



# Digitization Beyond the Point of Care

**Patient Satisfaction, Paper Reduction, and Cost Savings  
in Healthcare**

**HEALTHCARE INFORMATICS**  
CUSTOM MEDIA

RESEARCH SUPPORTED BY



# Contributing Executives



## **Chris Collinge**

Information Technology Director  
Department of Health, Orange County,  
Florida

Chris Collinge is the Director of Information Technology (IT) for the Florida Department of Health in Orange County, which is one of 67 county health departments in the state of Florida and is located in Orlando. Chris' team has developed innovative strategies for state-wide IT projects and standardizations for mobile and tablet technologies that use their electronic health record (EHR) system.

Collinge recently received a "Best Practice" award from the National Association of County and City Health officials. His leadership in developing systems to support medication reconciliation and clinical decision support has impacted patients across the state and helped support the work of the 18,000+ employees in the Florida Department of Health. Mr. Collinge continues to work on behalf of patients struggling with chronic conditions, and finding innovative ways to improve their quality of life.



## **Mark Zielazinski**

Chief Information and Technology  
Integration Officer  
Marin General Hospital

Mark Zielazinski joined Marin General Hospital in September 2012. Before joining the Marin General team, Zielazinski was Chief Information Officer at Alameda County Medical Center, where his responsibilities included information systems, telecommunications, health information management, and biomedical engineering.

From 2001 to 2006, he was the Chief Information Officer at El Camino Hospital. He is a graduate of Illinois State University, and currently lives in Novato.



## **Christopher Walden**

Director of Information Technology  
Health First

Christopher Walden's background is leading organizations across many different business sectors. Christopher is a Registered Nurse specializing in pediatric emergency medicine, and a technology executive having served in the roles of CIO, BRM, and information technology director. He currently serves as the Information Systems executive for HealthFirst Integrated Delivery Network (IDN) in Melbourne, Florida.

As a member of the hospital executive leadership team and leader in HealthFirst IT his responsibilities include developing leaders and leveraging technologies to transform, grow, and run the HealthFirst integrated delivery network (IDN). Previously, he served as the Vice President and Chief Information Officer for HealthAlliance hospital, part of the UMASS health system. Walden has spent the last 20 years in various leadership roles. He is active on many community advisory boards, and is a member College of Healthcare Information Management Executives (CHIME), American College of Healthcare Executives (ACHE) and is a Healthcare Information and Management Systems Society member. Walden is also the co-founder of the popular blog and website Cultureinfusion.com.



## **Matthew Leary**

Healthcare Delivery Manager  
Bottomline Technologies

As the healthcare delivery manager with Bottomline Technologies, Matthew Leary serves as a technology, business process workflow, and project management contact for new clients as they incorporate solutions through Bottomline.

Leary has extensive experience in a variety of roles across the healthcare technologies landscape, specializing in project management, program development, database administration, quality assurance testing, and implementations of complex technologies.

# Table of Contents

- 4** Executive Summary
- 5** Introduction
- 5** The True Costs of Paper
- 7** Further Paper Reduction Possible Outside the EHR
- 8** Improving Security Through Paper Reduction
- 9** Improving Patient Satisfaction Through Paper Reduction
- 10** Moving Forward: Paper Reduction Beyond the Point of Care
- 13** Executive Recommendations
- 14** References



## Executive Summary

Is your healthcare organization reducing enough paper beyond the point of care?

As the market moves away from traditional fee-for-service models, healthcare organizations are becoming increasingly focused on better managing expenditures. But to make a true difference, those plans need to go beyond costs at the point of care. One way to do so is to digitize ancillary services in registration, administration, and business offices to reduce unnecessary paper expenditures—thereby reaping significant financial savings, more streamlined care, better protected health information (PHI), and increased patient satisfaction ratings.

The purpose of this research report is to better understand how healthcare providers are reducing the use of paper beyond the point of care. This report will consider the paper-based systems that are currently in use in so many administrative processes—and how those systems interfere with optimizing both business and care-related workflows. It will discuss how investments in information technology (IT) systems like electronic health records (EHRs) and electronic prescribing have made paper all but obsolete at the point of care—yet such advances have not been extended to ancillary and administrative services. This report will outline the security issues surrounding the continued use of paper in these areas—and how that use can negatively impact patient satisfaction in your healthcare organization. And, finally, it will highlight some of the current strategies organizations can use to finally move away from current paper-based systems to electronic forms, signature capture, and annotations outside the point of care in order to secure significant savings and benefits across the enterprise.

**But to  
make a true  
difference,**  
those plans need to  
go beyond costs at  
the point of care.

## Introduction

You know the astonishing costs of paper.

The Center for American Progress estimates that administrative costs in the healthcare sector consume approximately 14% of all healthcare expenditures in America. And, more importantly, at least half of that spending is considered “wasteful.”<sup>1</sup> Much of that waste is due to the overuse of paper.

To combat that waste, your healthcare organization has likely implemented an EHR system. It has trained clinicians to use e-prescribing and other online documentation tools. It has invested in new computers and handheld devices to ensure the clinical workflow is not interrupted. It’s taking the steps to move toward a paperless organization—and those steps have shown remarkable gains in efficiencies, cost savings, and, most importantly, scores for the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) patient surveys.

You know the astonishing costs of paper. But as many policy experts and providers discuss “paperless” business models, we understand that healthcare is still very far from complete digitization. Mostly because paper still reigns supreme in business and administrative offices, as well as for registration, signature capture, and other forms surrounding the point of care.

A value-based healthcare market means more than just a focus on clinical care. It means that healthcare organizations also need to take a long, hard look at ancillary processes, too. They need to do so to save business, administrative, and hardware costs on the back end. They need to do so to cut down on waste and help patients get the care they need in a timely fashion. They need to do so to protect PHI. And, in addition, they need to do so to improve patient satisfaction—and ensure that clinical “consumers” will return to the provider organization for future care—by improving quality, saving time, and facilitating smoother interactions and transactions.

### The True Costs of Paper

By all accounts, the amount of waste in American healthcare is enormous. A report from the McKinsey Global Institute estimated that the U.S. healthcare system costs more than “\$650 billion over and above” what is expected for the nation’s economy—with over \$90 billion in wasteful costs due to “inefficient and redundant” administrative practices.<sup>2</sup> Similarly, TechNet Magazine reported that U.S. hospitals generate more than 6,000 tons of waste per day—with a significant proportion of this waste being paper files.<sup>3</sup>



A report from the McKinsey Global Institute estimated that the U.S. healthcare system costs more than **“\$650 billion over and above”** what is expected for the nation’s economy—with over **\$90 billion in wasteful costs** due to “inefficient and redundant” administrative practices.

Billions of dollars in waste. And one avenue to help reduce that waste—and, ultimately, recoup wasted dollars and apply them where they are most needed—is to target paper-based systems. Today, advances in digitization technologies within healthcare mean that there are new opportunities to decrease the use of paper across the enterprise and help better control an organization's overall bottom line, with IT being at the center of this effort.

Yet, as organizations look to reduce extraneous costs, they often overlook obsolete paper-related systems. Becker's Hospital Review reported earlier this year that, despite the fact that printing is one of the highest expenses in the hospital budget, healthcare organizations often don't consider printing and paper-related costs when they are attempting to implement new and efficient ways to save resources and dollars<sup>4</sup>

The one exception is electronic health record and other point-of-care systems. Under mandate to implement EHRs by the federal government, hospitals have substantially decreased the amount of paper used by clinicians at the point of care over the past decade.<sup>5</sup> But healthcare administration offices still rely heavily on paper-based systems for registration, insurance verification, and billing services. Clinicians still often use paper forms for informed consent and other required paperwork after registration. Discharge also entails a significant amount of paperwork. As such, there is opportunity in these ancillary services, around the point of care, to further reduce paper-based systems and reap significant benefits in both expected and unexpected ways.

"There's still a ton of paper in healthcare. And it is really expensive," says Chris Collinge, Director of Information Technology at the Florida Department of Health in Orange County. "You've got the costs involved with the generation of the paper—so the printers, the fax machines, the toner costs. You have the costs with maintaining all of that machinery. You have to buy reams and reams of paper for all the forms that must be generated. You have to pay for secure storage and shredding. I really could go on and on. But, the costs are substantial and recurring. If you look at those costs adding up every month, you understand why the push to reduce paper is so pressing."

But Mark Zielazinski, Chief Information and Technology Integration Officer at Marin General Hospital, says the physical costs of paper are the "easy" ones to consider—the associated costs are the ones that can really affect your bottom line in unexpected ways.

"There's still a ton of paper in healthcare. And it is really expensive."



—Chris Collinge

“The real costs of paper in healthcare are the people and opportunity costs involved,” he says. “And by that, I mean what clinicians may not know when they need to know it because they don’t have access to a piece of paper. Not having information available at the right time to make a decision means you are missing details that can affect the quality of care. You may have to duplicate tests or other activities. And those can end up being astounding costs—both to the hospital and the patient.”

## Further Paper Reduction Possible Outside the EHR

With the widespread adoption of EHRs, it was hoped that healthcare would become a “paperless” environment. But while EHR use has led to a significant reduction in paper at the point of care with an associated reduction in paper-related costs, Christopher Walden, Director of Information Technology at HealthFirst, says that hospitals are still far from paper free. In fact, most hospitals are still far from reaching the Stage 7 Meaningful Use Standards as put forth by the Healthcare Information and Management Systems Society (HIMSS) Electronic Medical Records Adoption Model.<sup>6</sup>

“We’ve moved to the EHR, which has reduced paper, but there are so many appendages to that system that are still on paper. In fact, we have a large portion of our processes that remain on paper that has to be scanned back into the EHR—and we have to fax those pieces somewhere else to get them scanned a lot of times—and things can get lost in the shuffle,” he says. “It’s been really difficult to eliminate paper altogether. It’s a battle.”

Matthew Leary, Healthcare Delivery Manager at Bottomline Technologies, says that it really is a sizeable challenge—paper has a life of its own inside the organization and can become extremely difficult to manage. Certainly, the use of EHRs has reduced the use of paper at the point of care. But digitizing ancillary services, like patient registration and informed consent forms, could help make further significant reductions.

“This is a low dollar, high value investment. Digitizing processes at the front of the house—what we call the registration section—cuts out so much paper,” he says. “We know that EHRs have helped to reduce paper and paper-related costs. So making the move to digitize registration, signature capture, and other ancillary processes is something that not only reduces even more paper and the costs associated with it—it improves security and it increases patient satisfaction. That will result in significant savings, and more dollars that hospitals can put towards what they need to: providing the best quality care.”

“In fact, we have a large portion of our processes that remain on paper that has to be scanned back into the EHR—and we have to fax those pieces somewhere else to get them scanned a lot of times—**and things can get lost in the shuffle.**”



—Christopher Walden



## Improving Security through Paper Reduction

Cybersecurity is a buzzword in healthcare these days—especially with so much protected health information (PHI) at stake. A recent Accenture report estimated that security breaches in electronic systems will put hundreds of billions of dollars at risk in the near future.<sup>7</sup> But as many information technology departments look toward putting new IT security tools in place, they are forgetting that excess paper can provide just as many opportunities for security breaches in their organization—and the HIPAA Privacy Rule mandates that healthcare organizations need to secure both electronic and paper records.<sup>8</sup>

With a recent research study by Xerox-McAfee reporting that more than half of the individuals surveyed said they have copied, scanned, or printed confidential information at work, Leary says digitizing ancillary services like registration and consent forms is crucial to good security.<sup>9</sup>

“With paper records, it’s really easy to photocopy a form or fish something out of a garbage can. You can get as much as \$1,500 for a patient’s fully filled out registration sheet. So even though there is a focus on the technology security, paper remains a huge risk area,” says Leary. “Eliminating the paper reduces your security footprint, which is something that all healthcare organizations need to be thinking about.”

Chris Collinge agrees. “This is a big concern. Once something is printed out, it’s another piece of paper I have to worry about—and something we have to make sure doesn’t get in the hands of someone it shouldn’t get into,” he says. “A few years ago, I had to testify in federal court due to paper-based security breach. I keep the subpoena, framed on my desk, to remind me, every single day, why we need to get away from paper, and why we need to be vigilant and more secure in our systems.”

By digitizing those front-of-house registration forms, Leary argues, you can add a layer of security to that information by building in automatic auditing procedures.

“A paper record really doesn’t have any auditing intrinsic to it. You don’t know who has seen a piece of paper, where it’s been, if it might have been copied. It’s all subject to the honor system,” he says. “But if you’ve taken proper precautions with an electronic record, you can be sure where it’s been. You have the ability to see who has been looking at the record, who has touched or changed it, who signed the form. And that reduces those opportunities where a piece of paper can get away from you and lead to a breach. And it means you have a way of figuring what happened and what’s actually been compromised if a breach does happen.”



“You can get as much as **\$1,500** for a patient’s fully filled out registration sheet. So even though there is a focus on the technology security, **paper remains a huge risk area.**”



—Matthew Leary



Christopher Walden says this is a huge concern at HealthFirst as his organization tries to figure out how to help patients receive medications before they leave the facility in order to increase medication compliance.

“Right now, we take down credit card information on a piece of paper and then run that down to the pharmacy, run that credit card through the machine, and then bring the meds back,” he says. “We’re solving one problem at the expense of another—because there’s a huge risk of that paper ending up in places where it shouldn’t. And this is why we are trying to leverage some technologies that will let us connect our disparate systems so we don’t have to use paper. The registry and the billing need to be connected so we can make sure our patients are getting what they need without us having to worry about the security aspect.”

## Improving Patient Satisfaction through Paper Reduction

Such a focus also improves patient satisfaction scores. The Affordable Care Act (ACA) gives patients more control over where they spend their healthcare dollars. And this means that hospitals need to consider each patient a potential consumer—and treat each one as such. And arduous, repetitive paperwork, at registration or at other points outside the point of care, Walden says, can really affect how a patient views the entire care experience.

“There are a lot of forms. And patients are always telling us, ‘Why do I need to fill this out again? I just told you that.’ They get frustrated,” he says. “And it’s not a surprise. Imagine you are a consumer taking a flight on an airplane. Imagine if we have to fill out new paperwork every time we had to make a layover. Chances are, if we had to do that, we wouldn’t fly that airline anymore.”

Collinge says that digitizing those forms—from initial registration and intake to billing consent and eligibility forms—helps to streamline the process and makes everyone’s job much easier.

“With one-stop processing, we can get eligibility and financial information, we can maintain privacy—and then get it all signed off and in our system,” he says. “It facilitates the process for the patient or client since they don’t have to repeat the same information over and over again. There’s time savings and patients don’t have to worry about forms being lost. It really helps improve satisfaction.”

Leary agrees. He says that service counts a lot more than it once did in healthcare—and service at the hospital begins and ends with ancillary services like registration and discharge.

“Imagine you are a consumer taking a flight on an airplane. Imagine if we have to fill out new paperwork every time we had to make a layover. Chances are, if we had to do that, **we wouldn’t fly that airline anymore.**”



—Christopher Walden

“An electronic management system saves you and the patient a lot of time. The less time patients have to deal with the paper, often having to report the same things over and over again, the more time they can spend with the caregiver. It makes a huge difference,” he says. “Once an organization goes through electronic implementation of forms, you often hear the patients say, ‘Finally, you guys are joining the 21st century! I could fill out forms like this at my bank years ago. Now I can fill them out on a tablet or iPad here.’ Having these things digitized really helps to set the tone for the rest of your organization’s interactions with the patient. And you can see savings, not just in the dollars saved from paper, ink, and printer maintenance right off the bat, but also with patient HCAHPS scores. It’s not just smoke and mirrors. It’s real patient satisfaction affecting real dollars in the bank for hospitals.”

## Moving Forward: Paper Reduction Beyond the Point of Care

Mark Zielazinski says that it’s well understood that reducing paper at the front end of healthcare could result in huge savings—but it’s often easier said than done.

“You often hear that you can wring out billions of dollars of cost by eliminating paper. I don’t doubt that, in the long run, that’s true,” he says. “But it doesn’t happen overnight. It’s a big transition and it’s going to take some time for us to get there.”

The fact that most hospital IT departments already have a long list of prioritized projects to implement doesn’t make it any easier. So what is required to start the transition? The right physician champion or IT stakeholder is an excellent place to start—followed by a careful look at process requirements and workflow.

“You need to have the process owners. The evangelists out there who will lead the charge to change,” says Zielazinski. “We’ve done quite a bit in terms of moving to digital in our intake processes to eliminate that front-end paper. And my hope is that we’ll steadily continue to make progress toward eliminating the generation of paper in other places as well.”

Having that champion is critical to organization buy-in, and Collinge cautions that making the jump to digital ancillary services does require some iteration to get right. “It’s a big change not only for the hospitals but also for the patients,” he says. “It requires a bit of a learning curve to figure out how to adjust what fields to put where—and getting people accustomed to an electronic instead of a paper process.”

“And you can see savings, not just in the dollars saved from paper, ink, and printer maintenance right off the bat, but also with patient HCAHPS scores. **It’s not just smoke and mirrors.** It’s real patient satisfaction affecting real dollars in the bank for hospitals.”



—Matthew Leary

Zielazinski says this is especially important when you consider one of the biggest consumers of healthcare today: the Baby Boomer generation. “Today, even if you have systems in place to capture an electronic signature, many older patients will ask for a paper copy. So we’re still generating paper even when we don’t need to,” he says. “But that is changing over time. And people are becoming more open and accustomed to these electronic systems at intake and in other areas.”

Given the average Boomer’s desire to still walk out of the hospital with a handful of paper, the digitizing of ancillary services may seem like it’s a low priority. After all, as Christopher Walden explains, any IT project always comes down to prioritization and dollars.

“Many organizations moved to EHRs because we were incentivized to do so—plus, we were mandated,” he says. “These other projects need the right driver to get started and so you are often stopped from starting on these ancillary services because it seems like you have bigger fish to fry.”

But Leary says that the time is now for making the move to digitization in ancillary services. He emphasizes that these solutions are a low cost, easy return on investment project for healthcare organizations. They are small—and often quickly implemented—investments that can yield very high returns, both now and in the future, in terms of the quality of care, reduced printer costs, and improved security.

“The nice thing about this is that you don’t have to do everything at once. You can start easy and start small—and front of the house, registration, is a great place to do that. This is often something that can fit into a discretionary budget and the resources required are pretty minimal,” he says. “And if you have strong leadership in place to push through some of these changes, you can ramp up the use of these new products throughout the organization and see some great benefits, both for your organization and your patients, fairly quickly.”

Collinge agrees. He says that his organization has seen great savings from starting with the “low-hanging fruit” of intake and registration.


“The continued use of paper is a huge concern—it’s a huge drain on our resources that we’d rather put elsewhere. And when you look at the big picture, you see that the most common piece of paper out there that you can easily eliminate is the intake form,” he says. “Digitizing that form helps provide better service for our clients, it helps to make data more secure, and it saves us a significant amount of money. It’s made life a lot easier—and gives us a lot of benefits that we didn’t have before.”



## Forming the Digitization Team—Who to Get Involved

1. CIO
2. CMIO
3. Physician champion
4. Nurse champion
5. IT Team champion – process owner
6. Technology vendor project manager
7. Billing department management team
8. Administrative staff team member





You know the astonishing costs of paper. And today's healthcare organizations have new, unparalleled opportunities to flourish in a value-based care world if they can reduce those costs. But, to do so, they need to make a strong commitment to reducing the paper waste that plagues healthcare today. And, most importantly, they need to think beyond digitizing only the processes involved in clinical care and doctor-patient interactions.

By automating data-smart front-end processes like registration and signature capture in business, administrative, and billing departments, healthcare organizations can reap significant benefits and savings by reducing paper across the enterprise—allowing healthcare organizations new opportunities to improve security, advance care, and increase overall patient satisfaction.

Today's healthcare organizations have new, unparalleled opportunities to flourish in a value-based care world if they can reduce those costs. But, to do so, they need to make a **strong commitment to reducing the paper waste** that plagues healthcare today.

## Executive Recommendations

- » Assign IT team members to a forms committee to standardize data capture fields
- » Project manage and understand critical standardized forms, and associated data fields for routing and upload to the EHR (HIPAA Terms, Insurance forms, etc.)
- » Interview staff members and clinicians to understand ancillary workflow processes in depth
- » Formulate a training program and paradigm appropriate for administrative staff and clinicians
- » Outline a robust security protocol for these digitized records, investing in staff training for securing these records (both from a physical security and cybersecurity perspective)
- » Identify a physician champion to advocate for and design digitization processes
- » Start with the digitization of the intake process leveraging electronic signatures and acknowledgements to show a quick return-on-investment
- » Integrate and interoperate forms capture technology with EHR to exchange data seamlessly within the clinical record, route critical information to physicians at the point of care
- » Expedite time to care, and limit registration steps by importing and optimizing forms through mobile technologies (tablets, secure signature capture devices, etc.)
- » Assign team members to continuously monitor and examine IT workflows to eliminate unnecessary data capture or data exchanges that may increase risk
- » Analyze patient responsiveness and HCAHPS scores, and install a continuous quality improvement process to streamline user-experience
- » Create a roadmap based upon implementation success to apply this model to other areas of the enterprise
- » Expand digitization processes to surrounding business departments, including: billing, pharmacy, radiology, lab, and other departments surrounding the point of care

## References

1. Wikler, Elizabeth, Peter Basch, and David M. Cutler, "Paper Cuts: Reducing Health Care Administrative Costs." Center for American Progress, June 11, 2012. <https://www.americanprogress.org/issues/healthcare/report/2012/06/11/11658/paper-cuts/>
2. [http://www.healthaffairs.org/healthpolicybriefs/brief.php?brief\\_id=82](http://www.healthaffairs.org/healthpolicybriefs/brief.php?brief_id=82)
3. Ganju, Nihar, and Michael Walsh, "Sustainable Computing: How Digital Healthcare Can Help the Environment, Reduce Costs, and Improve Patient Service." TechNet Magazine, April 2009. <https://technet.microsoft.com/en-us/magazine/2009.04.digitalhealthcare.aspx>
4. <http://www.beckershospitalreview.com/healthcare-information-technology/how-to-reduce-healthcare-printing-costs-by-40-or-more.html>
5. <http://www.rwjf.org/en/library/research/2013/07/health-information-technology-in-the-united-states-2013.html>
6. <http://www.healthcare-informatics.com/news-item/nih-clinical-center-becomes-first-federal-hospital-reach-himss-stage-7>
7. Accenture, "The \$300 Billion Attack: The Revenue Risk and Human Impact of Healthcare Provider Cyber Security Inaction." 2015. [https://www.accenture.com/t20150723T115443\\_\\_w\\_\\_/us-en/\\_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Dualpub\\_19/Accenture-Provider-Cyber-Security-The-\\$300-Billion-Attack.pdf](https://www.accenture.com/t20150723T115443__w__/us-en/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Dualpub_19/Accenture-Provider-Cyber-Security-The-$300-Billion-Attack.pdf)
8. <http://www.hhs.gov/hipaa/for-professionals/faq/575/what-does-hipaa-require-of-covered-entities-when-they-dispose-information/>
9. <http://www.forbes.com/sites/ciocentral/2013/02/07/the-hidden-it-security-threat-multifunction-printers/#4fa5653a3e4c>