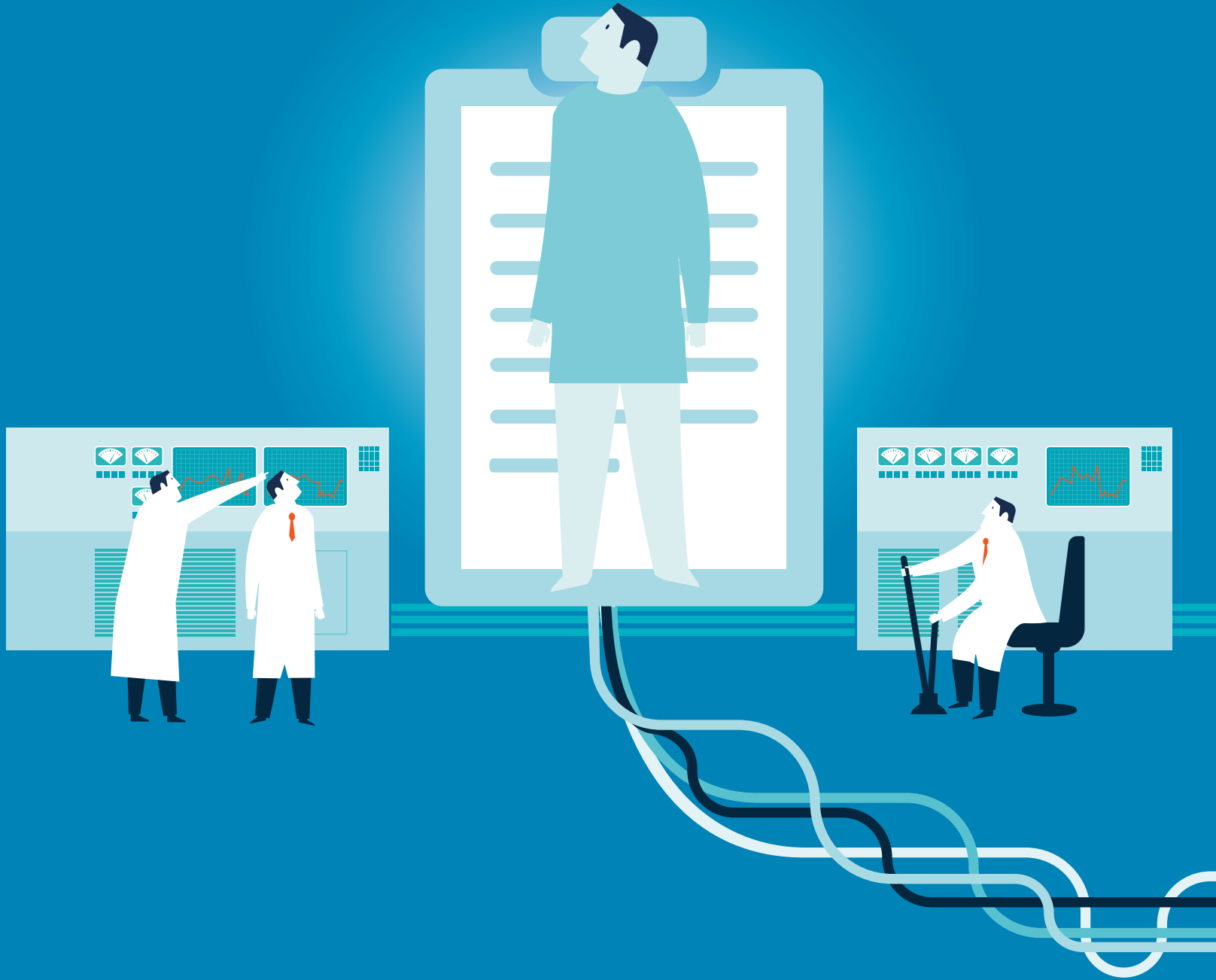




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Lean Document Processes in Healthcare

Helping to build a patient-centric, cost-effective flow of information



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Introduction



Despite intense interest in improving healthcare — ensuring access, improving quality, and lowering costs — the U.S. healthcare system and providers continue to face an array of problems:

- 27.6 million Americans were uninsured in 2016, and one in five uninsured adults went without required medical care due to cost.¹
- Medical errors remain an under-recognized cause of death, accounting for as much as 10 percent of all U.S. deaths (250,000) — the third highest cause of death in the United States.²
- U.S. healthcare spending grew 4.3 percent in 2016 to \$3.3 trillion, accounting for 17.9 percent of the country's gross domestic product.³
- Patient data privacy regulations — i.e., Health Insurance Portability and Accountability Act of 1996 (HIPAA) — have added a layer of complexity not found in other industries.

Outdated systems for management of healthcare information can contribute to high costs and impact patient care. Yet efforts to implement new technologies have created frustrations of their own as healthcare organizations transition to digital documents and use of electronic health record (EHR) systems. Many providers still have mix of paper and digital documents, creating opportunities for errors — handoffs, re-keying, etc. — as information is shared among document processes based on the use and/or function (physician office, registration, medical records, administration, billing, etc.). Just as wasteful is redundant documentation, with patients completing the same forms at numerous stops, only to have a practitioner enter the same information digitally.

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¹ "Key Facts about the Uninsured Population," Kaiser Family Foundation.

² "Study Suggests Medical Errors Now Third Leading Cause of Death in the U.S.," John Hopkins Medicine, May 3, 2016.

³ "National Health Expenditure Data," Centers for Medicare & Medicaid Services.

Unstructured, Growing Mountain of Data



Unfortunately, problems with healthcare document processes are unlikely to disappear any time soon (*Figure 1*). The volume of data available in modern healthcare organizations is without precedent — and threatens to overwhelm the executives and employees trying to manage it. In 2016, there were 35,158,934 total admissions to organizations that met American Hospital Association criteria as a hospital facility, up from 35,061,292 in 2015.⁴ Some 1.2 billion clinical documents are produced in the United States each year.⁵

With each admission can come an array of documents, many in paper formats — medical histories and test results, physician orders, consent forms, etc. Once considered a legacy technology that would soon vanish, paper remains critical to the vast majority of healthcare providers. At the

same time, generational differences among healthcare practitioners has impeded the transition to all-digital documents (even when provider organizations demand digital documents and physicians have an EHR system).

This means that many organizations find themselves buried in mountains of paper documents even as they organize growing terabytes of digital information — simultaneously managing filing cabinets and growing databases of patient records, physician schedules, prescription data, personnel files, compliance audits, financial statements, and legal records. Even at facilities with streamlined patient procedures, processes to manage accompanying documentation often cause bottlenecks — potentially impacting quality and cost of care.

Figure 1. Healthcare Document Challenges

Challenges	Potential Outcomes
Redundant information gathering	Decreased patient satisfaction, lost productivity
Limited or missing authorizations	No controls for patient information
Non-standard document processes	Delays, lost productivity, patient-care problems
Mixed file formats	High costs and excessive digitization resources
Inconsistent document creation/revision practices	Lost productivity, errors
Lack of organization	Delays, compliance problems, lost productivity
Print-everything mentality	Paper overload and environmental waste

⁴ “Fast Facts on U.S. Hospitals, 2018” and “Fast Facts on U.S. Hospitals, 2017,” American Hospital Association.

⁵ “HIMSS Health Story Project,” Healthcare Information and Management System Society.

Costs associated with unauthorized access of patient records can be staggering.



Even worse, many healthcare documents don't have access controls — whether sitting on desks; held in unsecured patient-monitoring systems; stored on laptops; or accessed via employee smartphones. Costs associated with unauthorized access of patient records can be staggering, because HIPAA requires all covered entities to implement appropriate administrative, physical, and technical safeguards to keep protected health information secure. The Office for Civil Rights of the U.S. Department of Health & Human Services can issue fines of up to \$1.5 million for HIPAA violations, with that number multiplied by the number of years each violation has been allowed to persist.⁶

Yet without appropriate document security protocols, healthcare systems are potentially exposed to a high risk of a breach. Some 477 healthcare breaches were reported to the U.S. Department of Health and Human Services or by the media in 2017, affecting more than 5.5 million patient records.⁷

In short, the unstructured nature of document workflows at many healthcare organizations — ineffective or missing policies, inefficient processes, lack of standardization, limited monitoring, etc. — potentially puts sensitive information, organizations, and patients at risk.

Fortunately, there's a better way.

⁶ "The Cost of HIPAA Non-Compliance," *HIPPA Journal*, May 4, 2015.

⁷ Heather Landi, "2017 Breach Report: 477 Breaches, 5.6 Million Patient Records Affected," *Healthcare Informatics*, Jan. 23, 2018.

Lean Techniques for Healthcare Document Management



Many provider organizations have recognized that lean principles used in industrial facilities are just as effective in healthcare settings. Lean tools such as value-stream mapping are used to observe and analyze the movement of material (e.g., patients) and the information associated with them (e.g., patient information). Mapping techniques and other lean tools help providers identify and remove wasted time, effort, and costs associated with patient care and the information that moves with them.

Providers that adopt lean principles and examine their patient and information workflows typically uncover multiple delays that may cause late discharges and affect patient care, bottlenecks that can lead to underutilized resources (e.g., operating rooms), and rework that may increase costs. These faulty workflows often include duplicate, conflicting, or missing documents; time spent converting documents from one format to another; paper-to-digital errors; or an inability for EHR systems to communicate with one another.

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Lean document management — supported by the right technologies — offers opportunities for dramatic improvement in:

- Productivity via streamlined workflows with standardized practices and processes
- Costs, as staff and systems are deployed more efficiently, freeing up capacity for growth without additional investment
- Transparency and collaboration across the organization
- Enhanced clinical documentation improvement (CDI) efforts that convert patient status into coded data for quality reporting, reimbursements, disease tracking, etc.
- Information security and patient privacy procedures, with policies that require authorized access to documents.

How can providers seize these benefits? By focusing on the pillars of lean document management: protected documents, productivity and staff performance, cost management, and — most importantly — patient satisfaction.









Protected documents

Lean document processes start by implementing security features to help safeguard confidential documents and protect vital information. This requires authorization for document access, usage tracking, and automated alerts of unauthorized access. Healthcare organizations can establish security protocols that help bring transparency to document usage (Figure 2).

words/phrases are used while also recording forensic evidence in the event of unauthorized access.

Document processes must also track transfers of digital documents to unauthorized storage devices. This is critical in a time when a single unscrupulous employee can steal thousands of documents via thumb drive or file-sharing. Many healthcare employees access

Figure 2. Document Security Protocols

 Who	accesses documents — authorized employee or contractor?
 What	information is being sought — applicable, confidential, proprietary?
 Why	are employees/contractors accessing documents — information appropriate per role and responsibilities?
 How	are documents accessed — secure devices?
 When	are documents accessed — during business hours or after?
 Where	are documents accessed, scanned, copied or printed — authorized printing and scanning locations?

A typical protocol might require that healthcare staff use multifunction printers (MFPs) on which they can be validated as authorized users — and confirm their permission for access. This step triggers a document-workflow capability to monitor access and block unauthorized use. An ability to log the activity of each user by device and usage — scanning, printing, copying, faxing, sending documents — can help to safeguard critical documents. For example, automated inspection of document usage for key words or phrases can alert IT departments when these

documents from outside of the workplace (e.g., staff on call), but often without authorization to use file-sharing applications or personal devices.

Protocols also can help protect against information leaks caused by inattention. Lean document processes can hold employees accountable for everything they print. This can be accomplished by directing documents to secure MFPs for authorized pickup or by routing jobs to a MFP that only functions when a user is logged in.

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A modern content-management infrastructure can boost quality and speed by ensuring that information is updated as changes occur.



Productivity and staff performance

Lean practices can help eliminate bottlenecks that slow work, waste resources, and delay access to patient records by standardizing document workflows, which helps increase the speed and accuracy of document dissemination. For example, one-touch automated distribution from MFPs can route printing to precise locations and workgroups, helping to eliminate unintended access.

Workflow improvements also can apply to scanning, and can help improve efficiency by indexing PDFs in databases with access controls. Users direct scanned documents to private folders, which can then be tracked by user, time, and date for audit purposes.

Technology advances offer flexibility in scanning, including the ability to merge, modify, and send reformatted documents to specific applications throughout the facility or to external locations (physician offices, urgent-care centers, rehab facilities, insurers). This is critical because users of healthcare documents — including medical suppliers and regulators — often require digitized information that integrates with their own systems, so they can access documents in application-specific formats. For example, an outpatient therapist can find an order within his document management system — while a hospitalist can access the same information from her document application.

It's important to note that these technologies also require responsive databases to develop, capture, and transform content. A modern content-management infrastructure can boost quality and speed by ensuring that information is updated as changes occur, and by deleting outdated documents, whether on an organization-wide network or an employee device. This helps to ensure that patient records contain the most current information.

Cost management

Whenever staff want a paper document, they're likely to print it — often more than once. Active print management initiatives can help reduce printing costs by requiring that all printing occur on networked devices with rules and policies, which can minimize redundant costs. They also can limit other wastes — color printing instead of black and white, duplex vs. simplex — and reduce print-supply costs.

These initiatives also track users, usage, and devices to specific print jobs, allowing print costs to be allocated by department, function, provider codes, and patient.



Improve patient satisfaction

Lean healthcare document processes help improve collaboration by allowing staff to quickly, appropriately, and responsibly leverage knowledge for improved patient satisfaction. This speeds communications among those involved with patient care (hospital staff, physician groups, family members, insurers) and builds problem-solving capabilities to help improve care, compliance, and costs.

To reach this new level of patient focus, healthcare providers can develop digital document processes that incorporate standardized work, best practices, and appropriate technologies:

- **Build bridges:** Implement short-term workaround bridges between paper processes and digital documents/EHR until digitization is complete. Standardized practices and technologies can help make the paper-to-digital transition more efficient and potentially allow for the elimination of a paper document once completed.
- **Enhance interoperability:** By identifying where paper-to-digital handoffs occur, providers can apply practices and technology to help improve interoperability, reduce time, labor, and potential for errors as documents move between mediums.
- **Establish paper-light processes:** As of March 2017, 87 percent of U.S. office-based physicians were using EHRs,⁸ and

as of 2016, over 95 percent of hospitals eligible for the Medicare and Medicaid EHR Incentive Program had achieved meaningful use of certified health IT.⁹ In this digitized environment, no practitioner or provider should create new paper-based processes; only *digital* document processes and workflows should be implemented.

- **Leverage technology:** Technologies to support patient care as well as those that enable digital document workflows are changing rapidly. Identify appropriate technologies to help improve communication and patient, provider, insurance, and regulatory access to information.
- **Capture and expand benefits:** Lean document management typically provides an array of improvements, such as better scheduling of high-revenue functions, (e.g., operating rooms); decreased turnaround times and increased hours of availability (e.g., beds, specialty units); more efficient and accurate documentation, which can help to decrease readmissions and associated penalties while lowering costs *and* helping improve patient satisfaction. For example, at Florida Hospital, an acute-care, not-for-profit healthcare organization based in Orlando, a clinical documentation improvement program helped to improve the case mix index, reduce mortality rates by 48 percent, achieve ICD-10 compliance, and capture \$72.5 million in increased reimbursement.¹⁰

⁸ "Electronic Medical Records/Electronic Health Records (EMRs/EHRs), Centers for Disease Control and Prevention, March 31, 2017.

⁹ "Quick Stats," The Office of the Coordinator for Health Information Technology, August 3, 2017.

¹⁰ Jeff Lagasse, "Florida Hospital reaps \$72.5 million from clinical documentation improvement, achieves ICD-10 compliance," *Healthcare IT News*, May 2, 2016.

Get Started with Lean Document Processes



Begin the transformation to more streamlined, cost-effective document-management processes by assessing improvement opportunities and prioritizing individual projects based on the biggest problems (e.g., patient care, security); functions/areas most in need of improvement (e.g., admissions, medical records, administration); and processes that can be exhibited and replicated elsewhere in the organization (e.g., the registration process in one urgent care center can be a model of improvement for a provider's other registration processes).

Providers should engage cross-functional teams in implementing lean solutions and technologies to stabilize paper/digital document management processes and then transition to digital processes. Cross-functional representation is critical, as every healthcare role — patient transport, nurse, physician, administrator, etc. — brings a unique perspective to patient-care process improvements, including those affecting document management. Ensuring broad input into document management changes early on can speed the transfor-

mation later by helping to minimize process revisions and builds employee engagement as new processes and standardized work are trialed and implemented.

As cross-functional teams make improvements and then expand the breadth and depth of document-management solutions across departments, functions, and provider groups, they follow the scientific method of PDCA (Plan, Do, Check, Act/Adjust):

- **Plan:** Map the workflow of health-care documents (how and why they're originated, where they travel, and how they're used and stored), identify frequent problems, and develop and plan countermeasures to address root causes.
- **Do:** Trial countermeasures, such as standardized workflows that minimize document redundancies or require authentication to improve access to sensitive information. The "Do" phase is a series of experiments (some successful, some not) that identify improvements and opportunities for technologies to support new practices.



- **Check:** Evaluate the application of new practices and technologies. Did the document process change as planned? Are the desired target conditions being achieved? Does the plan require revision or supporting technologies? The “Check” stage is not just about fixing problems; it’s also about identifying and codifying gains made in one healthcare process so they can be replicated throughout the organization.
- **Act/Adjust:** Regularly monitor progress (automated reports on usage trends, paper-to-digital conversions, document

errors) to ensure that changes are working as planned, and adjusted as necessary — while also looking for future improvements.

Improved healthcare document management processes can help not only patients, but all those involved with patient care by optimizing information security, efficiency, and costs. How healthy are your document management processes?

Improved healthcare document management processes can help not only patients, but all those involved with patient care by optimizing information security, efficiency, and costs.





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Some security features may impact functionality/performance; you may want to test these settings in your environment.

Canon Believes in Lean Document Processes and Protecting Confidential Information

In the 21st century, protecting intellectual property and document security has become more paramount than ever with the rise of office and online data breaches that have impacted the competitiveness and credibility of organizations. A lack of proper oversight for document management can potentially cause irreparable harm to your bottom line while putting your company, employees, and clients all at risk. Help protect sensitive information at your MFP devices by monitoring and logging document activity through the use of enterprise authentication and document tracking systems. Have the ability to record each typical daily document activity, such as copying, scanning, printing and faxing, and log that information by user, documents, and time stamping for compliance purposes. Enhance the monitoring of key confidential words or phrases to identify confidential word breaches when they occur and alert IT to prevent the possibility of your documents ending in the wrong hands.

Canon U.S.A Inc. is helping businesses understand the advantages of adopting lean best practices combined with leveraging today's imaging and document technologies to optimize business processes and to help protect document information. Canon offers a portfolio of scalable hardware, software, and services aimed at safeguarding documents, automating manual steps, and reducing waste that can help improve document turnaround time and connect resources for information sharing.

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