

A Realistic Transition Toward the “Paperless” Medical Practice

While digital technology promises to transform healthcare some day, most medical offices and clinics are a long way from a “paperless practice.” Still, practitioners can gain more time with patients by employing lower-cost digital solutions that streamline workflow and improve retention and retrieval of paper-based documents.

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Executive Summary

In many medical offices, paper-related inefficiencies can sidetrack medical professionals, delay reimbursement and even compromise care. More efficient management of paper documents would not only streamline workflow and reduce operating costs; it could improve the patient experience as well.

Digital technology is helping transform areas of medical practice, including management of medical records. But a truly “paperless practice” is unlikely, particularly for many smaller medical groups. They often lack the scale, infrastructure, investment dollars or compelling motivations to implement large-scale solutions. Besides, paper documentation continues coming in from outside the practice, and many physicians prefer paper files.

Nevertheless, reducing paper dependency and inefficiency doesn’t have to be an expensive, all-or-nothing leap. By inserting affordable scanning, storage, and paper-to-digital uploading into existing processes, offices can progressively move to digital records while retaining the option of outputting key documents to paper charts.

This white paper explores the issues related to reducing paper dependence in ambulatory care settings and proposes reasonable steps that can be taken now. One of the most critical steps is to choose a knowledgeable, experienced partner who can analyze document use in your practice, and then propose a plan for reducing paper in a way that helps you decide which benefits are most important to the practice and your patients.

Introduction

The paperless medical office is a metaphor, not a real place. It represents a desired digital future where patient information and practitioner decision support are always available, always accurate, and highly secure.

In the ideal paperless world, healthcare professionals would be able to practice in an environment that enables these benefits:

- **A better patient experience.** Patients primarily spend their visit with caregivers, and less time with intake, waiting for physicians who are behind schedule, or dealing with follow-up issues because of poor documentation. Errors and delays related to prescriptions, physician orders, patient records, and reimbursement are reduced.
- **Higher quality of care.** Providers meet a high standard of patient care. Complete and accurate patient files decrease opportunities for mistakes, omissions, or duplicated treatments. Physicians can securely access files from home, the hospital or other offices, promoting greater continuity of care.
- **Enhanced medical staff productivity.** Physicians and other medical staff now spend more of their time providing face-to-face care because office workflow is less disrupted due to missing, misfiled, and incomplete files. They can see more patients, spend more time with patients, or devote saved time to other productive activities.
- **Improved office efficiency.** Healthcare organizations are able to eliminate duplication of effort and administrative delays. Less administrative staff time and space are devoted to records management, and less manual data entry reduces the risk of errors.

Drivers toward a digital future

In addition to these benefits, other market forces are pressing toward a less paper-intensive environment:

- Computers are widely used in front and back office functions. Based on a Medical Group Office Management System Survey of 300 physicians, 93% currently use a computer-based patient scheduling system and 95% use an electronic billing and coding system.
- Insurance authorization and payment processes are driving toward electronic transactions.
- Patient privacy regulations can be more reliably met with electronic-based systems that provide automated security features and audit trails.
- New diagnostic technology increasingly generates digital output that can be viewed and stored directly on a PC.
- New generations of patients, physicians, and healthcare workers — already very comfortable with using digital technology in their personal lives — are more likely to accept that computers can enhance medical care.

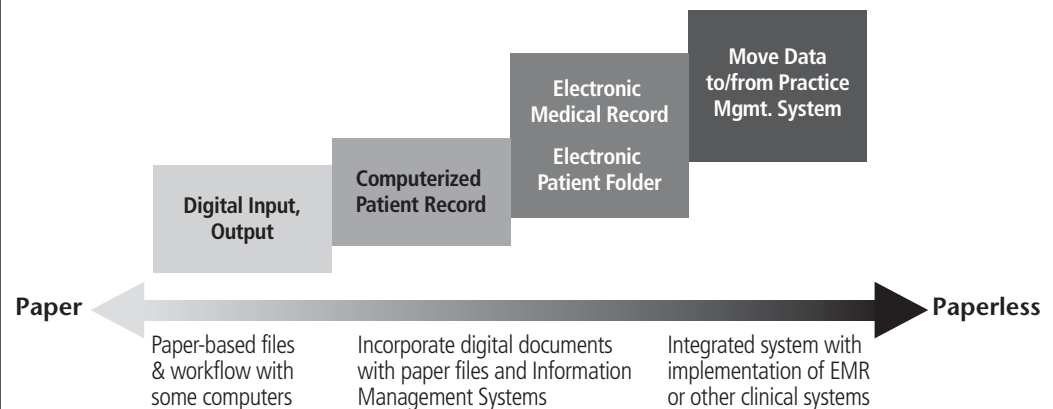
- Practice management and electronic medical record (EMR) systems continue to evolve toward more physician-friendly interfaces, while incorporating expert systems and built-in safeguards that help prevent medical errors. Twenty-three percent of the physicians in the Medical Group Office Management System Survey indicated that they currently use an electronic patient record system.
- Healthcare organizations agree that EMR systems, Web-based information systems, computerized physician order entry (CPOE) systems, and other IT-related solutions may be able to reduce the frequency of errors and improve overall accuracy.

But for most practitioners in ambulatory care settings, the paperless utopia is far from reality.

The Paper-to-Paperless Continuum

Healthcare today operates on a continuum between paper dependency and paperless practice. Toward the paperless end of the scale are larger hospitals and health plans. With economies of scale, integrated systems and often-captive patient populations who are restricted due to health plan, these institutions can more readily invest in the promised benefits of integrated information systems.

While practically no one operates exclusively with paper, many smaller ambulatory practice groups may view going electronic as an all-or-nothing leap that presents few measurable benefits and numerous perils.



Levels of Digital Document Management

Smaller medical offices concerned about costs and changes to workflow can still apply a variety of digital solutions to manage paper records and reduce paper-related inefficiencies.

Managing Paper: A Practical Challenge in Ambulatory Settings

To date, most of the comprehensive solutions for managing medical documents — such as EMR and CPOE systems — were developed for hospitals, healthcare systems, and larger multi-specialty groups. These facilities, representing the bulk of the market, are more likely to be able to benefit from an integrated solution, and also are more likely to have the resources to acquire and support a new system.

Most established ambulatory care practices still lack compelling motivations — in the form of clear practice benefits with relatively low risk and low cost to implement.

The vast majority of smaller physician offices do not have computerized medical records or convenient Web access, and lack the IT infrastructure and support these systems require. Leaders of these independent groups may be unsure about the paperless future as payers and medical plans increasingly favor a more corporate style of doing business.

Physicians are also acutely attuned to stories of early adopters making large investments in EMR systems that failed to deliver the promised benefits. Though they understand the advantages of digital technology, their workflow is tied to narrative notes and the sequential structure typical of paper charts.

The overview version of the Fifth Annual Medical Records Institute Survey of EHR Trends and Usage (2003) shows a steady increase in provider motivations to implement electronic health records (EHRs). In general, however, EHR administrative and financial applications tend to be implemented ahead of clinical applications. For example, a majority of respondents used EHR applications for Registration/ Admissions/Discharge/Transfer (65.5%) and billing and accounts receivable (66.5%). But applications used by nurses or staff for laboratory order entry were implemented by 47.2% of respondents; 38.9% had implemented pharmacy order entry; and physician order entry was even less prevalent.¹

Why paper isn't going away

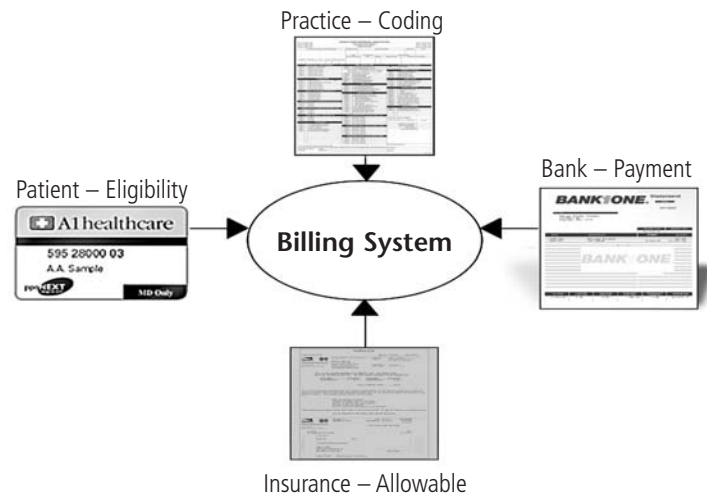
Despite the advantages of electronic systems, paper is still very much a part of medical practice today. Consequently, there are good reasons why groups should plan to deal with paper in the future.

- **Paper documents are still widely preferred.** Paper is still the standard for record-keeping — both for its familiarity and its flexibility in accommodating individual preferences for notation and transcription. Some physicians don't feel comfortable with new technologies, and even for those who do, finding or cross-referencing information in a paper file can often be faster and easier than navigating menu-driven screens.
- **Primary care groups have greater document complexity to manage.** Ambulatory care handles 12 times the number of patients compared to hospitals. Internists, family practice, and pediatric physicians typically see twice the number of patients per day, compared to specialists, and often have patient relationships that can span decades. More active patients with a wide variety of document retention requirements mean the practice must decide how to deal with conversion of existing versus new records. Any change to the existing system must have very strong benefits for a practice to risk converting to a new system.

¹ Question 12. Which of the following applications or functions do you have in use today or planned for implementation? "The survey results for this question should not be interpreted as a measure of the actual implementation levels of EHR components for the healthcare industry as a whole. However, the results are valuable as an indicator of the relative implementation levels or plans of the respondents."

— Fifth Annual Medical Records Institute Survey of EHR Trends and Usage (2003).

- **Practices will continue to receive documents in variable formats.** These include documents bound for the patient file from referring physicians, labs and diagnostic centers, specialists, and treatment centers. They also include Explanation of Benefits (EOB) and remittance forms that must be entered into the billing system in order to reconcile accounts. These records come from a variety of sources in both paper and electronic formats.



Once collected, specific data contained in the paper documents is entered into a billing or information system. For the most part, such systems operate stand-alone and do not effectively leverage information assets across the medical practice. This creates additional redundancies and binds the practice to the time-consuming tasks of entering, filing, and retrieving information.

As a result, the inefficiencies inherent in this process often contribute to delinquent claims processing, administrative errors, and payment delays for physicians and their staff.

- **Solutions to reduce paper do not match workflow.** Though they recognize the benefits of a digital record, many physicians and nurses will work around any solution that does not fit their existing workflow. For example, 13 to 15% of hospitals have some form of computerized medication order entry in place, but physicians in these organizations enter fewer than 25% of their orders using the electronic system. Why? Because even though the solution may increase productivity, it does not fit existing workflow.

Other barriers to adoption

- **Smaller medical practices typically lack the scale, technology, and systems support required.** Electronic record systems require robust backup systems and the support of IT professionals — especially in the event of an emergency. In a paper-based office, problems locating a file usually interrupt the individual patient/physician interaction and can create downstream delays — for subsequent patients, claims processing, and payment, for example. But when an IT-dependent solution goes down, the entire practice may come to halt. Even a system with 98.5% uptime would be unavailable the equivalent of more than three office days per year.

If the physician's practice is totally paper-based, introducing digital document management will present few conflicts with existing technology. But most offices already employ a mix of systems for physician order entry, billing, and medical records storage, plus printers, copiers, and fax systems. They will not take on a wholesale changeover to an integrated electronic system, but will look for ways to extend the use of current infrastructure. In such situations, interoperability issues among systems can arise and it takes longer to identify the source of problems. If the electronic file won't print, is it because of the printer, software, hardware, network, or user?

- **Staff will resist change.** With a daily clinical environment that is already highly interrupted and non-linear, physicians are reluctant to make changes that might increase their distractions or require them to spend more time with computers and less providing medical care. Any solution that takes time from seeing patients, requires substantial training, or changes the physician's perception of personal productivity is apt to be met with resistance.
- **Groups may not measure the real costs of dealing with paper.** In many offices, everyone has access to paper files, including physicians, nurses, assistants, and receptionists — without the same level of experience with the filing system, or the same degree of accountability. Physically transporting paper records between the office and a lab, a medical imaging center, an offsite storage facility, or a specialist's office creates opportunities for error, delay, or misfiling.

Every incomplete, lost or misplaced record creates ripples of inefficiency throughout the office. Everyone who practices medicine recognizes this, but not many groups have the time or resources to quantify the true cost. So, they may underestimate the cost benefits of reducing paper in the workflow. See *The Cost of Paper*.

The Cost of Paper

Labor is the primary cost in running a medical practice, and workflow should be designed to help professionals be even more productive. This workflow is disrupted — often several times a day — when paper documents or patient files are not available at the point of care.

- It costs \$20 in labor to find a document; \$120 if misfiled.
—Source / *Cap Ventures (2000)*
- The average document is copied 9-11 times at a cost of about \$18.
—Source / *Cap Ventures (2000)*
- 86% of mistakes in family care offices involved document-related activities, such as misfiling patient information, prescribing the wrong medication, and ordering incorrect or duplicate tests. Errors related to information access and delivery are among the most preventable of all medical errors.
—Source / "A Preliminary Taxonomy of Medical Errors in Family Practice," published by *Quality and Safety in Healthcare, 2002*

Practical Solutions to Reduce Paper Dependency

There are affordable digital technology solutions for reducing paper dependency — well within the reach of practices that are uncertain whether they could benefit from a fully integrated electronic medical records system.

Automated storage and retrieval systems can provide many of the same benefits as EMR technology for less cost — or may be used to complement an EMR system by providing large volume electronic storage of sensitive paper files that include protected health information. Typically, the solution includes hardware and software that enable secure capture, printing, scanning, electronic storage, and retrieval of medical documents. Hardware components may include: 1) a digital multifunction product (MFP) — which includes print, scan, copy, and fax capability — where hardcopy documents (such as paper copies of EKGs, consultation letters and release forms) are scanned; 2) a secure electronic filing and retrieval system; and 3) a dedicated backup server for added protection from data loss. Software components may include applications for indexing and retrieving documents, and for generating accountability reports.

Paper-to-digital uploading applications help solve the problem of redundant data entry between paper forms and digital data systems. Until recently, organizations have had no choice but to manually re-enter data from paper documents into digital practice management or medical records systems — requiring staff time and introducing the potential for errors. Now there are reliable solutions that simplify the uploading of information from paper forms via a single scanning operation.

The advantages of paper-to-digital uploading include:

- Easily turn paper documents into digital format to reduce redundant filing of paper and electronic documents
- Use familiar office technology (copier/scanner) that may already be in place
- Easily fit within existing workflow
- Integrate into selected information systems
- Feature built-in security of vital records and tracking of use
- Require relatively little training to use.

A returning patient is asked to present her insurance card, update her personal information, and sign a consent form regarding release of health information. The receptionist scans the insurance card and puts the completed forms in the document feeder of a digital MFP. As the documents are scanned, the receptionist logs in on a touch screen connected to the MFP and calls up the patient file from the practice management system. She selects a chart category as the destination for the data and then is prompted to execute the upload. Scanned information is then stored in the clinic's business information or medical record system.

Indexing applications are useful for capturing the “metadata” of each transaction — such as the name of the person retrieving the file, the name of the person requesting the file, the date and time of transaction, and the number of copies generated. This information can be captured automatically for reporting purposes, creating a verifiable audit trail that will help a practice meet HIPAA privacy regulations.

With a single, reliable, and searchable location for patient records and other documents, organizations can reduce the incidence of lost and misplaced files. The automated storage and retrieval system virtually eliminates the risk of employees returning files to the wrong location. Automated storage and retrieval also increases efficiency by automating manual processes. And although the automated process is electronic, it conforms to existing workflows for file capture and retrieval.

A specialist treating a referring clinic’s patient requests a copy of pages from the patient’s chart. Within seconds, an office member handling the request logs in and calls up the patient’s records from the database. Using a search function, the staffer locates the appropriate documents and outputs them to a nearby printer. The indexing system automatically records the key information about the transaction.

Network scanning and routing can be an effective strategy for distributing healthcare documents in organizations that use email.

Network scanning software allows you to route scanned documents to other doctors or healthcare providers as email attachments directly from the control panel of a digital MFP. The attachments are sent as TIFF, PDF or other easily transferable file formats. Security can be ensured through encrypted transmission and login authentication that associates a specific user with a specific transaction.

Web-based storage and management can provide a single access point for healthcare documents without requiring substantial investment in technology. This solution uses a scanning-enabled digital multifunction product (MFP) to transmit pages directly to a secure Internet site, where they are filed in individual private folders holding all related records, including physicians’ notes, test results, and other files. Authorized users can then access these folders through any Web-connected device. Access is password protected, and data transmission is encrypted for added security.

A consulting physician has just examined a patient. Instead of dictating and mailing a report that arrives a day later, the physician calls up a Web browser, logs in, and accesses the patient’s file. He opens an email and uploads the new test results or diagnostic information, and then notifies the referring physician via email.

Web-based storage reduces the need to transport paper files via mail, courier, or fax machine. It can also be used to manage the storage and retrieval of paper-based archives. Additionally, Web-based storage can be helpful when the providers are located in multiple offices.

Web-based storage also creates a verifiable audit trail that shows who has accessed a particular file, and whether any new information was uploaded to the folder.

Choosing the right solution for your practice

Workflow in a medical practice is relatively standard, with a predictable mix of document types including: patient records, prescriptions, physician orders and notes, insurance forms, admissions forms, communications among physicians, lab tests, transcriptions, medical images, and many others. However, individual practices and specialties will have certain preferences or conditions that should be considered, with varying formats of handwritten documents, documents created electronically and printed for storage, or created electronically and stored electronically.

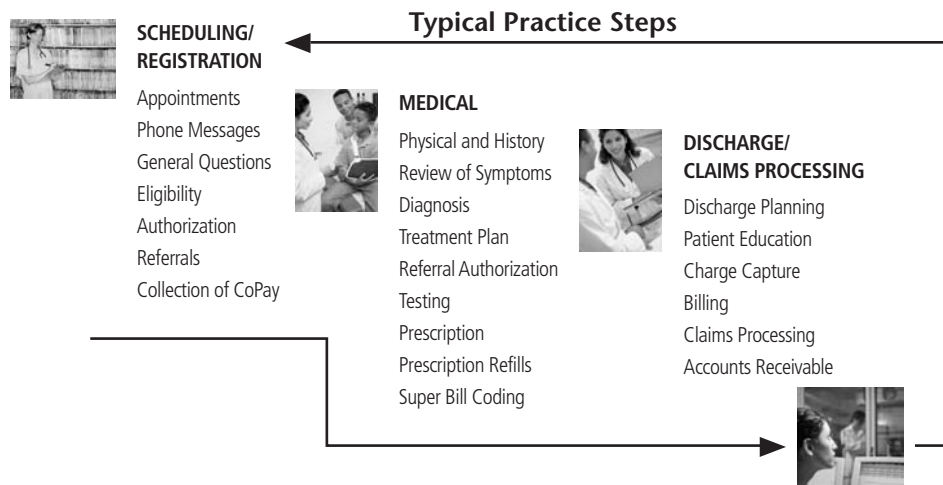
Therefore, a good first step is to perform a thorough assessment of document-related workflow. This assessment should answer the questions:

- How does the office find, file, release, and distribute medical records?
- What are the costs to follow the current process?
- What costs savings and improvements in the quality of care could be realized by reducing the paper-intensity of the process?

Workflow assessment

The workflow assessment should follow the patient, whose experience generally defines the path documents will take inside and outside the organization. This approach helps identify where the process breaks down or requires inordinate time, while ensuring that the focus remains on the patient, not the paper. Employees should be able to recite from experience where errors and inefficiencies most often occur and which document requests and types require the most staff time to manage.

When completed, the assessment should provide a realistic picture of how much your organization depends on paper — and how much it costs to deal with paper-related inefficiencies. Typical data gathered in an assessment is presented in *Document Assessment Checklist*.



Practice Workflow: A Mix of Paper and Electronic Documents

In the typical medical practice, workflow goes back and forth across paper-based and electronic information systems, opening the door to inefficient use of staff, potential medical errors, and billing delays.

Document Assessment Checklist

Few clinics have the time to conduct their own assessment — or have the budget to pay independent consultants. Some document management solution providers will perform an analysis, but be sure their process focuses on workflow, not technology. Whatever provider you choose should cover the following areas in a thorough document assessment.

Patient Files

- Average number of patients seen per day
- Number of new patients per day
- Age and volume of files kept in active and inactive records areas
- Frequency of adding documents to a patient's file
- Frequency of return visits
- Initial number of pages in a new patient's file
- Average pages in a file after three years
- Average number of times files are accessed
- Average weekly number of urgent searches for a misplaced file or document

Staffing

- Number of physicians
- Employees involved in filing and retrieving medical records
- Average staff hourly wage
- Average percentage of staff time spent on managing documents

Protected Health Information (PHI) Activity

- Staff dedicated to PHI releases
- Number of times per day processing PHI releases
- Average number of pages in a PHI release
- Start to finish time to process a PHI release
- Number of times a week an entire chart is copied
- Number of faxes sent and received
- Average number of pages per incoming fax / outgoing fax

Archiving

- Archiving method: Banker's boxes, microfilm, digital
 - Physical storage: Onsite, offsite; square feet or storage fees
 - Microfilm: In-house or third party; staff and materials or fees
 - Digital storage: System requirements; interface; file format; searchable text; storage and back-up systems; audit trail
- Frequency of moving documents to archiving system
- Average pages in an archived file
- Length of time files are retained
- Frequency accessing archived files
- Time and cost required to retrieve archived files

Technology

- Practice management or other electronic systems
- Technology currently used for document input and output
- Office Internet access and email
- Office computer network
- PCs in use on network
- PC use by physicians: In office, from hospital, from home

Strategies for reducing paper with digital technologies

Medical practices don't have to make an all-or-nothing transition to electronic patient records. By inserting affordable scanning, storage, and paper-to-digital uploading into existing processes, offices can progressively move to digital records while retaining the option of outputting key documents to paper charts.

Because records retention requirements can vary by specialty and by state, use these guidelines to develop a strategy that best fits your practice.

Inactive patient files

1. **Digitally archive newly inactive files.** When clearing shelves of inactive patient files, scan documents and store them in a digital archive. Dispose of the paper charts after scanning. Over time, all inactive files will be available immediately on site.
2. **Scan each file retrieved from archives.** Each time a paper file is retrieved from storage, take it out of circulation by scanning it into the digital archive.

New and active patient files

The next step in a progressive plan to introduce digitization into normal office workflow is to convert contemporaneous paper records as they enter the system.

1. **Start new patients with digital files.** Create a digital record for each new patient by digitally uploading patient enrollment forms, insurance information, and initial encounter forms to existing practice management system. Add to the digital record on subsequent visits.
2. **Digitally store incoming paper.** As EOBs, insurance cards, encounter forms, and other information come into the office, scan documents to patient files. Documents can be automatically tagged with patient information from the practice management system and indexed for retrieval. The original can go to the file for physicians who don't want electronic documents.
3. **Scan records for scheduled patients.** As existing patients schedule return visits, their records can be added to the digital archive. Adding patients progressively breaks the job down to a manageable size.

Principles of a smooth transition

Regardless of the pace of change and solutions you choose, there are a few basic principles that will help smooth your transition to a less paper-intensive practice.

1. **Recognize the direction of medical practice.** For most smaller practices, a paperless future is a long way off. But regardless of your position on the paper/digital divide, recognize that you are already operating in the midst of it. Plan for how you will meet the future demands of running an efficient practice, providing patient care, and interfacing with payers, hospitals, and other providers. Today, the choice to operate paper-intensively may still be yours. But ultimately, digital technology will transform healthcare, just as it has other industries.

2. Don't make an expensive short-term decision. You don't need to make the leap to paperless all at once. Consider your timeframe and strategy for adopting an integrated system and work toward it. If you take interim steps, understand whether they will help you reach the eventual goal — or whether they will simply make you more productive in the meantime.

3. Focus on processes first, not the paper or the technology. Significant savings or efficiencies mainly come from reduced labor costs or greater productivity. Any technology solution should make life simpler for your most skilled professionals. Consider the impact upstream and downstream from any change to the process. Don't make an "improvement" in the business office that requires more time from physicians or nurses. Look to solution providers for a thorough analysis of how to achieve these savings in your organization.

4. Decide which benefits are most important to you and your patients. The more a solution addresses the following benefits checklist, the more likely it will have a positive overall impact on your practice of medicine:

- Frees physician time to see more patients, spend more time with patients, or use for other productive activities
- Supports elimination of paper storage, but also allows physicians the option to access record in paper vs. electronic format
- Reduces data input — is not just a parallel system
- Increases record accessibility and security — allows access from multiple locations or by multiple users
- Offers secure and auditable PHI release
- Requires little or no change to office workflow
- Requires little or no training
- Reduces requirements to fax, mail, and courier documents
- Is interoperable with current systems or requires only minor modifications to current systems
- Requires little technical support
- Reduces labor for record filing and retrieval and space or storage service costs for archiving.

Conclusion

The transition from a paper-intensive environment to digital document management doesn't have to be the expensive, all-or-nothing leap many groups believe it to be.

By deploying lower-cost, lower-risk digital technology — including scanning, storage, and paper-to-digital uploading solutions — into existing processes, offices can progressively move toward more efficient and secure digital records. In a few focused interim steps, practices can streamline workflow, improve productivity, and ensure clinical professionals are focused on serving patients instead of finding paper.

A thorough assessment detailing medical records, current process costs, and potential improvements in quality of care is the first step for practices searching for the most appropriate and cost-effective approach to reducing paper intensity.

About the Author

Richard Hostetler has more than 23 years of sales, sales management, and executive level leadership positions in the healthcare industry. He has extensive healthcare experience in software technology, integration, and document management technologies within the healthcare enterprise. Today, Richard is Director of Healthcare focusing on growing the healthcare vertical business segment. He is a member of HIMSS, the American Health Information Management Association, and the Healthcare Financial Management Association.

