

Driving Value Across Your Enterprise

Document Management: A Core IT System



FEATURING THE RESULTS OF THE

Healthcare **IT** News

HEALTHCARE
FINANCE NEWS

DOCUMENT MANAGEMENT SURVEY
June 2010

OnBase
a Hyland Software solution

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Executive Summary

The American Recovery and Reinvestment Act (ARRA) of 2009 gave information technology a huge boost in the healthcare industry. ARRA's Healthcare Information Technology for Economic and Clinical Health (HITECH) Act allocated \$19.2 billion for provider adoption of electronic health records (EHRs). In the last year, physicians and healthcare organizations have focused their health IT initiatives on EHR and electronic medical record (EMR) implementation and the "meaningful use" that must be derived from these systems in order to qualify for federal stimulus funds.

While EHRs and EMRs are viewed as a core IT system, forward-thinking healthcare organizations are deploying other solutions to not only complement their EHR and EMR systems, and in doing so achieve meaningful use, but drive value across their enterprise. Given the impact of the economic recession, reimbursement cuts and the rise of self-pay, healthcare organizations are looking for health IT investments that deliver both clinical and financial value, and can be leveraged for future initiatives. Document and content management solutions fulfill healthcare providers' strategic requirements.

Healthcare IT News and *Healthcare Finance News* each conducted a survey, on behalf of Hyland Software, the leading developer of OnBase enterprise content management (ECM) software, to determine healthcare providers' perceptions and usage of document and content management solutions as part of their organization's IT infrastructure. Allina Hospitals and Clinics, Bayonne Medical Center, Cleveland Clinic Health System, SSM Health Care and University Hospitals of Cleveland also participated in case studies to highlight the benefits they realized in deploying a content management solution.

While these applications are slowly emerging as a core enterprise-wide IT solution — thanks to early adopters illustrated in the case studies — mainstream adoption is still a few years away, the surveys show. The trend may accelerate, however, with the rise of documented clinical and financial benefits by visionary healthcare organizations.

Common themes were gleaned from both the survey results and case studies that will inform the direction and expansion of this market by healthcare providers. From those common themes, calls to action emerged:

Present a complete view of the patient in the EMR and EHR

The federal stimulus programs are incentivizing many healthcare systems to deploy certified EMRs and EHRs. One of the clinical goals for implementation is to gain a complete view of the patient in order to deliver high-quality care and continuity of care from the inpatient to the outpatient setting. A high percentage of data, such as external test results, however, resides outside of the digital patient record. While market-leading EMR and EHR vendors have either developed capability or partnered with best-of-breed vendors to capture external, unstructured and siloed data, many healthcare systems are struggling to integrate data across disparate IT systems and seamlessly present both documents and images for clinical users. Opportunities exist for the rest of the EMR and EHR vendor market to fill this need.

Use ECM to contribute to meaningful use

Although the meaningful use criteria under the proposed provisions for the EHR incentive programs

have not been finalized yet, the 2011 milestone will still focus on the general concepts of data capture and sharing. The first critical step is being able to capture patient information. As the survey shows, healthcare organizations understand the importance of having complete patient information in an EMR to provide better care. Despite content management solutions' ability to input unstructured data and images into the EMR to enable a comprehensive view of the patient, overall healthcare providers have yet to fully realize their contribution to meaningful use. While early adopters understand the value, the majority of healthcare providers will need help making the connection between content management and meaningful use.

Derive value across departments and facilities

Survey results revealed that healthcare systems had more than one content management application in various departments outside of health information management, including patient financial services, patient registration, clinical areas, accounts payable



and human resources. Early adopters, however, are benefiting from the deployment of one application for all departments, which connects clinical, financial and administrative IT systems for data sharing and visibility. Not only is having an enterprise-wide content management platform cost-effective and operationally efficient, it also increases patient satisfaction and end-user utilization. The holy grail of healthcare IT is the integration of all IT systems within an organization. Enterprise content management needs to be emphasized as one of the applications that will enable integration.

Highlight ROI

The case studies' hospitals and healthcare systems documented qualitative and quantitative return on investment, including cost savings through the elimination of paper processes and physical storage, and efficiencies in electronic workflows. On the clinical side, clinicians were able to access data in the EMR for timely clinical decision support. More healthcare organizations need to document their ROI to drive critical mass for content management solutions.

Optimize robust capabilities

The surveys indicated high utilization of content management applications' capabilities, which included electronically capturing paper documents, providing access to paper documents in the EMR, speeding

up manual processes with electronic workflows and centralizing unstructured content in a single repository. Revenue cycle management capabilities, such as electronic handling of claims and EOBs, also had high utilization. Hospitals and healthcare systems should optimize the full range of capabilities to increase the value proposition of content management solutions.

Position content management as a core IT system

More than half of the survey participants ranked content management as a core IT system in their healthcare organization. The rest did not have a content management application, or their application was either a complimentary technology in a few departments or not a major focus. The current environment has forced healthcare providers to scale down their IT initiatives and significantly alter IT strategies going forward. Given these circumstances, healthcare systems whose IT initiatives include content management should optimize its deep and broad functionality and strategically position it as a core IT system that can be leveraged across the enterprise and can support future IT projects.



Synopsis: *Healthcare IT News* and *Healthcare Finance News* Document Management Survey Results

One of the common goals for healthcare organizations to implement an EMR or EHR is to gain a complete view of the patient in order to deliver high-quality, continuity of care.

Survey Respondent Demographics:

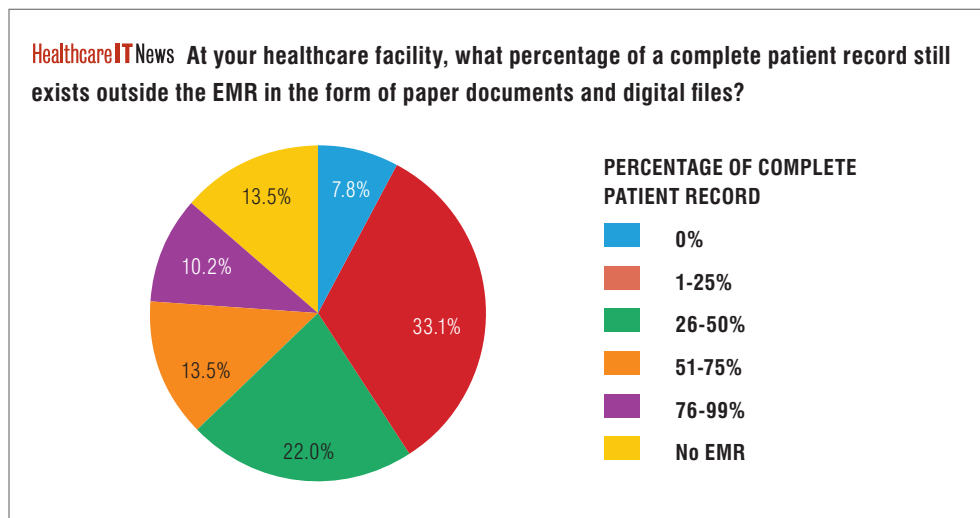
Of the 245 participants in *Healthcare IT News*' survey, 37 percent work in hospitals, with 24 percent associated with multi-hospital or integrated delivery systems. The rest, each under 10 percent, spanned ambulatory care facilities, home healthcare, ancillary clinical service provider, payer or managed care, healthcare consulting services, healthcare vendor and other. A quarter of the participants identified themselves as IT directors, with the rest split among CIOs or CTOs, CEOs or CFOs, other management executive position, medical records manager, administrative manager, finance manager and other. Nearly 49 percent of respondents' hospital or health system had 100 or less beds, 18 percent had between 501 and 1,000 beds, and the rest had between 100 to 250 beds, 251 to 500 beds or more than 1,000 beds.

Of the 83 participants in *Healthcare Finance News*' survey, more than half were associated with hospitals, with 21 percent working in multi-hospital systems, integrated delivery systems or ambulatory care facilities. Twenty-one percent are medical records managers, 17 percent are CFOs or CEOs, and 35 percent comprise finance managers, IT directors and administrative managers.

Usage of EMRs and Document Management Systems

Nearly two-thirds of the *Healthcare IT News* survey respondents reported having an electronic medical record (EMR), with 26 percent planning to implement one. More than half of *Healthcare Finance News* respondents reported that their organization has an EMR, with another 40 percent planning to implement one. Overall, both survey results reflect organizations that are further along in health IT deployment, given that a February 2010 survey conducted by SK&A revealed that EMR adoption rates among hospital-owned and health system-owned sites are 44 percent and 50 percent, respectively.

Although the meaningful use criteria have not been finalized yet, the proposed rules for the 2011 milestone will still focus on the general concepts of data capture



and sharing. One of the common goals for healthcare organizations to implement an EMR or EHR is to gain a complete view of the patient in order to deliver high-quality, continuity of care. This is an ongoing process for many hospitals. According to an April 2009 Robert Wood Johnson survey of EHR use in U.S. hospitals, only 1.5 percent of hospitals have a comprehensive electronic records system and an additional 7.6 percent have a basic system.

Two-thirds of the *Healthcare IT News* respondents said an EMR enables viewing of a complete patient record. However, 24 percent said that at their healthcare facility between 51 to 99 percent of a complete patient record still exists outside the EMR in the form of paper documents and digital files. Up to 25 percent of a complete patient record still exists outside the EMR at their healthcare facility, according to 33 percent of respondents. Seventy-nine percent of respondents said EMRs primarily house structured content, or data stored in a fielded form, and 21 percent said EMRs primarily house unstructured content, including documents, audio, video and unstructured text such as the body of an e-mail message.

More than 61 percent of *Healthcare Finance News* respondents said an EMR enables viewing of a complete patient record, and 72 percent said EMRs primarily house structured content. Of these respondents, 28 percent indicated that one to 25 percent of a complete patient record still exists outside the EMR in the form of paper documents and digital files. Eleven percent indicated that their EMR presents a complete patient record, and 50 percent of the responses ranged from 26 percent to 99 percent.

Nearly 80 percent of *Healthcare IT News* participants and 69 percent of *Healthcare Finance News* participants said they would consider a document management system as an add-on to an EMR, given the percentage of data residing outside of the EMR. Allina Hospitals & Clinics, a not-for-profit network of 11 hospitals, 80 community- and hospital-based clinics and other healthcare services in Minnesota and western Wisconsin, needed a document management system to complement its EMR, which did not have a robust scanning functionality. It also wanted to provide its clinicians seamless access to paper-based patient documents within its EMR. Allina, which established a “One Patient, One Record” philosophy with the implementation of its EMR, can now fax, for example, external test results directly to its document management system’s work queue, which imports the documents into its EMR.

Healthcare IT News respondents identified the various types of information physicians could access through their organization’s EMR: lab results (74 percent), radiology reports (69 percent), physician/nurse notes (64 percent), EKG results (56 percent), patient consent forms (52 percent), insurance cards (43 percent), retinal eye scans (11 percent), surgical videos (6 percent) and other information (10 percent).

Cleveland Clinic, a leading academic medical center, uses its EMR as the presentation layer. Anything that goes into the content management system is seamlessly presented through the EMR. When physicians view data in the EMR, which are accessed via hyper links, they are entering into the clinic’s content management system. With the deployment, Cleveland Clinic’s physicians can now access extremely high-value documents such as EKGs across its facilities. For physicians at the number one heart institute in the country, seeing the actual wave file of an EKG in real time is

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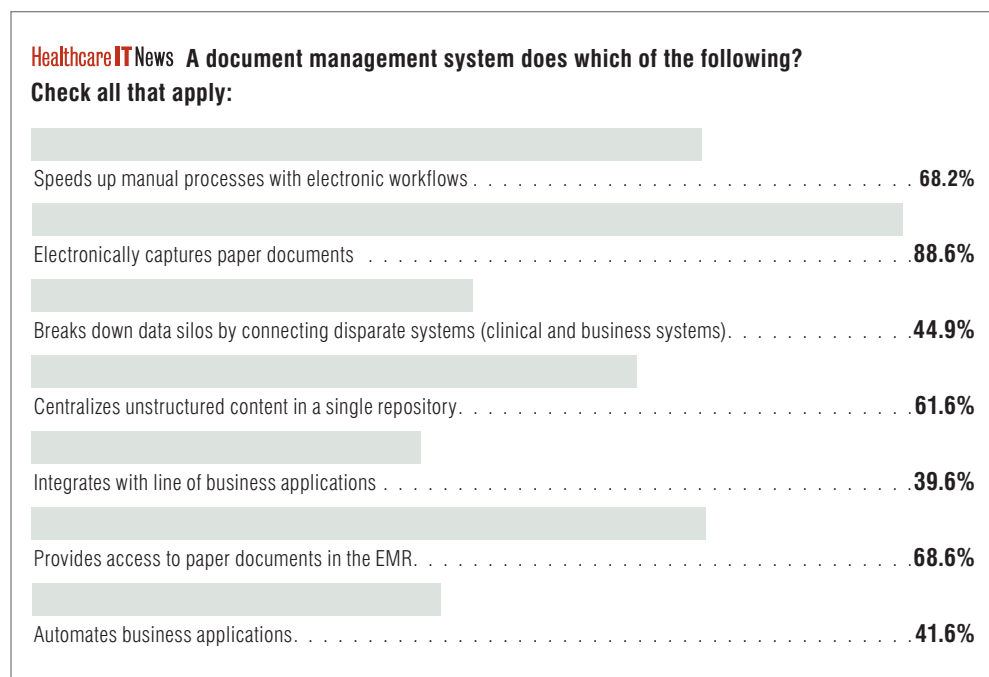


Sixty-one percent of *Healthcare IT News* respondents said that document management is an essential step to a fully automated EMR.

critical. Physicians at University Hospitals in Cleveland, a healthcare system serving the Northeastern Ohio region, can also access high-priority images, such as a cardiology consult, by clicking on a tab within its EMR.

Sixty-one percent of *Healthcare IT News* respondents said that document management is an essential step to a fully automated EMR. Thirty-two percent indicated that document management contributes to meaningful use, but is not as important as other technologies, and 8 percent believe it doesn't help providers meet meaningful use requirements. Market research firm KLAS noted in an October 2009 report, "Enterprise DMI: Finding the Right Stepping-Stone to Full EMR," that most enterprise EMR vendors focus primarily on their core competency — building a quality EMR, rather than developing a strong document management and imaging solution. As a result, very few enterprise EMR vendors offer robust document management and imaging solutions. For many healthcare organizations, the move from paper to electronic is taking years. In response, a majority of hospitals are looking to document management and imaging solutions to ease the transition from paper records to a full EMR, according to the report. Bayonne Medical Center, an acute-care hospital in Bayonne, New Jersey, is on the road to being a paperless organization, but in the interim it is relying on its document management system to scan paper-based documents and enable physicians to view the data in its EMR.

The meaningful use criteria under the proposed provisions for the EHR incentive programs are phased in three stages. The Stage 1 meaningful use criteria focus on electronically capturing health information in a coded format, using that information to track key clinical conditions and communicating that information for care coordination purposes. The first critical step is being able to capture patient information. As the *Healthcare IT News* survey shows, healthcare organizations understand the importance of having complete patient information in an EMR to provide better care.



Despite document management solutions' ability to input unstructured data and images into the EMR to enable a comprehensive view of the patient, overall providers have yet to fully realize their contribution to meaningful use.

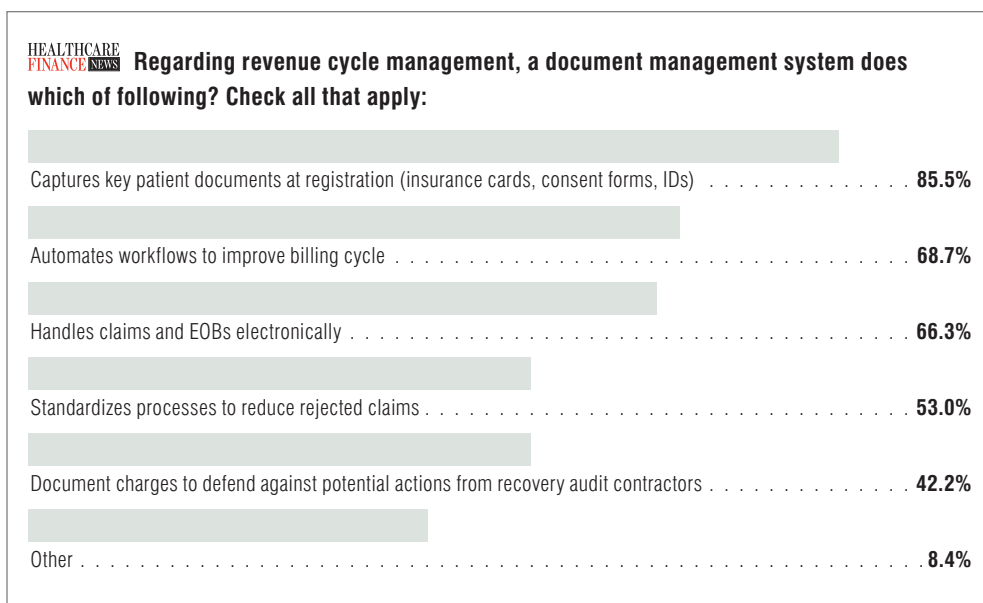
Document Management Functionalities

Seven out of 10 *Healthcare IT News* respondents noted that their organization currently has a document management system. Respondents' document management systems are fairly robust, given the functionalities they reported possessing: electronically captures paper documents (89 percent), provides access to paper documents in the EMR (69 percent), speeds up manual processes with electronic workflows (68 percent), centralizes unstructured content in a single repository (62 percent), breaks down data silos by connecting disparate systems such as clinical and business (45 percent), automates business applications (42 percent) and integrates with line of business applications (40 percent).

Of the 74 percent of *Healthcare Finance News* respondents who had document management systems, they also reported robust functionality: electronically captures paper documents (82 percent), speeds up manual processes with electronic workflows (80 percent), provides access to paper documents in the EMR (69 percent), centralizes unstructured content in a single repository (46 percent), automates business applications (43 percent), breaks down data silos by connecting clinical and business systems (37 percent) and integrates with line of business applications (33 percent).

Healthcare Finance News respondents also looked at document management functionalities in terms of revenue cycle management: captures key patient documents such as insurance cards and consent forms at registration (86 percent), automates workflows to improve billing cycle (69 percent), handles claims and explanation of benefits electronically (66 percent), standardizes processes to reduce rejected claims (53 percent) and document charges to defend against potential actions from recovery audit contractors (42 percent).

Despite document management solutions' ability to input unstructured data and images into the EMR to enable a comprehensive view of the patient, overall providers have yet to fully realize their contribution to meaningful use.



Thirty-nine percent of *Healthcare IT News* respondents ranked “speeding up manual processes with electronic workflows” as an IT implementation outcome as “most important.”

The functionalities both survey respondents report speak to the flexibility of current document management applications. In its selection process, SSM Health Care, a St. Louis, Mo.-based healthcare system with hospitals and nursing homes in four states, wanted a document management solution to meet its clinical and business needs. SSM Health Care focused the last two years of its document management implementation on the clinical side, but it is looking to meet the needs of financial and administrative departments such as revenue cycle management and patient accounting. Bayonne Medical Center will be deploying its document management system for medical records, physician portal and paperless registration by early summer 2010 and for human resources, accounts payable, materials management and billing by the end of 2010. The success of Cleveland Clinic’s clinical installation of its content management system has driven demand for administrative scanning. University Hospitals of Cleveland is in the middle of its enterprise document management deployment, but recognizes the value in leveraging its document management platform. The healthcare system is establishing the groundwork to use this platform for administrative functions in its human resources and legal departments.

IT Implementation Outcomes

Thirty-nine percent of *Healthcare IT News* respondents ranked “speeding up manual processes with electronic workflows” as an IT implementation outcome as “most important,” with another 22 percent ranking it just below “most important.” While University Hospitals of Cleveland is in the middle of its document management deployment, the healthcare system anticipates not only reducing the physical storage of its documents but driving efficiency by automating the process of routing images to different departments. SSM Health Care’s health information management department relies heavily on its document management application to enable physicians to electronically sign scanned documents, saving time and providing a complete electronic health record upon patient discharge. The first phase of Bayonne Medical Center’s document management implementation has helped improve emergency department (ED) documentation and chart capture processes. As a result of the deployment, Bayonne Medical Center has seen financial performance improvement in ED charging.

Only 17 percent of the *Healthcare IT News* respondents ranked “electronically capturing paper documents” as “most important.” Thirty-eight percent of respondents rated the IT implementation outcome in the middle of the pack. Twenty-seven percent ranked “providing access to paper documents into the EMR” as “least important,” and nearly 20 percent ranked it just above “least important.” Only 13 percent ranked it as “most important.” These numbers run contrary to what Cleveland Clinic has experienced. Usage of scanned documents and images is tracked on a weekly basis. More than 40 percent of all documents scanned into the clinic’s EMR are instantly retrieved, validating very high utilization. For SSM Health Care, having a complete electronic patient record available at their clinicians’ fingertips at all times eliminates the time-intensive search for paper or charts and enables clinicians to spend more quality time with their patients.

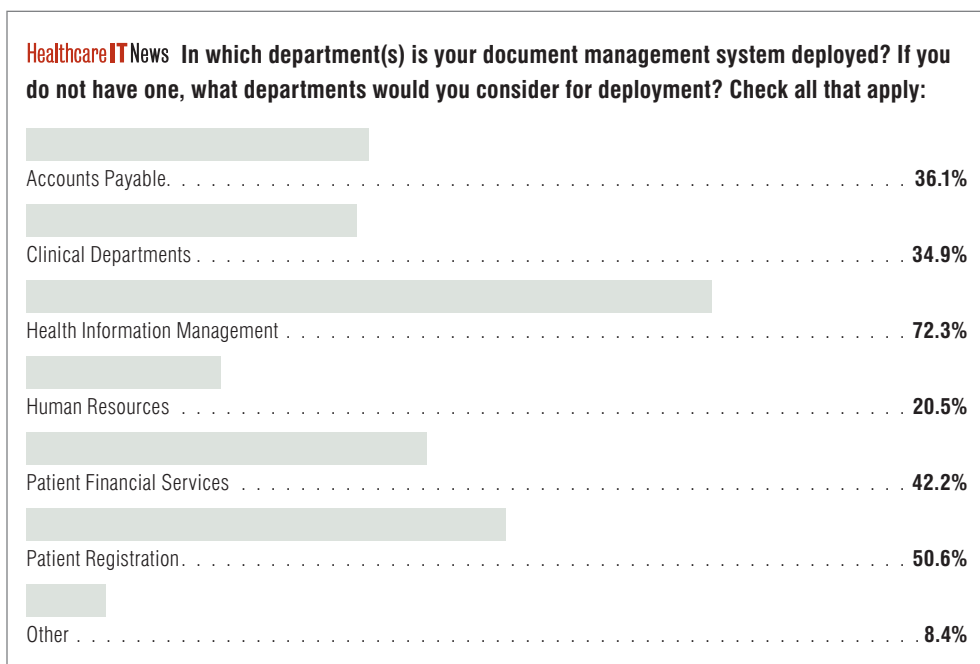
Forty-five percent of the *Healthcare IT News* respondents ranked “breaking down data silos by connecting disparate clinical and business systems” either “most

important” or just below “most important.” Another 32 percent ranked it in the middle. “Integrating with line of business applications” was not an important IT implementation outcome, with 23 percent saying it was the “least important,” and another 22 percent ranking it just above “least important.” Only 7 percent ranked it as “most important.” The majority of *Healthcare IT News* respondents, nearly 50 percent, sat in the middle with regard to the importance of “centralizing unstructured content in a single repository” as an IT implementation outcome. Only 9 percent rated it “most important.”

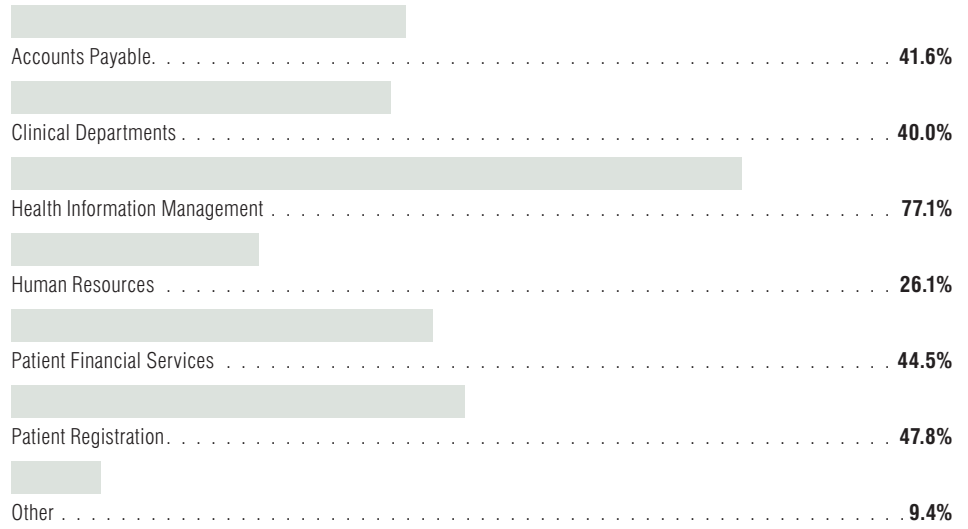
Despite the low rankings, some hospitals and healthcare systems have identified these IT implementation outcomes as goals for their document management systems. When Bayonne Medical Center developed its major health IT transformation, the hospital wanted all of its data — business and clinical — in one or two repositories to make the process of locating data more efficient, which reduces time and saves resources. For SSM Health Care, getting documents from financial, administrative, medical records and clinical departments digitized and centrally stored for easy indexing and retrieval is one of its goals that will enable it to continue to deliver exceptional care and services more efficiently and completely. Before deployment of Cleveland Clinic’s content management system, access to high-value documents was limited to the physical location of the paper. This was a drawback, given the clinic’s multiple facilities. With the electronic capture and dissemination of the data, the information is now accessible across the health system.

Multi-department Document Management

Of the *Healthcare IT News* respondents who had a document management system, 39 percent had one application, 18 percent had two and 19 percent had three or more, indicating that multiple departments had their own document management system. *Healthcare IT News* respondents were asked which department is their document



In which department(s) is your document management system deployed? If you do not have one, what departments would you consider for deployment? Check all that apply:



management system deployed. For the 25 percent who did not have one, the survey asked what departments would they consider for deployment. The responses also reflect the multiple departments for those who have more than one application. The departments included health information management department (77 percent), patient registration (48 percent), patient financial services (45 percent), accounts payable (42 percent), clinical departments (40 percent), human resources (26 percent) and other (9 percent).

Of the *Healthcare Finance News* respondents whose organization has a document management system, 30 percent have one document management application, 27 percent have two and more than 19 percent have three or more. More than 70 percent noted that their health information management department has an application. Departments that had a document management application included patient registration (51 percent), patient financial services (42 percent), accounts payable (36 percent), clinical departments (35 percent) and human resources (21 percent).

Nearly 85 percent of *Healthcare Finance News* respondents said their organizations strive to invest in an enterprise-wide versus departmentalized solution, which would create more efficiencies and increase data integration with a single IT application. Some of the departments at Allina Hospitals and Clinics were already using their own document management applications. With its EMR requiring document management capabilities, the healthcare system recognized the need for an enterprise-wide solution that would serve clinical, financial, administrative and other departments. Having an enterprise-wide document management solution supported Allina's health IT goal of having one IT system that supports its patients, providers and research activities, and provides a seamless integrated approach toward delivering a positive patient and provider experience.

Document Management Strategies Going Forward

Survey respondents were asked what their document management strategy entails over the next one to two years. Forty-eight percent of the *Healthcare IT News* respondents and 55 percent of the *Healthcare Finance News* respondents said document management is a core technology of their IT infrastructure across their healthcare organization. Thirty-four percent of *Healthcare IT News* respondents and 16 percent of *Healthcare Finance News* respondents said document management is a complementary technology in a few departments, while 6 percent of *Healthcare IT News* respondents and 8 percent of *Healthcare Finance News* respondents said that while document management is in one to two departments it is not really a focus. Thirteen percent of *Healthcare IT News* respondents and 16 percent of *Healthcare Finance News* respondents noted that they do not have a document management strategy.

Roughly half of both sets of respondents view document and content management solutions as a core technology. That said, a disconnect still exists between provider perceptions and the multi-functionalities this solution brings across the healthcare organization, including enhancing EMR functionality to meet meaningful use. This disconnect is also evident in the types of IT implementation outcomes the respondents ranked. Notable healthcare systems, such as Cleveland Clinic, which *U.S. News & World Report* has consistently ranked as one of America's Top Hospitals in its "America's Best Hospitals" survey, and SSM Health Care, which is the first healthcare recipient of the Malcolm Baldrige National Quality Award, have demonstrated the clinical, administrative and financial value of these applications. As more healthcare systems deploy and leverage the applications to solve today's problems and tomorrow's needs, document and content management will emerge as a core.

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Five Supporting Case Studies

Allina Hospitals and Clinics: EDM helps support “One Patient, One Electronic Medical Record” philosophy

The enterprise document management (EDM) and EMR selection process was multi-disciplinary and became an enterprise-wide health IT initiative.

Allina Hospitals and Clinics

Allina Hospitals & Clinics, headquartered in Minneapolis, MN, is a not-for-profit network of 11 hospitals, 80 community- and hospital-based clinics and other healthcare services located throughout Minnesota and western Wisconsin. The healthcare system’s mission is to serve its communities “by providing exceptional care, as we prevent illness, restore health and provide comfort to all who entrust us with their care.”

IT serves patients and providers

Allina’s health IT initiatives share a common goal: To have one IT system that supports its patients, providers and research activities, and provides a seamless integrated approach toward delivering a positive patient and provider experience, said Stephanie Luthi-Terry, director of the e-HIM division of Allina’s Health Information Management department. Its “One Patient, One Record” philosophy has been core to the inception of Allina’s EMR. “It has always served as the foundational vision for our EMR, so we do not have multiple, disparate, orphan systems that don’t talk to each other,” she said.

The healthcare system began its first implementation of Epic Electronic Medical Record (EMR) in August 2004. During the strategic planning, Requests for Information (RFI) and Requests for Proposals (RFP) included an extensive search for document management systems that would complement its EMR, which did not have a robust scanning functionality. Allina wanted its clinicians to be able to seamlessly access paper-based documents within its EMR, Luthi-Terry said.

Some of Allina’s departments were already using their own document management applications. With its EMR requirement, the healthcare system recognized the need for an enterprise-wide solution that would serve clinical, financial, administrative and other departments, said Julie Aschenbach, business analyst and team lead for Document Management and HR/Payroll.

The enterprise document management (EDM) and EMR selection process was multi-disciplinary and became an enterprise-wide health IT initiative. During the vendor demonstrations, a broad group of Allina users evaluated the functionalities and requirements, such as ease of use and ability to navigate the electronic environment. The decision-making process was collaborative, said Luthi-Terry.

Allina implemented Hyland Software’s EDM solution, OnBase, in Accounts Payable in April 2004 to see how well it would perform in a single department, said Aschenbach. The EDM system was then deployed alongside its Epic EMR rollout in August 2004, as well as in the human resources, home care and hospice, transportation, reference lab and facilities management departments.

Allina created a robust project team that was responsible for the design and vision of the EMR, as well as the education and training. “Training was and continues to be a key part of the strategic initiative,” said Luthi-Terry. The team trains new users on the EMR and associated applications in classroom settings and through e-learning. With OnBase being deployed as part of the EMR implementation, the technology migration was smooth, with a single training and learning opportunity, she said. Luthi-Terry

credits the seamless implementation process with the tandem deployment of EDM and EMR. “We weren’t training multiple levels and changes to new technology,” she said.

Reaping multiple benefits with EDM

Six years later, Allina’s EMR is still in a “hybrid” state, as it does not have a direct electronic interface for paper-based documents. Consents, patient authorizations and outside correspondence, among other forms, are still scanned. “As we become more electronic and our knowledge of document management has improved, our dependence on paper lessens,” Luthi-Terry said.

Allina has complied with Minnesota retention rules around medical records, which require certain documents to be retained permanently, by burning documents onto CDs. Now the data on the CDs are loaded into OnBase. The electronic retrieval process has eliminated manual searches. As Allina continues to purge its hospital and clinic file rooms, its long-term record retention strategy is to scan directly into OnBase rather than send documents to an off-site vendor that burns CDs, which are then uploaded to its EDM system, according to Luthi-Terry.

Cost savings will be realized with the elimination of the CD-burning services. In the meantime, Allina has reduced the cost of storage, not only in its medical records department, but other departments that have deployed its EDM system, said Aschenbach. Allina’s storage budget has gone down substantially, especially in the last year, said Luthi-Terry. “With purging records, we have saved in excess of a couple hundred thousand dollars over the last two years,” she said. The EDM system has also replaced several applications that enabled access to images, which has reduced maintenance costs.

From a staffing perspective, Allina’s health information management (HIM) department has seen a 40 percent decrease in staff over the last five years as a result of having an EMR with an integrated EDM system, said Jean MacDonell, HIM operations director. The HIM department is leaner but no less busy.



“With purging records, we have saved in excess of a couple hundred thousand dollars over the last two years.”

Departments that are connected to the EDM system are finding more ways to add functionality. One such function was implemented in the last six months in the e-HIM business solutions division of the HIM department. Before the EDM system was deployed, the e-HIM division had to individually scan faxed receipts of external test results from non-Allina organizations to patient records, which was time-consuming. Now the test results are faxed directly to the EDM system’s work queue, which imports the document into the EMR. The new process eliminates paper handling and improves the turnaround time for external test results to be posted to the electronic patient record.

The efficiency of the new process speaks to IT delivering a positive provider experience. Just as important, the ability for providers to have a complete view of the patient in a timely manner in order to determine treatment speaks to IT serving both patient and provider. The integration of the EDM and EMR has allowed Allina to make good on its philosophy of “One Patient, One Record.”



Bayonne Medical Center: ECM delivers long-term sustainability

Bayonne Medical Center

Established in 1888, Bayonne Medical Center is a 278-bed, fully accredited, acute-care hospital located in Hudson County, New Jersey. The community-based hospital's mission is to provide for the healthcare needs of the residents of Bayonne and neighboring communities. Serving more than 70,000 patients annually, Bayonne Medical Center delivers state-of-the-art care in a patient- and family-centered environment.

A Major health IT transformation

In 2008, IJKP OPCO, LLC, bought Bayonne Medical Center and turned it into a for-profit hospital, one of three in New Jersey. The major changes have sharpened the focus on the hospital's goal of long-term sustainability, which in turn has informed the health IT initiatives being undertaken, according to CIO Dimitri Cruz. "One of the core functions for IT is for us to generate a return on investment. We have to be able to sustain ourselves long term, so it's really critical for us to be able to demonstrate that kind of modeling," he said.

After the acquisition, Bayonne Medical Center began a major health IT transformation. It transitioned from one vendor's clinical systems to Meditech's financial and core clinical systems, including an electronic health record (EHR), and implemented a picture archiving and communication system. The hospital replaced its enterprise content management (ECM) system with Hyland Software's OnBase suite in February 2010, and the emergency department (ED) is currently deploying an ED information system. The ECM system will scan ED clinical and registration documents. Once the ECM and ED information systems are both integrated with Meditech's EHR, the business and clinical sides of the hospital will have easy access to patient data through its EHR system, said Cruz.

Bayonne Medical Center's implementations are part of the next phase to become a "one-stop shopping" for its clinical and business users. "We want to be able to have all our data as much as possible in one or two places so our users don't have to go to three or four places to get anything done," he said. The key is integration. It was critical that its EDM solution be able to integrate clinical and business documents with its Meditech EHR. "We did not want to limit this application to clinical documents; we want to scan in human resources, contracts, invoices and shipping notes," he said. "Anything that can be scanned in, we want to scan in. It makes the hospital paper light."

"Paper-light" hospital equals greater efficiency

With an ECM system, Bayonne Medical Center will become a "paper light" hospital, Cruz said. The amount of time and inefficiency associated with paper documentation is "astronomical," he said. The hospital ships out and stores thousands of documents to an off-site storage facility. "OnBase will provide us long term with a repository for all our paper-based documents," he said. By scanning paper-based documents and eliminating storage, the hospital could potentially save anywhere from \$20,000 to \$30,000 a year. "If we can find ways of managing our data better, we've made our lives a lot better long term," he said. "If we can scan in as much as we can electronically, whether business or clinical side, make that data available to our

The amount of time
and inefficiency
associated with paper
documentation is
"astronomical."

users in real time and eliminate document storage, we have provided clinicians and department directors an invaluable tool.”

Down the road, the hospital will become paperless. In the interim, it’s still generating paper, Cruz said. Anything paper based that can’t be transitioned immediately is scanned in by the EDM system. By the end of 2010, all paper-based documents will be scanned. The EDM system has also become part of the hospital’s downtime strategy. When the systems are down, for example, nurses will continue to document on paper. Once the system is up, the documents will be scanned in and made available to clinicians.

EDM drives efficiency, process improvement

Being a paper-light organization means document management is more efficient for the medical records department and chart practice is more efficient, enabling physicians to sign off their documents electronically wherever they are. “That’s a huge win for us,” Cruz said. Traditionally, physicians make a request to the medical records department, which pulls the chart and has to find the document for the physician to sign, and then once it is signed the physician routes it back to the medical records department. “All that goes away,” he said. Physicians can access and sign the document presented as part of the EMR through a physician portal. If the document is not for them, they can reroute to the appropriate person or medical records department. Workflow becomes more efficient and physicians save time. On the inpatient side, authorized users can see the information electronically. For the outpatient side, documents are scanned and available the same day or next day. “That’s a change in practice and a reduction in turnaround time,” Cruz said. “We’re within months of achieving that, revolutionizing how we practice medicine and other activities within the organization.”

The first phase of the EDM deployment has also helped improve ED documentation and chart capture processes. Whereas the previous EDM solution historically had technical issues, OnBase made scanned documents available to professional billers, who appreciated the new EDM system. Bayonne Medical



Center has seen financial performance improvement in ED charging, Cruz said.

Efficiency throughout the enterprise

Bayonne Medical Center is in the middle of its EDM system Phase I rollout. The system is up and running in a controlled ED environment. The hospital is in the process of scanning documents for cardiology, neurology and respiratory therapy. It is also finalizing and resolving technical issues so the EDM system can be rolled out across all registration areas. Once those departments have been transitioned to digital documents, the hospital will continue with the outpatient surgery, in a department by department implementation, said Cruz. “This will also allow us to move forward with our next larger deployment,” he said.

Medical records, physician portal and paperless registration will be tackled by early summer. Other business areas to roll out will include human resources, accounts payable, materials management and billing by the end of 2010. The hospital is looking at all opportunities to scan paper-based historical and incoming documents to reduce long-term document management, he said. Cruz exudes pride in Bayonne Medical Center’s health IT efforts, including its EDM system. “For a small community-based hospital with 200-plus beds, I’ve got a relatively efficient mechanism to managing all our business activities electronically,” he said.



Cleveland Clinic Health System: ECM's high demand delivers high value



Cleveland Clinic Health System

Cleveland Clinic is a non-profit academic medical center that integrates clinical and hospital care with research and education. U.S. News & World Report has consistently ranked Cleveland Clinic as one of America's Top Hospitals in its "America's Best Hospitals" survey, and has ranked its heart care best in the country for the 15th consecutive year. The mission of Cleveland Clinic is to provide compassionate healthcare of the highest quality in a setting of education and research. In support of its mission and to foster the group practice of medicine, Cleveland Clinic develops, applies, evaluates and shares new technology. Founded in 1921, the health system has more than 1,000 beds.

Deploying ECM to augment EMR

Cleveland Clinic first implemented Epic's electronic medical record (EMR) system on the ambulatory side in 2000 and then migrated to the inpatient setting. Its EMR was a hybrid model, which included aggregating both electronic and paper documents. "We were struggling with access to the paper, along with the electronic source," said Dan Slates, director of Integrated Enterprise Applications. "We were looking for an enterprise content management (ECM) as a solution to augment the EMR."

The academic medical center implemented Hyland Software's ECM suite, OnBase, in 2006, and considers it a Tier One, or core, application because it is heavily integrated with its EMR. Cleveland Clinic is continuing the long-term ECM conversion throughout

its 11 hospitals, while at the same time commencing deployment on the administrative side this year.

During the initial planning phase, the health information management (HIM), which includes the medical records group, and IT departments had to align their communications and standardize terminology in order to collaboratively develop an indexing strategy for scanning paper-based documents. Indexing typically falls under two strategies: Documents are either lumped into a large bucket or grouped in granular fashion. In the former strategy, all paper-based documents are scanned into one bucket in the medical record. A granular approach breaks down scans into several categories. Cleveland Clinic opted for a middle ground, creating categories that are not so granular that physicians can't easily access documents they need.

Centralized scanning in the HIM department is Cleveland Clinic's preferred mechanism. As IT rolled out the ECM suite across the academic medical center, however, it realized that department content experts could scan documents directly and thus more quickly into the EMR. With the price of scanners decreasing, decentralization became an inexpensive option. The demand for a decentralized scanning workflow originated from registration, which wanted to capture paper-based documents such as consent forms before the patient left, said Robert Lipowski, lead systems analyst in the Information Technology division. "Over time we have adapted and changed our thinking on what should be scanned in a centralized fashion and what can be decentralized," said Slates.

Cleveland Clinic uses its EMR as the presentation layer. Anything that goes into the ECM system is presented through the EMR in a seamless manner; when physicians view data in the EMR, which can be accessed via hyper links, they don't realize they are

"You're getting something in your EMR that you never had before, which is a more complete picture."

entering into the ECM system. There are no additional sign-ons or searching. “It’s the right information at the right place at right time,” said Slates. “You’re getting something in your EMR that you never had before, which is a more complete picture.”

OnBase has also become heavily integrated with 15 other key IT systems, much more so than was originally planned, Slates said. Integration to other core systems enables data, such as images generated by the reference lab system, to be collected and presented through the EMR. Other core systems essentially are now tied to the EMR through the ECM system. “You’re basically using your content management system as an integration engine to tie these systems together in a way that was never possible before,” he said.

ECM delivers clear benefits

While Cleveland Clinic has not quantified return on investment (ROI) of its ECM system, ROI is tangible because information is no longer being fetched by a paper process and sent to requesters and less manpower is required to scan the documents into the EMR, Lipowski said. Image quality has also improved and workflow is much more efficient. “By eliminating the intermediary between the two applications, data integration allows you to increase the rate at which information goes from one system to the next, which ultimately gets the information into the hands of the physician in a timely manner — when they’re triaging the patient,” Lipowski said. Usage is tracked on a weekly basis. More than 40 percent of all documents scanned into the EMR are instantly retrieved, Slates said. “We know that utilization is very high,” he said.

Before deployment of the ECM system, Cleveland Clinic’s access to extremely high-value documents such as EKGs was limited to the physical location of the paper. “For the number one heart institute in the country, that was a drawback,” Slates said. With the electronic capture and dissemination of the data through the EMR, the information is now accessible across the health system. For example, physicians can see the actual wave file of an EKG instantly. “Distribution is really the key,” he said. “You’re getting it in and making it available to multiple entities.”

ECM has allowed treatment to become a truly collaborative process.

ECM has allowed treatment to become a truly collaborative process. For instance, a pulmonary function test has always had interfaced textual results going into the EMR, but there was no graph showing how the patient performed in the test. The picture results are now being pushed through the ECM system. “A picture is worth a thousand words,” Slates simply said. The graph confirms what they’re seeing in the textual results. When a patient goes to another facility, the next physician will have the same data that the original physician had, Lipowski said.

Next steps: From clinical to administrative

As ECM expands into the enterprise, the biggest challenge is having the human resources bandwidth to complete the physician-requested projects within deadline, said Lipowski. “We have so much demand for document imaging in the clinical arena,” Slates said. “Once your clinicians find out you can augment electronic medical records with what’s left in paper — you find out there’s quite a bit of paper floating around the enterprise — there’s quite a bit of work to do.”

The success of the clinical installation of the ECM system has driven growth into the administrative side. There is a high demand for administrative scanning, Slates said. “We keep unearthing more demand as we move forward. We’re continuing to find work that has value for the different groups.” Of the rapid growth, Slates said, “It grew much faster than we thought it would. We knew there was demand out there, but we didn’t know how big until we uncorked the bottle.” The IT department built a robust, scalable platform back in 2006, which was a smart move because its ECM system is “still one of the faster-growing systems in terms of pure users, access and storage” within Cleveland Clinic, Slates said.



SSM Health Care: EDM Helps Enable the Delivery of Exceptional Care

SSM Health Care

Sponsored by the Franciscan Sisters of Mary, SSM Health Care owns, manages and is affiliated with hospitals and nursing homes in Illinois, Missouri, Oklahoma and Wisconsin. The St. Louis, Mo.-based healthcare system is the first healthcare recipient of the Malcolm Baldrige National Quality Award.

A Multi-year, multi-million dollar clinical transformation project

SSM Health Care's mission, "Through our exceptional health care services, we reveal the healing presence of God," is the "cornerstone of everything we do and really drives all of our strategic planning, including IT planning," said Chris Bullerdick, regional Information System director. Sister Mary Jean Ryan, chair and CEO, has been a leader in ensuring that all areas of the organization strive to deliver quality and exceptional care, embrace health IT and fully engage in all the benefits that health IT can bring, she said. For its part, the IT department's mission is to support the staff's ability to provide exceptional care. SSM Health Care's efforts were validated when it won the Malcolm Baldrige National Quality Award in 2002.

The healthcare system is in the middle of a nine-year, \$330 million clinical transformation project, which is expected to be completed in 2014. Its IT initiatives and IT systems are all focused on meeting the clinical and business needs of its physicians, patients, employees and other stakeholders, said Bullerdick.

The project incorporates two large umbrellas — a picture archiving communications system (PACS), which has already been implemented, and Epic's electronic health record (EHR) system. The Phase I rollout of the EHR commenced in March 2008. Thus far, eight hospitals and 200 physicians in 48 physician offices have EHRs. On the business transformation side, SSM Health Care is implementing an operating system, human resource and revenue cycle management platform and business warehouse.

SSM Health Care's deployment of Hyland Software's OnBase, an enterprise document management (EDM) system, ran parallel to its first EHR go-live as part of the Epic EHR implementation, Bullerdick said. The healthcare system wanted a complete electronic patient record, which included any paper records such as advanced directives created beyond the enterprise. The EDM system scanned the paper-based documents and included the data into the EHR. "We wanted a complete EHR from day one," she said.

EDM challenges and best practices

With SSM Health Care facilities located across four states, implementation was going to be a logistical challenge, said Amanda Blase, team leader, Health Information Management (HIM) for SSM Health Care's St. Joseph Health Center. In addition, with the simultaneous implementation of both Epic EHR and Hyland Software's OnBase, training and education for SSM Health Care's HIM department doubled. Developing standards in terminology, processes and location of documents was going to be critical to gain widespread adoption among clinicians and other authorized users.

Its diversity and geographical reach compelled the healthcare system to bring all the stakeholders together to identify upfront business needs and workflows, said

Through the combination of best practices and its EHR and EDM, the HIM department reduced its FTE within six to 12 months of its IT deployment.

Bullerdick. The biggest hurdle was getting buy-in and having them understand and participate in the workflow creation. The meetings not only helped develop best practices and standardized practices across all facilities, but they fostered collaboration, transparency and ownership.

Another benefit of standardization is the support given to sister hospitals as they go live, said Blase. Hospitals with EHR and EDM systems then help hospitals that are undergoing implementation. Standardization was also helpful for the healthcare system's physicians who work at multiple facilities, said Erin Sweeney, regional product specialist, HIM, for SSM Health Care's computer division, SSM Integrated Health Technologies. Physicians can find the same documents in the same location with the same title at multiple sites.

Qualitative and quantitative ROI

Despite many paper documents living outside the EHR, SSM Health Care's HIM department used the EDM solution to enable its physicians to electronically sign scanned documents. "We heavily rely on this functionality," said Blase. "We are able to provide a complete electronic health record upon patient discharge." Through the combination of best practices and its EHR and EDM, the HIM department reduced its FTE within six to 12 months of its IT deployment, said Blase.

The clinical benefits include being able to present a complete EHR for every patient. The HIM department's goal is to have documents scanned within 24 hours of a patient's discharge so the record is accessible for patient follow-up, said Sweeney. "The biggest underlying benefit is the improved ability for clinicians to have a complete electronic patient record available at their fingertips at all times," said Bullerdick. Electronic access eliminates the time-intensive search for paper or charts and enables clinicians to spend more time with their patients. The quality of care has improved greatly with easier access to complete patient documents for treatment, said Bullerdick.

EDM moves from clinical to administrative

Its EDM system is "absolutely" one of SSM Health Care's core solutions, said Bullerdick. In its selection



The quality of care has improved greatly with easier access to complete patient documents for treatment.

process, the healthcare system was looking for a solution that could fill both clinical and business needs. It also wanted a vendor that was flexible enough to take care of "loose" documents for the EHRs, as well as documents in human resources, financial and revenue cycle management departments. The last two years has been focused on the EHR deployment and the clinical aspect of the EDM system. SSM Health Care is beginning to focus on the business needs, such as health insurance and patient accounting, Bullerdick said. Across financial, administrative, medical records and clinical departments, the goal is getting documents digitized and centrally stored for easy indexing and retrieval, which will enable SSM Health Care to continue to deliver — with more efficiency and completeness — exceptional care and services.



Seattle Children's Hospital: ECM as brick and mortar

Seattle Children's Hospital is the primary teaching, clinical and research site for the Department of Pediatrics at the University of Washington School of Medicine and has consistently ranked among the nation's top children's hospitals by *U.S. News & World Report* magazine. It comprises the hospital, Seattle Children's Research Institute and Seattle Children's Hospital Foundation. Besides the main campus, a 356-bed hospital upon completion of its new wing, the hospital includes eight clinics in the Puget Sound area and a clinic in Yakima and Tri-Cities. The Bellevue Clinic and Surgery Center will open in July 2010.

Getting more clinical documentation online

Seattle Children's Hospital has been an early adopter of health IT, first implementing CPOE nearly seven years ago and then adding other clinical systems. After the deployment of its core clinical IT systems — Cerner inpatient and outpatient clinical information, Epic patient management, GE picture archiving and communications, and Siemens cardiology — the challenge became how to get the disparate systems to talk to one another, said Wes Wright, vice president and chief technology officer.

The hospital has embarked on a number of major health IT initiatives over the next two years, with a big focus on getting more clinical documentation online. Its first significant project is the amalgamation of systems under the umbrella of its clinical information system (CIS). The implementation of Hyland Software's OnBase enterprise content management (ECM) system will support getting data into the digital clinical record, he said. As a tertiary specialty hospital, Seattle Children's Hospital receives referrals from many physicians who don't have electronic medical records (EMRs). The hospital may be moving toward a paperless world, but Wright said, "We recognized that there would be some peripheral paper around." An ECM solution would enable paperwork generated by referring physicians to be input into the digital clinical record.

Seattle Children's Hospital is building a new wing that is expected to open in 2013. Plans for a second wing when completed will make the main campus a half-mile long. Having an ECM system digitizing legacy paper will eliminate having to physically locate and transport documents from one part of the campus to another, he said. For now, the ECM system will scan documents into the digital clinical record. At some point the documents will be input directly into the digital records. The transition, however, is long term, making the scanning functionality critical at this time. "With the campus expansion, we can't afford to live in that two-record — quasi-digital, quasi-paper — world," he said.

"ECM will eventually be one of our big applications that is just as relevant to patient care as our other clinical systems," Wright said. With ECM as part of the core CIS, patients and providers will interact with the ECM system as if it was one of the hospital's clinical systems.

Implementing ECM through CPI

As a Toyota Motor Company lean methodology shop, Seattle Children's Hospital employs a Continuous Performance Improvement (CPI) program. For its CIS project, the hospital is conducting a current-state and future-state mapping on processes and workflow

"ECM will eventually be one of our big applications that is just as relevant to patient care as our other clinical systems."

upfront and then fitting the technology to the process to support the transformation, Wright said. The CPI program also informs how the hospital rolls out its ECM system. “There’s a tremendous demand for digitization of documents,” he said. A committee was created to prioritize the high volume of requests from the clinical side, and a small document imaging workgroup is tasked with inputting documentation under the direction of the information systems project management office. Applying CPI resources to the workflow issue ahead of the IT implementation is “bringing chaos of the mad rush to an ECM solution to a more organized and methodical approach,” Wright said.

The ECM solution has been rolled out to seven of the hospital’s specialty clinics. One of the hospital’s priorities is the elimination of faxes from outside labs and the subsequent lab data entry into the CIS’ text fields. Now physicians get scanned versions of the full lab results. The next ECM project is digitizing surgical packages, which include patient history, physical and signature. Getting the documents, especially patient consent, into the CIS will make the surgery checklist process much more efficient.

ECM as mortar and big bricks

The ECM system complements the hospital’s CIS in many ways, Wright said. The ECM implementation is analogous to adding the mortar to the bricks, which represent all of the rest of the hospital’s clinical systems; ECM supports all the hospital’s clinical systems. “We have the big bricks of the data that we will be able to serve up,” he said. “The ECM solution from a clinical perspective is adding the other, not insignificant, small pieces of information into the system.”

The hospital chose an ECM system to be an enterprise-wide solution. While it supports the clinical systems, ECM is one of the two “big bricks” on the business side of the house, Wright said. “It will become a major business system,” he said. Given the volume of paper generated by business processes and physical storage requirements, the hospital plans to digitize documents from across departments, including financial, administrative, supply chain and human resources. The Research Institute, which also deals with a lot of paper, will benefit from



digitizing research documents. In addition, some of the hospital’s smaller outside vendors don’t have electronic data interchange capabilities for business documents, Wright said. “We don’t want to continue that paper chase. We know we can gain a lot of efficiencies by automating that,” he said.

The ECM system has been up and running from an IT perspective for the last four months but is undergoing a methodical workflow process assessment. Seattle Children’s Hospital expects to see efficiencies on the business side, first in supply chain and accountable payable. For example, with invoices scanned alongside purchase orders, the hospital will be able to easily identify under and over charges. “We think we’ll see fairly significant ROI on that,” Wright said.

From a clinical perspective, the ECM system will improve patient safety. Scanning outside lab results eliminates the potential error in manual data entry, and completed scanned surgery packages will mitigate potential surgery delays. The overarching qualitative benefit, according to Wright, is aggregating and making available all the clinical data in real time at the bedside for the clinician to deliver high quality care.

University Hospitals in Cleveland: Tying Clinical Document Management to EMRs

University Hospitals in Cleveland

One of the country's leading healthcare systems, University Hospitals (UH) in Cleveland provides quality medical care throughout the Northeastern Ohio region. The system comprises a major academic medical center, community hospitals, outpatient health centers, outpatient surgery centers, urgent care centers, cancer centers, rehabilitation facilities, pediatric specialty centers and mental health facilities, as well as joint venture and partnership hospitals and health centers. University Hospitals Case Medical Center serves as UH's flagship medical center and the primary teaching affiliate of Case Western Reserve University School of Medicine.

Improving the clinician experience

UH expects to open its Ahuja Medical Center, located outside of Cleveland, OH, in December 2010. As the newest hospital in Northeast Ohio in several years, UH Ahuja Medical Center was designed to incorporate as much healthcare information technology (IT) as feasible, according to Dan Clark, Division CIO.

The state-of-the-art facility, which will grow to 600 beds upon its three-phased completion, will be connected to UH's core IT systems. UH has been using electronic order entry systems since the early 1990s and is in the process of rolling out its inpatient electronic medical record (EMR) system by Eclipsys at UH Case Medical Center and UH Ahuja Medical Center. Its other core IT systems include financial and scheduling, picture archiving and communications, and cardiovascular laboratory. UH Ahuja Medical Center will also debut Hyland Software's enterprise document management (EDM) system, OnBase. "The document management system is part and parcel to how we will augment the electronic workflow of our EMR," said Clark.

UH is in initial deployment of its EDM system in two pilots — UH Case Medical Center's emergency department and operating room — with a July 2010 completion date. The academic center is serving as the laboratory for the clinical documentation management

projects, which will enable the healthcare system to work through any issues before the EDM system is rolled out at UH Ahuja Medical Center, Clark said.

The clinical document management initiative comprises three phases in a span of three to four years. The first phase, which includes the two pilot projects, will culminate with the opening of UH Ahuja Medical Center in December. Phase two, which is expected to take 12 to 18 months to complete, will consist of a roll out of the EDM system to UH's other acute-care facilities and its new cancer hospital. Phase three will likely focus on the incorporation of the EDM system into UH's physician organization.

The IT department's role is to help improve the clinician experience, and EDM is one of the tools that will accomplish that task, Clark said. The healthcare system acknowledges that some paper will exist in its environment. The challenge that UH faced was how to incorporate technology to digitalize paper within the enterprise. "The strategy was taking the paper, digitalizing it and incorporating it into our EMR so that the data could be another image that's viewed in our EMR," he said.

Best practices from selection to implementation

UH's search for the right EDM vendor to serve its needs revolved around its guiding principle of transparency for both vendors and staff, Clark said. UH's initial vendor list comprised top EDM vendors from KLAS reports and existing strategic relationships. In its Request for Proposal round, the healthcare system required competing EDM vendors to be able to integrate with its Eclipsys EMR. Five companies were invited to conduct on-site demonstrations until one was chosen in a three-round process of elimination.

Approximately 30 internal stakeholders, comprising physicians, staff nurses, administrators and managers of various departments such as supply chain, formed the selection committee. A survey tool was used to solicit the committee members' responses after each

demonstration. “The committee drove the selection process,” he said. The culture of transparency and honesty created greater participation and excitement, which contributed to the adoption of the new technology, he said.

Buy-in aside, UH anticipated the challenge of not having paper in hand anymore. UH spent a great deal of time with physicians and nurses to determine which pieces of paper being generated in the new medical center they would want immediately and which documents can be accessed digitally within 24 hours. The Health Information Management department created a workflow process in which documents were collected overnight and scanned according to priority. High-priority images, such as a cardiology consult, would be available in the morning by clicking a tab within the EMR system. UH’s EMR leadership and team were involved in the implementation and testing of its EDM system since the scanned images would be viewed within the EMR system. The EDM system is pivotal to the whole EMR project, rather than a separate project, because the goal is to enable physicians and other clinicians to seamlessly access scanned images via the EMR system, Clark said.

Laying the foundation for future deployments

UH is in the middle of its EDM deployment, but the healthcare system expects benefits down the road. “Over time, we hope to cut down on the physical space that houses our documents,” he said. Clinical benefits include being able to route images to different departments more efficiently. For example, once a physician gets the consult notes, the physician can



send them electronically to the external billing vendor. “We are automating the workflow process as opposed to making a copy or fax,” Clark said.

UH has its hands full with three phases of installing the infrastructure within four years. Still, the healthcare system anticipates a phase four down the road. “We’ve got a pretty good platform here,” he said, of the EDM system. “We need to take advantage of it. We are laying the groundwork for other administrative functions such as HR and legal.” At some point, the EDM system will be an enterprise-wide solution, supporting other departments and organizations.

UH will try to measure the qualitative and quantitative benefits of the technology, he said. “At the end of each phase, we’ll look at financial improvements and process efficiency as a result of the implementation,” With the industry moving in the direction of process and financial efficiency, clinical document management stands on its own financial merit, he said.

The EDM system is pivotal to the whole EMR project, rather than a separate project, because the goal is to enable physicians and other clinicians to seamlessly access scanned images via the EMR system



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