Unclogging
WORKFLOW
BOTTLENECKS

Meeting network infrastructure challenges

Living case study: Self-service kiosks at check-in

Mobile trends: Workstations/Carts

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Sign-Off

MECHANICAL

REVISED BLUELINES

PG. 1
Here’s to new beginnings

By Jason Free | Features Editor

For many, the end of a year brings cause for remembrance and reflection. I, on the other hand, tend to look forward in anticipation of new possibilities on the horizon.

At Health Management Technology, we have made plans to continue to be the industry’s “source for healthcare information and systems solutions.” This is no simple task given that the healthcare industry is undergoing so many fundamental changes as it transitions from a volume-based business to a value-based one. To ensure that we provide our audience with the most impactful editorial content, we have decided to place special emphasis upon six core areas in 2015. While we will be reporting on numerous issues outside the scope of these topics, we will delve deeply into the following subjects:

- Analytics — To harness the enigma that is Big Data, healthcare executives need opportunities to read success stories where organizations develop analytics competencies equating to actionable insights, establishing future plans, improving outcomes and reducing time and cost.

- Claims and coding — October marks the latest deadline requiring the implementation of ICD-10. Outside this mandate, we believe claims and coding will dominate many facets of day-to-day healthcare administrators’ actions and planning, including testing procedures, clinical documentation improvement and reimbursements.

- Electronic medical record (EMR)/electronic health record (EHR) — EMRs/EHRS are becoming integral, yet highly debated, components of healthcare. Will they become easily usable — and meaningfully usable?

- Decision support — With the aim of providing timely information, usually at the point of care, decision support utilizes sophisticated systems and tools to take over certain administrative tasks, create notifications of prospective problems and provide data and suggestions for clinicians and patients to consider. In terms of post-care, decision support is also becoming a key factor in addressing population health.

- Revenue cycle management (RCM) — Securing payments and managing claims processes are critical functions to any healthcare organization. It is vital that these organizations appraise the emerging technologies and systems that track the entire lifecycle of its claims and supply chain processes so that inefficiencies can be easily addressed and, in turn, allow for a predictable revenue stream.

- Population health — The populations of whole communities, condition cohorts and even entire nations are being examined by not only clinicians, but also public and private policymakers to determine care decisions and even preventative measures. Population health can extend the reach of healthcare far outside the walls of hospitals and doctors’ offices, bringing outreach, monitoring and care directly into patient homes.

I hope you are just as excited as we are to investigate how organizations are wrestling with these issues, because 2015 will be a watershed year for healthcare. I invite you to join us for this great ride. And if you have another topic you’d like to see covered, drop me a line.

2 December 2014
FOLLOW A COMPANY’S PROJECT IN REAL TIME

Take a look at Health Management Technology’s exclusive Living Case Studies Series as we follow a project’s implementations forward... in real time. Watch for our comprehensive updates over several months, as we describe a project from inception to completion, with details of the project provided in a realistic and compelling manner. Discover a company’s services, solutions, and processes as they directly relate to real-world problems in healthcare technology.

Each project is unique, with a Living Case Study ranging in duration from six to twelve months. As the project evolves, our editors work with the company’s team to create a series of feature articles describing the steps taken and the problems faced.

A Living Case Study begins with an introduction feature article in print and online, written by an executive of the company who describes the objective of the project so that you, our reader, can observe their ideas in action through subsequent articles.

The second installment is posted to our website on the company’s exclusive Living Case Study web page in the form of a Q&A interview by our editors, involving managers of the company and clients of the project who detail the project’s plan of action. This is followed by more online installments, each illustrating the project’s evolution and effectiveness, with commentary from those directly affected by its benefits... culminating with a final summary online mega-feature.

We invite you to follow the various Living Case Studies within this issue, and posted on our website and e-mail newsletters, as we take new projects from the idea stage through their final solution.

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Infection control and healthcare IT: Five technologies that can help

By Kenneth A. Kleinberg, Managing Director, Research and Insights, The Advisory Board Company

Paper and language are as old as civilization itself, but when it comes to locating and controlling the spread of infectious diseases, IT can help.

As we transition to a more complete digital health environment, we can use technology advances to keep infections that used to kill tens of millions in check. With Ebola in the news, just about every vendor, provider and health-related industry or government body is stepping forward with their guidelines—but how will these be put into effect? And how will they become part of a more comprehensive and scalable, coordinated approach inclusive of other types of health threats?

Here are five technologies that are key to effective infectious disease control:

1. **Communications**: Expert sources need to ensure they can get the word out (e.g., guidelines) to the right people within and across organizations in a timely manner. Email, text alerts, portal postings, interactive voice response (IVR) and social media (e.g., Twitter) can be used to reach (and receive information from) healthcare workers and patients, but an accurate directory and priority system must be utilized lest important information get drowned in a sea of endless messages.

2. **Data capture and EHRs**: A broader array of data capture is now possible that can extend beyond the provider’s office, such as the use of wireless tablets and smartphones and via telehealth. EForms and templates can be readily modified to capture specific information during interviews/encounters. Improved documentation tools with use of controlled medical vocabularies, natural language processing and more granular ICD-10 coding can ensure the relevant infection control-related information is captured and then later retrievable. Baking protocols/guidelines into workflow and decision support can help ensure the right steps are being followed and nothing falls between the cracks.

3. **Locationing**: The use of GPS, cell-phone position data and in-building locationing (via WiFi, RFID, etc., some of which can be expensive) can provide huge benefits. Knowing where someone has been (and when), and whom and what equipment they have been in proximity to can improve the tracking of infections back to their origin, and to track down the people and equipment that might be compromised.

4. **Consolidated reporting**: The use of electronic submission of infection control information to local, regional and national reporting systems and registries offers many advantages to paper and batch-type approaches of the past.

5. **Big Data and analytics**: Experience being gained in BI/analytics and data visualization can be used to discern trends and to make predictions so that action can be carried out (e.g., targeted communications, proper distribution of vaccines).

Salesforce launches powerful self-service analytics tool

Imagine a scenario where users instantly access and easily analyze billions of rows of their own business data themselves, handling numbers and results just like they do in popular consumer travel apps. That’s the Salesforce Wave. Wave, the sixth cloud in the Salesforce Customer Success Platform, was launched in October.

Wave aims to make it easier than ever for companies to quickly deploy sales, service and marketing analytics, or build custom mobile analytics apps, using any data source. Users get a dynamic user experience, indexed search and a powerful computing engine integrated into a single cloud platform. They can also create mash-ups of relevant third-party data sources in a single dashboard to identify data correlations and develop action plans. Dashboards can then be shared via Salesforce Chatter, and new workflows and tasks can be triggered.

Wave is integrated with the Salesforce1 Platform and uses the same trusted, single sign-on data security and compliance features of the core platform. Developers can use Wave application programming interfaces (APIs) and other data connectors to easily link to third-party data sources – from structured SAP and Oracle data to unstructured machine and social data.

The Wave platform license includes all compute, data management, API and security infrastructure. Monthly subscription pricing is based on the number of Wave Explorer and Wave Builder licenses. The Wave mobile app is available on Apple iOS for iPhone and iPad, with additional device support forthcoming.

IBM has a similar new cloud-based utility, called Watson Analytics, that was highlighted in HMT in November.
**Meaningful Use**

**Disappointing data prompts renewed cry for change**

After lower-than-expected Medicare numbers and nationwide difficulty in meeting federal guidelines for electronic health records (EHR) requirements were reported in early November, industry leaders nationwide called for a renewed effort by the Centers for Medicaid and Medicare Services (CMS) to shorten the Meaningful Use (MU) reporting period in 2015 and provide more program flexibility.

According to newly released figures from CMS, less than 17 percent of the country’s hospitals have demonstrated Stage 2 capabilities, and less than 38 percent of eligible hospitals (EHSs) and critical access hospitals (CAHs) have met either stage of Meaningful Use in 2014. While eligible professionals (EPs) have until the end of February to report their progress, only 2 percent have demonstrated Stage 2 capabilities so far.

Officials from the American Medical Association (AMA), College of Healthcare Information Management Executives (CHIME), Healthcare Information and Management Systems Society (HIMSS) and Medical Group Management Association (MGMA) called the results disappointing yet predictable, according to a CHIME statement November 4.

The new Meaningful Use participation data “continue to underscore the need for a sensible glide-path in 2015,” said CHIME President and CEO Russell P. Branzell, FCHIME, CHCIO. “Providers have struggled mightily in 2014, in many instances for reasons beyond their control. If nothing is done to help them get back on track in 2015, we will continue to see growing dissatisfaction with EHRs and disenchantment with Meaningful Use.”

CMS data required by Congress indicate that more than 3,900 hospitals must meet Stage 2 measures and objectives in 2015, and more than 260,000 EPs will need to be similarly positioned. Given the low attestation data for 2014 and the tremendous number of providers required, but likely unable to fulfill, Stage 2 for a full 365 days in 2015, healthcare leaders have pressed for a shortened reporting period in 2015, mirroring the policy of 2014. A coalition of national provider groups has repeatedly told CMS that a shortened reporting period will have a dramatic, positive effect on program participation and policy outcomes sought in 2015. Additionally, allowing flexibility in how providers meet the Stage 2 requirements, particularly related to Transitions of Care and View, Download, Transmit measures, would also improve program participation.

Source: CHIME
Unclogging workflow bottlenecks

Top strategies for handling tough challenges.

By Rick Dana Barlow, Editor-at-large

When a patient infected with the Ebola virus somehow eluded detection after arriving at a Texas hospital back in October, the blame game began.

Fingers pointed to clinicians who didn’t follow protocols, then to an electronic health record system that failed to communicate with other systems.

Much like the war veteran who jumped the White House fence and somehow made it past what’s supposed to be the tightest security in the nation – guarding and protecting the first family – these incidents simply reflected a deviation, if not a complete breakdown, in workflow processes.

Traditional workflow strategies tended to involve manual process steps that either are written down on paper and shared or communicated verbally. Errors occurred, typically because a worker didn’t consult the “manual” or misunderstood spoken directions, or maybe the person who gave the directions got it wrong, too. Or maybe the directions simply were too complicated. You get the idea.

Enter information technology, software systems in particular, which were designed to reduce, if not eliminate, many of those process errors by simplifying and streamlining steps. But software comes with its own set of foibles and snafus. After all, software is programmed by error-prone humans. Plus, what happens when there’s an electronic glitch, an interface or integration hiccup, or a loss of electrical power?

Suffice it to say, workflow strategies remain a work in progress with an inherent need for flexibility. So what works and what doesn’t?

To explore successful workflow strategies – and failures – Health Management Technology tapped several information technology experts for their perspectives.

**Kalember:** Regardless of the type of industry, IT-based workflows must consider the end user. By building workflow strategies around the needs and habits of employees, organizations are far more likely to realize broad adoption and acceptance of those workflows. This should include the tools and procedures employees are expected to use in the course of their daily work, as well as how information is accessed, stored and shared. For instance, do they use box-like services to collaborate on files? Is mobile access to company files a must-have?

**Cox:** There are four key factors to consider when establishing and maintaining a workflow strategy using IT.

The first is horizontal value and vertical scalability. Can the solution serve workflow needs beyond its original purpose? Can it scale to serve the organization through times of growth?

Second to consider is abstracting processes for reusability. One way workflows build efficiencies across an organization is by repeating certain processes in the same or similar ways. Two workflows may serve entirely different business purposes; however, the approval or authorization process should follow standard paths established by the organization. Abstracting workflow processes into individual reusable objects allows companies to create workflows quickly from pre-designed standard processes and, by modifying the source object, update all workflows accordingly if needed.

The third factor is enabling IT to distribute responsibilities. Provide IT with the absolute control to define, manage and change workflows, along with the ability to distribute those activities to non-technical users. This gives IT the flexibility to directly manage as much or as little of the process as required.
Lastly, the workflow strategy should complement existing environments. A collaborative workflow is one that ties in current applications, content, data, people and other company assets, allowing visibility into the process as a whole. Companies should take into consideration all their business processes prior to making a decision, even if that means some are deemed not critical to the workflow strategy.

**Hester:** Clinicians and end users affected by the workflow should be involved in the design of the workflow. Operations should drive change as it relates to establishing and maintaining workflows in healthcare. Workflows must be congruent with regulatory guidelines and standards of care. New workflows should not duplicate existing ones and should not impair or interfere with other workflows within the system. All new and revised workflows must be tested and validated prior to implementing.

**Jones:** New workplace technology equips workers with the tools they need to become more productive, but it’s important for organizations to keep in mind that tech alone isn’t a strategy. Tech deployments that automate business processes must reflect the way people actually work, while supporting compliance, privacy and the provider’s overall objectives. This will help bridge the gap between a tool that simply supports document management, and one that makes digital transformation – through process automation and efficient document management – a reality.

**Nguyen:** Our document management solution – built around Xerox DocuShare Enterprise Content Management software – provides a single view of a patient’s business/administrative records and their medical records. We recommend that healthcare organizations look for a comprehensive solution like this that can be customized to provide flexible search and retrieval. In the medical center pharmacies, we built a system to automate processing of medication orders electronically. Physician orders are scanned in at one of 25 to 30 locations, and orders are put into an electronic queue where they are reviewed, approved, filled and sent to the nurse’s station. The process helps deliver medications to patients more quickly and includes quality control steps to meet patient safety and government regulations.

**Kalemerber:** Forcing employees to use technology that is either too complicated or too restrictive will often backfire. This leads to the unauthorized use of devices, mobile apps and cloud services that fail outside IT control and introduce significant risk to sensitive data. For provider organizations, this is a compliance issue as well. Not surprisingly, this type of activity will likely result in the enforcement of greater security measures to protect patient and clinical data, thereby limiting workflow and productivity even more.

An example is an overreliance on virtual desktop-type solutions. They work reasonably well until someone needs to get access to a file on an iPad, and then they don’t work at all. This forces even well-intentioned employees to find their own solution, potentially violating corporate policy on data handling and increasing the risk of a breach.

**Cox:** One mistake is not future proofing. Workflows, by their very nature, are constantly changing. New people participate, new systems are implemented into the organization and new situations need to be planned for. The processes that affect the workflow, the activities and how people participate should be constantly monitored, tested and adjusted.

Another mistake is limiting participation. Workflows work best when they fully leverage the expertise of all personnel, distributing activities, tasks and decisions out to everyone who needs to participate. Locking down access to a subset of stakeholders creates bottlenecks. Team members need to be engaged in the workflow at times when their specific participation is required. Allowing wide participation is a function of the workflow application from both technical and usability standpoints. Applications that tightly control who has access and are designed for use by non-technical staff members allow everyone to contribute easily, efficiently and securely to the process.

**Hester:** Often, organizations allow IT to drive change in workflows. This can result in workflows that are not efficient, not salient to the work that needs to be accomplished and burdensome for the clinician or end user. Organizations also fail to consider downstream usage of the data generated by the workflow and whether that data will be retrievable and usable later on. In addition, there is often no risk/benefit analysis or testing/validation conducted prior to workflow design and implementation. Occasionally, a fix in one system will break another. This is especially true in enterprise systems that are integrated.

**Jones:** When determining a workflow strategy, all stakeholders must have a seat at the table – from the CIO to the end user. When decisions are made in a silo and then rolled out to employees, adoption can suffer. Transparent communication is key when an organization is changing a process or implementing a new one. When employees understand why and how a change is being made, and know their voice is heard, successful adoption is more likely.

Another critical failure when rolling out technology is to assume that all processes are alike, and therefore can be streamlined in the same way, or using the same toolset. Our research has found that, even in heavily automated or digitized environments, workers still use paper as a tool for collaborating and driving processes to completion. It is essential that management and system architects understand when, and why, workers choose the simplicity and portability of paper, and that they be prepared to provide a substitute. For their specific audience, what is an acceptable digital alternative to paper?
Workflow peaks and pratfalls

What are some workflow strategies that succeed and fail, according to several healthcare industry executives? Here’s what they say.

What works

Andy Jones, Vice President, Workflow Automation, Large Enterprise Operations, Xerox

There are four key technologies driving transformation around workplace technology.

• Mobile: Mobility is impacting every industry. For example, healthcare workers spend a large amount of time referencing and interacting with documents from many different devices. In order to maintain control over information that is accessed via mobile devices, employers must give mobile workers a secure, easy way to find files and perform routine business processes. Like many hospital systems, St. Peter’s Health Care Services was reliant on hard copy documents, and its team of hospice caregivers routinely carried around boxes of paper. The health system implemented an electronic content management system where files are scanned directly into a secure repository that can be accessed from a patient’s home, a remote office, an employee’s laptop or a mobile device.

• Social: Collaboration in the workplace has been completely redefined by social. In today’s world, it’s not just about sharing ideas; it’s about sharing information in context with teams spread across different locations, networks and even organizations. One well-established approach is to incorporate collaboration tools into existing enterprise applications, such as an enterprise content management (ECM) system.

• Cloud: A private cloud content management solution is a secure way to give mobile employees simple and round-the-clock access to the business content they need to get work done. This solution provides all the benefits of mobile, remote and partner access, but without the compliance and security risks of a consumer-grade file-sharing application.

• Big Data analytics: As organizations gather and manage more data, provide a safeguard during unforeseen circumstances. For example, during heavy flu season, when half the pharmacy staff was out ill, I was able to log in from home to review the flow of medication orders and troubleshoot immediately, as medical decisions need to be made.

In addition, it is critical that organizations fully understand how work actually gets done. It’s not enough to simply look at an existing process and transform it into a digital process using a business process management (BPM) or workflow engine, some rules and some training. Especially in healthcare, where the interaction between the provider and the patient has a huge impact on outcome, the tools and technologies need to seamlessly support the health worker, not distract them or add additional layers of complexity and frustration to their day.

Ryan Kalember, Chief Product Officer, WatchDox

In the current cyberthreat landscape, the key to effective workflow rests in a blend of process and technology that offers a balance between data security and productivity.

Some of the most effective and secure workflow solutions will:

• Embrace user-centric IT: Design workflows from the perspective of the end user, rather than architecturally across IT systems;

• Plan to enable workflows across platforms, cloud storage repositories and devices. Users increasingly demand to work from whatever device they want, which should be enabled within reason;

• When considering content-based workflows, strategies that deliver content access and sharing from a single pane of glass to repositories both new (cloud storage) and old (file shares, SharePoint) tend to be more successful.

Doug Cox, Chief Strategy Officer, Elixir Technologies

• Create predictable outcomes in all cases. Collaborative workflows enable companies to define specifically how people and systems will interact in all possible scenarios. Exceptions and unforeseen changes become planned events and are handled as efficiently as possible to provide a more realistic view of the end result.

• Manage and limit ad-hoc activities. Removing ad-hoc activities in favor of specific assigned tasks adds discipline to the process and builds in consistent reactions for future similar scenarios.

• Add business logic and automation. At the heart, workflows need to be formula and rules based. Complex workflows get their name because they change course. When rules, rather than a personal decision, can handle this, the workflow happens faster and is less prone to error. And when an automated process takes the place of a manual task, even more time is saved and accuracy gained.

• Use technical transparency for business accuracy. Make complex workflows transparent to the team. Let them manage the business process rather than the technical steps to achieve the business result. Workflows can change any number of times, dynamically initiating alternate processes and involving different people. The user experience remains focused on their role and specific responsibilities given the new scenario.

• Grant visibility. Adding the capability to report on activities regardless of where or when they occurred enables a real-time view of the entire process, giving management valuable context for the information.

Amy Hester BSN, R.N., BC, Director of Clinical Informatics and Innovation, University of Arkansas for Medical Sciences

• Having an official workflow change request and response system that is successful as it creates a repository of requests and responses to those requests that are structured and usable.

• Change governance including stakeholders is necessary to vet and approve all changes to workflows. This prevents one discipline from creating a “fix” for one area that is a “break” for another.

• All changed and new workflows should be tested and validated by end users whose work is affected.

• Training/education on new workflows is key. Without this, implementation of new workflows will be varied and inconsistent.

• Whatever the workflow, the end user should have the resources to carry out the workflow when they need to. This is important because when end users are under-resourced, whether that resource is hardware, staff, software, etc., they are set up for failure.

Thao Nguyen, Director of Pharmacy Services, White Memorial Medical Center, Los Angeles

Integrating paper-based and administrative records with a centralized system for patient medical records provides an inexpensive way to compile a complete patient record. Benefits include:

• Better patient care. Staff can review a patient’s history immediately, as medical decisions need to be made.

• Access from anywhere. This provides a safeguard during unforeseen circumstances. For example, during heavy flu season, when half the pharmacy staff was out ill, I was able to log in from home to review the flow of medication orders and troubleshoot if there was a delay.

• Improved compliance. Any changes made to a document or digital image are tracked and captured as new versions, providing a complete history of the changes for regulatory compliance.

• Timely billing. Reducing lost and misplaced documents and providing immediate access to information allows our accounts receivable department to bill for patient services faster and more accurately, resulting in more predictable and reliable revenue flow.

www.healthmgttech.com
• Emergency preparedness. Staff can access the DocuShare applications 24/7 from anywhere using the Internet, providing an important safeguard should there be a problem with physical access.

**What doesn’t**

**Kalembert:**
• Porting the old (virtual desktops) to the new (tablets). Mobile virtualization may be great for IT, but not so for end users since not every vendor makes mobile virtualization products. IT must ensure that the tools and apps employees need to access data from their mobile devices are supported.
• Over-engineering processes. This tendency is not uncommon, especially in large and bureaucratic organizations, and generally results in processes that are overly complex and inefficient.
• Having an internally focused architecture that doesn’t permit secure collaboration with the outside world. It’s next to impossible to do business of any kind today without external collaboration.

**Cox:**
• Lack of scope. Workflow practices need to cover a minimum number of areas or processes to truly have an effect. Failure to identify these areas results in a workflow that only partially addresses the problem. Lack of scope also takes the risk that the workflow solution may not be positioned to serve future needs.
• Lack of reporting. Reporting is necessary to understand what is actually happening in a workflow and critical in times when corrective action is needed. Reporting tools are often an overlooked feature in workflow applications, so it’s well worth the time to do due diligence on the software prior to buying, or design your own reports.
• Fair-weather planning. Too often, workflows are designed and tested only under ideal scenarios, however, workflows really earn their keep in bad situations, where problems need to be identified and resolved quickly. Companies should map out these situations, design workflows around them and test in as real a situation as possible.

**Hester:**
• Having IT drive and/or design clinical workflows often fails, as IT is not the expert in the workflow. The end user or clinician should be the architect of the workflow design. IT is the carpenter that builds it.
• Implementing changes in workflows without governance often fails, and the work has to be redone. Without an evaluation method for new workflow requests, there is lack of insurance that all steps of the change process are implemented.
• Implementing workflow changes without testing and validation often fails as issues that should be resolved prior to implementing the change with end users does not happen. This frustrates end users and impairs adoption of the new workflow even after the bugs are worked out.
• Implementing workflow changes in “certain areas” versus all the areas affected is also a strategy that tends to fail. This usually occurs when a change governance process is not utilized that identifies all the affected stakeholders for a given workflow.
• Implementing multiple workflow changes together often fails. It is more difficult to ensure adequate training of end users when multiple workflows are impacted simultaneously.
Improveing patient outcomes is a key driver of new technologies established to enable the continuity of patient care. Healthcare no longer begins and ends with a doctor’s visit. With the advent of patient portals, telemedicine initiatives and health monitoring through wearables, patient care is not a finite concept. It’s evolving as technology advances to meet patient needs.

Many foundational elements that support “digital healthcare” are here today, and the latest technologies require a strong network backbone to ensure peak network performance. Sufficient network capacity and speed are critical for supporting advanced healthcare technologies and applications such as electronic health records (EHRs), picture archive and communications systems (PACS) and telemedicine. Concurrent with the explosion of healthcare applications and technologies, IT healthcare professionals face additional challenges relating to security of patient data and scalability for the future.

**Challenge: Data capacity**

Sufficient bandwidth is a challenge for many organizations, but in healthcare, the requirements of Meaningful Use – specifically, the conversion of paper records to digital versions that need to be stored and shared on a network – create additional data capacity and data connectivity challenges.

The sheer size and volume of healthcare data files (EHRs, imaging files, digital pathology, medication records, etc.) place stress on the network, especially when large files need to be transmitted within the hospital and across the healthcare ecosystem to other hospitals, insurance companies, pharmacies and other health management stakeholders. A single MRI file, for example, can be 5 gigabytes large, and by 2016, it’s expected that the capacity needed to store medical images alone will cross the 1 exabyte mark (that’s 1 billion gigabytes).

The introduction and adoption of new healthcare applications such as advanced point-of-care devices, remote monitoring and diagnostics, and HD video consultation apps are also driving network traffic growth, resulting in stressed infrastructures that create demand for high-performance networks. In addition, more healthcare systems are moving to the cloud, which requires much more bandwidth than using similar applications on an organization’s traditional local area network.

The increasing use of mobile devices to provide patients with anywhere, anytime access to their information is another issue healthcare IT professionals need to consider when evaluating their network infrastructure. Healthcare professionals and patients are no longer just accessing the organization’s network from desktop and personal home computers. Laptops, tablets and smartphones are also used to help deliver and receive quality care, all of which place additional bandwidth requirements on the network.

Patients are creating network demand as they access online portals and telemedicine applications. Virtual medicine kiosks and mobile e-health devices are allowing patients to receive professional care outside hospital walls. All of these factors result in the need for a robust network infrastructure, which is critical for managing the transfer of real-time data, video and voice to and from remote locations.

**Challenge: Security**

The security of private patient data is a primary concern for all health IT decision makers and the providers they support. As healthcare organizations and individual clinicians increase their use of mobile technologies and cloud applications and continue to expand their bring-your-own-device (BYOD) policies, the likelihood of a large-scale security breach is compounded.

Consider medical imaging. Physical distances often separate healthcare facilities, imaging facilities and data centers. Transferring large imaging files can consume substantial amounts of bandwidth, often subjecting the network to greater lag times when viewing and transferring these files. These slowdowns can cause fragmented, unreliable access and long wait times, which hinder a caregiver’s ability to collaborate when attempting to diagnose and treat patients.

When these locations connect through separate network providers, data transfer may incur additional lag from the translations and conversions each individual network needs to make. This can slow down access further.

**Challenge: Speed and performance**

In healthcare, seconds count. Systems and applications such as EHRs, PACS imaging, telemedicine and telesurgery need to operate at peak performance. But legacy networks may not have the capability to support these mission-critical applications, especially when accessed from remote clinics and doctor offices.

Confront medical imaging. Physical distances often separate healthcare facilities, imaging facilities and data centers. Transferring large imaging files can consume substantial amounts of bandwidth, often subjecting the network to greater lag times when viewing and transferring these files. These slowdowns can cause fragmented, unreliable access and long wait times, which hinder a caregiver’s ability to collaborate when attempting to diagnose and treat patients.

When these locations connect through separate network providers, data transfer may incur additional lag from the translations and conversions each individual network needs to make. This can slow down access further.
event. It’s recommended that IT professionals install multiple connections whenever possible.

**Challenge: Scalability**

It’s clear that technology will continue to advance, placing even more data demands on legacy networks, which may struggle to keep up and provide 21st-century medical care.

In addition to advances in technology, the past decade has seen providers aligning with health networks and those networks consolidating to realize economies of scale. This evolution further challenges IT professionals in terms of coordinating infrastructure across multiple locations, particularly when moving EHRs from local to centralized storage.

The explosion of Big Data in the clinical space is not the only issue driving the need for better network scalability. Indeed, smart building systems that manage water and energy use, fire and life safety systems, lighting, security, maintenance and other facility services will also need more bandwidth in the future as they become integrated into the “digital” hospital environment.

**The solution: Ethernet**

To meet these burgeoning network challenges, many healthcare organizations are turning away from rigid, legacy networks such as T1 to Ethernet. Ethernet’s blend of capacity, security and scalability makes it ideal to support mission-critical, data-intensive healthcare applications, including mobile and cloud-based solutions.

With high bandwidth and low latency, Ethernet networks are designed to support the growing technology needs of healthcare organizations. Whether it’s supporting the transmission of patient records in real time or the ability to intelligently segment and prioritize different types of traffic to maximize performance, Ethernet is well suited to address the changing healthcare IT landscape.

Ethernet provides several additional advantages:
- More cost effective than T1s or other similar technologies;
- Scales quickly and easily across multiple locations, so expanding network capacity is easy; and
- Special skills aren’t needed to manage Ethernet because it’s a familiar technology.

When looking for an Ethernet network provider, healthcare IT professionals would be wise to choose one that offers a private fiber-optic network with carrier-grade data and Internet services. Extra redundancy should be built into the network design to maximize availability. The network should also be robust enough to support multiple functions, including the ability to provide seamless connectivity between data centers for disaster recovery and business continuity planning. Data should always be transferred to and from data centers and cloud providers securely over the Ethernet provider’s network – and never over the public Internet.

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Contact us today at 407.539.2015 or info@quammengroup.com and we can make sure your organization gets its very own “happily ever after.”
Dealing with equipment end-of-life issues

By Sean Magann

As advances in electronic devices enable hospitals to transition manual duties to automated tasks, hospitals are finding more and more of these devices throughout their facilities. However, many hospitals struggle with managing these devices once they reach their end of life. As with traditional IT equipment such as computers and printers, healthcare facilities now have to manage the recycling of these new electronic medical devices. Many medical devices, such as certified decontaminated infusion pumps and sterilization equipment, may contain data and need to have programs that protect this data. These devices also contain hazardous components and need to be recycled accordingly.

With some electronic medical devices, state and federal law may mandate detailed support documentation on recycled items, such as individual unit serial numbers or certificates of destruction. In addition, there have been several recalls of electronic medical devices over the past few years. For these recalls, the Food and Drug Administration (FDA) may require the certified destruction of certain components or whole units.

With the eclectic mix of devices and legislation that governs their disposal, healthcare device recycling requires expertise to ensure data security, legislative and environmental compliance.

Ensure data security, even on equipment no longer being used

Patient health records stored digitally will continue to increase as the number of insured individuals grows, online patient health centers gain popularity and more healthcare equipment records patient data. Laboratory information systems, which collect and analyze patient data, are an example of a type of medical equipment that likely falls under the protected health information legislation.

The patient information stored on medical devices is included under the legal protection of the HIPAA Omnibus Rule. Violation of this act can result in substantial monetary fines and consumer backlash that is often more costly than the legislative penalties.

The healthcare industry remains a top target for hackers as private health records are often the most commonly compromised information and hospitals continue to be targeted for attacks daily. Health data breaches have become so common that the FBI recently issued an alert that identifies frequent malicious targets on healthcare-related systems in an effort to obtain protected healthcare information and personally identifiable information like birth dates and social security numbers. As in the case of Chinese hackers who stole 4.5 million patient records in a single breach, overseas criminal organizations use this information for medical and/or financial fraud.

Most responsible healthcare organizations have responded to threats by increasing the security defenses of devices currently in use on their premises. Understanding the high risk of compromised patient data, the best-in-class healthcare organizations have also devised programs to properly deal with devices when they become obsolete and are no longer in use. In addition, asset disposition vendors are responding to the need for greater security by offering new disposal options such as on-site destruction services. These hard-drive wiping and shredding services take place at the healthcare facility to minimize risk and ensure data is destroyed before it leaves the premises for recycling. This extra precaution to protect patients’ health information provides reassurance that a data breach will not occur during the disposal process.

Depending on the type of electronic medical device, different disposal stipulations may apply. Some asset disposition vendors specialize in the disposal of traditional computer equipment, while others have expertise with niche medical devices such as heart monitors and imaging equipment. Large vendors that have a history of working with the medical field will have the knowledge and expertise to handle both IT assets from the office and electronic medical devices in practice.

With a wide variety of devices, you may have to deal with multiple vendors

Selecting a responsible disposition vendor is crucial to stay in compliance with all legal regulations as well as your organization’s internal protocols. While many vendors that are capable of recycling electronics exist, not all will have familiarity with the medical devices from your particular healthcare environment. It is important to rely only on trustworthy companies that have experience with the types of medical equipment for which your organization has a recycling need.

To get started, evaluate your own healthcare organization’s needs. Specifically, what types of devices are you looking to recycle? Refer to Table 1 for examples of common medical devices that electronics recyclers process, but note that not all vendors will be able to handle all of these devices. It is imperative to assess the electronics recycling vendor’s capabilities before contracting for one type of recycling service or another.

It’s important not just to find a vendor that can process electronics, but to find one that can do so responsibly and in an
of each device and any other identifiable numbers to better track your equipment. Having this information will streamline the asset disposition process and provide an extra level of assurance that assets will be properly recycled in an efficient and timely manner.

Prior to arranging a shipment or pickup, contact the recycler or the manufacturer of the device for assistance with product packaging recommendations and advice on disposal criteria. This extra knowledge will save time and resources throughout this, and future, recycling processes. When dealing with a recall, it is essential to contact the manufacturer for counsel on disposal procedures and to verify if all devices or only parts will be subject to the recall.

Communication and preparation are key factors to the success and efficiency of the process. Early establishment of what your organization and outside parties require will help keep you organized, efficient and on target through each step of the process, which will allow you to be open to advancements in the industry as they occur.

**The future is here**

The shift from traditional computers and the ubiquity of mobile health electronic devices is well under way, and the medical field, as well as the recycling industry, is beginning to see these devices reach their end of life. The best companies in the recycling industry will continue to meet the demands of these new items with creative solutions that offer efficient and data-secure solutions for all electronic devices used in the medical field. HMT

**References**


**Environmental safety**

Consider the vendor's standards and certifications to ensure they align with your organization's needs and expectations. Specific to the electronics recycling industry are the e-Stewards certification and the Responsible Recycler (R2) certification, which have strict stipulations and frequent audits on electronics recycling practices that work to ensure electronics do not end up in landfills or are exported to developing nations.

Other certifications to note involve environmental, health and safety standards.

- ISO 14001 is the environmental management standard and aims to decrease the amount of pollution and waste that is produced by a business;
- OHSAS 18001 is a certification designed to put in place sound occupational health and safety practices that protect employees while on the job;
- ISO 9001 assures there are defined and effective quality management processes in place that are verified by routine third-party audits; and
- ISO 27001 ensures adequate company processes are in place and followed to protect third-party digital assets and minimize information security risks.

Once you have assessed your healthcare organization's recycling needs and found an appropriate recycling vendor, your organization should begin preparing for the first recycling transaction.

**Streamline and standardize your internal asset disposition process**

Each healthcare organization will have a different set of internal protocols for equipment disposal. Understand what those are early on to accurately communicate what is expected to ensure the vendor's compliance. To do so, take an inventory of items ready for disposal, including all IT equipment and all electronic medical devices. As a part of the record, make note of where the items are stored in the facility and at what location. Also note the weight and dimensions of each device and any other identifiable numbers to better track your equipment. Having this information will streamline the asset disposition process and provide an extra level of assurance that assets will be properly recycled in an efficient and timely manner.

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Once you have assessed your healthcare organization's recycling needs and found an appropriate recycling vendor, your organization should begin preparing for the first recycling transaction.
Using self-service kiosks with your check-in staff

The right combination for higher patient care.

By Jeri Pack

I have been in healthcare for over 30 years, and I have seen first-hand how sick people often experience unnecessary anxiety during check-in. I also have learned how healthcare organizations may create unneeded work and stress due to their poor registration processes and the inefficient documentation trail that’s produced.

These hassles have been eliminated at Montgomery Cancer Center where we have implemented several self-registration kiosks.

Before our kiosks were in place, like at most other facilities, patients got registered, but they did not go through the process in the timely and efficient fashion that they should. We had, on average, 450 patients a day. To funnel that many people through one portal, or one type of intake area, was almost physically impossible. When you consider that these patients were suffering from cancer and they were coming to us for things like checkups, blood work and infusions, it’s easy to imagine that we observed numerous frustrations for our patients and staff but we could not create a meaningful solution on our own. We needed a technology that we did not know was even in our market at the time. We wanted to find a system that was easy to use, could accurately identify and verify incoming patients, but also be capable of utilizing separate billing platforms and a high volume of duplicate medical records and corporate numbers. Looking back, our expectations were very high because our patients are so important to us. Looking forward as we use the self-registration kiosks that Clearwave developed with their vendor partners, I am so excited about the new level of attention our patients will receive for years to come.

You would not think this type of technology would lend itself to cancer patients, especially given the high volume we treat, but just the opposite is true. The average age of the patients at our cancer center is 62.5. Their average check-in time at the kiosk is just over two minutes. A registrar can’t work that fast with a high level of accuracy, but our kiosks can. Each kiosk can automatically identify our patients through their driver’s licenses, and their names, social security numbers and dates of birth are all instantly recognized and recorded. The kiosks identify the most current physical addresses, and they even collect the email addresses of our patients as well. They have helped the cancer center collect more accurate demographic information. We are collecting 38 percent more email addresses at the kiosk as compared to the old manual registration process.

In addition to the high ease of use for our patients, the self-check-in kiosks have also helped our staff to reduce their involvement with large and time-consuming activities, such as dealing with duplicate records. At our center, we have a high volume of duplicate medical records and duplicate corporate numbers. That’s a big deal for any facility like ours because a master patient index (MPI) cleanup can cost in excess of $1 million. Our kiosks require nowhere near that level of expense, and they do a wonderful job with these tasks.

It is so important to have this level of automation because we feel strongly that our patients should be treated with dignity and respect. They need staff members that are schooled in customer service to describe our processes and to answer their questions, not impersonal note-takers who spend most of their time dealing with forms. There is not one location within our system that we don’t have a human registrar that greets a patient after they check-in via a kiosk. Because our kiosks have cut down on the time used during patient check-in, our staff members have more opportunities to interact more calmly and caringly with our patients. Our kiosks do not replace staff. They enhance what they can do, and they enable us to provide new services such as true financial counseling on the front end. I am rewriting our charity and discount policies so that I may retrain all of our registration staff in this direction. We think this type of counseling is vital and that it will take our customer service to a whole new level.

All of these things did not happen overnight, and a great many people and companies were involved. You will hear many of these individuals throughout this Living Case Study explain the technical details involved with this implementation, and I am confident you will be in awe of their work. But as a healthcare veteran, I have to say that my biggest thrill has been seeing how excited our staff is to come to work. Everyone genuinely believes that we can now take some of our dreams for better patient care and, using our new kiosks, turn them into realities.
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The innovative system integrates the advanced technologies from four industry-leading companies. The result is a secure, streamlined, cloud based solution that delivers unbeatable service and ROI.
The phrase, “form must consider function” takes special meaning within the context of healthcare mobile carts and workstations. As integral tools that can increase workflow efficiencies, positively impact the point of care, and, in turn, improve the overall level of satisfaction of staff and patients, workstations must not only fit within an organization’s physical layout and its operational policies, but also fit the physical requirements of their users.

Ill-fitting or “mismatched” carts or workstations can lead to staff workers experiencing fatigue and even pain. Conversely, by properly integrating a workstation that provides its users comfort at the appropriate workflow position, a facility can achieve the highest levels of efficiencies and care.

We have included a brief overview of the ergonomic considerations administrators should make when planning to incorporate carts and workstations within their organization.

**A comfortable place to work**

Once thought of as little more than common furniture, the basic mobile cart can serve as a powerful tool at any healthcare facility. Simply by offering a comfortable place to perform important tasks, the right cart can increase productivity and satisfaction of your front-line staff.

Mobile carts and workstations can “enable quick, accurate decision making thanks to immediate access to data; reduce errors and enhance documentation accuracy as paper charting is eliminated; and provide access to patient data for all members of the circle of care, preventing duplicate efforts and providing accurate communication and clear care plan,” says Kimberly Krisik, Business Development Manager, CDW Healthcare. While these benefits are very real, many organizations do not appreciate the functionality of how workstations can affect their staff, thus limiting the equipment’s effectiveness.

“Scott-Clark (a LogiQuip Company) offers carts that are lightweight and have a low center of gravity,” said Bill Bzdek, Chief Operating Officer. “This allows for easy forward, backward and lateral movement.” When working at the cart, the user can adjust the desktop to the proper working height and then further adjust the monitor for the right sight position. A safer and more easy to use cart allows the worker to employ the cart for longer periods of time without injury.

The Armstrong Medical Premier cart line is all aluminum and 45 percent lighter than steel carts, minimizing end-user exertion. All full-size Armstrong carts are sold standard with a stabilizing frame with bumper. This extra-wide base provides the cart with added stability. The Armstrong Medical Premier Carts are seamless with no holes on the outside to retain spilled fluids – an infection-prevention consideration for patient and staff safety.

With the option of motorized or manual operation, the Getinge Height Adjustable Prep and Pack Workstation allows optimum ergonomic positioning between 28.6 inches and 44.1 inches from the finished floor. It has a high load capacity – 1,000 pounds for motorized units; 500 pounds for hand-crank units – and it has three different user positions that can be preset to store individual worker preferences, maximizing comfort and efficiency.

Belimed’s workstations are built to meet a wide range of U.S. and international ergonomic factors for comfortable carts and workstations. Continued on page 18
Keep things moving

The Elora Modular Battery System is an innovative solution designed to dramatically transform battery management for any portable point-of-care technology, including mobile workstations, vital signs monitors and EKG monitors, and meet strict agency safety standards, such as the IEC 60601-1 3rd edition. This system enables uninterrupted workflow by eliminating the time-intensive and onerous tasks previously associated with battery management, letting nurses and other healthcare professionals dedicate additional focus to patient care. Anton/Bauer

www.rsleads.com/412ht-185

Integrate some individual style

Successful EHR deployments depend on the flexibility of computer technology mounting and mobility within the workflow. Ergotron’s StyleView medical cart platform gives unprecedented control to nurses and IT to design a cart to specific caregiver needs without skipping on critical ergonomic features like sit-to-stand height adjustment and an adjustable back-tilt keyboard tray. Plus, the innovative auto-locking drawer system enables simple and efficient management of non-controlled medication. Ergotron

www.rsleads.com/412ht-189

Provide secure mobile services

Managed Mobile Services is an all-inclusive suite of mobile device and application management tools to help address the concerns of sensitive data in a mobile environment. Clinicians benefit from knowing their private emails, photos and personal applications are untouched, while IT administrators can help ensure patient data is secure. These mobile services enforce security requirements for your bring-your-own-device policy, while providing IT administrators with access to a real-time, easy-to-use dashboard to manage end-user devices. McKesson

www.rsleads.com/412ht-186

Lock, track supplies and carts

The Harmony 7000 cart with Intelligent Locking System (ILS) is part of STANLEY Healthcare’s leading Supply Chain Storage Solutions. The ILS offering is a keyless-entry solution that uses proximity card access supported with software through a Wi-Fi connection. ILS offers hospitals an easy, time-saving way to manage a large fleet of storage carts, providing remote credential and setting management, audit reports and battery status – all from a single administrator computer. STANLEY Healthcare

www.rsleads.com/412ht-187

Unmatched ergonomics and battery life

The all-new Metro AccessPoint Mobile Computing System delivers an unmatched user experience for both caregivers and IT professionals. It is the only mobile computing workstation to meet or exceed all of the Cornell University Healthcare Cart Ergonomic Standards (a stringent 35-point checklist measuring ease of use, safety and effectiveness of carts). Additionally, the advanced Li-Nano batteries deliver twice the life of typical LiFe batteries found in other carts and come standard with an industry-leading five-year warranty. Metro

www.rsleads.com/412ht-188

Access control for wall-mounted stations

The latest WALLaroo wall-mounted workstations feature ISONAS access control, which offers network-based, “Pure IP” technology that eliminates the need for a separate power supply, control panel and dedicated hard wiring. The system allows an authorized user to open locked cabinets and other access points throughout a facility with a single swipe card. These stationary workstations provide convenient and secure storage to help streamline daily activities, create workflow efficiencies and foster improved interaction and enhanced care. Carstens

www.rsleads.com/412ht-190

Telepresence with remote control

JACO’s UltraLite 100 Kubi Cart is a state-of-the-art telepresence tablet cart platform developed in conjunction with Revolve Robotics. With any tablet and the KUBI robotic neck, remote users can look where they want by panning and tilting the display. This unit features a durable aircraft-grade aluminum build, hidden cable management system and a simple app available for iOS, Android and Windows 8 that connects to tablets automatically and is compatible with any video conferencing client. JACO

www.rsleads.com/412ht-191

It’s all about the ergonomics

The TouchPoint T7 mobile technology cart features Auto Fit technology that instantly adjusts to each caregiver’s entered height with the touch of a button. Power Track steering allows for virtually effortless maneuvering and complete user control, while the unit’s simple design makes cleaning easy and promotes a healing environment. The negative-tilt keyboard slides back, allowing the palm rest to become a handle, and the titling and rotating monitor arm provides endless customization. Humanscale

www.rsleads.com/412ht-192
Security and medication administration on the go

Few tasks are as important on the frontlines of healthcare as medication administration and the security measures needed to ensure patient safety and regulatory compliance. When implementing mobile carts and workstations, healthcare officials should make extra considerations to ensure the highest level of care and security.

On challenges related to striking a balance between the use of mobile computing solutions and healthcare’s unique security requirements, Andrea Bradshaw, CDW Senior Director and General Manager, Mobility Solutions, said, “Research tells us that security and mobile device management (MDM) are the biggest concerns keeping healthcare IT managers awake at night. In particular, the ability to offer staff, patients and visitors the freedom to use the devices and apps that make caregivers productive – all while upholding HIPAA requirements mandating that all patient data is secured at all times.”

CDW’s Total Mobility Management helps organizations determine and define their ideal mobile strategy, including mobile carts and workstations, and choose which devices and apps would best support its workforce. “We can guide IT managers to the right solution to protect the organization’s data – most importantly, its patient data,” said Bradshaw. “Through our Mobility Management Portal, we can integrate day-to-day IT operations into one screen and provide real-time views and alerts of usage, expenses, device location, non-compliant activity and other activity deemed important. For BYOD users, we offer 24/7 support through a help desk and self-service portal. CDW will customize the optimal Total Mobility Management solution and services for each specific healthcare environment, because we know that the right clinical mobility solution can improve quality of care, communication and convenience.”

The Armstrong wireless auto-locking cart offers added security with several programmable auto-lock features. Additional security options from Armstrong include badge access, dual locking controlled-substance drawer with audible alarm and software audit trail reports for accountability. The Wireless Auto-Locking cart with optional Controlled Substance drawer requires dual credential access. In addition, alarms (audio and visual) can be set to ensure drawers are secure. When using the software, accountability is also a key feature to view audit trails and track who has accessed the Controlled Substance drawer. It also offers keyless entry with programmable auto-locking in minutes or hours for up to 250 users. Its LCD display provides cart status information and allows for on-screen programming. With the integrated 802.11g wireless capabilities, managing the carts and users (up to 5,000) can be administrated remotely in only minutes.

Blue Bell Bio-Medical offers its new wireless auto-lock cart with optional controlled substance drawers. Susan Saam, Regional Manager, explained, “It allows user updates and lock settings to be managed from the convenience of an administrator’s office by utilizing the facility’s Wi-Fi network. Make the update once and it’s done, even for carts located at satellite facilities. No more docking to each cart.” Its keyless entry feature allows for multiple individual user codes and activity reporting. Proximity or Magstripe card readers may be added, and optional independently accessed drawers for increased security of controlled substances or other valuables are also available.

The WALLArOO units from Carstens can not only serve as secure computer stations, they also offer secure medication storage – both at the point of care. They can be secured with network IP access control, as well. They can be used as mobile diagnostic equipment carts to improve workflow and can integrate technology equipment with an on-board power supply. The LinkIT cart enhances face-to-face communication with a built-in seat for the clinician.
Mobile Trends

NPs, PAs and pharmacists are top engaged mobile users

Nurse practitioners (NPs), physician assistants (PAs) and pharmacists excel at mobile, according to findings from the third annual Epocrates Mobile Trends Report, which examines mobile technology adoption and use patterns among healthcare providers.

More than 1,200 healthcare professionals from across the Epocrates member base shared opinions on mobile device usage and its impact on the medical profession and clinical workflow. Results were released in June.

Epocrates, an athenahealth service, led the digital health market in terms of medical reference app reach on smartphones for the fifth consecutive year in Manhattan Research’s 2014 Taking the Pulse U.S. study.

PAs lead daily tablet usage among clinicians, with NPs following close behind. As for hospital pharmacists, over half identified themselves as digital omnivores and designate mobile as having significantly improved their productivity while enhancing interactions with patients.

Interestingly, the report also notes that daily time spent on desktop computers by clinicians has increased this year over last, which is attributed to the increased adoption of traditional EHR systems.

Get the Epocrates Mobile Trends Report at www.epocrates.com

Patient Safety

ONC offers info on myriad patient safety issues

As part of an update in September 2014 to the ONC Health IT Safety Program – Progress on Health IT Patient Safety Action and Surveillance Plan, the agency noted that a study published in the summer of 2014 funded by HHS’ Agency for Healthcare Research and Quality (AHRQ) found that Florida hospitals that adopted all five core measures of Meaningful Use for medication management in 2010 had the lowest rate of adverse drug events of all hospitals in the state. The study is called “Meaningful Use IT reduces hospital-in 2010 had the lowest rate of adverse drug events of all hospitals in the five core measures of Meaningful Use for medication management. AHRQ found that Florida hospitals that adopted all five core measures of Meaningful Use for medication management in 2010 had the lowest rate of adverse drug events of all hospitals in the state. The study is called “Meaningful Use IT reduces hospital-

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Solutions

Laptops and tablets love Peanuts

With a tiny footprint of 18 x 17 inches and height of only 24 pounds, the Peanut is perfect for holding your light devices – without the fuss of an overblown cart. This simple design supports up to 10 pounds and features a durable, all-steel construction and a baked-on, powder-coated finish. One model has a deeper top area for your laptop, while the second is taller and holds your tablet in a 3-phase tiling mount. Anthro Corporation

Optimized for workflow

The new Fetal Monitoring Workstation from GCX Corporation combines fetal monitoring and IT hardware with recordkeeping functions for EMRs in a modular, single-cart solution to improve operational workflow for labor and delivery nurses and nurse managers. This multipurpose unit saves valuable space and helps keep medical devices and recorder paper organized. Accessory options include flat-panel mounting solutions, UPS/CPU mounts, a hospital-grade power strip and more to provide a customizable solution that is durable and easy to keep clean. GCX Corporation

Aluminum wireless auto-locking cart

The new Aluminum Wireless Auto-Locking Cart from Armstrong Medical features keyless entry, an LCD display (shows date, time of day, current battery life and programmable menu-driven display system that prompts you to each additional command), integrated 802.11g wireless capabilities with wireless antenna, up to 5,000 user codes, supervisor code for programming, and manual or automatic locking. This cart also has many customizable auto-locking features to fit your unique security needs. Optional prox reader and controlled-substance drawer available. Armstrong Medical Industries

Flexibility for clinicians and patients

AFC’s newest line of computer tablet carts comes equipped with a 24-inch flexible gooseneck tablet holder that allows the healthcare professional to set the viewing angle for the patient as they view podcasts, webcasts, articles or other content in an up-close and interactive environment. This configuration frees up the clinician’s hands while providing mobility throughout the facility. The cart is available with either a 1- or 2-inch outer-diameter steel pole and 19- or 24-inch corresponding weighted base. AFC Industries
Medicare penalties for eligible providers who don’t meet Meaningful Use for electronic health records (EHRs) begin on January 1, 2015, and increase every year providers continue to fail to demonstrate they have achieved it. While the meaningful use of EHRs has historically been viewed as the responsibility of information technology (IT) staff and clinicians, there is growing recognition among healthcare organizations about the vital role that supply chain professionals must play in this critical undertaking.

Setting the stage for standardized data
Earlier this year, the Office of the National Coordinator (ONC) for Health Information Technology proposed that EHR technology be able to record and display unique device identifiers (UDIs) about patients’ implantable devices to be certified for Meaningful Use. Deploying certified EHR technology is one of the factors that affect a provider’s ability to avoid penalties under the conditions described above. While that language was later withdrawn, the ONC is expected to revisit the idea next year in parallel with its proposal for Stage 3 of Meaningful Use. That proposed rule could also include a requirement that hospitals and physicians document UDIs for implanted devices in EHRs.

Meanwhile, the U.S. Food and Drug Administration’s (FDA) Unique Device Identification rule requires manufacturers of medical devices to assign UDIs to their products at all packaging levels and label those products with the UDIs in both human and machine readable formats. Under the rule, manufacturers must also submit data on their products to the FDA’s publicly accessible Global UDI Database (GUDID).

The deadline for Class III products to be in compliance with the UDI rule was September 24, 2014. All implantable devices regardless of class, plus products considered to be life-saving and/or life-sustaining, must comply by September 24, 2015, and the balance of Class II devices a year later.

The primary purpose of the UDI rule is to improve adverse event reporting and better manage device recalls. Capturing UDIs in EHRs is considered a key step toward achieving that goal.

But to successfully implement and use EHRs requires that healthcare organizations have a single source of truth for product data. That’s where supply chain comes in.

Supply chain in the lead
Today, supply chain departments already capture information on the medical-surgical products their facilities procure, and they store this information in their item masters. The item master drives not only supply chain processes, but also a broad range of clinical and financial functions. Therefore, it makes sense that the item master should also feed the EHR to support documentation of the products used in patient care. But using the item master to feed standardized product data to the EHR is not as simple as it might seem.

Healthcare’s dirty little secret: Item master data
While the item master should be a healthcare provider’s source of truth for product data, most item masters are filled with inaccurate, duplicate and erroneous data. The problem lies with the sheer volume of product data a facility must maintain as well as the number of changes made to products each year. Even the most well-staffed and technologically equipped supply chain teams face an insurmountable task managing this continuous data churn. Other contributing factors to bad item master data include technology limitations (MMIS/ERP), discrepant data sources, lack of adoption of data standards, variation in processes and poor data governance policies.

Bad data in is bad data out. A healthcare facility that feeds inaccurate data to its EHR cannot trust the outputs generated – from the information generated to evaluate the clinical effectiveness of products and procedures to data used to secure reimbursements from
the Centers for Medicare & Medicaid Services (CMS) and private payers.

A healthcare organization's supply chain team is ideally positioned to inform clinical and IT staff of the quality of its item master data so that, together, they can make an educated decision about what steps must be taken to clean and maintain product data before it reaches the EHR and impacts downstream processes.

Recognizing the value of the item master and its impact on clinical and business operations, more facilities are implementing virtual item masters that continually monitor an organization's item master for changes and updates, and then systematically correct product data inaccuracies, remove duplicates and fill in missing information.

**Standardization is far from simple**

Healthcare providers will soon have greater access to standardized product data thanks to the FDA's UDI rule. That said, just because the unique device identifiers exist in the GUDID, it is not easy for organizations to obtain the data in a manner that can be easily integrated into its various systems, from the enterprise resource planning (ERP) and materials management information system (MMIS) to EHRs, billing systems and product registries for clinical research.

Because the supply chain department ultimately owns data on all of the products procured by its facility, it is uniquely positioned to lead UDI adoption efforts. Furthermore, many supply chain teams are already capturing product data that is subsequently used for a variety of purposes (e.g., inventory management, analytics, etc.). They can use this knowledge and experience to help their organizations access the necessary data to achieve EHR Meaningful Use objectives.

Many healthcare facilities currently implement product data standardization initiatives in parallel with their EHR implementations, but not necessarily in a coordinated fashion. Having a collaborative, multidisciplinary team comprised of clinicians, IT staff, supply chain staff and other key stakeholders overseeing both of these major initiatives helps ensure a facility gets the most out of its technology, time and resource investments.

**Conclusion**

EHR implementations are time and resource intensive. To ensure a return on its investment, a provider needs to prove the meaningful use of its EHR. Providers also need to use their EHRs to drive revenue growth and better reimbursements by delivering more effective, efficient patient care across the continuum. Both require healthcare organizations to have access to accurate data on the products used in patient care.

As the owner of a healthcare facility's single source of truth for product data – the item master – and the driver of product data standardization efforts, supply chain professionals are positioned to help their organizations achieve Meaningful Use of EHR systems and must play a key role in EHR planning, adoption and use.
Meaningful Use

Is your organization prepared?

By Marc Grossman and Jenna Barsky

Meaningful Use (MU) is becoming more challenging and expensive for both providers and the federal government. Centers for Medicare and Medicaid Services (CMS) payouts rose dramatically from $5 billion in June 2012 to $26 billion as of September 2014, which has led to a heightened focus on MU audits and a significant surge in the total number performed in 2014. This intensified regulatory environment is causing healthcare providers to question the certainty of incentive payments. Preparing for a potential audit is crucial in this all-or-nothing program, where MU documentation shortfalls can lead to big losses. The time to secure past and future incentive payments is now.

The increased number and stringency of MU audits has occurred primarily as a result of political pressure to make every MU dollar count. The last Government Accountability Office (GAO) review of the MU audit strategy resulted in the institution of pre-payment audits, which gives CMS the option to withhold payment until an organization successfully fulfills an audit request. The next review could tighten the purse strings even more by strengthening audit tactics.

CMS has designated Figliozzi and Company to perform audits on at least 20 percent of MU attestations, evenly split between pre-payment and post-payment audits. Medicaid providers could also face an additional audit performed by their state's Medicaid program.

While there is not a published list of audited providers, word is spreading quickly through the healthcare community of eligible hospitals and professionals who have received the dreaded audit notifications. An increasing number of providers are appealing negative audit outcomes, while some have voluntarily returned incentive payments in order to avoid claims of fraud. Two of these providers are Health Management Associates, which is in the process of repaying $31 million, and Habersham Medical, which must repay $1.5 million in incentive payments.

Although CMS’ audit selection method is undefined, providers should be careful to avoid attestation red flags and documentation pitfalls that could trigger an audit. An audit can occur up to six years following each MU attestation, increasing the need to maintain the appropriate documentation.

The most common types of MU documentation are:

- Proof of complete ONC certification;
- Core and Menu Measure reports;
- Clinical Quality Measure reports;
- Screenshots as evidence of compliance throughout the reporting period;
- Evidence of compliance for Yes/No objectives; and
- Policies or procedures.

Key lessons learned thus far

As MU audits become increasingly common, certain best practices are identifiable:

- Have a designated MU Coordinator;
- Prepare for an audit prior to attesting;
- Document and save everything;
- Create an electronic “audit folder”;
- Print reports on day of attestation;
- Do not rely heavily on software vendors for proof of compliance;
- Pay attention to details;
- Only provide requested documentation; and
- Ask questions.

We have seen the value of these practices in numerous instances, ranging from small physician practices to large academic medical centers. The underlying success factor of each organization is the formation of an audit strategy prior to the reporting period. In one instance, a hospital selected a staff member to take on the role of “MU Audit Coordinator” to collect documentation throughout the reporting period and organize the information in electronic folders. Prior to the start of each month in the reporting period, the Coordinator sent out a list of needed documentation to the MU team, including the individual responsible for submitting each piece of information. After submission to the Coordinator, the organization had a third-party MU expert review the documentation for completeness. The Coordinator also confirmed the email address listed in the MU registration to receive the audit notification and ensured the account was frequently monitored.

Soon after the organization attested to MU, the Coordinator received notification of a pre-payment audit. Each information request was satisfied by selecting the appropriate documentation from the prepared electronic folders. The Coordinator also contacted the Auditor prior to submitting the documentation to ask questions and confirm the documentation fulfilled the Auditor’s request. Ultimately, the hospital’s diligence paid off, resulting in a swift decision that the hospital was in compliance with Meaningful Use.

With the new measurement period about to start, we recommend that hospitals review their documentation process and make sure that they are being thorough and timely in their approach to gathering appropriate documentation to substantiate compliance from the very beginning (October 1). Being unprepared for an MU audit is taking an unacceptable risk with an organization’s financial health, particularly in this increasingly stringent atmosphere of program review.

Marc Grossman, Principal, and Jenna Barsky, Senior Consultant, WeiserMazars

Postscript

Sign-Off

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Extend your image access

OnBase has integrated Calgary Scientific’s diagnostically cleared medical imaging technology, ResolutionMD, into its Patient Window, so caregivers can access patient records from Web or mobile devices and make treatment decisions using FDA Class II-cleared software. Providing mobile access to diagnostic images in OnBase supports the growing demand for collaborative and telehealth solutions, enabling physicians to work in new ways whether they are inside or outside the walls of a caregiving facility. Calgary Scientific

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Windows-based healthcare PDA

The ergonomic Elf Healthcare PDA is a fast and reliable 2D imager that boasts an enclosure made of chemical-resistant plastics so it can withstand daily cleaning with harsh disinfectant solutions commonly found in various healthcare settings, such as Sani-cloth cleaners, CaviWipes and others. This Windows-based unit is equipped with the Datalogic patented Green Spot and a vibrating alert, providing good-read feedback while avoiding noisy beeps. These two features help to ensure quiet, restful scanning during patient bedside applications. Datalogic ADC

www.rsleads.com/412ht-153

Use Big Data for value-based care

The Enterprise Performance Management (EPM) Application Suite is a set of SaaS-based applications that enable rapid population health management, measurement and engagement to support clinically integrated network and value-based care initiatives. This solution allows the clinically integrated network to aggregate and analyze its patient data in an effort to improve care quality and outcomes while reducing healthcare costs. It was recently chosen by Integrated Health Collaborative (a subsidiary of Aultman Health Foundation and an Ohio-based, physician-led, clinically integrated network) to handle its population-health efforts. Explorys

www.rsleads.com/412ht-155

Automated HIPAA-ready contact center

Verizon’s Virtual Contact Center and IP-based Interactive Voice Response (IP IVR) offerings are now HIPAA ready, so healthcare providers and payers can effectively manage incoming inquiries from users, such as patients and healthcare professionals, while sharing electronic patient health information (ePHI). The cloud-based Virtual Contact Center can be integrated with existing customer relationship management software, EHRs and other customer-owned databases. The IP IVR system “intelligently” interacts with callers to identify and route calls, while sharing ePHI. Verizon provides a HIPAA Business Associate Agreement with each solution and works closely with clients to safeguard any electronic health information that’s exchanged. Verizon Enterprise Solutions

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Applications for population health

A new bundle of health IT applications from Caradigm aims to enable clinically integrated networks (CINs) moving to value-based care to manage the health of populations. The suite spans data aggregation, healthcare analytics, risk stratification and care coordination and management, providing solutions via Caradigm Intelligence Platform, Caradigm Knowledge Hub, Caradigm Risk Management, Caradigm Quality Improvement and Caradigm Care Management. Training and ongoing support are available. Caradigm

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Full-featured data protection

The Dell Backup & Disaster Recovery Suite is a new data protection bundle that gives customers access to the company’s full back-up and recovery software portfolio by way of a single capacity-based licensing model. The suite includes AppAssure, NetVault Backup and vRanger (for agentless protection for VMware and Microsoft Hyper-V), providing three variations of critical enterprise and virtualization back-up software in one package applicable across physical, virtual or cloud infrastructures. This solution is priced by front-end terabyte. Dell Software

www.rsleads.com/412ht-154

Disaster recovery with “one-button” restore

Informity provides an automated cloud back-up and recovery solution for the ImagePilot family of imaging solutions. This product automatically creates a mirror image of the complete ImagePilot system, including all images, patient medical history and system settings. With the touch of “one button,” the system is restored and users gain immediate access to all prior images for worry-free operation. An expanded Collaboration Box, which includes validated updates and antivirus software, promotes Web-based remote image sharing and physician collaboration. Konica Minolta Medical Imaging

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Genome technology
Bringing more precision to patient care.

By Matthew Hawkins

Genomic medicine is an emerging discipline with enormous promise for enabling providers to create highly targeted care plans for individuals and patient populations. Used for both diagnosis and risk prediction, the number of genetic tests available is growing by leaps and bounds. In the National Institutes of Health Genetic Testing Registry, for example, more than 16,000 detailed tests for 4,200 conditions and 2,800 genes now exist.

In keeping with healthcare's emphasis on value-based care, advances in genomic information technology are revealing new opportunities to bring disparate data together to promote precision medicine. In fact, by incorporating complex genomic, lab and other data into EHR-accessible platforms, healthcare organizations can further enhance the clinical information already stored and provided through EHRs – thus shaping the future of healthcare.

Growing benefits for patients and providers
Genomic information is used to diagnose, treat and even predict disease more accurately by looking at specific gene sequences and the role they play in a person's health. As the evolution of genomics continues and its use becomes more mainstream, individuals, patient populations and providers all will realize significant benefits.

Individual patients can benefit from an integrated view of their genomic and pathology data that empowers providers to diagnosis and treat faster and more effectively. Typically, for example, providers today will order a battery of tests to diagnose the cause of a patient's symptoms. This approach requires starting with a broad view of diagnostic possibilities and then progressively narrowing them down based on test findings, which can be a costly and time-consuming process.

By contrast, genetic testing immediately narrows the diagnostic view by identifying variants within the genome. These variants potentially can create health issues – if not immediately, then in the future. Mutations of the BRCA1 and BRCA2 genes, for example, influence the risk of breast and ovarian cancer. Knowing a woman has such mutations can help shape effective therapies, including preventive action.

Physicians also can pinpoint trends, patterns and opportunities to improve care across patient populations by enabling the capture, storage and analysis of valuable genomic variant data. When new genetic variants are detected, for instance, the results can initiate a process to track and develop new treatment plans, helping future patients in the affected population. In this way, entire patient populations can benefit from access to a growing and constantly updated database of genomic data.

As a new discipline, genomic medicine does carry some implementation challenges because it requires unique clinical skill sets, specialty-testing equipment and software capable of recording, storing and interpreting the results. This means healthcare organizations need to fully commit before they will see effective clinical application. Once they do, however, the precision of genome-supported diagnostic information holds the potential for substantive advances in patient care and outcomes.

Shaping the future
Genomic medicine supports the precepts of value-based healthcare by permitting faster diagnoses, more accurate individual care plans and more efficient care delivery – all factors that additionally bring higher physician and patient satisfaction. As more genetic data is gathered, more targeted treatments will reduce the number of tests and treatments needed to produce desired outcomes. Furthermore, as genetic testing moves into the mainstream of medicine, its costs will continue to decline.

Several reports and statistics point toward accelerated use of genomic-based medicine in the near future, including a market outlook for 2018 that predicts a 9 percent compound annual growth rate for the U.S. genetic testing market, as well as a report released by the United Health Center for Health Reform and Modernization that anticipates a five-fold increase in spending on genetic testing. The job outlook for genetic counselors also looks strong, with employment growth from 2012 to 2022 projected at 41 percent.

These predictions and trends coupled with changing healthcare reimbursement models validate that future success in value-based care requires use of precision medicine – backed by genomic information – to improve individual health outcomes and population health management. They underscore that the time is right to bring science and technology together to solve the long-standing problems of cost and quality in healthcare.
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