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Creating a strong data security program

ICD-10: Everything is different; nothing has changed

THOUGHT LEADERS
Nelson Le, M.D.
Clinical Advisor, InterSystems

Medication management:
A cure for the common payment reform
I used to be a magician

Brenda, Hospital CEO.

I used to spend my time trying to make the impossible, possible. Now, real-time visibility means I can do what I do best. Lead.
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And how will it make me healthy?

**‘Wear’ is my data going?**

By Chad Michael Van Alstin, Features Editor

LIKE MANY OF YOU, I ATTENDED SEPTEMBER’S AHIMA CONFERENCE IN NEW ORLEANS. In between enjoyably regrettable trips to the French Quarter, I walked the show floor and met dozens of intelligent, interesting people on both the provider and vendor side.

With all of the quality topics of discussion to be had, it’s strange that one of my biggest takeaways happened during a coffee break just outside the showroom. The gentleman in front of me pulled up his sleeve to look at his health band and caught me tossing a glance at his wrist. “It’s a Garmin Vivomart,” he said. “What kind do you have?”

I was a bit confused. Were we all supposed to have one? I was forced to admit that I didn’t wear any health device – or use any health apps, for that matter. Undoubtedly, this is a terrible faux pas for those of us involved with the industry. I considered mentioning I carry around my step-counting Nintendo 3DS, though I knew in my heart that didn’t count since I was unaware if that feature was turned on, let alone what purpose it serves beyond granting me coins to play video games more effectively.

After this incident, the ubiquity of wearables suddenly became clear to me – they were everywhere. A number of booths were offering health bands as free giveaways, and the majority of the wrists I encountered were wearing ominous, colored bands … which I assume were gathering data right in front of my eyes!

I also homed in on any mention of wearables during the conversations I had with various individuals, taking a mental note whenever data analytics from the devices or integrating what they collect into an EMR was mentioned. It seemed that most vendors and providers alike agreed that wearable information is a goldmine for healthcare organizations, both in terms of revenue and care quality. But just how exactly these devices will lead to better care beyond a few anecdotal cases was a question that never elicited a firm answer.

I think it’s worth questioning if improving health is what wearables are designed to do in the first place. These are devices that measure steps taken, stairs climbed, heart rate, workout regimens, sleeping patterns, calories burned, and more. This information is then automatically graphed by the application so that progress and trends can be observed – without question, all of that data is valuable to many organizations, and giving it up is so easy that the wearer barely even realizes they’re doing it.

But, is a doctor, who is reimbursed for the care they provide, really going to find a patient’s FitBit data to be relevant and scientifically valid? I’m not so sure. And regardless, I’m not sure the good outweighs the bad.

One thing I find most concerning is that IT privacy and security experts seem to have a different take on these devices. In a conversation that is partially published in this issue of HMT, an expert on data security from Symantec, David Finn, told me many organizations, both in terms of revenue and care quality. But just how exactly these devices will lead to better care beyond a few anecdotal cases was a question that never elicited a firm answer.

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INDUSTRY WATCH

Commentary

2016 — The year of the image-enabled EHR

Enterprise imaging is in the now. Make sure you’re in the know.

By James Jay, Global Vice President, Imaging IT Solutions, Agfa Healthcare

Not too long ago, experts across health IT questioned whether the cost and productivity benefits of the electronic health record would ever be realized in the real-world medical setting. Today, EHRs are ubiquitous within healthcare, as common as stethoscopes and syringes.

Enterprise imaging – a centralized system that integrates images from any clinical specialty into a patient’s EHR and securely renders that information to any clinician – has been in a limbo similar to what EHRs experienced several years ago. Many hospital CIOs and CMOS have clearly understood the value potential of an “any image, any time, from any location” strategy would deliver if offered to their healthcare community. However, just as with EHRs, industry inertia – due to combinations of budgetary, skillset, and bandwidth limitations – slowed the widespread adoption of such systems.

But that is about to change, as 2016 is poised to be the year of enterprise imaging.

What has led me and others in the industry to make this prognostication? Today, the conversation surrounding enterprise imaging has crystallized around three key factors that, in my opinion, have become the catalysts for what is expected to be a wide-scale adoption of enterprise imaging systems in 2016 and beyond. CIOs and healthcare IT specialists who are not yet in the know should take note.

1. Consolidation: Until recently, some hospitals attempted to create enterprise imaging capabilities by repurposing or extending their PACS (picture archiving and communication system) and VNAs (vendor-neutral archives). However, what at the time seemed like a logical – and cost-effective – solution has proven largely unworkable due to the immense and ever-increasing amount of image data that is generated across all specialties within a hospital. This same realization previously occurred across the enterprise with the EHR, leading to the collapse of what was a series of departmental systems into the consolidated platforms that today are delivered by Epic, Cerner, Allscripts, etc. This paradigm shift is now occurring within image management where an integrated, enterprise-wide strategy is eclipsing the “piecemeal PACS” approach.

2. Convergence: In lock step with consolidation, advances have been made with the convergence of imaging access and storage systems with sophisticated technologies that enable department-specific image acquisition, ordering, clinical metadata creation, and billing automation all in one place. The result is a solution that can serve the diagnostic departments while seamlessly managing the ingestion, transfer, routing, and review of images across the enterprise.

3. Workflow: In today’s modern hospital, nearly every department generates clinical images. Radiology and cardiology remain the most prolific, but departments as disparate as obstetrics and gastroenterology also produce diagnostically important images and are doing so on a more frequent basis. True enterprise imaging strategies offer the ability to synchronize thousands of potential workflows securely, which can encompass everything from creating a worklist on a modality to order generation and notification to the EHR that a study exists.

For modern hospitals, the ability to maximize image-usage efficiency can become a competitive advantage. Not only does the opportunity exist to improve the operational and fiscal performance of a hospital, but ubiquitous access to patient images can also help foster an environment of informed patient management, supporting today’s value-based care model.

So here’s to 2016 – The Year of Enterprise Imaging.

EHR Incentive Programs

Meaningful Use modifications, final rule lauded by CHIME

The College of Healthcare Information Management Executives (CHIME) Board of Trustees Chair Charles E. Christian released a statement Oct. 6 welcoming the Centers for Medicare & Medicaid Services’ (CMS) updated policies on Meaningful Use, particularly a drastically reduced reporting period. The Department of Health & Human Services (HHS) released details of the policy changes in a press release on that day.

“We are pleased that the Centers for Medicare & Medicaid Services today finalized modifications to the current stages of the Meaningful Use program and agreed to extend the comment period on Stage 3, CHIME and its 1,700-plus members agree with CMS that it is time to focus the Meaningful Use program on adoption of information technology systems that improve both the quality and safety of patient care,” Christian wrote.

“The 752-page rule grants flexibility for providers who are doing their best to not only meet the intent of the federal program, but also ensure the adoption of health information technology that improves patient care.

“Importantly, the rule adopts a 90-day reporting period for the current stages of the program, down from 365 days. CHIME has long called for a 90-day reporting period and applauds CMS for adopting this new standard. While several members are positioned to take advantage of this shorter period, others will be challenged to meet it since there are fewer than 90 days remaining in the year. We urge CMS to implement a hardship exemption for those unable to meet this timeframe.

“CHIME also applauds the agency for modifying requirements surrounding patient access to electronic records. The rule stipulates that for 2015 and 2016, [only] one patient discharged from a hospital [must] view, download, or transmit their electronic record.

“With regard to Stage 3, the extra comment period will enable providers, CMS, and other stakeholders to ensure that the next stage of Meaningful Use advances interoperability and takes into account new payment models being advanced by Medicare.

“Also today, the Office of the National Coordinator for Health Information Technology finalized a rule on certification of electronic health records. CHIME supports key provisions in the rule that should lead to greater transparency regarding vendor products, improved testing and surveillance of health IT, and an improved focus on user-centered design.

The rules were published Oct. 16 and are on display in the Federal Register.

You can access the final rule and more detailed information from CMS at www.cms.gov/EHRIncentivePrograms.
Security

FBI: Internet of Things a serious cybercrime risk

The Internet of Things (IoT), “dumb” devices that become “smart” by connecting to the Internet automatically to send and receive data, opens the door to serious security vulnerabilities that cybercriminals could exploit, according to a published warning from the Federal Bureau of Investigation (FBI) Internet Crime Complaint Center (IC3) issued Sept. 10, 2015.

Organizational risks to medical facilities include: an exploitation of the Universal Plug-and-Play protocol (UPnP) to gain access to many IoT devices; an exploitation of default passwords to send malicious and spam emails or steal personally identifiable or credit card information; common misconfigurations of the IoT device to cause physical harm; overloading devices to render them inoperable; and interfering with business transactions.

But there are things that can be done. Countermeasures recommended by the FBI include:
- Isolate IoT devices on their own protected networks;
- Disable UPnP on routers;
- Consider whether IoT devices are ideal for their intended purpose;
- Purchase IoT devices from manufacturers with a track record of providing secure devices;
- When available, update IoT devices with security patches;
- Consumers should be aware of the capabilities of the devices and appliances installed in their homes and businesses. If a device comes with a default password or an open Wi-Fi connection, consumers should change the password and only allow it to operate on a home network with a secured Wi-Fi router;
- Use current best practices when connecting IoT devices to wireless networks and when connecting remotely to an IoT device;
- Patients should be informed about the capabilities of any medical devices prescribed for at-home use. If the device is capable of remote operation or transmission of data, it could be a target for a malicious actor; and
- Ensure all default passwords are changed to strong passwords. Do not use the default password determined by the device manufacturer. Do not use common words and simple phrases or passwords containing easily obtainable personal information, such as important dates or names of children or pets. If the device does not allow the capability to change the access password, ensure the device providing wireless Internet service has a strong password and uses strong encryption.

Leadership

Top 10 strategies for building a healthy IT team

Beth Dituro, HIT Program Director, Pinnacle Center for Professional Development, gives her spin on how to build up – and keep – a strong and effective health IT crew.

1. Provide effective project management: Especially important at the beginning of projects.
2. Boost morale: Overwork should be kept to a minimum, managed tightly, and rewarded.
3. Foster teamwork: When teams work together for any length of time, it is important for members to avoid becoming like families, with associated dysfunctional roles and relationships. Leadership is required to ensure teams function on all cylinders, playing on complementary strengths and focused on a common goal – the success of the project.
4. Develop creative problem-solving skills: Allow team members to fail and learn from mistakes.
5. Cut the red tape: Too much bureaucracy can be an embarrassment to the IT organization and a source of frustration, distrust, and disrespect by end-users, customers, and vendors alike.
6. Provide transparent governance: Invisibility causes frustration both inside and outside the IT organization because no one knows the rules of the game. Good governance simply spells out the processes for identifying, prioritizing, and funding IT requirements.
7. Hire the right people: HIT organizations do themselves a disservice when they insist on hiring staff with experience in a particular vendor product. Finding the perfect person will often take longer than hiring someone with proven, related skills and providing them with training.
8. Walk the walk of both IT and healthcare: Be fair, fearless, and fault tolerant.
9. Continually show appreciation and respect: Recognize ongoing efforts, both in private and in public.
10. Empower staff: Provide ongoing continuing education. The best and most effective managers have solid backgrounds in health IT with an understanding of the “big picture” of HIT.

System Implementation Wins

UF Health Shands Hospital selects Lexmark VNA

Gainesville, FL-based University of Florida (UF) Health Shands Hospital, part of the Southeast’s most comprehensive academic health center, will deploy the Lexmark vendor-neutral archive to serve as an enterprise solution for managing medical images across its many diverse healthcare facilities and clinics. UF Health Shands will implement the Lexmark VNA as part of an enhanced technology foundation to better manage the more than 550,000 imaging studies produced each year.

“The Lexmark VNA will support our goal to provide any UF Health Shands clinician a location-independent ability to view patient information within Epic,” says Kari Cassel, Chief Information Officer, UF Health Shands. That means better access to patient information at the point of care.

Lexmark will also assist UF Health Shands in migrating nearly 7 million existing imaging studies. Lexmark VNA will integrate with UF Health Shands’ enterprise viewer and worklist applications to provide a solution for image access, management, sharing, and exchange across patient care facilities. The solution is expected to provide enhanced interoperability of patient information with the hospital’s existing electronic medical record (EMR) and other clinical information systems. UF Health Shands is currently using Lexmark Enterprise Image Connectivity solutions, including Perceptive Media Writer, PACS Scan, and PACS Scan Film to automate document and medical imaging workflow.

Source: Lexmark
Too much Big Data may not be enough

Providers are aiming for multimedia healthcare.

By Rick Dana Barlow, Editor-at-large

Todd Winey, Senior Advisor, Strategic Markets, InterSystems.

“Images need to be blended into the comprehensive patient record, along with genomic information, claims data, wearables, and other disparate healthcare data sets,” Winey tells Health Management Technology. “Picture archiving and communications system images represent a significant percentage of the worldwide medical data volume. However, these images have remained locked in proprietary PACS systems that have had limited connectivity to systems outside of radiology. All that is changing. Rich standards to support image exchange are becoming more widely available. Vendors are promoting vendor-neutral archives (VNAs) to unlock images across disparate PACS systems, and health information exchanges are leveraging images as a component of the comprehensive patient record for all care team members.”

For the clinical and diagnostic data to play a more valuable role in patient care improvement, these trends need to be accelerated, Winey insists, which isn’t without challenges. “VNAs remain only marginally deployed,” he laments. “Many of the advances in radiology information systems and PACS have been focused on productivity improvements for radiologists and are not yet fully supporting advanced interoperability.”

Kao agrees with the foundational importance of a VNA but adds that it shouldn’t stop there.

“A vendor-neutral archive that links radiology, endoscopy, pathology, cardiology, lab results, and other systems is a good foundation,” she says. “But having a repository is just the first step – providers also need to provide the clinical context for unstructured data within those systems to enable better decision support. Carestream’s Clinical Collaboration Platform offers optional services to a VNA – or other backbone – by using the latest interoperability standards to identify and aggregate data from disparate systems to create a holistic view of the patient. Once you have a comprehensive view of patient data it can be maintained and distributed to authorized users for different uses, such as clinical diagnostics, analytics, etc.”

Depending on an organization’s capabilities, imaging data must be accessible to more than just one clinical segment to be included as part of the decision support process, according to Winey.

“For imaging data to truly drive patient care improvement, imaging data must become part of the unified health record, available in real time to the entire care team, not the exclusive domain of radiologists,” he says. “Bringing RIS/PACS data into the era of accountable care requires a focus on sharing available imaging studies to avoid duplicative diagnostic tests, extensive use of decision support guidelines to minimize unneeded imaging studies, broader access to imaging data during patient encounters, and the ability for patients to own their own records to avoid duplication. These have been tenets of the RSNA Imaging 3.0 education efforts and are critical steps towards a patient-centered imaging process.”

Kao says she fully anticipates future reporting functions may include “more intuitive searching capabilities that will link pertinent patient information that can provide clinical information when and where it’s needed. New advanced reporting techniques provide information that can lead to improved decision support and diagnostic outcomes.”

Imaging can contribute to the outcomes of the healthcare system by providing meaningful information to drive decision making, and by contributing to the patient’s visual medical history, according to Sham Sokka, Ph.D., Head of Radiology Solutions, Philips Healthcare.

“The future of imaging depends on the integration of data from imaging modalities, device manufacturers, or care team members,” Sokka adds.

In the quest to mine and analyze meaningful, reliable, and useful data from the burgeoning plethora of electronic and online sources, healthcare organizations can allow the big picture to overshadow many underlying and valuable components contributing to patient care improvement.

The clinical data and diagnostic images in radiology information systems (RIS) and picture archiving and communication systems (PACS) remain two examples. For clinical imaging and radiology executives, these visual clues and cues are necessary for effective, efficient decision support.

Certainly a growing number of manufacturers and information technology companies recognize this – even if many healthcare providers have not yet reached the point where they can tackle the necessary underlying infrastructure beyond the planning and strategic stages. As a result, they’re offering providers a light at the end of the tunnel.

Streaming expanded horizons

“The latest generation of reporting capabilities can help improve the utilization of imaging data for diagnostic decision making,” says Cristine Kao, Global Marketing Director for Healthcare Information Solutions, Carestream.

An NIH study concluded that oncologists and radiologists prefer quantitative reports that include measurements as well as hyperlinks to annotated images – with tumor measurements, for example. A report by Emory and ACR shows eight out of 10 physicians will send more referrals to facilities that can offer interactive multimedia reporting – citing the ability to better collaborate with radiologists.”

Connecting all of the technology and tools remains important, too, for a visually rich information view, according to Todd Winey, Senior Advisor, Strategic Markets, InterSystems.

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Winey tells Health Management Technology. “Picture archiving and communications system images represent a significant percentage of the worldwide medical data volume. However, these images have remained locked in proprietary PACS systems that have had limited connectivity to systems outside of radiology. All that is changing. Rich standards to support image exchange are becoming more widely available. Vendors are promoting vendor-neutral archives (VNAs) to unlock images across disparate PACS systems, and health information exchanges are leveraging images as a component of the comprehensive patient record for all care team members.”

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JIM’S MEDICAL RECORDS GOT THERE BEFORE HE DID.
When we work as one, care coordination just happens. **work as one**
ties and clinical informatics, allowing for optimization and improvement in outcomes, both economic and clinical,” Sokka says. “[At] Philips, we are developing integrated imaging to drive meaningful change towards achieving the Triple Aim. This integration of imaging toolsets – from acquisition to clinical informatics to care coordination to outcomes management – enables future innovations to achieve better outcomes and overall health of populations.”

Healthcare organizations continue to struggle with the demands of improving outcomes while reducing per-capita costs, Sokka says, adding that the amount of available data complicates matters.

“Data can help direct improvements, yet most hospital systems have a plethora of unaligned data sources, such as EMR, RIS, PACS, business intelligence/workflow engines, HL7, and DICOM,” he says. “In addition to people and process transformations, improving outcomes while reducing costs requires aggregation of the multiple silos of data in healthcare and converting that data into information and intelligence for data-driven decision making.”

Sokka says that practice management is the solution that ties all of this information together to drive continuous improvement.

“To transform your practice, you need an analysis and intelligence framework to monitor and to improve operational, financial, and clinical aspects,” he continues. “The practice management platform could act as a command center that could be customized to the needs of different users like director of imaging services, radiology administrator, chief of radiology, etc. The solution also provides a toolset and services for healthcare provider leadership to understand the impact of imaging at the system level, and to drive collaboration across clinical service lines to deliver improved performance.”

The “longitudinal picture or visual medical record” plays a key role, Sokka says.

“Your medical record is the written version of your history, but there’s a lot of meaningful information in images, videos, and pictures collected along the care pathway,” he says. “Radiology has typically been the imaging information source within the hospital network, and can continue to contribute to this but also drive the broader aggregation of the full visual history of the patient.”

Susan Niemeier, R.N., BSN, MHA, Chief Nursing Officer, CapsuleTech, stresses the foundational nature of data analytics within the clinical decision support system.

“Data analytics is the engine of a clinical decision support system that can help describe what has occurred in the past, why something is happening, and what is predicted to happen in the future,” Niemeier says. “Data analytics is built on evidenced-based criteria and unique insight into the association of data to certain events. Data analytics coupled with near real-time, comprehensive, and accurate data is the foundation for a clinical decision support system and the delivery of its full promise of increasing quality of care, enhancing health outcomes, minimizing errors and adverse events, improving efficiency, reducing costs, and improving staff and patient satisfaction.”

Yet in today’s alert-addled industry, clinicians need help navigating through the noise, according to Kathleen Aller, Director of Business Development for HealthShare, InterSystems.

“Analytics should inform us of baseline states, help to target where clinical decision support can be applied to greatest benefit, and then quantify the impact, positive or negative,” Aller says. “Given the risks inherent in over-alerting, and the disruptive impact of inappropriate interruptions to care processes, knowing what is and is not moving the dial in the right direction is a critical factor in successfully deploying decision support interventions.”

**Holistic partnerships**

Data-driven decisions may lead to improved decision-making so long as the
clinical and operational perspectives factor in the patient. “Data analytics is the process of compiling raw data from various sources and turning that data into information, that information into knowledge, and that knowledge into action,” says Thomas Van Gilder, M.D., Chief Medical Officer and Vice President, Informatics and Analytics, Transcend Insights. “Successful analytics should be shared with physicians, care givers, and patients in a way that is relevant, easy to understand, and results in action. It should also fit well into the care team’s workflow.”

Those decisions ideally should be made in a more objective and timely manner, according to Jason Williams, Vice President, Business Analytics, Financial Solutions, McKesson Relay-Health Financial. “Lots of decisions are made in a vacuum of objective data or deferred for lack of facts,” Williams says. “We’ve seen a number of examples in interactions between clinicians and operations teams. When the data is made available, it elevates the discussion above anecdotes and perceptions, creates imperative for change, and delivers facts. Moreover, change in actions can be prescribed prior to reports of poor results, such as high documentation-based claim denials.”

Yet Larry Schor, Senior Vice President, Medecision, cautions against a “just-the-facts” philosophy, particularly for more acute and chronic patients as they are drawn into the care process. “Analytics will be increasingly important for patients with complex care needs where alternative treatment options require analysis and consideration,” Schor says. “And weighing options will mean not just facts about the patient objective history information, but also self-reporting preferences and personal expectations that will need to be considered. Decision support and analytics will no longer be the sole province of the practitioner, but include the patients in important treatment decisions that consider how alternatives rank in terms of outcomes, side effects, and lifestyle.”

Sarah Corley, M.D., FACP, Chief Medical Officer, NextGen Healthcare, recommends embedding analytics and decision support into practice procedures from the start to capitalize on the value of data already collected. “There are many areas of medicine of which we do not have solid evidence as to what is the best treatment option in terms of outcomes, complications, and costs,” Corley says. “Data analytics can play a vital role in unlocking the answers from data already existing once it is aggregated. It can assist in prioritizing care when time or resources are limited.”

Moreover, one can derive value out of the data by putting analytics into the workflow in order to improve clinical and economic outcomes, thereby increasing patient satisfaction,” she says.

**Population to personal**

Manu Varma, Vice President, Strategy, Philips Hospital to Home, sees the precision dynamics within data analytics for individualized care. “Analytics can help spot trends inside large amounts of data being generated in healthcare IT systems,” he says. “These trends can then be codified into decision support tools that can allow superior provider and patient experience.”

As an example, Varma cites his company’s “Discharge Readiness Score” created for patients in intensive care units. “We used data from [more than] 1 million ICU stays of patients to develop a scoring mechanism to spot patients ready to be discharged from the ICU,” he says. “What used to depend entirely on physician review of large amounts of data is now supported through a simple score. Tools like this have helped tele-health programs show as much as 20 percent reduction in length of stay.”

Rather than distinguish data analytics from decision support, Chris Hobson, M.D., Chief Medical Officer, Orion Health, classifies the former merely as a form of the latter to shape population health initiatives. Analytics shows “stratified populations of patients with gaps in care, plus the ability to go from a list of patients with gaps in care directly to each individual patient record, so the provider can take action on that patient’s care gap,” he says.

“Data analytics are typically applied at a whole population level,” Hobson says. “We translate that population view into an individual patient view that shows care gaps and tasks, and their relative priorities. Imagine analytics that stratify your patient population and auto-enroll them onto condition-specific pathways with action items, deadlines, and owners. Now imagine that these owners are automatically alerted as to the next step in the patient’s care in whatever way suits their workflow.

For example, a care coordinator owner may see an action item for a particular patient on a COPD pathway within the care coordination system or module he uses each day. A physician owner may be alerted via a text message or right within her EMR, and a patient may be alerted via email that there is a task awaiting his attention in the patient portal. This personalization of action allows all stakeholders to work in the manner most efficient to them but with the added value derived from population level and individual patient data analysis.”

Donald Voltz, M.D., Department of Anesthesiology and Medical Director of the Main Operating Room at Aultman Hospital in Canton, OH, recognizes the inherent value in data analytics with and within decision support. “One of the greatest potentials in healthcare comes from how patients and healthcare professionals use the data and information that is generated,” he says. “There is a great deal of success on using population data to assess the effectiveness of treatments and interventions. There is no question this will continue to be utilized to guide physician decisions and help patients become more involved with these decisions.”

But Voltz sees the communication connections within analytics as holding potential for understanding how the system functions. “One of the problems that remains in healthcare is communication between health professionals as well as between patients and their care providers,” he says. “Data analytics on what information is required, or of most interest, to making my decision goes a long way to ensure that a high quality of care is being delivered. Without such an understanding, and the use of decision support to filter the expanding amounts of patient health data, healthcare professionals and patients will be overwhelmed with the data deluge.”

In fact, Voltz envisions technology enhancements to current systems to drive more efficiency and generate more informed decisions to improve patient care. “Imagine a smart system, one that sits on top of one or more EHRs, that recognizes all the members of the care team,” he says. “When an abnormal result, a missed finding to support a diagnosis, or a previously ordered test is entered into a different system, decision support aids in addressing the needs by the most appropriate member of the team. In addition, tracking on how this is accomplished brings about the ability to redesign systems, visual displays of information, or processes to improve the flow of information in the future. Predictive presentation or smart displays of relevant information bring consistency and less risk of errors from missed data or duplication of services.”

**ANALYTICS IN IMAGING**

The explosion of the smart systems, particularly for more complex and chronic patients, as well as the ever increasing volume of patient data, is creating problems for healthcare professionals, patients, and providers. “One of the great potentials in healthcare comes from how patients and healthcare professionals use the data and information that is generated,” he says. “There is a great deal of success on using population data to assess the effectiveness of treatments and interventions. There is no question this will continue to be utilized to guide physician decisions and help patients become more involved with these decisions.”

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Creating a strong data security program

Support strategic initiatives with the right mix of technology.

By Ron Ropp and Becky Quammen

This article is part three of the Quammen three-part security series. Parts one and two were published in the July and October 2015 issues of Health Management Technology.

Security threats in healthcare are becoming more prevalent – and, therefore, worrisome. Consider the following: In 2014, more than 12 million healthcare records were breached. And the situation became even more dire in 2015, with more than 94 million records breached from the beginning of the year through June 26, according to the United States Department of Health and Human Services (HHS).

With the threat front and center, healthcare organizations are ready to take action. In fact, 87 percent of healthcare professionals indicated that information security had become a critical business priority, according to results of the HIMSS 2015 Cybersecurity Survey, which included responses from 297 healthcare professionals.

And it looks as if healthcare organizations are ready to move forward, purchasing and implementing the tools necessary to keep risk at bay. Indeed, 63 percent of organizations are planning to increase spending to offset data threats, according to a Harris Poll survey of 920 IT decision makers conducted on behalf of Vormetric, a data security solutions vendor. And 81 percent of the professionals surveyed in the HIMSS study believe more innovative and advanced tools are needed.

The challenge for you, as a healthcare leader, is to actually implement the technologies and tools that will support your strategic security initiatives. To do so, you need to ask the following questions:

- Do you have the technology tools that will support the three “Ps”? That is, do you have technology in place that will enable your people to adequately implement security policies and follow established security procedures?
- Do you actually know what tools you have up and running – and what technologies might fill in the gaps?
- Are you considering the fact that many of your staff members bring their own technology into the mix? Do your security plans account for these “bring your own cloud” or “shadow IT” movements – both of which refer to technology, apps, and infrastructure that are being used within your organization outside of the IT department’s sanctioned technologies? Are you protecting data that is potentially being stored by employees in Dropbox, Evernote, or iCloud?

By answering these questions, you can better determine what tools you need to support your strategic security initiatives, instead of simply buying the next big thing from each and every vendor that knocks on your door. In essence, you can create a security technology purchasing initiative that enables your organization to identify where your risk is greatest and then take action on the most pressing priorities, ultimately purchasing and implementing the tools that will offer you the greatest protection.

When creating such a program, you are likely to assess the viability of the following tools:

- Security risk assessment technologies. Because your organization handles protected health information, you must regularly review the administrative, physical, and technical safeguards that you have in place to protect the security of the data. By conducting these risk assessments, you can identify potential weaknesses in your security policies, processes, and systems. Risk assessments can also help providers address vulnerabilities, potentially preventing data breaches or other adverse security events. In fact, the Office of the National Coordinator for Health IT, in collaboration with the HHS Office for Civil Rights and the HHS Office of the General Counsel, has developed a downloadable Security Risk Assessment Tool to help guide organizations through the process.
- Intrusion detection systems (IDS), intrusion prevention systems (IPS), and firewalls. Firewall and IDS technologies have been around a long time,
as have newer IPS tools that monitor and respond to threats. However, when purchasing these tools, it’s important to remember that security incidents are no longer isolated events. The threats are advanced. Proactive security is required to maintain protection. No longer can you simply build a bigger and higher wall. The threats have been able to evolve faster than these systems that can identify them using “signatures.” Newer next-generation IPS systems or firewalls (sometimes called NGIPS or NGFW) allow for more sophisticated prevention and response. The typical traits of a next-generation system are application awareness, network awareness, identity awareness, behavior awareness, and the ability to dynamically tune itself based upon the data it gathers.

**Security information and event management (SIEM).** You likely already have logging and monitoring of some sort in your various technologies in place. But do you have a way to gather this information centrally and manage the volumes of log and event data that exist? Does it give you actionable information? And are you looking at the right things? There are many vendors and tools that provide SIEM capability, but first it’s important to determine your scope. Are you simply complying with a regulatory requirement or an enterprise implementation, and what are the critical things you want and need to know?

**Mobile device management (MDM).** These tools and software products are used to centrally manage your mobile devices. As BYOD and other mobility initiatives are more “the norm,” do you have the platform that protects your organization? MDM systems typically implement administrative features on mobile devices that allow you to secure functions like email, applications, and Web browsing, and place potential restrictions on devices.

**Encryption.** Do you have tools in place to make it easy to encrypt email and other network systems transmitting data? Some phones and newer operating systems offer encryption by default for the entire device. Even better, do you have tools that examine content and automatically encrypt emails upon distribution, in addition to a strong policy on what can and cannot be sent? Have you conducted an inventory of your systems that communicate in house, and are they securely transmitting all information? Such a review should include file shares, the intranet, portals, etc.

The most important thing to remember is that you must always consider risk and security management as a core and ongoing function, and not a one-time event. Keeping information security tools in your annual budget is a requirement and should be accounted for continually as the threats become more sophisticated and the data more pervasive. HMT

**REFERENCES**

Paper-era security in the digital age

Does hospital data security start with you?

By Chad Michael Van Alstin, Features Editor

By the time this article is published, odds are another security incident will have been announced, exposing millions of records to the eyes of clever thieves. Even with HIPAA fines and the public shame that comes from being a media headline statistic, it seems there is no end in sight to the waves of data breaches that are sweeping away a patient’s right to have their medical information secured.

In this Q&A, data security expert David Finn, Health IT Officer, Symantec, explores what healthcare organizations – and individuals – can do to improve privacy and keep valuable patient information out of the hands of those who would use it for nefarious ends.

Editor’s Note: The following interview has been edited for the purpose of clarity and concision.

**David Finn**, Health IT Officer, Symantec

WHEN WE TALK DATA SECURITY, THAT ENCOMPASSES EVERYTHING FROM THE STORAGE OF INFORMATION TO THE CHANNELS OF COMMUNICATION BETWEEN DEVICES. IS THERE A BLANKET PRIVACY AND SECURITY SOLUTION THAT CAN COVER EVERYTHING?

One of my favorite sayings is, “A fool with a tool is still a fool.” Particularly in healthcare, the CIOs, the CFOs, the operating officers, they want to buy a technology and turn it on and think that they’ve solved their security problem. But these are big, complicated systems – not unlike an EMR – and if you think you can put these in without adding staff, getting some consultants, and understanding workflows and changing processes, you will be about as successful as you would if you put in Epic or Cerner without changing any of your practices. It just won’t happen. It might work for a little while, and then the people who put it in change jobs and move on, and no one knows how to use this tool again.

One of my other things I like to say is that robotic surgery is not actually surgery being performed by robots on patients. Or a medication cabinet isn’t actually dispensing drugs directly to patients – you have to have smart people using these very complicated tools in order to get the outcome you’re trying to achieve.

IS CONTINUOUS EDUCATION AND PROPER TRAINING THE ANSWER? IT SOUNDS LIKE THE PROBLEM IS MOSTLY A LACK OF GOOD PEOPLE WITH THE PROPER SKILLSET.

You have to have the tools. Don’t get me wrong. I’m not saying don’t use the tools, but if you aren’t using the tools correctly, you aren’t doing yourself any favors. And the worst thing you can do in today’s world is create a false sense of security, because just having a tool isn’t going to protect you.

You strike an important cord, I think. Security is ultimately a people problem. Computers don’t click on phishing emails, and no tablet has ever social engineered its way into a secure area. And so, you have to have the tools to know when stuff is going wrong, but you have to really focus on the people – getting them educated and helping them understand the value of the information they’re trying to protect and why it’s important to protect it.

Some of these scams and techniques used by the bad guys are getting really smart and clever, though. How do you ensure that staff at a provider location is educated on the latest methods?

Well, and that’s one of those things – it’s an ongoing process. A lot of healthcare organizations have security and privacy training they do annually, and you get 45 minutes or an hour – and that security training from the first year you take it until the second year, the whole threat landscape has changed. I’m not saying it takes dozens of hours a year, but you have to keep reminding people when new things happen – and they have to be informed about them.

When I was a CIO, I had two requirements for training: It had to be personal, and it had to be entertaining. Everything you would teach at your business to employees to protect their business applies to them in their personal practice.

I read one your articles where you were talking about how you encrypt your device.¹

That’s right. I do.

I wish you were the norm for the American people. Most people don’t understand why that’s important. And what’s even worse because they don’t know what’s happening on their mobile devices every day. Most people have no idea that when they post a picture on Facebook, it’s geotagged. Everyone now knows you’re on vacation, and your house is unprotected. It won’t be very long before the bad guys figure out how to use that, if they’re not already. And so, yeah, it’s about protecting the business and the EPHI (electronic protected health information), but that really applies to people as individuals, too, and we don’t always make that connection. And then, let’s get real, security and privacy training can be very boring. You can talk for hours about HIPAA and fines and all that stuff – but you have to make this entertaining. It doesn’t have to last hours, but it has to be to the point and help them understand.

Is this one of those things where individuals and providers may not get the point until after they’ve been a victim of a data breach? For example, I didn’t start encrypting my phone until after I had it stolen once — then the importance of security and privacy became clear.

(laughs) Yes, that is very impactful. And that’s exactly what we’re seeing in healthcare, unfortunately. A lot of organizations don’t address the problem until they’ve had a breach, and 40 million records later they’re dealing with it. I think part of our job at Symantec, and you in the media, is to help educate the non-IT executives on why this is important.

¹ Some of the text references a footnote, but the footnote is not provided in the image.
Healthcare is just now moving away from paper. So, when we talk about data security, is that something that is decades away? After all, it took so long just to get providers to use electronic records—and in some cases they still aren’t.

It’s funny, I did a presentation recently in Chicago, and I was going back through privacy and security. I started with Hippocrates and the Hippocratic Oath, which is about 400 B.C.—he talked about the sacred trust between a physician and a patient, that you should never speak abroad of anything known about them.

And so I said, “When is the next time we get any rule in healthcare about protecting information?” And the answer was 2003, when the Privacy Rule went into effect in the United States (laughs)! We went from 400 B.C. to 2003 without any changes in our approach to privacy of healthcare records, and now that we’re all digital, medicine is just trying to catch up with it.

So, as a security vendor how do you overcome that challenge? Healthcare and tech don’t always mesh—is education your biggest obstacle when it comes to selling someone a security system?

Exactly. Getting them to understand what they need to do in healthcare is always a challenge. There are a lot of people, for example, still resisting mobility. Well, it’s a requirement today. Physicians are mobile, you’ve got patient engagement under Meaningful Use 2—you cannot keep mobility out, you have to embrace it. Yes, it’s probably a new technology to your organization, and these probably aren’t even devices you own even—these are devices that are going to be connecting to your resources. So, you need new strategies.

We have to change the way we think about delivering healthcare, and that means we have to change the way we think about security. There’s that component of convincing providers that healthcare needs new technology, and then there’s the component—and it is an educational issue as well—that these new technologies, while they’re cool and easy to use, the easier it gets for the end user, the more complicated it gets for IT and how you manage to control them.

We’ve talked a lot about what providers can do in terms of protecting data, but is there anything that patients can do to keep their personal information secure, apart from not seeking healthcare services? Yeah, and I think you touched on this in your article—people need to be sensitive about what they’re doing. In our Internet security threat report that we issued in April of this year, for the 12-month period of January through December 2014, we looked at mobile health applications. Some of those mobile health applications sent—in clear text—passwords and your patient data. Some of them reported up to 15 separate domains—now, why would a healthcare app have to point to 15 separate domains? They’re collecting that data!

And most users don’t think about this. So, there’s an education component—and yeah, you think the user would send data to the app in the cloud and maybe you’ve chosen to send it to a personal record, but that still doesn’t account for 13 other places it’s sending data. In some cases, the app is sending data to adware sites—and those are the things patients, in fact any consumer of digital technology, needs to look out for.

Will businesses catch up in the same way that consumers are beginning to? We’re starting to see market demand on the consumer side for devices with native encryption and the like. I think they will. Particularly in healthcare, privacy and security is going to become a differentiator. If you have the choice between two hospitals—and you clearly do—and one just breached 40 million records while the one down the street has never been in a headline, which one are you going to go to?

We’ve seen hospitals that compete with breached organizations use that information in media ads. And I’m not saying that’s a good thing either, because pretty much anyone can get breached this day and age, but I think it really is going to be a differentiator. People are going to start thinking about those track records and their information and who can do the best job of protecting it.

One final question: Is there any excuse for all of these data breaches we’re seeing involving healthcare organizations?

I have a couple of thoughts about that. Of course, I’m reminded again of your article—if you went from 2014 back to 2009, what you’d see on the HHS “wall of shame” is that about 66 percent of the breaches were lost or stolen devices. Now, give me a break! Encryption would have stopped all of those. Laptops, mobile devices—if they’d have been encrypted, there wouldn’t have been a breach.

The other thing is I think healthcare asks the wrong questions. When I go into a provider—and I’m talking to someone outside of IT or above IT—the question is usually, “How do we keep from becoming the next CHS or the next Anthem or BlueCross?” And I understand the fear and motivation behind that question, but if all you want to do is stay out of the headlines, you’re asking the wrong question. The real question should be—and this applies even to individuals—“Given the threats we face on a daily basis, how do I make good, rational business decisions and clinical decisions that make sense and drive the business without exposing more risk?” Healthcare is very risk adverse, and the problem in today’s world is you can’t eliminate all the risk—you have to make smart decisions.

References
Google Glass: Seeing too much of your patients?

By Chad Michael Van Alstin, Features Editor

Paula Skokowski, Chief Marketing Officer, Accellion talks with HMT about the intriguing use of Google Glass in healthcare and what that means for patient data security, privacy, and quality of care.

Let’s start by talking about the applications Google Glass has in healthcare. How are they being used?

We at Accellion actually built a reference application for Google Glass that’s for an ER doctor and, basically, it shows how you can hook up a secure content platform to do an application on the glasses whereby a doctor can scan a wristband barcode and see vital information on a patient pulled up, and then also be informed when results are available, such as MRI results.

The new upcoming version of Google Glass is more targeted to the enterprise sector, and it also offers tremendous opportunities for healthcare companies to deliver applications to doctors and healthcare workers that let them provide levels of care that you couldn’t do without this technology. So, it’s very exciting, but there are concerns about security.

It seems as if its capabilities are similar to any mobile device. What are the additional privacy concerns that Google Glass brings to the table?

You would be quite aware if a TV crew was walking around your building – somebody would know something was up. But if somebody was walking around with a pair of glasses on recording, you might not realize what was going on. And so, the security concerns are, first of all, do you have in place a policy about when and where and how people can record video or capture pictures wearing wearable devices? So this would be like an extension of the BYOD (bring-your-own-device) policy, to like WYOD (wear your own device).

And the next thing is that there is another level of concern with wearables, and that is they can capture a tremendous amount of information. And so, even application developers need to think about, “Just because I could capture this data, should I?” You really shouldn’t be capturing data that is not central to the application. For example, in a healthcare situation, let’s say it was something to do with a flu epidemic, as part of this wearable device, you may want to record geolocation because that’s sort of relevant to flu outbreaks. But if you were actually doing a healthcare application that had something to do with, say, a rash on someone’s arm – well maybe you shouldn’t be capturing geolocation for that.

Is this even something physicians will want to use? Will it actually help them improve the care they provide?

When you see our Google Glass ER app, you’ll get it. If you were an emergency room doctor and you had on your Google glasses, it’s giving you information about this patient, which means you have your two hands free – that’s an example of real value add, and it’s not just for the doctor, it’s for the patient too. I think that’s what’s so interesting about these wearable devices; they also have real potential for transformative-type applications – particularly for applications where there is a need for hands-free, and particularly in healthcare there is that need.

I think it’s an exciting time. Think about it – fighter pilots are the ones who always have these heads-up displays. Now, it’s coming down to people who work in hospitals or work out in the field.

Are Google Glass and wearables something providers should be hesitant to adopt?

I think they should think this through before they do it. Here’s the thing, with smartphones and tablets I think that enterprise IT was caught flat footed. They were in their organizations before they had any chance to think it through. With wearables, I think there’s an opportunity for organizations to get ahead – and the lessons learned from securing smartphone and tablet use, they apply to wearables. It’s not that I think people should be hesitant about it; I think they should go in from the start with a viewpoint of thinking about the security aspects as much as the benefits. HMT
**DATA BREACHES IN HEALTHCARE: TACKLING A BIG PROBLEM**

**THE FIVE BIGGEST HEALTH DATA BREACKES [SO FAR]**

1. **Anthem Health Breach:** Affected - 80 million people [Hacking/IT incident]
2. **Premera Blue Cross:** Affected - 11 million people [Hacking/IT Incident]
3. **Science Applications International Corp:** Affected - 4.9 million people [Loss]
4. **Community Health Systems:** Affected - 4.5 million people [Theft]
5. **University of California, L.A.:** Affected - 4.5 million people [Hacking/IT incident]

**THE TOTAL NUMBER OF HEALTHCARE RECORDS BREACHED PER YEAR**

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<th>Year</th>
<th>Records Breached</th>
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*2015 data through June 28, 2015

**DATA PROTECTION: AN EMERGING PRIORITY FOR HEALTHCARE ORGANIZATIONS**

- 87% of healthcare professionals indicated that information security had become a critical business priority.
- 81% believe more innovative and advanced tools are needed.
- 63% of organizations are planning to increase spending to offset data threats.

**DATA PROTECTION AND SECURITY: READY — OR NOT?**

- 73% of organizations have implemented a data breach response plan.
- 67% don’t have solid understanding of what needs to be done to minimize damages and retain consumer trust if a breach occurred.
- 41% had no set time for reviewing and updating plans.
- 31% had not reviewed their plan since it was created.

**SMALL HOSPITALS: READY, WILLING — BUT NOT ABLE?**

- 91% of small healthcare providers (less than 250 employees) have suffered a data breach.
- 23% have had a medical identity theft incident.
- 100% of these organizations are taking steps to protect data.
- Only 30% have resources needed to ensure privacy/security requirements are met.

**SAFEGUARDING AGAINST A DATA BREACH: DON’T MISS THESE 8 BASIC STEPS**

1. Conduct a HIPAA security risk analysis
2. Perform vulnerability assessments and penetration testing
3. Implement SIEM (Security Information & Event Management)
4. Know who can legitimately access your systems from the outside
5. Get rid of generic passwords
6. Develop and implement a strategic data security plan
7. Train employees in data security and privacy issues
8. Encrypt all patient data
We had a problem at PeaceHealth’s Sacred Heart Medical Center at Riverbend here in Oregon. It’s one I experienced firsthand in my previous life as an operating room (OR) anesthesia technician. It can be summed up with these conversations, which happen multiple times every day between departments at hospitals everywhere:

**OR Tech to Distribution:** “I need an IV pump for this case.”

**Distribution:** “We don’t have any.”

**Tech:** “This is Distribution. You don’t have any IV pumps?”

**Distribution:** “Check with ICU, they keep taking them all.”

The OR Tech treks over to the ICU …

**OR Tech to ICU Nurse:** “I need an IV pump for this case.”

**ICU Nurse:** “We don’t have any.”

**Tech:** “This is ICU. You don’t have any IV pumps?”

**Nurse:** “Well, we need them for here.”

**Tech:** “But this patient is coming to you.”

**Nurse:** “I’m sorry, you can’t have an IV pump.”

Then the tech goes to the secret storage place where the ICU has hoarded about a dozen pumps, looks to make sure no one’s watching, and runs off with an IV pump for his case.

**The impact of hoarding**

Hoarding is a real issue that causes friction between departments, not to mention wastes time due to searching and having fruitless conversations like the ones above. This time could be much better spent caring for patients.

It also hinders a hospital’s ability to find equipment for preventive maintenance and recalls, creating a patient safety and liability hazard. During this process, technicians spend inordinate amounts of time searching a hospital’s nooks and crannies for the things they need.

Then there’s the sense of scarcity that can negatively impact capital budgets. Hospitals typically buy or rent 20 to 30 percent more assets than they actually need, just to make up for the equipment that’s being hidden from view. What’s more, many hospitals write off hundreds of assets per year, simply because they can’t be located.

**The root cause behind hoarding**

This sense of scarcity at Riverbend led to pressure to lease or buy more IV pumps. Instead, we decided to question whether we actually needed more pumps, and determine the root cause of the perceived scarcity.

The root cause is not hoarding, as some may have guessed. The root cause is the reason nurses hoard and hide equipment – our nurses didn’t have pumps available to them when they needed them. They don’t have time to waste looking for IV pumps and can’t run the risk of not having a pump for a patient who needs one.

So the problem we set out to fix was not to get nurses to stop hoarding; it was to support nurses by making sure they always had IV pumps ready and available.

**The solution to hoarding**

Riverbend set out to leverage our existing Versus real-time locating system (RTLS) to implement a just-in-time periodic automatic replenishment (PAR) model for IV pumps. The RTLS was already in place as part of our nurse call system. We had expanded its use to improve patient flow in the emergency department, so leveraging the RTLS investment for yet another process improvement initiative was an easy decision.

Engaging a multi-disciplinary team including executive leadership, improvement engineers, IT, nursing, distribution, biomed, and others involved with managing assets, we formed a plan to decentralize our distribution process for IV pumps. I know, “decentralize” seems like a scary word, but it proved to be hugely successful on multiple fronts. Here’s how it works:

Every floor in our Riverbend hospital is divided into north and south units. Each unit has a central
supply closet – this is where we house clean IV pumps for every unit on every floor. By placing an RTLS sensor in each closet and tagging all the IV pumps, we have an automated tool to see in real time how many pumps each unit currently has.

Next, we set the PAR levels for each wing by doing internal observations and consulting with other hospitals. It’s also possible to first tag your pumps, then use RTLS reporting software to determine how many pumps are typically in use (i.e., in a patient room) at any given time on each unit. For example, we determined that the labor and delivery unit should ideally have 15 available IV pumps on hand, and that a count of five available IV pumps would qualify as a “critical low” that needs to be immediately addressed.

Through the RTLS PAR-level asset management software, our distribution department can see a color-coded count of all IV pumps in every unit, indicating whether each unit is below its PAR level, at a critical low, or critical high – which allows overstocked IV pumps to be distributed elsewhere.

For dynamic communication across multiple departments, the system also automatically sends alerts to workstations and text messages to mobile phones when critical lows and highs are reached, so distribution can address the situation in real time.

Changing the culture with proof
This process wasn’t without its bumps in the road. Nursing was highly suspicious that we were going to make do with the pumps we had, instead of purchasing more. Distribution wasn’t sure nursing could give up the practice of hoarding. But by engaging nursing throughout this process and fully committing to the PAR-level concept that would always make pumps available, the initiative gained nursing’s trust.

Today the system works really well, and hoarding is a problem of the past. With the cooperation of different departments and the use of technology, we were able to change the culture of our practice.

Return on investment
Using this system produced an immediate, long-term, and ongoing return on investment. We immediately avoided a capital expenditure of $600,000, which is what Riverbend had planned to spend on additional IV pumps. We were also able to reduce the number of pumps in our existing fleet by 26 percent, eliminating the need to lease pumps altogether. The savings from these reduced rental costs totals up to $2.7 million over a 10-year period.

However, this project wasn’t just about saving money. It also reduced frustrations for staff, saved valuable time, broke down barriers between departments, fostered a culture of trust and collaboration, and ultimately allowed us to enhance the care we provide to patients.
On Oct. 1, the U.S. healthcare industry finally moved into ICD-10 production mode after years of preparation. With one month into the transition, performance and process improvement activities are the priority focus areas, as well as careful monitoring of key performance indicators. As we move into the post go-live phase of the ICD-10 transition, healthcare organizations should focus on five key areas to ensure ICD-10 compliance and success:

1. **Physician documentation**
   - ICD-10 compliance begins with physicians and other care providers who must incorporate the new ICD-10 terminology into their documentation. Without complete and accurate documentation that fully captures the specificity required for ICD-10 coding, compliance with the new code sets will be impossible.
   - As Example 1 illustrates, physicians will need ongoing education and feedback to help them make documenting in ICD-10 second nature. It will take effort on the part of providers as well as their organizations. The support and engagement of medical staff leadership during this period is critical.
   - In the short term, an ICD-10 hotline that can call for assistance may help during the transition, but over the long-term, a clinical documentation improvement (CDI) program will promote consistent education and establish a feedback loop.

2. **Validate coding accuracy**
   - Success with ICD-10 requires ongoing coding validation and lots of it! ICD-10 is brand new to coding professionals – especially ICD-10 procedure coding. The ICD-10 Procedure Coding System (ICD-10-PCS) requires coding professionals to radically change their way of thinking when applying procedure codes as compared to ICD-9 (see Example 2).
   - Every organization needs a coding audit plan – be it an internal process, or through an external resource, or a combination of both. Don’t wait for denials before auditing coding accuracy. Daily audits should start immediately so errors are detected early on and resolved. Focused as well as random auditing will identify coders who are struggling and pinpoint areas for additional coder education, as well as opportunities for documentation improvement.
   - Coding professionals should continuously review “the sources of truth” when it comes to compliant ICD-10 coding, such as the ICD-10-CM/PCS Official Guidelines for Coding and Reporting as well as the AHA Coding Clinic for ICD-10-CM and ICD-10-PCS.
   - Be ready for declines in coder productivity. Establish a contingency plan for addressing productivity issues in the short and long term. Some organizations have temporarily adjusted staff schedules. Others have supplemented their coding staff via outsourced resources to help their staff through the learning curve. Finally, look for ways to support coding and CDI professionals and keep morale up during the transition.

3. **Provide ongoing education and feedback**
   - Keep the lines of communication open across your organization in the weeks and months following ICD-10 implementation. In addition to physicians, coding and CDI professionals will need ongoing education and feedback as they adjust to the changes. As coders begin coding the whole spectrum of real-world medical records in ICD-10, they will encounter unfamiliar situations where advice is needed. Even experienced coders may come to different conclusions when coding complex cases. Create a process for resolving these differences, and once resolved, establish standard guidelines for your institution to help coders address these complex coding scenarios in the future.
   - When coding guidelines are updated, inform coders, CDI professionals, and physicians as quickly as possible. Creative ways to disseminate need-to...

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**Example 1: ICD-10 demands greater documentation specificity**

A patient involved in a car accident arrived in the local hospital’s emergency department, having sustained a neck injury and complaining of not being able to move or feel her legs. After physical exam and workup, the physician recorded the diagnoses of “cervical spine fracture with cord compression.” The patient was then transferred via helicopter to a larger facility for surgical intervention.

Subsequently, upon review of the patient’s medical record, the coder also noted that it included a detailed report from the radiologist, which indicated fractures of C1, C2, C6, and C7 vertebrae. The radiologist had further documented that the fracture of C2 was a Dens fracture with minimal dorsal displacement, and the presence of an epidural hematoma at C6-C7.

Thanks to documentation specificity provided by the radiologist, the coder was allowed to assign one of the new, specific ICD-10 codes for fractures – in this case, a code for a posterior displaced type II Dens fracture.

Based on the physician’s documentation, the coder also assigned a code for an unspecified injury at C6. However, the radiologist’s report indicated the presence of an epidural hematoma at C6-C7. If this information had been incorporated in the physician’s diagnosis, it would have allowed for the assignment of a specific ICD-10 code that would have described the epidural hematoma with incomplete compression of the cord. The result would have been complete, accurate, and compliant ICD-10 coding, as well as documentation that fully explained the severity of this patient’s injuries.
ICD-10 Compliance

know information can be employed such as a daily huddle with staff, email alerts, one-on-one physician consultations, or posting to a VPN or SharePoint site.

4. Remediate
Beginning in mid to late October, hospitals and health systems will start to see claims come back, particularly from Medicare. Monitor denied claims closely to identify coding errors and potential documentation gaps, and then take appropriate corrective action. A careful review will help determine where more education is needed – with coders, CDI specialists, and with physicians.

5. Monitor KPIs
Organizations should closely monitor key performance indicators (KPIs) post go-live. The following metrics need to be evaluated daily and shared across the revenue cycle (finance, billing, patient registration, HIM, and CDI teams) along with the medical staff office/CMO, those responsible for quality and public reporting, and with your organization’s top leadership:

- Days not final billed (DNFB)
- A/R days
- Financial impact on MS-DRGs and APR DRGs
- Coder productivity metrics
- Coding quality
- Denials

Monitor case mix and review high-volume diagnosis-related groups (DRGs). Look for the root cause of any change, as it may be a sign of something gone awry with ICD-10 code assignment. For example, DRG shifts, both positive and negative, should be a sign of something gone awry with ICD-10 code assignment.

Close attention should also be paid to publicly reported quality and outcomes data, especially since ICD-10 codes for hospital-acquired conditions (HACs) and patient safety indicators (PSIs) have increased in specificity with new documentation requirements. Work closely with your quality and public reporting teams to make sure they understand the ICD-10 codes and the corresponding documentation that drives this data.

Proactive and frequent data monitoring will ensure your ICD-10 transition is on track and any problem areas are addressed immediately.

Through complete and accurate capture of the patient’s experience in both documentation and coding, ICD-10 will promote more accurate reimbursement, and allow for a more precise assessment of quality and better disease management. Given a change of this magnitude, there will be challenges, but with careful planning and the right resources, healthcare organizations can achieve and sustain ICD-10 success in the weeks and months ahead. HMT

Example 2: Coding procedures in ICD-9 vs. ICD-10

In order to code a carotid endarterectomy in ICD-9, the coder would look up this procedure in the ICD-9 procedure index. The ICD-9 code listed for a carotid endarterectomy is 38.12 Endarterectomy of other vessels of head and neck.

In ICD-10, the coder must first identify the body system on which the procedure is performed – in this case, upper arteries. Next, the coder must select one of 31 root operations that best describes the procedure. In this case, extirpation. Then the specific body part must be identified – either the left or right common carotid artery. The coder then reviews the operative report to determine the approach. Was the site of the procedure accessed via an open incision or percutaneously?

The coder must understand all aspects of the surgical procedure in order to assign the correct I-10 code. The result is more complete and accurate information about the procedure performed on the patient, but the process is very different from looking up a code in an ICD-9 index.

CMS releases ICD-10 claim denial numbers

By Chad Michael Van Alstin, Features Editor

Just over 10 percent of claims filed since the implementation of ICD-10 on Oct. 1 have been denied, the Centers for Medicare & Medicaid Services reported on Oct. 29.

Of the 10 percent, 2 percent were reportedly rejected as a result of incomplete or invalid information, with 0.09 percent being denied due to the use of invalid ICD-10 codes.

The metric for claim denials is based on “end-to-end testing conducted in 2015,” CMS notes on its factsheet. According to what’s published, there have been an average of 4.6 million total claims submitted per day since Oct. 1.

This is the first metric on progress to be released by CMS since the ICD-10 launch, though more accurate numbers are expected to be released before the end of the year, after more claims are processed.

“CMS has been carefully monitoring the transition and is pleased to report that claims are processing normally,” the organization states on its website.

Also worth noting, 0.11 percent of claims were reportedly rejected due to improper ICD-9 coding. In an effort to ease the transition process, CMS has previously stated they would not deny claims coded in the correct ICD-10 family.

SOURCE
Everything’s different; nothing has changed

ICD-10 disruptions don’t have to be scary.

Now that ICD-10 is here, we can finally set aside the lingering debate about whether the change would occur in our lifetimes—or ever. We can begin to see the payoff after years of training and preparation—and we can look forward to fewer articles about “truly bizarre” ICD-10 codes.

That’s got to be a relief for everyone, especially those who have walked into a lamppost at some point.

In these first few weeks of ICD-10, as we’re seeing mostly business as usual—and as providers have little choice but to take a wait-and-see posture toward the impact on reimbursement for the first rounds of ICD-10 claims—it’s time to make an adjusted set of contingency plans. This isn’t just checking a box—it’s following through on your commitment to a successful ICD-10 transition.

Address training needs strategically

If you haven’t already, formalize your process for gathering ICD-10-related feedback from your team, and find ways to share this insight across your organization. This will help everyone who is working together to form new processes around ICD-10. For example, when physicians understand the specific challenges of coders, they will better understand the adjustments they need to make to their documentation process. And when clinical documentation improvement specialists understand the developing trends in denial management, they can pay special attention to documenting medical necessity or take other steps that help prevent similar denials from occurring in the future.

Ask your staff which specific parts of their workflow are taking longer or becoming more cumbersome: where additional (or alternative) resources would be helpful, or where they notice opportunities for improvement or the need for additional training.

Once you’ve gathered and analyzed this feedback, act on it by adjusting your training plans and resources accordingly. Don’t stop there—look ahead at the coming months. Examine your Q4 2014 and Q1 2015 claims data and pay special attention to the most common families of codes you’re likely to need through the rest of this year and the first part of 2016.

Depending on where you’re located, for example, you may need to be ready to document and code snow-sports injuries throughout the winter, while next summer you’ll need to master mountain-bike-related codes. And wherever you’re located, you’re more likely to need to code flu and flu-related conditions in winter and spring. Get a jump on those trainings and reference materials now.

Here are a few other ways to add strategic focus to your ICD-10 training and planning:

• As remits start to roll in, immediately identify and continue to monitor denial trends by payer. Get staff comfortable with specialized or strategic work queues so that you’ll be better prepared to segment workload by payer as needed.

• Apply the lessons learned from commercial payers to government-payer claims. The announcement from CMS regarding “families” of ICD-10 codes has been thoroughly written about elsewhere—but a less-discussed risk is that processes for ICD-10-coded Medicare claims will evolve differently due to CMS’ adjusted rules.

• Code and develop processes for Medicare claims as though nothing has changed about CMS’ rules for these claims. The goal should be to abide by the full specificity and documentation necessary for ICD-10—if you don’t, there will be a gap in your processes for Medicare claims when CMS’ rules re-adjust a year from now.

• In anticipation of a potential spike in ICD-10-related denials, focus on reducing preventable, non-ICD-10-related denials. Until meaningful feedback begins to roll in from payers—and perhaps, more importantly, if that feedback shows little ICD-10-related impact—the greatest single sources and root causes of your denials will be the same as they were before ICD-10. If a spike does occur, the effect on your organization will be lower overall if you’ve addressed root causes of denials and streamlined workflows for preemptively addressing them.

Remember the front office

The flow of information relevant to ICD-10 begins when the patient makes their appointment. In fact, the specific ability to code initial, subsequent, or sequela encounters accounts for a significant percentage of the overall increase in number of codes, as does laterality—information that can often be gathered effectively during check-in or appointment setting.

As an example, let’s say a physician forgets to document whether it’s an initial, subsequent, or sequela encounter. If your coders can find this information on the appointment record, that might make the difference between the claim going out the door on time or being delayed due to incomplete documentation.

Everything’s fine so far—so keep making it better

While signs in the industry are positive thus far, there’s still a long way to go on ICD-10. The right ongoing training plan and the right insight into your organizational performance will help you build on the momentum of this positive start—and help you move forward strategically so that no matter what, your organization is stronger if and when ICD-10-related disruption occurs.
MU Stage 3: Can we get there from here?

Studies show that the majority of providers pursuing Meaningful Use (MU) have attested only to Stage 1, and many are questioning whether to proceed further. Yet, for those who have made the decision to invest in technology and make the effort to attest to Stage 2, there remains good reason to stay the course – provided that the Final Rules reflect provider concerns voiced during the commenting period.

When the Centers for Medicare & Medicaid Services (CMS) and the Office of the National Coordinator for Health IT (ONC) released their proposed rules outlining the requirements for Meaningful Use Stage 3 in March 2015, CMS promised that Stage 3 would give providers more flexibility. On close examination, achieving the most expanded requirements in Stage 3 seems challenging, from both a timeline and technology perspective, as issues related to interoperability and data sharing are not entirely in the provider’s control.

Primary objectives of MU Stage 3

With the delays to Stage 2 due to vendors’ inability to meet timelines for 2014 Edition CEHRT, the earliest that health organizations can begin reporting against Stage 3 criteria is 2017 – and they must begin in 2018, regardless of prior participation or stage of Meaningful Use.

The eight Stage 3 advanced-use objectives to be met during that timeframe are:
1. Protect electronic health information;
2. E-prescribing;
3. Clinical decision support;
4. Computerized provider order entry;
5. Patient electronic access to their data;
6. Coordination of care through patient engagement;
7. Health information exchange; and
8. Public health reporting.

Perhaps the most perplexing of the Stage 3 requirements concerns objective six from the above list: coordination of care through patient engagement. Stage 2 offers a reduction from a threshold of 5 percent of patients to just one patient. The idea is simply demonstrating that providers have built out certain capabilities, rather than having a percentage of patients take specific actions. Yet, in Stage 3 there is a proposed increase to a threshold of 25 percent of patients. Many providers are raising questions as to the reasons behind the seeming reversal in re-instating a threshold at a much higher level. There is real hope that the agencies will address this confusion, as many providers feel strongly that they cannot control their patients’ use (or lack of use) of technology.

Objective seven from the list above, health information exchange, poses potential issues for health organizations meeting Stage 3 due to technology lagging behind regulatory expectations. This objective calls for the electronic transfer of continuity of care documents (CCDs), an activity that has de-failed to the use of DirectTrust to satisfy security requirements. Yet DirectTrust has not become as prevalent as expected, largely due to its inability to fit into existing workflows. Satisfying this requirement will depend on DirectTrust becoming much more commonplace in advance of 2018.

Similarly, objective eight from the list above is intended to drive health reporting to public registries. State registries are not typically equipped to facilitate connections with providers at even modest levels today, yet alone for the escalating number of connection requests they will likely receive as a result of this objective. Connectivity to these registries will need to become much more automated over the next couple of years to accommodate them, which is again out of provider control.

Getting to Stage 3

With the timeline and technical challenges that lie ahead in moving from Stage 1 (where most are today) to Stage 2 – and ultimately attesting to Stage 3 by 2018 – some in the industry are fervently hoping that truly sweeping changes will permanently alter the Meaningful Use landscape. Some larger organizations are quietly contemplating their options, leaving very expensive technology and infrastructure investments in limbo, at least for now.

By Michele Judge, Senior Director of Clinical Services, Emdeon
Imagine you’ve been thinking about replacing your roof. It’s not leaking at the moment, but you’ve been patching it for years and you know that the next big storm could mean serious water damage. A new roof is expensive, but you know that it will help keep your house – and the money you’ve invested in it – secure for years to come.

Unfortunately, your spouse is expecting your in-laws for a visit next month. The guest room is shabby and outdated, and the living room carpet, which your dog has done some digging on (as well as other actions I won’t mention), needs replacing. This is in addition to the steps leading up to the porch being in sad shape – so much so that you are concerned that the elderly in-laws might trip and fall on them.

In this scenario, it is easy to see why the roof repairs would be put off for a while. Spending money on the roof may mean that the stairs get a temporary fix, you have to buy a cheap carpet for the living room, and the guest room won’t get much more than a new bedspread. It’s either that or you may have to reach deep into your savings, which you really don’t want to do. Besides, convincing the spouse that the roof is a good investment would take more time and energy than you can muster, given all the other things on your plate. For your spouse, making family welcome is the most important thing. You know you need the roof, but you decide to go with your spouse’s top priorities instead.

Will your organization be ready for the coming storms?
For most hospitals, integration tools are rather like that roof. What you have was provided with your electronic health record vendor, and it does an ok job, as long as you don’t need anything more advanced than HL7-2. You know you are going to need a more robust integration platform soon, because the outcomes-based payment storms are coming. In the new world that will soon be upon healthcare providers, integration will be needed for a range of endeavors: accountable care organizations (ACOs), analytics, telehealth, and remote monitoring devices, plus other relationships and technologies that you can’t even imagine at this moment.

To go back to the home-repair analogy: There is a deluge coming, and the clouds are likely to start pouring rain sooner rather than later. It’s worth your time and effort to convince your spouse that the investment will pay off soon, because without the new roof, the new guest room (not to mention that new carpet) will likely be soggy.

Your C-suite colleagues are like your spouse – they have other priorities that seem much more urgent than an integration platform. But there is no doubt in anyone’s mind that outcomes-based reimbursement is on the horizon, and your hospital or health system won’t be granted some magic exemption. Plus, you have a need today, right this minute, for technologies like telehealth and remote monitoring to help reduce readmission rates and lower the cost of care.

While it may be tough to convince your colleagues and your board that integration is an investment that shouldn’t be put off any longer, it’s worth the effort to try to persuade them. Because when they hear the drip, drip, drip of revenue leaking away due to a lack of analytics and other key capabilities that depend on integration, they’ll want to know why you didn’t push harder to get them what they needed.

Do your homework and have a plan
Since your C-suite colleagues have priorities that will compete with the integration platform for dollars, make sure you are prepared when you present the possibilities. Do your homework: Know what technologies are available, what integration challenges your organization is facing, and what the costs are. In particular, look closely at the business and clinical projects that are dear to the hearts of your colleagues, and identify opportunities that will be enhanced by robust integration capabilities.

For example, if your interoperability capabilities are limited to traditional point-to-point
The study highlights how provider organizations rate their EMR vendors in terms of how proactive and effective they are in sharing patient data outside their organization. KLAS interviewed more than 200 healthcare professionals during a three-month period for this study. All participants identified barriers to interoperability. However, neither providers nor vendors mentioned technology as a missing ingredient, stating instead that a lack of agreement on the use of standards and willingness to share information are more likely causes.

In addition, the report identifies key areas and questions that, if addressed, could accelerate interoperability:
1. Is interoperability success tied to service?
2. Perception is not always reality.
3. Where does information sharing break down?
4. FHIR is hot – why are Carequality and CommonWell not?
5. Are there dollar differences in sharing?
6. Does interoperability impact EMR buying decisions?

To access this report, visit www.klasresearch.com.
Connecting what matters
Patient-centered interoperability leads to better care.

Why does interoperability matter?
There’s a lot of media and industry attention on interoperability these days. In general, people in the healthcare space welcome that attention, and applaud government and industry efforts to shine a spotlight on interoperability as a necessary step to help us solve the challenge of making it easier for health information to flow across different information systems.

One key point that we must not lose sight of is why interoperability is important. Interoperability isn’t just about solving a business problem. It isn’t only about the mechanics of connecting one health IT platform to another. Interoperability is about the patient. It’s about giving you, your family, and your loved ones the ability to move your health information securely between providers, regardless of what information system they might be using. At its core, interoperability is about helping providers get a complete picture of that patient’s medical history regardless of where they received treatment.

My own personal interoperability story
The lack of interoperability can manifest in many ways, such as the need to gather our children’s immunization records for school or transfer medical records from one physician to another. Sometimes the situations are far more serious and have dire consequences. A member of my extended family could have (and I say “could have” because there is no way to say with complete certainty) benefitted from a nationwide system of healthcare communication. My young cousin developed a fast-moving infection that required treatment from multiple health systems across multiple states. The care that he received was excellent, but it was simply not coordinated or communicated in a way that caught the problem in time to successfully treat the infection. Unfortunately, it was not contained in time and my cousin passed away.

I’m sure we’ve all experienced a situation where interoperability could have improved the outcome, which is why I am so motivated by the industry’s fight to improve data exchange.

Solving the interoperability challenge
To support the advancement of patient-centered interoperability, Cerner offers solutions that help healthcare organizations securely transfer data within the community and beyond. At the local level, providers have a need for information exchange as they refer patients to other specialists, send information to area laboratories and pharmacies, and communicate with care providers outside the organization. The Cerner Connectivity Hub helps providers connect to their local care community as they collaborate and electronically share patient information, wherever the patient goes.

To advance interoperability on a national level, Cerner collaborated with other healthcare IT companies to establish CommonWell Health Alliance, a not-for-profit trade association with the simple vision that health data should be available to individuals and providers regardless of where care occurs. CommonWell members are committed to building interoperability into their software, so that providers can maximize a trusted network for data exchange while maintaining their existing workflows. Cerner uses the services provided by CommonWell Health Alliance to allow our clients to exchange relevant clinical information with other providers that use CommonWell services.

The Cerner Health Information Exchange solution offers a central clinical data repository for the HIE and its community partners. With Cerner, HIE organizations have access to aggregated patient data to providers via an online portal and viewer embedded in the EHR.

Many HIEs are looking to expand their reach to connect care within a broader geographic region. Bringing together many different organizations to support community health programs takes strong leadership and a vision. One interoperability pioneer HIE organization in Indiana is doing just that.
Interoperability pioneers

The Michiana Health Information Network (MHIN) was established almost 20 years ago, long before interoperability became a buzzword. With the vision to create a shared central data repository with person-focused health histories specific to each patient, MHIN grew into one of the nation’s first and most deeply integrated HIEs.

After almost two decades of improving communication among healthcare professionals, MHIN has helped the Michiana community become one of the most connected healthcare regions in the country. Today, MHIN supports more than 3,000 providers associated with 14 hospitals across 11 counties in northern Indiana and southern Michigan.

When MHIN was founded, the healthcare tech industry had yet to develop information exchange solutions. The industry was still working to get providers on electronic systems, let alone focused on exchanging those electronic records. Although the industry as a whole wasn’t quite ready for interoperability yet, MHIN recognized the value of data exchange and seized the opportunity to begin connecting providers.

“The Michiana community was very unique. Most of our local providers used Cerner and they all connected to the one independent regional lab, which was also on Cerner,” says Mark Kricheff, M.D., Medical Director, MHIN. “We thought, instead of having everyone on separate Cerner EHR domains, let’s see if we can get all of our providers on the same Cerner EHR domain so that each provider had access to all regional patient’s health history.”

Cerner was tasked with integrating the independent local lab into MHIN’s inpatient records and outpatient EHR. That first step set the stage for MHIN to become an integrated provider.

As the Michiana region experienced organic growth and change, it became clear that not all providers were going to be on the same EHR system. MHIN and Cerner realized they needed a solution to connect all other health IT suppliers. Over the next 20 years, Cerner and MHIN continued to refine their approach to include many different information systems used throughout the region.

Today, MHIN’s approximately 2,000 provider members on various EHR systems share health information through MHIN. The HIE pulls aggregated patient information from a variety of documents into a single, comprehensive view of a person’s medical and health history.

Interoperability’s impact on patient outcomes

Dr. Kricheff has helped MHIN stay at the forefront of interoperability. He also sits on the St. Joseph County Board of Health, practices in a local emergency department (ED), and regularly experiences the benefits of information exchange.

Dr. Kricheff says he is a proponent of interoperability because he experienced firsthand how connected information can make a difference in patient care. He shared the following anecdote on interoperability’s ability to improve outcomes:

“One day, a woman came into the ED with severe chest pain, a headache, high blood pressure, and a very complex medical history,” says Dr. Kricheff. “My first thought was that these symptoms could have related to a subarachnoid hemorrhage, an aortic dissection, or vascular catastrophe.

“Unfortunately, the patient didn’t know her entire health history and couldn’t remember what a different physician from an organization across town treated her for just a couple days prior. Being a Sunday night, I couldn’t call the medical records department to see if they had any background information on her.

“With the Cerner information exchange solutions, I was able to visit the medical exchange platform and look up her health history. I was able to review physician notes, tests, and results from her visit with the doctor across town, which turned out to occur just 48 hours ago.

“Because all of her information was accessible and in one place, I was able to rule out life-threatening catastrophes with just a few clicks. In addition to the time saved for both of us, I was able to prevent the patient from being admitted, having three invasive and costly procedures, and avoided the risk of adverse reactions.

“Access to the office documents with the clinician notes and patient history provided a clear picture of her diagnosis, allergies, medication list, and more. Ultimately, all I had to do for this patient was have her cardiologist adjust her medication and keep her under observation for about two hours. Before having access to Cerner’s information exchange solution, I would have had to subject the patient to thousands of dollars in tests and procedures that she already had done.”

Changing healthcare

As a mature HIE that successfully enables information exchange in its region, MHIN is now working with Cerner to help its members improve the health of their populations through access to information from many different sources.

MHIN is embarking on a groundbreaking journey to start using the data it amassed during the last 20 years to develop a snapshot of the health of its population. They will begin using the Cerner HealtheIntent population health management platform to help analyze data and identify risk for the patient populations covered by its members.

MHIN’s goal for this initiative is to support the population health management structure for individual organizations, like ACO or health systems, but also to help improve the health outcomes for its region. Michiana hopes to develop insight on broad regional public health issues like infant mortality and biosurveillance.

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Integrating Technology and Expertise to Create Innovations

From the front lobby to the radiology reading room, NEC can offer you the right equipment and technology to improve the lives of everyone in your hospital.
Systems Integration
Top 10 imaging interoperability concerns
By Bob Schallhorn, Senior Vice President, Solutions Management, Merge Healthcare

I was recently asked what I thought was a simple question: “So, you’re in the medical space. Why is it that in 2015 — with all the abilities we have to access almost anything, anywhere, on any device — my doctors, local rehab clinic, and hospital cannot share my knee MRI with each other?”

It sounds like a simple question but, in fact, it has a complicated answer. The good news is that we are now (finally) in the Colonel Steve Austin (aka “Six Million Dollar Man”) era and have both the people and the technology to rebuild his knee and solve our imaging interoperability challenges. The answer, of course, lies in the effective use of both traditional imaging solutions like PACS systems, vendor-neutral archives (VNA), and “universal viewers.” So, how do we do it? Below is a top 10 list of concerns the imaging community should consider, as well as the vendors who support it.

1. **Embrace, require, and adhere to international medical imaging standards.** These standards were created by people who learned from their mistakes – learn from them and you’ll have clean data that is easy to manage.
2. **Allow the customer to manage their data:** Do-it-yourself tagging, routing, policy-based deletion, migration, and access rules reduce costs and empower the customer.
3. **Lower the startup costs by enabling customers to decide when, what, and how much data to migrate.** Start here and go forward. It’s time to provide a self-service way to get the legacy data when needed.
4. **Patient mobility requires providers to collaborate — both within and across networks.** Allow the customers to hook up or unhook new and old systems alike, and enable them to define how to access data, answer questions about the data, and format responses as needed without relying on vendor support.
5. **Allow the customer to define individual data retention rules and easily handle mixed hardware architectures.** Historically, we have been accustomed to recycling, and we know that tomorrow’s hardware will be faster and cheaper. It’s important to let the customer be involved in that decision process.
6. **Rethink the one-size-fits-all approach.** You need to be flexible in how your solutions are deployed. Sometimes the data is centralized, and other times it is spread across multiple systems. Allow the customer to determine which model works best.
7. **Protect your data.** Let the customer establish a true “active-active” solution with application-level replication between data centers or, if they are ready, use the cloud.
8. **Track the right data.** To manage your business processes, it’s imperative to be given accurate information on where your data is.
9. **Lead with your solutions.** Become a trusted advisor who leads and develops solutions that solve problems, save money, and easily interoperate with existing solutions technology.
10. **Define a clear path.** Look to the leaders in the industry to set a three- and five-year plan to lead your market. With a clear vision, embrace new ways of adopting innovative technology. Any medical image, anywhere, anytime, should be viewable on any device. Both vendors and medical institutions need to work together, build trust and understanding, and adopt new strategies and technologies to thrive in a truly interoperable imaging market.

System Implementation Wins
Seattle Children’s Hospital chooses INFINITT PACS, VNA

Seattle Children’s Hospital has signed a 10-year partnership agreement with INFINITT North America for INFINITT to provide a centralized archiving solution for the 323-bed hospital and research center dedicated to pediatric and adolescent healthcare. The deal includes utilization of INFINITT’s latest PACS technology and INFINITT’s new healthcare platform, a next-generation vendor-neutral archive, to unify content across disparate PACS and all data formats. It provides open, standards-based storage and manages DICOM and non-DICOM data with intelligent Lifecycle Information Management.

Seattle Children’s Hospital delivers superior patient care and advances new treatments through pediatric research. They are also the pediatric and adolescent medical referral center for Washington, Alaska, Montana, and Idaho, and the primary teaching, clinical, and research site for the Department of Pediatrics at the University of Washington School of Medicine.

“In addition to improved workflow and radiologist toolsets, we expect the INFINITT Healthcare Platform to greatly improve access to images and reports at Seattle Children’s, and beyond that to its extensive referral network,” says David Smarro, CEO, INFINITT North America. “With immediate access to patient information in a centralized archive, Seattle Children’s referring physicians should be able to make well-informed care decisions in a shortened time span – and consolidation of systems will simplify IT infrastructure and reduce costs.”

According to Adam Kielski, Director, Enterprise Imaging, Seattle Children’s, 40 terabytes (TB) of radiology department data and 50 TB of cardiology department data will be migrated initially. Requirements for retention of image data are significantly greater at Seattle Children’s than in an adult-only medical facility – potentially, the organization could have 25 years’ worth of images for a single patient.
Solutions

Clinical data collaboration platform
Carestream’s Clinical Collaboration platform goes beyond the capabilities offered by a vendor-neutral archive. This new platform helps equip those responsible for managing, providing, receiving, and reimbursing care with the ability to share and manage clinical data in ways that can help reduce costs and improve service delivery.

It employs Carestream’s intelligent VNA to archive and exchange dermatology, endoscopy, radiology, and cardiology files. This new platform also provides access to specialists, enabling tele-consultancy using a zero-footprint viewer that can be embedded into the EMR. Carestream’s MyVue portal empowers patients to access and share their own medical imaging data, while Vue Beyond provides real-time business intelligence for strategic decision making. Carestream

Prior-authorization process automated
Merge Healthcare has launched a new business unit called iConnect Network Services to deliver interoperability services to healthcare enterprises seeking to reduce the labor and overhead costs associated with prior-authorization processes, improve physician engagement among provider communities, and boost referral success. The venture seeks to create a closed loop to efficiently manage orders for imaging, to automate the prior-authorization process, and to simplify the delivery of imaging results to the ordering physician. iConnect Network Services consists of three core offerings: iCNS Orders (for easy order placement and to reduce the volume of lost orders), iCNS Authorize (automates existing manual and costly prior-authorization processes for hospitals and imaging centers), and iCNS Results (to deliver imaging results to the ordering physician within his or her existing EHR). Merge Healthcare

Go beyond simple VNAs
Conservus is a new suite of vendor-neutral solutions for healthcare IT enterprise and diagnostic imaging that takes advantage of the promise of image-enabling the EHR. This suite includes flexible quality and communication workflows, enterprise worklists driven by clinical and business logic, an enterprise image repository, and a clinical data exchange. The solution is designed to help healthcare providers of all sizes and complexities go beyond simple VNAs and departmental systems by enabling interoperability between existing systems. McKesson

One platform for IT, one platform for imaging
At RSNA 2015, Agfa HealthCare will demonstrate how its Enterprise Imaging platform offers an image and information management ecosystem that supports healthcare enterprises and caregivers in their efforts to increase productivity and enhance the value of care. The solution offers a flexible workflow engine, a blend of structured and voice recognition reporting, advanced image processing and integration of clinical information – all in one, modular sophisticated platform. It simplifies secure access to a single, comprehensive patient imaging record, empowers physicians to make informed decisions through multi-specialty collaboration, and addresses many different process workflows to help improve the delivery of patient care and streamline costs. Agfa HealthCare

Calgary Scientific, Apollo PACS partner to expand image access
Calgary Scientific’s ResolutionMD enterprise image viewer will now be integrated with the Apollo Enterprise Patient Multimedia Manager (Apollo EPMM) to extend Web and mobile image access. The integration is aimed at helping physicians make more informed decisions by enabling quick and secure access to medical images using desktop, Web, or mobile devices. Apollo EPMM is a single, secure interface for accessing patient multimedia across an enterprise. It gives healthcare providers a better way to view and manage their patient multimedia files and provides clinicians with a 360-degree view of their patients’ health. The ResolutionMD integration offers Apollo clients access to medical images, enabling healthcare providers to confidently perform clinical diagnoses and treatment decisions from Web and mobile devices using a solution that is Class II FDA cleared. Calgary Scientific

Detectors get lighter, tougher
FujiFilm’s new FDR D-EVO II detectors have been completely re-engineered, featuring advances in design and functionality that bring new levels of performance to radiographic imaging. The detectors are lightweight with a ruggedized magnesium alloy case and a sleek smooth shape that simplifies positioning under patients. Inside, the electronics have been redesigned to enhance dose efficiency and improve diagnostic image quality at ultra-low dose levels. D-EVO II is also the world’s first detector protected with a FujiFilm exclusive engineered antibacterial coating. The unit has an IPX-6 water resistance rating. FujiFilm

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Medication management: A cure for the common payment reform

Think back to the last encounter you had with a healthcare provider. One of the first questions you were asked was, “What medications are you taking currently?” Whether it was in an acute setting like the emergency room, a routine annual visit, or even at the dentist’s office, this information is vital to ensure that you receive appropriate care.

It was not until 2005, when The Joint Commission selected medication reconciliation as one of its National Patient Safety Goals, that the practice of verifying a medication list became a routine process in the delivery of patient care. However, despite the recognition of its importance, medication reconciliation has experienced slow adoption, initially for lack of a best practice approach. The process of tracking down an accurate medication list was laborious for clinicians. The data used by physicians, nurses, and pharmacies was recorded in differing levels of granularity and formats. Protocols varied in when and how often medication reconciliation should be completed.

In 2006, the topic of medication reconciliation reached national importance when the Institute of Medicine report, “Preventing Medication Errors,” stated that as many as 50 percent of all medication errors, and up to 20 percent of adverse drug events in the hospital, are due to poor communication. Around the same time, the Institute of Healthcare Improvement identified medication reconciliation as one of its tenets in its 100,000 Lives Campaign. More recently, the ONC made medication reconciliation a requisite item for Meaningful Use certification.

With many healthcare systems transitioning to risk-sharing reimbursement models, it is time to elevate medication reconciliation beyond a transactional task to a more comprehensive approach that I refer to as “medication management.” Being able to manage a patient’s medication list has wider impacts on the healthcare system than just the episode of care. Under risk-sharing reimbursement models, the financial health of a hospital network is tied to quality outcomes and performance metrics. Not only are these hospitals at risk for earning less revenue, but they also face penalties for substandard care. In 2013, over 2,200 hospitals paid approximately $280 million in total penalties due to excess 30-day readmissions. Hospitals have deployed care coordination initiatives to improve the discharge process, but have failed to recognize that proper medication management throughout the care continuum, from admission to post-discharge, is critical to meet the metrics in value-based payment models.

Given that patients often access care from different facilities with disparate technologies, coordinating this care and maintaining a consistent therapeutic plan and medication list become increasingly challenging. When you add payers into this mix of stakeholders, the need to manage medication regimens to optimize outcomes while reducing costs is paramount.

Medication management incorporates reviewing the medication list not only for accuracy, but also for optimization of therapeutic regimens and patient adherence. This requires negotiation between the patient, healthcare providers, and pharmacist. It is unrealistic to discharge patients on 12 medications and expect absolute adherence to a complicated and disruptive drug schedule. Yet, lack of adherence to a medication regimen is a known risk factor for readmissions and worsening morbidity and mortality.

How can technology help? As healthcare networks expand through mergers, acquisitions, and new partnerships, it is important to share medication regimens and create shared care plans that allow for simplifying medication regimens without the tradeoff of efficacy. Simplifying the medication regimen requires addressing the frequency medications are taken, access to pharmacy that can dispense the medication, and finding suitable alternatives at lower costs. However, this is not feasible unless there is a holistic view of the patient medical record.

Interoperability is the bridge that can share information among systems, facilities, and providers. As simple as it may sound, many health organizations fail in ensuring that the entire ecosystem surrounding the patient is fully aware of the medication management plan. The deleterious impacts are patients being on the wrong medication regimens, getting sicker, and then readmitted.

Medication reconciliation, on the surface, appears straightforward. Yet its path to adoption has been stop and start. Transitioning from paper to an EMR process was slow until the technology mirrored the workflow. Now at another pivot in the way healthcare is delivered, technology again needs to mirror the clinical and business drivers behind medication management. The key is employing an interoperability strategy that reinforces medication management (not just reconciliation), shared care plans, and patient engagement. With this approach, medication management will be a collaborative process that will position healthcare systems to achieve its metrics in the new environment of payment reform. HMT
What does the future hold?

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