely to hold managerial positions than women.
- Fifty-one percent of women report various forms of discrimination in the cybersecurity workforce
- Women who feel valued in the workplace have also benefited from leadership development programs in greater numbers than women who feel undervalued.
- In 2016, women in cybersecurity earned

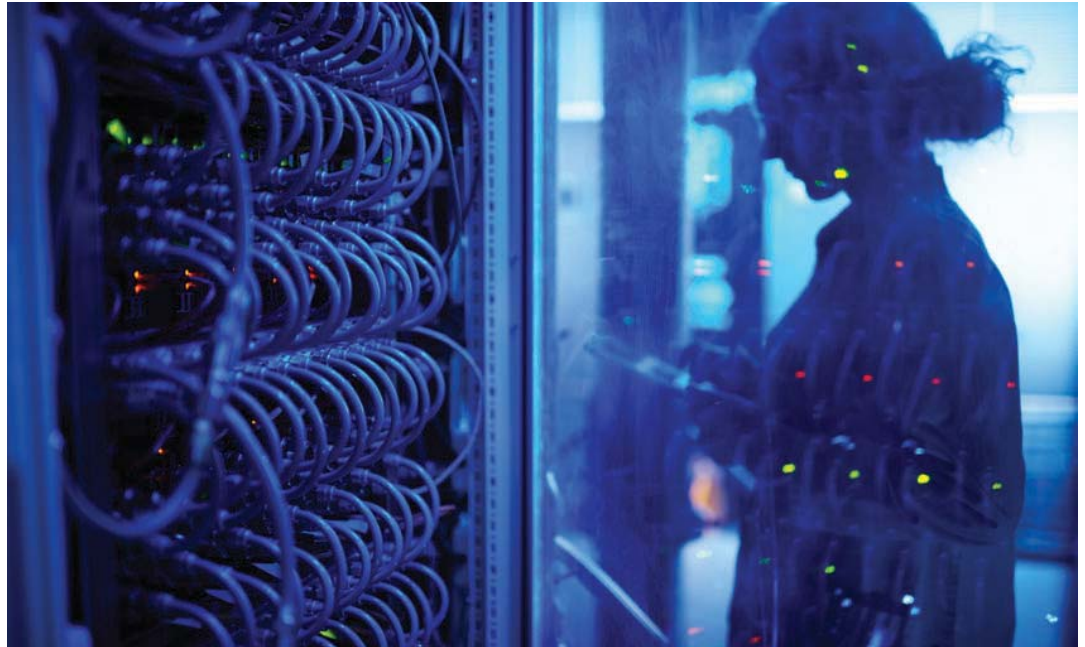
less than men at every level.

In North America, women comprise 14 percent of the cybersecurity workforce, the highest regional concentration in the world,

according to the report. Nevertheless, with the population balance of women to men for working-age adults falling at essentially 50/50, women remain under-represented in North

America. For example, females in the United States comprised 48 percent of the workforce.

"What is clear is that enterprise and government efforts to attract and retain more women



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in the global cybersecurity profession have not made a meaningful impact," the researchers write. "The stagnation of women's participation in the workforce is noteworthy because the workforce gap continues to grow."

Frost & Sullivan projections show the gap between available qualified professionals and unfilled positions will widen to 1.8 million by 2022.

The Global Information Security Workforce

"What is clear is that enterprise and government efforts to attract and retain more women in the global cybersecurity profession have not made a meaningful impact."

– The 2017 Global Information Security Workforce Study: Women in Cybersecurity

Study is conducted every two years by the Center for Cyber Safety and Education and ISC. The most recent worldwide study was conducted from June 22 through September 11, 2016. The online survey gauged the opinions of 19,641 information security professionals from 170 countries regarding trends and issues affecting their profession and careers.

3 ways IBM engages women in technology to thrive in workforce

A recent study from IBM, in collaboration with the Boston College Center for Work & Family, outlines how Big Blue brings women in STEM together for development opportunities and provides resources to advance their careers.

According to the study, "Empowering Women's Success in Technology, IBM's Commitment to Inclusion," outlines how opportunities for women in STEM — science, technology, engineering and mathematics — are driven by inclusion across career environments, empowerment to think freely, and the ability for women to bring their "whole selves" to work.

The study offers examples of how IBM is growing and supporting an inclusive work environment to create a culture where women in technology can thrive and succeed.

"IBM has relentlessly focused on building and fostering an inclusive career environment," IBM Chief Diversity Officer Lindsay-Rae McIntyre said in a statement. "We remain committed to creating a supportive career

environment that offers IBMers the resources to progress in their careers and fulfill the company's purpose."

The study outlines three approaches the technology giant has taken to help women advance in their careers:

1. Identify talent early. Through IBM's Executive Potential & Extraordinary Leadership Identification program, managers identify IBMers who display extraordinary leadership and initiate a development journey with them.

2. Focus on technical women. IBM's Technical Women's Pipeline program aligns women with an executive coach and sponsor, offers face-to-face workshops and learning labs, and creates a development roadmap to track progress and readiness for the next milestone in their career path.

3. Lift up women around the world. The company's Elevate program develops leadership skills through education, experience and exposure.

Today, IBM is partnering with Girls Who Code to close the gender gap in technology, recruiting girls in grades 6-12 for after-school clubs and summer programs to learn coding and learn about career opportunities in technology. IBM's Tech Re-Entry program, together with the Society of Women Engineers and iRelaunch, are making it easier for women who have been out of the workforce to rejoin the tech industry, McIntyre said. ■

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Nonprofit hospitals struggling to hire digital-focused talent, study finds

CEOs and IT pros say they will invest heavily in digitizing operations within the year.

TOM SIY AN, Editor-in-Chief

NONPROFIT HOSPITALS ARE GEARING UP to digitize their business models, systems and processes in 12 months, but most are finding it difficult to attract and retain top talent.

The good news, though, is they also expect their workforce budgets to expand in 2017, according to, Datis, a national online survey published by cloud-based HR and payroll service provider.

Sixty-five percent of respondents, in fact, indicated that it is either extremely likely or very likely that they will invest in digital strategies within the year, while more than half described themselves as either strategic or transformational regarding digital maturity.

That said, only 6 percent strongly agree that they currently have the necessary digital skills they need in-house; 23 percent said they do not have requisite skill sets, and 31 percent were unsure.

Making matters more complicated are the findings that 32 percent of nonprofit hospitals face a 20 percent turnover rate, and 75 percent said their existing process for recruiting is only slightly or moderately effective.

The upside is that 70 percent of survey respondents said they expect to have a larger workforce management budget in 2017 than in the past — though only 8 percent said it would be significantly bigger.

“As competition rises and change becomes constant, organizations are searching for new ways to improve their processes,” Datis wrote in the report. “This is driving the need for more entrepreneurial-minded leaders that can implement creative approaches to process improvement and service delivery.” ■



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ON THE MOVE



Scott Andrews

Accolade tapped **Brad Mirkovich** as chief revenue officer and **Dave Swift** as chief service officer. Healthcare IT security firm Imprivata appointed **Adam Bangle** as vice president of sales international. **Scott Andrews** joined Kyruus as senior vice president of delivery. Andrews previously spent 17 years at Athenahealth, most recently as senior vice president of athenaCare. UnitedHealthcare tapped **Steve Nelson** as CEO and **Dan Schumacher** as president of the

insurance branch. Nelson currently serves as the leader of the company's Medicare and retirement business, and Schumacher was most recently its CFO. UnitedHealth also appointed **Eric Murphy** as CEO of OptumInsight, Optum's advisory consulting branch. OptumHealth named **Andrew Hayek** as CEO. Optum tapped **Dirk McMahon** as operating president and will manage the company's business technology division. Sisu Healthcare IT Solutions hired **Dan Pearsons** as vice president of customer experience. Altarum Institute tapped former SAMHSA official **Tom Coderre** as senior advisor to its Behavioral Health Technical Assistance Center and **Sheena Gill** as its chief administrative officer, senior vice president and general counsel. **Cary G. Vance** joined medical device company Myoscience as president and CEO. American Health Council named **Amit Acharya** and **Patrick Luthy** to its Industry Board. Acharya is the director of the Institute for Oral and Systemic Health at Marshfield Clinic Research Foundation. Luthy is the



Susan Carroll

financial controller of the Americas division of Medtronic. **Mary Jo Potter** joined SnapMD's corporate advisory board. Falls Church, Virginia-based Inova Health System promoted **Susan Carroll** to regional executive officer, overseeing the Alexandria-based Inova Mount Vernon Hospital and Inova Alexandria Hospital. **Ed Han-non** was selected as president of CHI Health St. Francis in Grand Island, Nebraska.



Andrew Hayek

Cleveland Clinic CEO Toby Cosgrove stepping down



Toby Cosgrove

After nearly 13 years as president and CEO of Cleveland Clinic, **Toby Cosgrove, MD**, said he would step aside, initiating a succession process that will allow him to transition out of the role later this year. At the request of the health system's governance committee, he will continue to serve in an advisory role. Cosgrove's tenure has been marked by some recent controversy. He was considered a potential pick by President Donald Trump to run the Department of Veterans Affairs, declining the job but agreeing to serve in an advisory role to Trump.

Cancer researcher George Sigounas tapped as HRSA administrator



George Sigounas

The U.S. Department of Health and Human Services named **George Sigounas** the new administrator of the Health Resources and Services Administration. Sigounas replaces HRSA Acting Administrator Jim Macrae, who will return to heading the agency's Bureau of Primary Health Care. HRSA's last full-time administrator was Mary Wakefield, appointed by President Barack Obama in 2009. Sigounas most recently served for 23 years as professor of medicine at the East Carolina University's Brody School of Medicine in Greenville, North Carolina. While at this position, Sigounas helped establish a bone marrow transplant program. Prior to ECU, he was a researcher at the National Institutes of Health and the Naval Medical Center.

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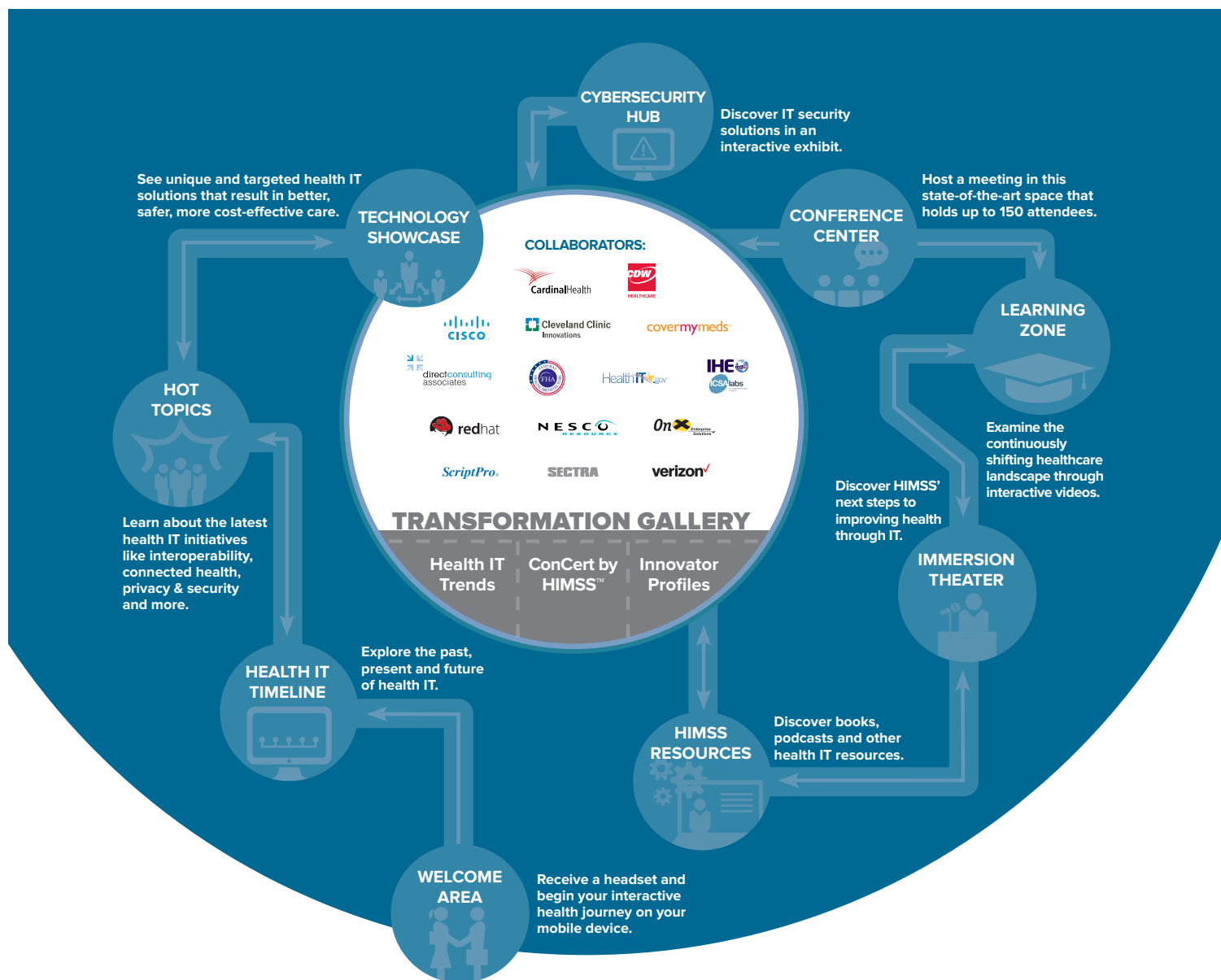
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“The GOP is crafting policy on an issue that directly impacts women without including a single woman in the process. It’s wrong.”

— Sen. Kamala Harris, D-California, on the fact that no female senators are involved in the creation of the Senate’s version of the American Healthcare Act



“It makes you start thinking, what is the ‘Amazon Prime’ for healthcare?”

— Craig Richardville, chief information and analytics officer at Carolinas HealthCare, on ways to build customer loyalty for health systems

“Hackers are experts at return on investment, they know how much effort to put in to get a return that is advantageous to them.”

— M.K. Palmore, FBI special agent



“Nurses are the best hackers in the world because they’ll do anything to take care of their patients.”

— Kevin Fu, medical device researcher, University of Michigan

“Healthcare organizations are not keeping themselves up to best practices with long multivariable passwords, for instance. Brute force attacks are hard to execute when logging into multifactor authentication, for example; it’s far less possible for them to execute an attack.”

— Kevin Hyde, managing director of Layer 8 Security



“There’s one sentence every American needs to know: ‘Trumpcare eliminates pre-existing condition protections.’”

— Andy Slavitt, former acting administrator of the Centers for Medicare & Medicaid Services, and vocal anti-AHCA tweeter



“Anybody foolish enough to miss out on a woman because she’s going to have a baby in their workplace is going to have a sh---y company.”


— Jonathan Bush, athenahealth CEO, speaking on MSNBC, on the chance that insurance costs associated with female and senior employees might make some business owners reluctant to hire those demographic in a post-ACA world

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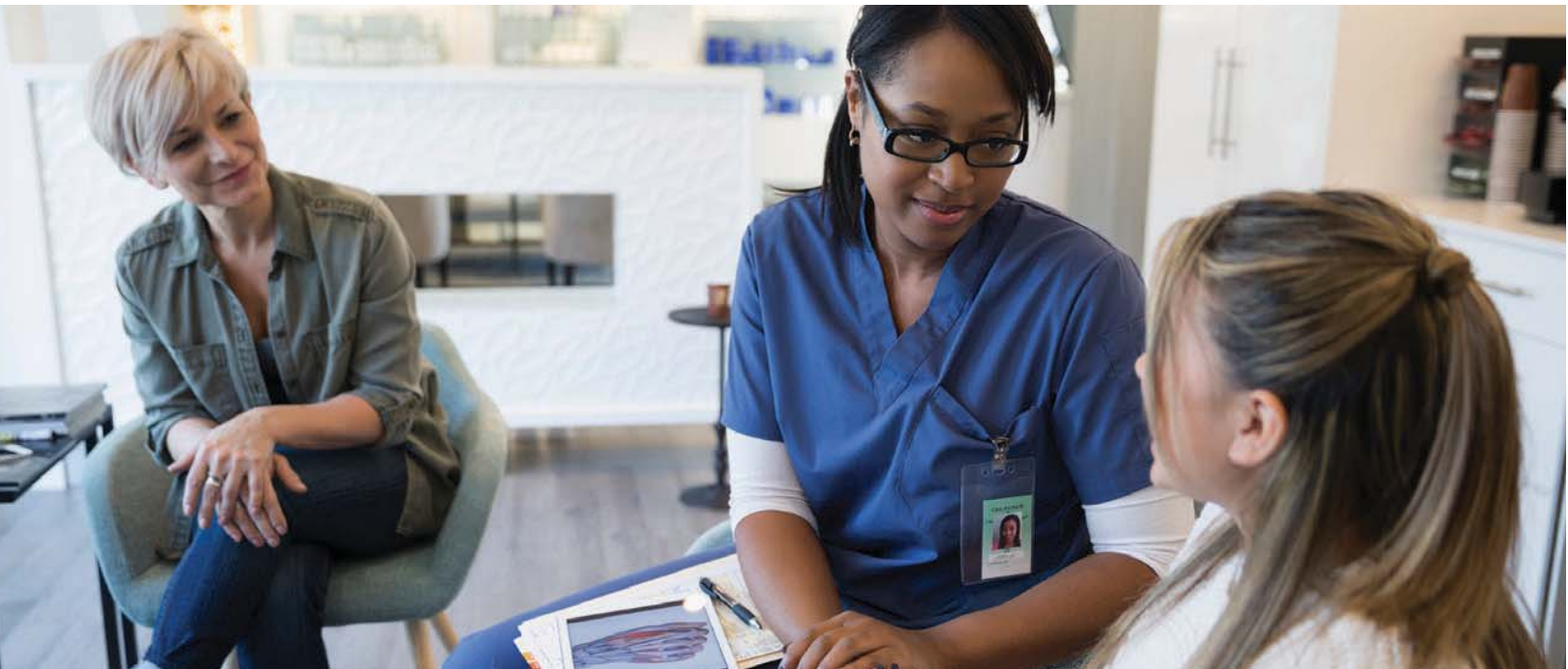
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