

# Agfa HealthCare

# Enterprise Imaging 20/20

## Navigating the “New Normal”: Agfa HealthCare’s Vision for Image-Enabling the EHR

The modern hospital enterprise is a dynamic and complex environment, due in part to the impact of healthcare reform legislation, such as 2009’s HITECH (Health Information Technology for Economic and Clinical Health Act) and 2010’s ACA (Patient Protection and Affordable Care Act), which are driving the development of EMRs (electronic medical records) and HIEs (Health Information Exchanges).

This position paper from Agfa HealthCare will discuss how some of the leading trends in healthcare are shaping the hospital enterprise. We will present Enterprise Imaging 20/20, our technology vision and strategy for enabling hospitals to navigate these trends to improve patient care, address impending healthcare reform requirements, achieve federal incentives, and support relevance and sustainability.

### What is the “New Normal?”

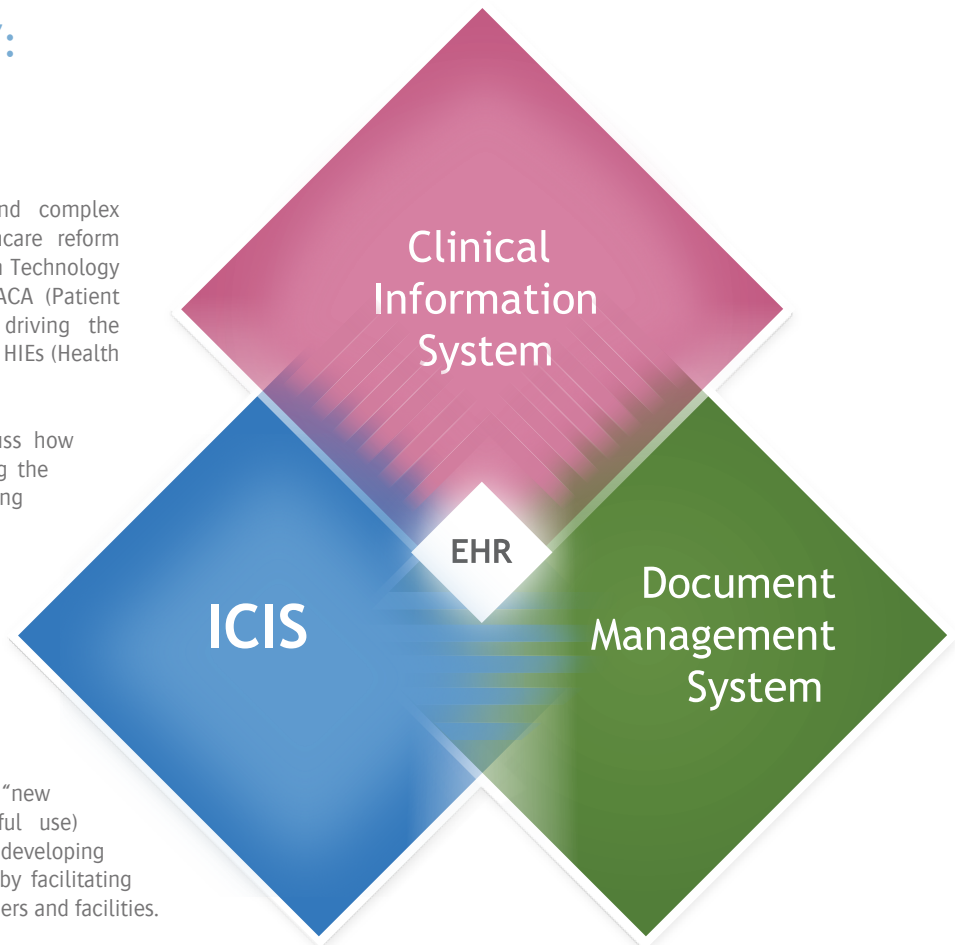
U.S. healthcare reform legislation is leading to a “new normal” in healthcare. Through its MU (meaningful use) guidelines, HITECH stipulates the requirements for developing EHRs, and promotes the coordination of patient care by facilitating access to patient data across multiple healthcare providers and facilities.

Both HITECH and ACA emphasize the importance of HIEs (health information exchanges) and ACOs (accountable care organizations) for care coordination across a patient population. Both are concerned with the development of EHRs and HIEs to improve patient care, contain costs, achieve federal incentives and prepare for new models of care delivery and payment—such as ACOs—which require data aggregation, care coordination and patient engagement.

The emergence of the EHRs, HIEs and ACOs will leave a lasting mark on hospital enterprises. As these concepts continue to drive the evolution of healthcare delivery, healthcare organizations can expect more changes in the next five years than that in the last 20 combined.

### Image-Enabling the EHR

To respond to these changes, hospitals are working to develop new, economically sustainable models of service delivery that improve patient outcomes and streamline the delivery of health care. As they drive towards new healthcare delivery and business models, they’ve discovered that the longitudinal patient record is more meaningful—and more complete—when it contains a visual component: medical images and information. When clinicians and other care providers are able to view



images and related information, regardless of department of origin or geographic location, the obvious outcome is better clinical practice and delivery of patient care.

Furthermore, the ability to provide medical images and related information in context with patient information is a key consideration in developing EHRs, successful collaborative care solutions and new organizations and reimbursement models. (It’s so important that it’s a Menu Objective for meeting the requirements of MU Stage 2 and Stage 3 draft). Image-enabling the EHR allows the development of new models that require the extensive use of patient imaging among clinicians and referring physicians to provide the highest levels of collaborative care. In this way, the image-enabled EHR can become the foundation for increasing patient engagement, also in accordance with MU Stage 2 and Stage 3 draft, because it allows healthcare organizations to develop a more patient-centric ecosystem.

To image-enable the EHR, C-level executives and healthcare IT leaders must overcome many challenges related to disparate, nonintegrated imaging workflows, such as:

- Images that are acquired and trapped in silos in multiple departments, locations or care settings
- Image access that's hindered by bandwidth and hardware and software compatibility issues
- Multiple imaging systems and modalities, including DICOM-based, proprietary and manually managed
- Multiple PACS (picture archiving communications systems), with and without RIS (radiology information systems) or other departmental information systems
- Images and video from standalone point-of-care digital and analog still and video cameras
- Images and video imported from CDs or other image exchange
- Lifecycle, integration and migration problems caused by the obsolescence of applications and storage

In addition, an image-enabled EHR must support:

- Secure access for all clinicians and referring physicians, including a single point of authentication and authorization
- Privacy requirements for HIPAA-protected information
- Electronic orders for all imaging procedures
- Process automation for all departmental imaging procedure
- Billing for eligible procedures
- CMS (Centers for Medicare and Medicaid Services) documentation for reimbursement justification

Many organizations have turned to Agfa HealthCare to help them overcome these challenges by delivering an image-enabled EHR that helps increase efficiency and productivity while maintaining best practices in quality healthcare delivery. Through an image-enabled EHR, Agfa HealthCare helps hospitals develop a strategy for addressing patient engagement and ultimately improving the patient experience and reducing healthcare costs.

*"Imaging is no longer just radiology or cardiology. It's a shared strategic resource."*

Louis Lannum, Director of Enterprise Imaging, Cleveland Clinic

## Insight Delivered: Agfa HealthCare Enterprise Imaging 20/20

Based on an ongoing analysis of healthcare reform legislation and input from our customers, Agfa HealthCare has formulated a vision that helps hospital enterprises address the dynamic healthcare landscape. It's part of our commitment to deliver insight into today's demanding healthcare environment. We call it Enterprise Imaging 20/20—a portfolio of solutions designed to meet the evolving needs of hospitals throughout the decade and into the future.

Our vision extends the benefits of digital image management across the enterprise, and establishes a focus on imaging as a strategic resource for healthcare providers. Enterprise Imaging 20/20 delivers the insight and technology that enable the sharing of medical information and access to the complete longitudinal patient record—including imaging information—without boundaries. It helps clinicians arrive at more informed diagnoses, work more efficiently and communicate more effectively with other healthcare providers and patients.

Many vendors propose solutions that are essentially extended radiology PACS or VNAs (vendor neutral archives). PACS and VNAs are stop-gap solutions and ultimately won't allow healthcare providers to complete the multimedia EHR. PACS are very effective departmental solutions, but are not enterprise systems able to handle the ever increasing image data volume expected from different departments and locations from multiple vendors and systems. By themselves, VNAs are optimized for storage—not for enterprise imaging workflows, such as department-specific image acquisition, electronic ordering, clinical metadata creation and billing automation. Some VNAs do not fully support DICOM and HIE, and most are not able to function independently of departmental RISs.

Enterprise Imaging 20/20 expands beyond standalone PACS and VNAs. Its foundation is a suite of technologies that provide a comprehensive, end-to-end solution for imaging/EHR workflow.

*"By taking a proactive approach and deploying technology such as image sharing applications, your department and organization will be better prepared for the impending future."*

Dr. Keith Dreyer, Vice Chairman, Radiology Computing and Information Sciences, Massachusetts General Hospital



## The Technologies Underlying the Vision

Enterprise Imaging 20/20 rests on Agfa HealthCare technologies that help healthcare organizations meet healthcare reform guidelines for integrating patient images and associated data into the EHR to enable the creation of collaborative care delivery models that rely on the access to medical images and related information in context with patient information.

### ICIS™

ICIS (Imaging Clinical Information System) is at the heart of Enterprise Imaging 20/20. A new class of enterprise imaging management solution for vendor neutral archiving and clinical data integration, it delivers a workflow-centric platform to make imaging data readily available to physicians across the enterprise, regardless of where the images are

created or stored. By unifying imaging and integrating it with the patient record across regions, facilities and departments, ICIS creates a true longitudinal patient imaging record.

As an enterprise clinical IT platform, ICIS helps deliver meaningful use of the EHR by providing providers with clinically relevant access to the comprehensive patient longitudinal imaging record. The platform creates a longitudinal patient centric imaging record and fills the gaps found in standalone departmental PACS and VNAs.

ICIS is incrementally scalable from single facilities to tens of millions of records annually. Because it is PACS and VNA agnostic, hospital enterprises aren't locked into a single vendor and can enjoy the flexibility of choice for imaging applications and infrastructure.

### **XERO®**

XERO is a technology platform that serves as the basis of the ICIS medical imaging and results viewer, which extends the EHR to include support for all medical images and related information to provide physicians with secure point-of-care access to the longitudinal patient record. The zero-download, browser-based viewer provides ubiquitous access to imaging information, regardless of the wide variety of platforms and administrative rules that can be so problematic with typical viewers.

XERO's innovative nature lies in the union of healthcare IT standards with traditional web standards, which provides the EHR with embeddable visualization technology, without sacrificing interoperability with the rest of the healthcare enterprise. XERO allows images to be accessed from anywhere on the enterprise network, or over the Internet (with a modest bandwidth connection), via any popular PC or Mac browser. It virtually eliminates desktop maintenance costs, while providing secure, efficient and ubiquitous access to medical images and reports throughout the healthcare enterprise.

XERO 3.0, a works-in-progress, will include support for Apple iPad® mobile digital devices. And we'll be introducing an exclusive capability—we call it the XEROVERSE—that allows imaging records from across multiple systems to be viewed and compared in a single view without having the need to transfer or store the data.

### **Orion Clinical Portal**

Working with Orion Health, a leading provider of HIE and healthcare integration solutions, Agfa HealthCare provides Orion's Clinical Portal, which integrates images from the ICIS platform (via XERO) into a shared "single best view" of the patient through the EHR. Multidisciplinary imaging data will now be available in context with other patient data and documents drawn from multiple systems across a hospital network or health region.

### **Orion Patient Portal**

Agfa HealthCare's relationship with Orion Health also includes Orion's Patient Portal, which provides a unified view of the EHR, including the entire longitudinal imaging record. Patients, their families and other authorized representatives enjoy secure access to patient healthcare images and records.

## **Seven Essential Services**

Enterprise Imaging 20/20 technologies are built upon seven essential services through which it image-enables the EHR, helps healthcare organizations develop HIEs and engages patients with patient-centric care.

### **1. Connect**

ICIS is a massively scalable, embedded interface/integration engine that supports multiple facilities, departments and domains. Each enterprise entity has multiple imaging devices and modalities—each speaking a different language—that require two-way communication with the EHR.

## **Benefits of Enterprise Imaging 20/20**

By image-enabling the EHR using Enterprise Imaging 20/20 solutions, hospitals and healthcare networks can bring improvements to many areas of the hospital enterprise, including:

### **Patient care**

When all images and results are linked directly to the patient record, primary care physicians can make more informed decisions. Physicians spend less time figuring out how to find information and more time practicing medicine—leading to faster decisions, response and patient discharge. And because all clinicians have access to all imaging procedure information, regardless of care setting, the EHR is more effectively supports continuity of care. Finally, analysis of clinical outcomes can be performed across multiple specialty imaging processes.

### **Patient safety**

Access to patient images helps providers' efforts to reduce duplicate procedures—along with patient inconvenience, insurance expenses and radiation dosage. Improved access to all images may also help reduce medical errors caused by the lack of critical information.

### **Patient satisfaction**

Better clinician productivity and decision-making may lead to fewer errors, shorter hospital stays, reduced readmission rates and lower patient stress. Extending the health record to patients can improve patient satisfaction and education.

### **Department flexibility**

With ICIS, individual departments aren't locked into certain vendors or solutions. They have the flexibility to choose from the imaging tools that meet their needs.

### **Physician communication**

Referring physicians have a much-improved experience because, via XERO, they can view results from any workstation without downloading software. Consulting physicians can access imaging information remotely, enabling them to more easily and quickly provide clinical knowledge to attending hospital staff.

### **Security of patient information**

Consolidation of patient images reduces the risk of inappropriate disclosure of personal health information. And through conformance to web-based and health IT standards, ICIS and XERO provide end users with a single point of authentication and authorization.

### **Costs**

ICIS helps healthcare organizations reduce costs by leveraging existing EHR investments, improving billing practices and CMS billing documentation, lowering the cost of healthcare delivery and reducing duplicate procedures. In the IT department, it decreases costs associated with managing storage, migrating data, integrating departmental systems, dealing with technology obsolescence and managing redundant data silos. In addition, it helps meet requirements that enable healthcare organizations to receive government incentives and can revenues by increasing referring physician satisfaction.

EHR companies charge a hefty “translation” fee for each connection, but you can avoid them by connecting imaging devices to ICIS. With only one EHR connection, hospitals are able to cost-effectively open clinical images from any department or location directly inside the EHR.

## 2. Workflow

ICIS is a workflow-centric platform designed to meet both departmental and enterprise requirements. For example, it supports both radiology and non-radiology departmental workflows, including predefined departmental imaging procedures and imaging acquisition and import workflow from point-of-care imaging devices and PACS. It also enables automated billing and supports reimbursement documentation.

## 3. Capture

ICIS supports department-specific capture requirements and provides department-level services, such as Web-based ordering and scheduling, exam identification, modality worklists, accession number generation, patient demographic validation, patient pick lists and others. It is RIS-independent, so it functions just as easily with radiology and non-radiology PACS, and also allows support of proprietary and manually managed imaging systems, point-of-care DICOM modalities without RIS/PACS, point-of-care image/video cameras, images imported from CDs and any electronically printable document. The platform also provides data migration services.

## 4. VNA

ICIS is PACS-, storage- and platform-vendor neutral, and compliant with relevant IHE integration profiles and DICOM Part 10 Storage. Highly available and massively scalable, it provides advanced business continuity options in the event of a disaster or interruption. ICIS also supports cloud configurations and virtualization. And because it's purpose built for hospital enterprises, ICIS is able to easily and quickly reconcile imaging procedures with demographics and orders.

## 5. View

A key component of our vision for enterprise imaging is fast image retrieval for any authorized clinician. With XERO technology, no client software is required to access patient images. Any of the most widely-used Internet browsers and a modest network connection are all that's needed. Via the viewer, image content is embedded into the EHR rendering it accessible by those who need it, whether in-network clinicians or referring physicians using a wide variety of browsers and networks on their office or home computers—without requiring the download or installation of a software application.

[www.agfahealthcare.com](http://www.agfahealthcare.com)

Agfa and the Agfa rhombus are trademarks of Agfa-Gevaert N.V., Belgium, or its affiliates. ICIS, IMPAX, and XERO are trademarks of Agfa HealthCare NV, Belgium or its affiliates. iPad is a registered trademark of Apple Inc. All rights reserved. All other trademarks are held by their respective owners and are used in an editorial fashion with no intention of infringement. The data in this publication are for illustration purposes only and do not necessarily represent standards or specifications, which must be met by Agfa HealthCare. All information contained herein is intended for guidance purposes only, and characteristics of the products and services described in this publication can be changed at any time without notice. Products and services may not be available for your local area. Please contact your local sales representative for availability information. Agfa HealthCare diligently strives to provide as accurate information as possible, but shall not be responsible for any typographical error.

## 6. Exchange

Through the EHR, ICIS facilitates image sharing to authorized caregivers in multiple locations, including HIEs, as well as patients and their families. Through a combined solution resulting from a strategic relationship with Orion Health, Agfa HealthCare provides seamless access to a unified view of clinical data and medical image in a single, secure unified environment. Image-enabled clinical and patient portals provide both physicians and patients turnkey access with to an image-enabled EHR.

## 7. Access

Agfa HealthCare is committed to providing excellence in image access via the EHR for clinicians and patients. MPI integration enables hospitals to link to their centralized reference point for standardized patient demographic data, so that patient records are consistent, accurate and all-encompassing. We provide HL7 interfaces for demographics, scheduling, orders and results, DICOM conformation interfaces including XDS and WADO and IHE actors and integration profiles. We also support existing web standards, so that users can connect using non-healthcare IT environments such as the Internet.

## Conclusion

The ultimate goal of healthcare reform is better patient outcomes. This will be achieved by improving service and communication between hospitals and their patients. To reach their goals, healthcare organizations need a patient-focused clinical IT vendor like Agfa HealthCare to help them image-enable the EHR.

A healthcare technology innovator for more than 100 years, Agfa HealthCare knows imaging informatics better than anyone. We have continually demonstrated our capacity for successfully supporting both our customers' technological challenges and their clinical needs, and transitioning them to technology solutions that help deliver the highest levels of patient care and hospital efficiency.

As healthcare organizations navigate the torrent of new healthcare reform legislation, Agfa HealthCare can help by delivering technology solutions that emphasize improved patient care and better communication among patients and physicians. Through our Enterprise Imaging 20/20 portfolio of solutions, we deliver the insight that helps hospitals and healthcare networks develop economically sustainable models of service delivery that allow for coordinated, streamlined patient care.

© 2013 Agfa HealthCare Corporation  
All rights reserved  
Published by  
Agfa HealthCare Corporation  
10 S. Academy Street  
Greenville, SC 29601 USA  
US 00201211