Healthcare transformation, we’ll take you...

Innovating Visual Healthcare

8  KLINIKUM LUDWIGSBURG, LUDWIGSBURG, GERMANY
Digital documentation system is enhancing quality in cardiology

22  SIMRAL PROJECT, ALSACE, FRANCE
How collaboration between healthcare partners is creating opportunities for regional image sharing

28  CHILDREN’S NATIONAL HEALTH SYSTEM, WASHINGTON, DC, USA
How DR solutions are benefitting both pediatric patients and specialist staff

50  FINANCING YOUR FUTURE
Facilitating your future projects through specialist Financial Services

These days, every investment we make in healthcare has to have visible value all along the care continuum. For the hospital or clinic, the doctors and staff, and the patients themselves, what these solutions and services offer has to be transparent – and often measurable.

And that requires innovative approaches that take a new look at what value means to each stakeholder, what they need and want, and what will make a real difference in how they deliver – or receive – care.

In this edition of THERE, we will give you several examples of how Agfa HealthCare has been using 100+ years of experience to develop innovations that keep the user, the hospital and the patient in mind. We’ll tell you stories that show how we are striving to make sure that every customer gets the most from each Agfa HealthCare solution they implement.

We’ll also explore what value means to patients, and why patient engagement has become a hot trending topic. You’ll find out how our solutions let stakeholders inside or outside the hospital view patient information from different sources.

So read on to discover all the ways to define value in healthcare, in order to achieve the overall goal: making a difference in patient care.

The Agfa HealthCare editorial team would like to thank all those who contributed to this publication.

Marc De Fré
Director Marketing Communications

Delivering the Clinical Care Network means innovating how we unlock the full potential of health data.
Empowering the clinical care network

Why providing patients and their team of caregivers, inside and outside hospitals, with easy access to their personal healthcare images and associated data is the next essential stage in healthcare evolution.

In an age when people can access information at the click of a button or a swipe of the finger, patients and their healthcare professionals are looking increasingly for access to their personal medical records to be as simple.

Providing easy access to health data

At Agfa HealthCare, we are committed to empowering you to provide your patients with easy access to their health data. We recognize the need for, and are able to help you create, an environment in which you can engage not only with your patients but share reports and images with other healthcare professionals in real time, establishing efficient and meaningful clinical collaboration across the continuum of care.

Breaking down the walls to sharing information

With more and more healthcare expected to take place outside the hospital, as a result of an aging population and with governments increasing the pressure on delivering value-based integrated care, the need to break down the walls of existing information silos — to allow the free-flow of images and relevant clinical data — has never been more important.

Comprehensive patient profiles through a single platform

Our capability, today, to provide you with data access via one single converged platform for departmental, enterprise and regional health — a platform that facilitates multidisciplinary communication and collaboration — has never been more valuable. Through it, we empower you to create a comprehensive patient profile, enabling professional healthcare givers both within and outside your immediate team to improve their ability to deliver quality care.

Secure, and completely scalable to meet specific needs, this cohesive approach requires fewer resources, oversight and infrastructure and provides cost-effective health data centralization.

Enterprise Imaging

in more than 30 countries around the world

Modern IT platform helps maximize performance

Designed for Clinical productivity

Improve diagnostic confidence

+140 VNA

Agfa HealthCare Enterprise Imaging VNA provides multi-vendor consolidated storage and helps reduce data ownership and migration cost.

+510 XERO Viewer

The XERO Viewer lets you and other caregivers access the patients’ images and reports in a single browser-based view, including on mobile devices.

+210 Radiology

Next generation medical imaging platform that truly combines workflow, image management, reporting and clinical applications into one consolidated platform.

Comprehensive patient profiles through a single platform

With greater context for image and text data, you can make more informed assessments and more confident care decisions.

Image-enable your EHR

Seamlessly integrating XERO Viewer with your EHR

With greater context for image and text data, you can make more informed assessments and more confident care decisions.

Note: The numbers represent sold, in deployment, and/or installed sites.
The need for speed

Enterprise Imaging for Nuclear Medicine delivers new levels of speed, quality and collaboration for Máxima Medical Center’s nuclear medicine department

Not only is Enterprise Imaging for Nuclear Medicine itself very fast, but because it is part of the PACS environment, we have seen additional speed gains.

Dr. Ing Han Liem
Nuclear medicine physician at Máxima Medical Center. The Netherlands

Máxima Medical Center is the largest medical campus in the southeastern Netherlands, with two sites: at Veldhoven (the larger site) and Eindhoven. This general hospital with around 540 beds provides a broad range of medical services; while both sites cover most medical services, the Veldhoven location is the main location for complex care, with the Eindhoven location focusing on planned and minor care. In both locations, specialists provide outpatient care, as well. The hospital’s nuclear medicine department is present at both locations, with three nuclear medicine physicians and seven technicians. Based on the differences in the department, the two sites vary slightly – for example, the Eindhoven site has a SPECT camera, while the Veldhoven site has a SPECT/CT and a PET/CT camera, which combines molecular and anatomic imaging. But since January 2014, the entire department, across the two locations, has been supported by Agfa HealthCare’s Enterprise Imaging for Nuclear Medicine solution. This long-term Agfa HealthCare customer already has an Agfa HealthCare PACS and RIS, plus other solutions including the Enterprise Imaging VNA, XERO Viewer** and CardioReport.

Multiple modalities, increasing complexity

“The nuclear medicine department collaborates with and supports many different specialties at Máxima Medical Center, from oncology, surgical oncology and medical oncology, to pulmonology, urology, cardiology, orthopedic surgery, rheumatology and more,” comments Dr. Ing Han Liem, nuclear medicine physician at Máxima Medical Center. Having played a key role in the department for 15 years, he has seen it – and the specialty – evolve. “When I started here, the department was very small and performed a limited number of exams. Over time we expanded, both in terms of the devices we used – from dual/multi-head cameras and gamma cameras to SPECT/CT, PET and PET/CT – and in the number and types of studies we perform. Working with so many applications is very complex. Previously, the department had a nuclear medicine information system that was organized on the local nuclear medicine server. “My desk had so many workstations on it, it looked like a flight deck” recalls Dr. Liem. “I had seven or eight monitors.” This old system had other disadvantages: “The system was fast enough – when it was working. But the local server wasn’t always stable, which meant the system wasn’t always available. What’s more, scanners like the CT and MRI were integrated into the hospital’s Agfa HealthCare PACS, but nuclear medicine was separate, so it took more time to get what we needed.” Finally, the original system did not support the nuclear medicine department’s collaboration with other units, which is increasingly important as nuclear medicine extends to reach additional specialties and fields within the patient care continuum.

Comparing systems reveals the advantages

With the nuclear medicine system aging, it was evident that a new solution had to be implemented. But which one? “As I said, our existing system was fast enough, and the vendor had a new version available. But we also had a good relationship with Agfa HealthCare, including the RIS/PACS environment, which worked extremely well.” Despite this, Dr. Liem and his colleagues were hesitant: “We just weren’t sure if Enterprise Imaging for Nuclear Medicine would give us the performance – especially in terms of speed – that we were used to. And we weren’t sure if it processing would be as good as the dedicated processors for the different applications. But our Agfa HealthCare representative was convinced that it could. We agreed to try it for ourselves, and to compare it to the other system.”

Enterprise Imaging for Nuclear Medicine was fully installed at the hospital, covering both the Veldhoven and Eindhoven sites, and initially ran in parallel with the other nuclear medicine systems. The implementation went well, and there was no disruption to the department. “You will always have a few problems when setting up a new, big software product, but the support was very good and everything was resolved very quickly,” explains Dr. Liem. “In total it took about six to eight weeks to get it up and running.”

All patient studies in a single window

He and his nuclear medicine colleagues were soon very impressed by the advantages of Enterprise Imaging for Nuclear Medicine: “Our existing nuclear medicine information system was our benchmark; whatever we selected to replace it with had to perform at least as well. But Enterprise Imaging for Nuclear Medicine didn’t just perform ‘as well’ – it excelled. Not only is Enterprise Imaging for Nuclear Medicine itself very fast, but because it is part of the PACS environment, we have seen additional speed gains. For example, studies from different modalities, such as PET and MRI, no longer have to be loaded separately and then fused manually; this is handled automatically by the system. And we had wondered if loading data in Enterprise Imaging for Nuclear Medicine would take longer than with the dedicated processing system for each modality, but it didn’t! That means we can use one system – Enterprise Imaging for Nuclear Medicine – instead of individual processors for each application.”

Dr. Liem continues, “The quality is also a big advantage: the reconstructive processing is excellent, and the quality is certainly equal to that of the dedicated processing systems. And Enterprise Imaging for Nuclear Medicine is very user-friendly. It only took each person about two to four weeks to be completely up-to-speed using it; we then saw even more improvements. With the two-screen layout, I can, for example, use one for the study I am looking at while the second screen lists all the other studies available. And, thanks to the integration with our PACS, we can go on making a report even while processing.”

The biggest change, though, says Dr. Liem, is having all of the patient’s studies available together at one time, in one window. This eliminates the risk of accidentally looking at studies from different two patterns, he specifies, and enhances the reporting for the departments that nuclear medicine works with and supports.

Not only is Enterprise Imaging for Nuclear Medicine itself very fast, but because it is part of the PACS environment, we have seen additional speed gains.

“We have a good relationship with Agfa HealthCare, including the RIS/PACS environment. The oncology boards, for example, really appreciate the screen captures in scrollable series we can now create. With the old system, we could only make static screen captures, which were very limited. And clinicians have let us know how useful they find the scrollable image series that are available. Plus, they actually see the SPECT/CT and PET/CT images in the same way we do: the image presentation is the same.”

As a final advantage of Enterprise Imaging for Nuclear Medicine, Dr. Liem says it is ideal for multiple sites: “It additionally adds to the security of the system. The old system was vulnerable because it relied on a single server. Now, we have servers at each hospital; we can review a study at one site, and have a back-up copy at the other.”

Convenience, speed, a common layout and userfriendliness

With the clear advantages of Enterprise Imaging for Nuclear Medicine, the complete nuclear medicine team – both nuclear medicine physicians and technologists – was quickly won over. They are so convinced of its benefit that they are now a demo site for Benelux, hosting visitors from other hospitals who want to see how it works in a ‘real-life’ situation. “We recently had some visitors from a multi-site hospital, one with four or five sites, who needed a solution that would provide speed and quality combined with a united user experience, and that would be able to integrate all data from the different sites. We showed them how well it is working across sites for us. For them, that is a valuable change for Dr. Liem, however, is the condition of his desk: “Instead of several workstations with seven monitors, I now have only two,” he smiles. “We really enjoy working with Enterprise Imaging for Nuclear Medicine.”

** Solution developed by Agfa HealthCare in cooperation with Segami Corporation.
*** XERO Viewer is not available in Canada.
In recent years the challenges in cardiology have increased steadily and the range of methods used has considerably expanded. “Most of the therapies we offer are now delivered on an interventional basis,” says Dr. Ralph Berroth, head of the Clinic for Internal Medicine, Cardiology, Nephrology, and Internal Medicine Intensive Care at Klinikum Ludwigsburg. He and his colleagues must continually integrate new methods into their day-to-day work to a very high standard. “The documentation requirements have also become stricter, which adds to the workload. So we began to introduce digital documentation and reporting at a very early stage,” explains Dr. Berroth.

Klinikum Ludwigsburg is part of Regionale Kliniken Holding RKH GmbH, which is made up of a group of hospitals: Kliniken Ludwigsburg-Bietigheim, Enzkreis-Kliniken, and Kliniken des Landkreises Karlsruhe. The hospitals have a total of 2,600 beds, of which around 1,000 are at the largest hospital, Klinikum Ludwigsburg. Some 11% of these are in the cardiology clinic, which cares for approximately 5,500 inpatients every year. The clinic is correspondingly equipped, with three cardiac catheter laboratories, one which focuses on electrophysiology, three echocardiography systems including 3D echo, and cardiac MRI and cardiac CT, operated in cooperation with the radiology department. Interventional cardiology is one of the clinic’s main areas of activity, including the treatment of patients with ST elevation myocardial infarction.

Everything from a single source
Since 2004 Klinikum Ludwigsburg has been using the hospital information system (HIS) ORBIS*. “Initially it was only used at the hospitals in Ludwigsburg, Bietigheim, Vaihingen, and Marbach. After the holding company was set up we then established a comprehensive IT strategy that included a standard HIS,” explains Dieter Martini, project manager in the Central Information Processing (CIP) department. “We chose ORBIS because the system was already being used successfully in the large hospitals and users were very impressed.”

The aim of this strategy was to standardize and centralize the software solutions. To Martini, the advantages are obvious: “We reduced the large number of different systems and providers, which made our job in CIP much easier. Markedly less support is now required and we were able to centralize the members of the team and assign them to specialist tasks. For example, I mainly look after the needs of cardiology in the various hospitals.”

ORBIS HIS is used for both clinical and administrative purposes at each hospital. “In the meantime we’ve achieved a high degree of penetration in all processes,” says Martini. “All patient management processes are handled with the HIS, as are medical controlling, financial accounting, inventory management, and catering management. Right from the start we consciously chose a vendor who we knew could deliver what we needed. We accept the degree of dependence that this brings because we believe this is outweighed by the benefits of an integrated complete solution.”

The Institute of Diagnostic and Interventional Radiology therefore uses the ORBIS radiology information system (RIS) and the image data management system IMPAX ES, while the digital archive uses HYDMEDIA**.

Ludwigsburg, Germany
Clinical Care Network
We’re faster, especially in terms of reporting findings.
Dr. Ralph Berroth,
Head of the Clinic for Internal Medicine, Cardiology, Nephrology, and Internal Medicine, Klinikum Ludwigsburg
Digital documentation system enhances quality in cardiology
Ludwigsburg-Bietigheim Clinics extend hospital-wide solutions from Agfa HealthCare
ORBIS Cardiology introduced one step at a time
The strategy of standard IT solutions was put to the test in cardiology in 2005 with the discontinuation of the documentation system. Martini recalls: “The question was whether to introduce an established special system or stick with ORBIS, even though the cardiac catheter workstation only had the necessary basic functionalities, so was by no means fully developed at the time.”
But once it became clear how much extra work would be involved in introducing another subsystem with the associated 11 interfaces, the team opted for ORBIS. “We decided that the benefits of integration in hospital-wide processes were greater than the advantages of a separate solution for cardiology,” says the project manager.

Fully digital from request to report
In the case of ORBIS Cardiology, the collaborative approach was a success. Today, the hospitals that make up Kliniken Ludwigsburg-Bietigheim use the cardiac catheter workstation for all procedure documentation, reporting of diagnostic findings, quality assurance, writing discharge notes, and materials management. ORBIS Echocardiography is also used. Thanks to the integration of special software from TomTec for image management, data is automatically transferred from ultrasound systems and integrated into the findings.

We decided that the benefits of integration in hospital-wide processes were greater than the advantages of a separate solution for cardiology.

Dr. Ralph Berroth, Klinikum Ludwigsburg

Directly to the X-ray system. During the examination an assistant documents the presence of doctors and nurses, the procedure, and all materials used. To do this, the barcodes on the packaging are simply scanned and the information is added directly to the documentation.

After the examination the hemodynamic and X-ray data is transferred directly from the system to ORBIS Cardiology. “Before, we had to enter everything manually,” says Kröhnert – another advantage of the digital process. All the information is then sent digitally to the examining cardiologist for interpretation. “With one click we can load previous cardiac catheter examinations from the last ten years and observe the progress of a disease. Thanks to integration in PACS we can also incorporate X-ray images into the interpretation process,” says Dr. Berroth.

Faster, more efficient, and quality-assured
According to Dr. Berroth, the introduction of ORBIS Cardiology has resulted in much more efficient processes. “We’re faster, especially in terms of reporting findings. You can select blocks of text and very quickly produce a finished report that doesn’t need to be typed, just signed. What’s more, all reports are in a standard form no matter which physician writes them.”

There have also been positive effects on communication between the hospitals: “Many patients are referred here from the hospital in Bietigheim for invasive diagnosis or treatment. I can look at all the relevant findings and lab data before an examination, and a matter of minutes after the examination the lab team has access to the findings and all other information.” It also works the other way round: If a patient is admitted to a ward after an intervention, for example, doctors can access all the data, including video sequences, for instance of coronary interventions.

For the heads of department there is another very important aspect, namely quality assurance. “We basically couldn’t achieve this without a digital documentation system, especially given the constantly growing number of examinations. In that sense ORBIS Cardiology provides essential support,” says Dr. Berroth.

“Fully digital from request to report”

Klinikum Ludwigsburg

Information Processing (CIP) department.

Project manager in the Central Clinical Care Network

Ludwigsburg, Germany

HYDMEDIA is not available in the U.S.

* ORBIS is not available in Canada and the U.S.

** HYDMEDIA is not available in the U.S.
Visually enabling the hospital for better patient care

Agfa HealthCare Enterprise Imaging platform has been chosen to support the meaningful capture, storage, exchange and access to medical images automatically through the electronic patient record at City Hospital’s Sunderland NHS Foundation Trust in the UK. Following cardiology image data, 11 other imaging departments will be added to the Enterprise Imaging platform to enable the review of images within the hospital’s EPR.

“Having worked with Agfa HealthCare’s solutions for many years, we are confident in working closer together, as we know they share with us a common vision and goal: visually enabling our hospitals in order to deliver improved patient care.”

Andy Hart, Director of IT and Information Governance, City Hospitals Sunderland NHS Foundation Trust, UK

Agfa HealthCare VNA, XERO Viewer and Radiology Suite will support consolidation and sharing of radiology results for first Moscow teleradiology project

“The proven maturity of the Agfa HealthCare solution made us confident that this was the right choice for a major project of this size and scope.

“Agfa HealthCare has a high level of expertise implementing projects on the enterprise and regional levels, worldwide. This is what we need to ensure the success of this project, which will support us in continuing to enhance the quality of healthcare we provide the people and visitors of Moscow.”

Yury Kashkarov, IT healthcare counsellor to the Deputy of Moscow Major responsible for the social development, Russia

Delivering the Clinical Care Network

Images – the missing element in today’s EHR

When considering VNA options, it became clear that providing ‘enterprise storage’ was only one piece of the enterprise imaging puzzle for My Practice Imaging in Cleveland, Ohio, USA. To truly deliver the power and value of an enterprise-wide image platform, the MyPractice Imaging team realized that workflow and indexing standards had to be established across all departments and clinicians who utilize the system.

“With the launch of its new electronic health record (EHR) Portal, Agfa HealthCare is taking customers on a journey towards an integrated care solution. Easy to implement, yet providing a comprehensive road map, the EHR Portal integrates the experience and knowledge Agfa HealthCare has acquired in its long history, to drive towards the future of healthcare delivery with an architecture that can be extended into the entire care continuum.”

Joost Felix and Jörg Schwarz, Co-project leaders, Agfa HealthCare

Patients spend about five hours at one of the dialysis centers for each treatment. During this time I have to collect all the important findings and make therapeutic decisions on the spot. This is distinctly easier now than it was in the past. I can now obtain all the information I need with a mouse click, and can begin or modify treatment much faster.

“Previously my colleagues were always on the phone or using the fax to get records for me. The fact that I can now call up these records online is an enormous advantage for my work. And the patients benefit not just from the shorter waiting time, but also from the peace and quiet which speeds their recovery!”

Dr. Uta Kästner, Internist and nephrologist at the Dialysis Clinic the Hufeland Klinikum (Hufeland Medical Center) in Bad Langensalza, Germany. Kästner commenting on the ORBIS portal solution.

“With the launch of its new electronic health record (EHR) Portal, Agfa HealthCare is taking customers on a journey towards an integrated care solution. Easy to implement, yet providing a comprehensive road map, the EHR Portal integrates the experience and knowledge Agfa HealthCare has acquired in its long history, to drive towards the future of healthcare delivery with an architecture that can be extended into the entire care continuum.”

Joost Felix and Jörg Schwarz, Co-project leaders, Agfa HealthCare

There is a wealth of images being created all over the hospital, and we want to make sure that this wealth is being put to good use. If images can’t be accessed, they don’t add value. We want to bring all images to the forefront of the electronic health record (EHR) so clinicians can unlock their potential. By getting the imaging information to where it is needed most, we will increase diagnostic comprehension, decrease unnecessary repeat imaging and, ultimately, significantly improve the delivery of patient care.”

Brad Genereaux, Project Manager, Enterprise Imaging, Agfa HealthCare

“Visually enabling the hospital for better patient care

Agfa HealthCare Enterprise Imaging platform has been chosen to support the meaningful capture, storage, exchange and access to medical images automatically through the electronic patient record at City Hospital’s Sunderland NHS Foundation Trust in the UK. Following cardiology image data, 11 other imaging departments will be added to the Enterprise Imaging platform to enable the review of images within the hospital’s EPR.

“Having worked with Agfa HealthCare’s solutions for many years, we are confident in working closer together, as we know they share with us a common vision and goal: visually enabling our hospitals in order to deliver improved patient care.”

Andy Hart, Director of IT and Information Governance, City Hospitals Sunderland NHS Foundation Trust, UK

Agfa HealthCare VNA, XERO Viewer and Radiology Suite will support consolidation and sharing of radiology results for first Moscow teleradiology project

“The proven maturity of the Agfa HealthCare solution made us confident that this was the right choice for a major project of this size and scope.

“Agfa HealthCare has a high level of expertise implementing projects on the enterprise and regional levels, worldwide. This is what we need to ensure the success of this project, which will support us in continuing to enhance the quality of healthcare we provide the people and visitors of Moscow.”

Yury Kashkarov, IT healthcare counsellor to the Deputy of Moscow Major responsible for the social development, Russia

Delivering the Clinical Care Network

Images – the missing element in today’s EHR

When considering VNA options, it became clear that providing ‘enterprise storage’ was only one piece of the enterprise imaging puzzle for My Practice Imaging in Cleveland, Ohio, USA. To truly deliver the power and value of an enterprise-wide image platform, the MyPractice Imaging team realized that workflow and indexing standards had to be established across all departments and clinicians who utilize the system.

“What we needed was a ‘thinking VNA’, which could do several things,” says Dr. Petersilge. “It had to manage, in one place, the context of all the images, their indexing, where they came from, and where they should appear in the EHR.”

The ‘thinking VNA’ Cleveland Clinic, Ohio selected was the Enterprise Imaging Suite developed by Agfa HealthCare.

Patients spend about five hours at one of the dialysis centers for each treatment. During this time I have to collect all the important findings and make therapeutic decisions on the spot. This is distinctly easier now than it was in the past. I can now obtain all the information I need with a mouse click, and can begin or modify treatment much faster.

“Previously my colleagues were always on the phone or using the fax to get records for me. The fact that I can now call up these records online is an enormous advantage for my work. And the patients benefit not just from the shorter waiting time, but also from the peace and quiet which speeds their recovery!”

Dr. Uta Kästner, Internist and nephrologist at the Dialysis Clinic the Hufeland Klinikum (Hufeland Medical Center) in Bad Langensalza, Germany. Kästner commenting on the ORBIS portal solution.

“With the launch of its new electronic health record (EHR) Portal, Agfa HealthCare is taking customers on a journey towards an integrated care solution. Easy to implement, yet providing a comprehensive road map, the EHR Portal integrates the experience and knowledge Agfa HealthCare has acquired in its long history, to drive towards the future of healthcare delivery with an architecture that can be extended into the entire care continuum.”

Joost Felix and Jörg Schwarz, Co-project leaders, Agfa HealthCare

There is a wealth of images being created all over the hospital, and we want to make sure that this wealth is being put to good use. If images can’t be accessed, they don’t add value. We want to bring all images to the forefront of the electronic health record (EHR) so clinicians can unlock their potential. By getting the imaging information to where it is needed most, we will increase diagnostic comprehension, decrease unnecessary repeat imaging and, ultimately, significantly improve the delivery of patient care.”

Brad Genereaux, Project Manager, Enterprise Imaging, Agfa HealthCare
A Portal to the future

CHU de Liège launches innovative Portal project that leads to greater information sharing with external caregivers

“Agfa HealthCare was able to offer us a unique technology concept: putting the PACS backend and the XERO Viewer on the same platform... This unique platform set-up is more effective and faster.”

Gregory Canivet, Computer Scientist, RIS/PACS/Cardio Application Manager, CHU de Liège, Belgium

Providing images and reports to referring physicians and patients is a massive endeavor for Centre Hospitalier Universitaire (CHU) de Liège. Until now, images have been distributed using CD-ROMs. When first available, these offered considerable benefits over hard copies: they were faster and safer, took less storage space, and were easy to use. But they were also expensive, inefficient and had to be transported physically from one site to another.

The university hospital decided to create a Portal for patients and referring physicians to provide easy, authorized access to images and reports. Combining Agfa HealthCare and internally developed IT technologies, this solution will ultimately make more and more information accessible, in a secure way, to caregivers outside the hospital.

Keeping the patient at the heart of the solution

Each day, about 1,000 radiology exams are carried out, and 200-300 related reports and CDs created at the multi-site university hospital CHU de Liège. The costs of making these CDs are high: from the investment, maintenance, ink and calibration required for the CD robot, to the staff time needed to burn the CDs, to the purchase of the CDs themselves.

With new security, visualization and sharing technologies mature and available, the radiology department and the IT department agreed that it was time to adopt a new approach – one that was in line with the hospital’s high level, long term CAP 2020 strategy: “the patient is at the heart of strategic planning”. And CHU de Liège turned to its long-time supplier Agfa HealthCare to help create this new approach.

“CD burning technology has become more outdated compared to other innovations in the digital age, and it no longer answers our needs or the needs of the referring physicians and patients we serve,” explains Gregory Canivet, Computer Scientist and RIS/PACS/Cardio Application Manager. In addition to the costs, using CDs results in less secure workflows since CD burning and report printing are very time-consuming. For the patient and referring physician, using CDs isn’t very convenient, and they are easily lost. The referring physician has to store or dispose of the CDs: an additional time, space and cost burden. Finally, using CDs or DVDs is not very environmentally friendly.

Portal: easy, fast access to patient images

“We wanted to replace all CD-burning activity in the radiology department with a Patient & Referral Portal that would give easy, fast access to the patient’s images using the most up-to-date technology,” explains Gregory Canivet. “But it would need to be a solution that could scale up in the future to include more and more information.

“We knew that newer technologies were available that would help us to do more and maximize our existing RIS and PACS investments, such as the XERO zero-footprint viewing technology. We could also develop very secure authentication with e-IDs, which was a prerequisite for launching the Portal.

“Agfa HealthCare was able to offer us a unique technology concept: putting the PACS backend and the XERO Viewer on the same platform. This means we don’t need an extra cache, saving us storage and hardware costs. With a single cache there is no risk of error due to synchronization, while a second cache is also slower. So this unique platform set-up is more effective and faster.”

The XERO technology converts images and content for display in the browser without requiring any client software installation. Very intuitive to use, it includes advanced clinical tools for the referring physician and is based on up-to-date web technology. Importantly, the single platform and direct connection also allow access to the patient’s complete image history, from all five of the hospital’s sites. Each day, about 1,000 radiology exams are carried out, and 200-300 related reports and CDs created at the multi-site university hospital CHU de Liège. The costs of making these CDs are high: from the investment, maintenance, ink and calibration required for the CD robot, to the staff time needed to burn the CDs, to the purchase of the CDs themselves. The project team and Agfa HealthCare worked closely with the University of Liège’s IT department to develop and implement the e-ID based security system, which offers very secure authentication without making login too complicated for users. To access their images, patients need a standard e-card reader, a Belgian electronic ID card and their INAMI code. For referring physicians, their unique identifier (INAMI code) was mapped to their national ID number, so they are automatically identified as such when they connect.

“We did add some restrictions to the system, as our Agfa HealthCare PACS contains a lot of non-radiology images (such as cardiology) which are not currently in the scope of phase 1,” comments Gregory Canivet.

First phase: cost-efficient, safe image access

On 1 June 2015, the first phase of the Patient & Referral Portal was put into production, replacing the CD burning activities in the radiology department with web-based image access. “To begin phase one, we first had to inventory the existing and future workflows,” Gregory Canivet explains. “With CDs, the radiology department secretary has to match each hardcopy report to the CD with the correct X-ray images, and put them together into a single envelope for the referring physician.

The new workflow is much smoother and faster for the secretary and the patient. When a patient has been referred to us, the secretary indicates in the system whether a Portal access code must be generated on the report. She also prints out a unique access code for the patient. The validated report automatically includes the access code, and it is printed on a centralized printer. These reports are then sent to the referring physician either by post or by Mexi a secure messaging system for the GPs. Additional specialists or GPs who need to receive the report and access the images can be easily included in the email.”
Patients and referring physicians receive a link for each request, and they can connect any time they wish to the Portal webpage, which is integrated directly into the hospital’s website. The referring physician can see images and reports, while the patient can see images only; this enables patients to get a proper explanation of images and results from their own doctor. Gregory Canivet continues: “Before launching the Portal, our radiology and IT teams carried out in-depth internal testing. Communication and training for staff ensured a smooth ‘go-live’ at all the CHU de Liège sites simultaneously. From day one, the administrative staff has been able to efficiently use the new system and workflow: the learning curve was very quick.

“The patients have been very positive about the Portal: being able to access, download and share their images makes them feel part of a more transparent process. In the first week, between 10 and 20 patients logged in each day. By week four, that number had reached 100 per day!”

“The referring physicians are also quickly adopting the Portal: in the first four weeks following the launch, 96 had already connected. And even our internal clinicians appreciate the DICOM export functionality, which allows them to use the images for other purposes, such as conference calls, case studies and more.”

Know your FAQs!
With such a large potential target group of patients and referring physicians, it was key to provide them with the information and support they need, without being overwhelmed with phone calls. The project team worked out a series of Frequently Asked Questions (FAQ) available directly on the website. They include technical questions, for example if the page won’t load, while others are about the service: how to access another person’s images, such as a spouse. This system has worked well: only five or six phone calls for assistance were received in the first week, and none in week four.

Next steps: all exams and mobile access
“We have been very pleased with the success of this first phase of the Patient & Referral Portal, and we have quite a few plans for the next phases,” Gregory Canivet continues. “For example, currently the patient’s access code is linked to a single request and a single report. But we might broaden this in the future, to allow patients to see more of their exams from the hospital: e.g., all their X-rays from the past three years. Authorized referring physicians will also eventually have access to the patient’s EMR, including all the images. And image sharing with other hospitals and even with doctors outside of Belgium will be possible. We are also putting in place a service allowing the patients to view all their exams without access codes, using only their electronic ID card.”

The hospital also wants to extend the image viewing to mobile devices, and to extend the functionality to allow patients and referring physicians to book their own appointments – for radiology and other departments. There are still some limitations to solve first, including access for people who don’t have a Belgian electronic ID card, such as children under age 12. Gregory Canivet concludes: “This has been an excellent start to a project that will result in significant changes in how we make information available to caregivers and patients outside the hospital. It thus fits in well with our long-term CAP 2020 plan, which aims to keep the patient firmly at the center of our strategy. This plan runs from enhancing patient care, to creating greater transparency, to providing more patient parking.

The Portal is also complementary to the ‘Réseau de Santé Wallon’, which allows sharing of digitalized images and other patient information across the region of Wallonia. So, not only have we succeeded in our objectives for phase one, but we have taken the first step in a long-term journey towards our ambitious patient care goals.”

* XERO Viewer is not available in Canada.
At the same time, the Azienda Ospedaliera di Perugia decided to implement a patient portal, thus allowing patients access to their diagnostic data. This project is just the latest stage in its transformation of access to and storage of images from its radiology and nuclear medicine services, with the aim of enhancing patient care.

Background
Santa Maria della Misericordia hospital in Perugia, Italy is the largest hospital in the region of Umbria (population 694,762 in 2015), serving residents from within and outside the region (see Figure 1). The hospital has more than 800 beds, and 41,160 patients were hospitalised in 2013. It is a reference centre for the region of Umbria as well as for adjacent regions. It is designated as a Highly Specialized Enterprise (Azienda di Alta Specialità), due to its high level of technology and the specialised professional staff who work there.

Since 2000 the Hospital has used an Agfa HealthCare Patient Archiving and Communication System (PACS) and Radiology Information System (RIS) to optimise the efficient operation of its imaging services. Already in 2006 access to imaging performed by both the Radiology and Nuclear Medicine Departments was made available to all clinical departments in the hospital.

In August 2014 the Azienda Ospedaliera di Perugia and Agfa HealthCare signed an agreement to implement a data centre, including a cloud solution. This solution will make it possible to store data – images, reports, diagnostic results – ECG – from the various hospital departments in the cloud, with a high level of data privacy and security. At the same time, the Azienda Ospedaliera di Perugia decided to deliver patient satisfaction and financial savings.

Delivering patient satisfaction and financial savings

Patient access to images

After opening up access across the hospital, the logical next step was to initiate access to allow patients access to their images. On March 1, 2015 Azienda Ospedaliera di Perugia activated this service, allowing patients remote access to their diagnostic data.

Why did you decide to enable patient access to their imaging information?

We set out to make diagnostic results available to patients via the internet for several reasons. Patients are used to convenient access to information over the internet in their daily life, and we believe that this should not be any different. There are many benefits of making results accessible to patients. Accessing their own diagnostic results is more convenient for patients and their families in terms of time, and it also guards against possible loss of private data by other methods, for example in hard copy such as DVDs, which may be lost and/or get into the wrong hands. Visualisation is possible using numerous devices, and, not least, this method is environmentally friendly, because we are not using resources to burn and distribute DVDs with images.

Why did you choose the Agfa HealthCare solution? What did you see as the advantages?

We chose Agfa HealthCare as our partner for RIS/PACS and hospital image distribution, because we found the solution to be both reliable and user-friendly. The main advantage is that Agfa HealthCare provides us with excellent integration among our different departments.

What were the main challenges?

The principal challenges included guaranteeing the safe storage of data, and protecting against any possible risk of data theft. Another key concern was to promote acceptance by hospital personnel of this change in their work practices. It was important to involve them in the decision-making process.

What was the first step in implementation?

The first step in implementation was to instruct patients on the convenience of using this new service. Specifically, access is much simpler and loss of documents is no longer a risk.

How did you inform patients about the imaging portal? How can patients access the portal?

There were some articles in the local press, which included some practical examples of cases. Also, at the end of each diagnostic test, patients are made aware of the possibility that they can obtain their test results directly from their personal devices.

Is mobile access an advantage? Has the portal increased patient engagement?

Mobile access is available to our patients, and it is highly appreciated. Patients express their appreciation of the fact that their data has been made more accessible, which suggests that this change has allowed them to feel more involved in the medical process.

What are the next steps and future plans?

- Render the complete imaging archive accessible to patients; currently only the latest exams are available for consulting;
- Extend the service to the other hospitals throughout the region of Umbria. This project has been the model to integrate data centres from other hospital sites in the region;
- Make instant messaging available to remind patients of future appointments.

Figure 1. Percentage of patients from regions other than Umbria (light green) Grey: > 20%; Blue: 15% - 20%; Green: 5% - 15%; Grey: < 5%.
Source: Azienda Ospedaliera di Perugia, Annual Report 2013

Figure 3. Number of radiological exams at Santa Maria della Misericordia versus age of patients over the first four months of web-access service, 2015.

For patients who are accustomed to daily use of the internet the portal is more friendly than the classic system comprising paper report and DVDs. For older patients, or those less accustomed to use of the internet, online access is a great effort and they normally prefer the traditional method.

Have you quantified the return on investment (ROI)? For example, the time and money saved by not burning and posting CDs and DVDs, or any other measures?

We have calculated a 10% annual financial savings in terms of spending on the production of CDs and DVDs. Likewise, the number of patients returning to the hospital to pick up their test results has declined, suggesting that they are also saving time and money.

You anticipated a significant impact on emergency care. You have already been realised through having immediate access to patient’s previous imaging?

The hospital of Perugia has the largest emergency structure in the region and the RIS/PACS imaging distribution is set up very well; the data of radiological emergency patients are immediately available within the hospital.

Originally published in Health Management Magazine - Issue 5 - 2015

Figure 2. Web-accessed exams (blue) and total exams available online (red) over the first four months, 2015. The average web-access ratio was 32.4%.

Note: To understand the data we must take in account that in Italy the mean number of families with internet access is 62.7%, whereas only 21.3% of families are internet on a daily basis. Only 36.3% of elderly people have internet access. (Source: Annual report of the Italian National Institute of Statistics – INSTAT 2015).
Driving towards paperless solutions

Hospital Unimed Nordeste drives towards becoming a fully paperless institution with single solution provider Agfa HealthCare, to retain a regional reference for excellence. By adding fully integrated RIS/PACS to existing HIS and CIS, this Brazilian hospital has experienced significant staff efficiency and patient care benefits.

A decade ago, when Hospital Unimed Nordeste was being built in the southern Brazilian state of Rio Grande do Sul, management were clear that they wanted a hospital information system (HIS) and clinical information system (CIS) that would deliver the same dynamism and security the new facility would provide for its patients. The hospital turned to Agfa HealthCare both for its technology that fit the facility’s needs, and for its commitment to developing further capabilities as part of a long-term relationship.

With the successful adoption of the HIS/CIS solution, the hospital then chose to integrate Agfa HealthCare’s Enterprise Imaging suite, as well. This solution provides a picture archiving and communication system (PACS), reporting, advanced image processing and integration of clinical information, all in one unified, sophisticated platform.

Now, the hospital will use its fully integrated Agfa HealthCare solutions to help it reach its long-term goal of using information technology to become a totally paperless environment. This project supports the hospital's strategic plan to retain its top ranking from Brazil's non-governmental medical National Accreditation Organization, and to remain Caxias do Sul's reference for excellence in the medical sector.

Adapting to an evolving healthcare environment

Management of Hospital Unimed Nordeste is seeking new ways to further increase efficiency and control costs. “We are seeing stricter implementation of the legislation governing Brazil’s medical sector. The government is monitoring health plan providers even more closely. There is a big push for quality. This all raises costs, so we increasingly need systems that allow us to control these costs,” says Ivan Venzo, the hospital’s IT Systems & Business Monitor.

Towards the fully digitized hospital

The project for fully digital patient charts by the end of the year will start with a pilot in one of the six in-patient wings. From there it will roll out to the remaining five in-patient wings and the intensive care unit before spreading to the other departments.

Agfa HealthCare has looked after us very well during implementation to enable our professionals to adapt to the new system quickly and smoothly.”

Agfu HealthCare’s in-depth understanding of the customer’s unique needs has been built up over the experiences of implementing the HIS/CIS and RIS/PACS. For the latter in particular, Agfa HealthCare made efforts to fit its own working methodology into the customer’s requirements. Overcoming the challenges together has helped further strengthen the relationship.

“We see constant improvement in the relationship with Agfa HealthCare, especially with regards to delivery,” says Cassini. “Now we get new versions ready to implement into production within two weeks. Issues are resolved quickly. And all this means we can collaborate well when Agfa HealthCare is developing a new solution or when we ask for one.”

Towards the fully digitized hospital

This mission has become all the more necessary as Hospital Unimed Nordeste undergoes a major expansion from its current 120 beds to 400. Already over a million records are produced each year in an institution that will shortly triple in size.

Close coordination to implement the right solutions

A key element to the successful implementation will be close coordination between the hospital and Agfa HealthCare on training. Cassini notes: “A new system requires very strong support for the medical professionals, especially the doctors, who need it to be fast, agile and easy to use. Otherwise, adoption and buy-in will be slow.

Agfa HealthCare has looked after us very well during implementation to enable our professionals to adapt to the new system quickly and smoothly.”

An in-depth understanding of the customer’s unique needs has been built up over the experiences of implementing the HIS/CIS and RIS/PACS. For the latter in particular, Agfa HealthCare made efforts to fit its own working methodology into the customer’s requirements. Overcoming the challenges together has helped further strengthen the relationship.

“We see constant improvement in the relationship with Agfa HealthCare, especially with regards to delivery,” says Cassini. “Now we get new versions ready to implement into production within two weeks. Issues are resolved quickly. And all this means we can collaborate well when Agfa HealthCare is developing a new solution or when we ask for one.”
image sharing in Alsace

With the SIMRAL project, Alsace e-Santé, Agfa HealthCare and Santeos collaborate to create opportunities for regional image sharing in Alsace.

There is a big improvement in sharing images internally, with their own clinical services.

Audits: a blueprint of imaging

To ensure a smooth implementation, Agfa HealthCare first uses its experience and knowledge to conduct a thorough audit of the hospital’s imaging environment, providing a report with findings and recommendations. Once the facility decides to go ahead with the agreed implementation, Agfa HealthCare delivers the PACS, tests the IT system, connects the relevant modalities, integrates them into the PACS and begins production. “So far, about nine audits have been completed, which provided highly useful insights for the hospitals and imaging centers,” comments Tania Messing. “And the implementation of the PACS at pilot site CH de Wissembourg has gone smoothly: there haven’t been any major issues reported. One thing we have learned during this process is that it is very important to not only provide the hospitals with the audit report, but to meet directly with them and go over this, so they can understand the proposal.”

In fact, close and direct collaboration of this kind between the various players in the project is key to the success of a big regional imaging program. For SIMRAL, a number of workgroups and project groups have been set up, and meet regularly.

The workgroups are central to the project and its specifications. “Each has its own ‘theme’: patient consent, sharing, communication, identity monitoring, financial aspects, etc.,” explains Tania Messing. “The members come from the different hospitals and clinics in SIMRAL, and then also include experts in the field.”

Tania Messing shared some of the decisions of the workgroups: “The identity monitoring group determined that when a patient with an INS-C number (national health identity number) goes to two separate healthcare facilities, the system should automatically recognize this as the same person and put the files together. Otherwise, it has to be done manually. Even if an INS-C number can be created for only about 70% of patients, this is still a big time savings, bringing the image record together and supporting the development of a regional file. For patient consent, it was decided to have each patient give consent one time for the entire SIMRAL offer: sharing with doctors, second opinions, etc. And the consent covers all of the patient’s exams. In sharing, we decided that doctors who access images – even from their own healthcare facility – must provide a motive; this is important for traceability.”

Working together on a successful project methodology

In addition to the workgroups, each month the healthcare facility undergoes a review, with the project manager from the hospital/clinic, the Agfa HealthCare and Santeos project managers and the e-Santé Alsace project manager. There is also a monthly meeting of the regional project committee, with all of the project managers from the participating establishments, to give them an overview of the progress of the project. And the regional pilot committee brings together the IT and/or finance directors to make decisions on the points raised by the regional project committee or workgroups.

Designing the methodology was a very much collaborative process, in which Agfa HealthCare and Santeos were full participants. “They have good visibility of what is necessary,” comments Tania Messing. “The availability of their project managers and other team members is critical. Of course, it isn’t only the meetings themselves: you have to prepare for the meeting, then take part in the meeting itself, and afterwards do whatever follow-up is necessary on what was discussed and decided.”

The sharing pilot will test that the portal and platform are easy to use, that they work as expected, and that the time for a user to access a file is very quick – a few seconds at most. “This pilot will also create visibility for the project in the wider community: referring physicians, patients, etc. While the PACS is very important, it is only visible within the hospital itself. We aren’t sure how long this pilot will last: probably through mid-2016. We need to have enough time to get plenty of feedback and to improve the platform. Because if we release it and it still has problems, we can lose the confidence of the users. It is better to take the time to come out with something proven and tested.”

“Good communication will be critical to the project’s overall success,” says Tania Messing. “It is in many ways as important as the technology. The referring physicians must see the added value of this system, since they won’t be receiving additional payment for using it. And the patients as well must see the benefit, and have their concerns answered.”

Tania Messing explains, “Agfa HealthCare’s expertise is very apparent for training: they give advice on how to organize training sessions, how many sessions to foresee, what information to include – it’s a real added value.”
Access to all images, anywhere

In the end, the project will mean big, positive changes for all the stakeholders, she insists: patient care givers can see the entire patient history, even when exams are taken in different facilities, while patients will do fewer duplicate imaging exams, which can potentially reduce their exposure to imaging radiation dose: “fewer exams means less dose,” says Tania Messing.

“It will also mean no more image films and CDs: the patient no longer has to store them at home and remember to bring them to appointments, the hospitals can save money and time, and the clinicians can immediately access everything they need in SIMRAL.” Based on her experiences so far, Tania Messing has some advice for other regions embarking on this type of ambitious project. “First of all, get your workgroups set up before you start the project, so that you have a good framework for your needs. When we started, it wasn’t always clear what was needed. So you need to know where you are going in terms of sharing, etc.: what to share, with whom, in what context, etc.”

Agfa HealthCare and Santeos: Providers offering added value

What’s more, she says you must make sure that the providers you select for the project are capable and competent: “You need providers who really understand how an imaging environment and workflow work, who understand all the software, have a good visibility of the hospital environment itself, and of course have an in-depth understanding of the PACS. They must have the knowledge necessary to understand the issues and questions: without this expertise, I fail to see how they can propose solutions that really meet those needs. You also need a technical interlocutor, who can speak about networks, etc.” According to her, Agfa HealthCare and Santeos have successfully met those requirements.

“Agfa HealthCare and Santeos together had all of the necessary competences for the different aspects of this project. From the beginning, they established a good relationship with us and the SIMRAL members; they are supportive and share their knowledge and advice. They have been very involved in all the workgroups and project groups, working with us in a true collaboration.”

While there is still a lot to do for the upcoming image sharing pilot and the project itself, the successes so far are a good indication of the future of SIMRAL, and the collaboration between Agfa HealthCare, Santeos and e-Santé Alsace to create a regional image sharing service that will offer proven value to all the stakeholders in the region.

The project will mean big, positive changes for all the stakeholders: patient care givers can see the entire patient history, even when exams are taken in different facilities, while patients will do fewer duplicate imaging exams, which can potentially reduce their exposure to imaging radiation dose.

Tania Messing,
Project Manager, SIMRAL

The Agfa HealthCare portfolio for the SIMRAL project comprises the following:

- IMPAX PACS
- IMPAX RIS
- VNA
- XERO Viewer
- IMPAX Master Patient Index
- Single Sign on

*XERO Viewer is not available in Canada.

The Clinical Care Network enables professional healthcare givers to improve their ability to deliver quality care.
Committed to DR innovation

Delivering lower dose through detailed diagnostic imaging
At Agfa HealthCare, we have long recognized the need for a balance between high image quality and the management of dose. With the cesium phosphor technology enhanced and empowered by the gold standard MUSICA image processing software, renowned for delivering diagnostic value images and making it easy to see details, radiologists are potentially able to provide a dose reduction of 50% to 60%*. When allied with the productivity and centralized dose monitoring capabilities of the NX Multi-Modality workation and the PACS Dose Management solution, this combination of solutions delivers a powerful set of tools.

Teamwork that delivers innovation
Of course, we do not work alone in developing new capabilities within this area. Live studies at key healthcare sites across the world are essential to refining and enhancing new and existing solutions, and we work regularly with interested parties to assess the practical application of our solutions. It is this approach that helped lead to the development of the DX-D 100 – our mobile DR solution – and just recently to the introduction of a number of innovations that will make it even easier to operate.

FreeView technology enhancement to our mobile DR solution
When we consider the different market segments – retrofit DR, room DR, and mobile DR – mobile is the fastest growing of the three. Now, with our latest innovation – FreeView technology, which is essentially a telescopic column that the technologist can lower to offer an unobstructed view while driving the system through hospital hallways – we are making the DX-D 100 even more user friendly. FreeView minimizes the risk of accidentally driving into anything – or anyone – en route to the examination. The mechanism it uses requires no battery power, is faster to position, and delivers high reliability when it comes to maintenance and performance.

Committed to delivering new products and solutions
Enhancements to the DX-D 100, however, represent just part of our commitment to our DR solutions portfolio. The DR-600 room includes the latest auto-positioning technology and fully automated tracking. ZeroForce Technology means manual movement of the tubehead in all directions is quick and takes almost zero effort. As part of our value proposition – a key element of our Fast Forward plan – we provide turnkey solution packages covering technology, user training and service, and financing. We have already introduced automated exposure retrofit products that allow us to retrofit any X-ray system from CR or analog to DR within one hour, and we are continuing to add additional forms to our automated exposure technology. We also continue to introduce additional DR rooms to further expand our line of DR solutions.

With these, and forthcoming innovations, we at Agfa HealthCare believe we are signaling clearly our commitment to being a dominant player in DR technology and we will continue to innovate and bring new products and new product lines to achieve that goal.

*Testing with board certified Radiologists has determined that Cesium Bromide (CR) and Cesium Iodide (DR) Detectors when used with MUSICA processing can provide dose reductions between 50 to 60% when compared to traditional Barium Fluoro Bromide CR systems. Contact Agfa for more details.

Digital Radiography (DR) advantages by the numbers
Empower your X-ray department

- 67% more exams per day for increased productivity
- 8.16 minutes time savings on average per exam
- 50% up to 50% dose reduction
- 9 more patients per day
- 3,285 more patients per year
- 100% Full Time Equivalent gain, the number of technologists required per exam is reduced from 2 to 1
Fast track move from CR to DR delivers pediatric excellence

Dr. Raymond Sze, Chairman of Radiology, Laurie Hogan, Radiology Director and Sanya Tyler, Operational Manager for Diagnostic Services, Children’s National Health System, Washington DC, explain how the DX-D 600 and the DX-D 100 solutions are helping benefit both pediatric patients and specialist staff.

Meeting the needs of children into adulthood

In selecting its DR solutions, the team had to consider not only the key benefits offered by the solutions but also what would best answer the needs of the diverse range of patients it serves. Says Laurie Hogan, Radiology Director, “Situated as we are in an inner city location in the heart of the capital, we have a diverse patient profile; from Medicaid patients on the lower socio-economic scale to the children of international diplomats. And in some cases we are still treating into their teenage years and adulthood those that came to us as children. Any solution needed to be capable of being flexible enough to handle that.”

Staff at the heart of successful six month program

“The move from CR to DR was something that we were all very excited about, however, we chose to make the transition in a very short time frame – just six months. We also took the opportunity to increase our capabilities at the same time – going from 90% CR to 95% DR – so this was a challenging time for the staff.

“Originally, our CR solutions comprised both portable and in-room CR with a digitizer on each unit in the hospital. We also had two units in our main departments; one in ER and one in the orthopedic clinic, so the move from CR to DR was no small feat. We had three DR providers under consideration for the new solution. We wanted to limit as much staff anxiety as possible when making the transition, so the staff was heavily involved in the demos and being able to test the solutions for their service. That played a really big role in our selecting the Agfa HealthCare solution. Now, despite the tight timelines, we have two full DX-D 600 radiology rooms and six DX-D 100 mobile units that are up and running efficiently.” The choice of DX-D 100 was driven by the need to provide easy access to the patient at the bedside while still delivering high image quality at the lowest dose reasonably achievable.

Improving quality and delivery of patient care

“Children don’t mean to be uncooperative they just don’t know how to cooperate”, says Sanya Tyler, Operational Manager for Diagnostic Services. “In addition, the hospital environment can make them very anxious. With DX-D 100, we are able to get images more quickly, assess their accuracy at bedside in real-time and speed up the whole process. In some cases we need to take fewer images due to the quality of the images provided, and with the dose monitoring software we verify that we are staying well within the prescribed dose allowances for our young patients.”

The sophisticated imaging capabilities offered by the DX-D 100 improved image quality and the potential to use a lower dose. “When a surgeon asked us to show him the location of his line, it stood up like a lamp post!” says Sanya. The DX-D 100 also provides the ability to generate detailed charts and graphs on technical and dose information that highlight where quality can be improved.

Imaging workflow time reduced by 61%

Recent comparisons undertaken at Children’s National’s between the old CR unit and the DX-D 100 show that the transition is already paying large dividends at the facility. Explains Sanya, “Before we took out our old CR units, we timed how long it took to do an exam.

Children’s National is a dedicated pediatric center of excellence, housing 313 beds, over 100 of which are for critical care patients. With over 90,000 emergency room visits each year and over 125,000 procedures across all modalities, it is constantly striving to improve its service to young patients. When it decided to migrate its capabilities from computed radiography (CR) to direct radiography (DR), it required both careful planning and a deep commitment from its team of 22 radiologists.

“ You know you are doing something right when you’re getting stopped in the hallway going to the cafeteria to be told how much someone really loves the new solution. It is all really gratifying for the team!”

Sanya Tyler,
Operational Manager for Diagnostic Services,
Children’s National Health System, Washington DC

“The move from CR to DR was something that we were all very excited about.”

Laurie Hogan,
Radiology Director, Children’s National Health System, Washington DC
With its ongoing program of innovation, Agfa HealthCare is signalling clearly its commitment to being a dominant player in DR technology.

Dr. Zee, Chief of Radiology, Children’s National Health System, Washington DC

Today, with the DR solutions, we are able to deliver a more streamlined efficient and effective solution to our colleagues.

Direct Radiography: DX-D 600

Key benefits:
- Two-detector, high-productivity, high throughput general radiography system with three configuration options: manual, semi-automatic, to fully-automatic.
- Cesium iodide DR detector technology, giving significant patient dose reduction potential.
- Specially-tuned MUSICA for gold-standard image processing, and NX workstation, for smoother workflow.
- DICOM connectivity to PACS, HIS/RIS.
- Can be integrated with our CR systems, bundling the high quality and flexibility strengths of each technology.

It comprised four steps; the time it took to take the unit to the room, image the patient, take the cassette down to one of the scanners to process the information and close the exam to complete it. Once we had the new DR units we did the same thing and found that we reduced the process to two steps with a time reduction of 61%. The result is that we are able to see 3-4 times the amount of patients that we did with our CR units.

And while it is one thing to be given anticipated improvement figures when you are in the sales process, it is not, as Sanya explains, until you experience them yourself that you really appreciate the benefits of these new technologies: “We expected the new equipment to be faster and more efficient, but I am still shocked at the 61% improvement in patient turnaround times. We are performing scans in such a way that allow us to finish an hour and 50 minutes early.”

Dr. Sze, the chief of Radiology adds; “Before, with the CR solution, many of the consulting physicians found the old workflow very frustrating. We would take an image, have to wait 15 minutes for it to process, then have to wait again for it to be updated. When the image did finally come through, the physician would often be at a different location. Today, with the DR solutions, we are able to deliver a more streamlined efficient and effective solution to our colleagues – of particular importance when dealing with ER and critical care.”

The DX-D 600 in-room exams have also delivered impressive times savings. “The DX-D 600 is so accurate and fast that the wait time for patients was reduced by over 70%,” says Sanya. “We are able to see images more quickly, and transmit them more quickly so that by the time we get the patient of the table the images are already being read by the radiologist!”

Sanya concludes by adding: “You know you are doing something right when you’re getting stopped in the hallway going to the cafeteria to be told how much someone really loves the new solution. It is all really gratifying for the team!”
Dose reduction has become a very compelling story; all radiologists need to be cognitive of patient dose and aware that patients are becoming better informed and will increasingly ask questions.

With more than 60 years' experience in the field of radiology, Zwanger-Pesiri is one of the largest non-hospital based radiology practices in the US today. Committed to investing in only the latest technology, its 12 Long Island sites serve 2000 patients a day. Its staff of 60 radiologists comprises a number of specialties including Vascular Imaging, Interventional Radiology, Neuroradiology, Musculoskeletal Imaging, Abdominal Radiology, Cardiovascular Radiology and Breast Imaging.

With such a diverse and large patient base and so many radiologists to manage, workflow is a key consideration, which is why the DX-D 300 DR system, with its Cesium Iodide detector technology and immediate image availability, was its solution of choice.

Workflow rather than dose reduction the initial driver

“We installed our first Agfa HealthCare DR system, the DX-D 300, in our Elmont site in August of 2013,” says Dr. Mendelsohn. “We chose it primarily because the workflow was so efficient, it was very easy for the technologists to set up and the images were quickly available. At the time, Agfa HealthCare was telling me about its dose reduction capabilities, but, to be frank, I didn’t really believe them. But they kept on telling me about it so we decided to set up a study to compare the results.

“We had two competitive units from other suppliers available on the same site, so that provided the ideal opportunity to test out what we were being told.”

The study parameters

The study sought to determine if the DX-D 300 required less exposure and patient dose versus two other systems in use at Zwanger-Pesiri Radiology. It also compared the doses used to those used for similar examinations in other facilities, based on available published studies). The study comprised PA Chest, Lateral Skull and AP Hand exposures taken on phantoms used to simulate patient exposures. In each case the phantom was positioned just as a patient would be and the standard exposure made.

Average dose reductions of 41% achieved

The results showed that while the amount varied depending on the type of exam, the average dose on most was 41% lower with the Agfa HealthCare system versus the other systems – an admittedly unexpected result for Zwanger-Pesiri.

The success of the first DX-D 300 has led to the purchase of another five units, because, as Dr. Mendelsohn says, “It’s a no brainer. We simply plug and play. They are robust and reliable, with little down time and are competitively priced. Plus, you get the dose reduction.”

Dose reduction has become a compelling story

And dose reduction is a subject on which Dr. Mendelsohn believes patients are becoming increasingly well-informed.

“However you look at it, radiation is not good but we are in global denial about it. Dose reduction has become a very compelling story; all radiologists need to be cognitive of patient dose and aware that patients are becoming better informed and will increasingly ask questions. But, change will ultimately be driven from the grass roots rather than by the radiologists themselves because our financial model does not currently place a premium on it.”

Sufficiently concerned was Dr. Mendelsohn over the need to reduce dose that six years ago he tried an experiment in dose reduction himself at the Zwanger-Pesiri sites. “As we got new CT equipment in, little by little we began lowering the radiation dose used in our studies. We didn’t tell anyone we were doing it and gradually the images became grainier year on year. Finally, it got to the point where the radiologists began to comment on it so we asked them: ‘Is it still diagnostic quality?’ and their answer was ‘yes’. So, while radiologists want their images to be crisp and clear, they don’t necessarily need to be such high dose to fulfil their role as a diagnostic tool.”

The best of both worlds

Dr. Mendelsohn does acknowledge, however, that with the advent of Cesium Iodide phosphor detectors and MUSICA imaging processing software used as part of the DX-D 300 solutions, Zwanger-Pesiri is now able to achieve the best of both worlds – significant dose reduction while still achieving the high quality images that radiologists have come to expect and are more comfortable working with.

And MUSICA is software that has also proven its worth to both Jeanine Santorelli, Zwanger-Pesiri’s Chief Technical Officer and Lead X-ray Technologist Mark Morales, who works out of Zwanger-Pesiri’s Patchogue site.

Says Dr. Mendelsohn, “Shush to my surprise, the DX-D 300 was able to provide high image quality at a lower dose. For me, that’s great in one way and possibly bad in another. It’s good because we can promote our commitment to dose reduction to our patients and now have the figures to prove it, but,” he adds laughingly, “it could possibly be bad because Agfa HealthCare will want to raise the price we pay! Although, to be honest, I would be prepared to pay a little more for the level of dose reduction we achieved. Agfa HealthCare has done a really wonderful job with it.”

With so many sites and such a large population to serve, our biggest challenge is one of workflow,” says Jeanine. “To meet demand, we have a lot of teams that rotate across our sites, so ease of use when switching between solutions is paramount.”

Mark agrees: “The capabilities created by Agfa HealthCare’s NX workstation with MUSICA software – the fact that it’s user-friendly, easy to use when correcting errors, has a fairly standardized intuitive user interface and self-explanatory color coded dose bar, as well as its dose reduction capabilities – means that we can get the best image in the shortest possible time. It’s what I like to call ‘set it and forget it’ – you hit a button and it walks you through what you need to do. It’s a lot less cumbersome than others I have used.

“Add to that that any time you can get a cassette out of a technologist’s hands you up your productivity and with the DX-D 300 our workflow has sped up. The patient has a positive experience and leaves happy.”

And a happy patient is Zwanger-Pesiri’s ultimate aim, as Jeanine explains. “With the advent of Google and other information sites, patients are becoming more knowledgeable and more prepared to question their dose exposure. It’s great to be able to say that we are using the lowest possible dose for their images. With the automation and accuracy offered by the DX-D 300 with Cesium Iodide detectors and MUSICA, we can spend them through the process and make it easier for referers to access their information.”

“Ultimately, it’s all about delivering better quality care for our patients.”
We chose the DR 400 because it offers a complete, scalable DR solution that is able to grow and develop as our requirements change. This was of critical importance to us because to be able to promote ourselves to the corporate sector to attract the funding we need, we have to continually upgrade our infrastructure and services to deliver the most advanced medical capabilities. We are one of the very few medical colleges in our state to have super specialty courses like plastic surgery, cardiology, urology, pediatrics, radiology and nephrology and were recently given A+ Accreditation from the National Assessment and Accreditation council – a very prestigious accreditation. Providing students with access to leading technologies and capabilities, such as those offered by the DR 400, is pivotal to that achievement.

Professor Dr. Pravin Suryawanshi, 
Mahatma Gandhi Mission, Aurangabad, India

What made the DR upgrade a no-brainer for us was the marginal cost increase in monthly payments for the adoption of significantly superb DR technology as compared to what we were paying previously for ongoing maintenance of our CR technologies.

Roland Rhynus, 
CRA, Executive Director of Radiology, Loma Linda University Medical Center, Loma Linda, California, USA

Driving the DR evolution

Installing CR solutions for all Trust radiology departments and four DR rooms for Derriford Hospital’s A&E department, was an important imaging project for us. Following the installations we saw immediate benefits, with the quality of the images and the ability to use CsI detectors to provide the potential for us to reduce patient dose.

Jan Davies, 
Superintendent Radiographer at Plymouth Hospitals NHS Trust, UK

When evaluating products to upgrade two of our X-ray rooms to DR, Agfa Healthcare’s DX-D 600 was a clearly superior choice for our facility due to its impressive image quality. We expect the implementation of the DX-D 600s to be a smooth transition as our radiology technologists are already familiar with and prefer Agfa HealthCare’s technology for its exceptional image quality and user friendly MUSICA workstation interface.

Henry Sinn, 
Director of Medical Imaging, Sunnybrook Health Sciences Centre, Ontario, Canada

Agfa HealthCare’s DR solutions will allow us to offer faster speed of service for our patients, with less downtime. So they will face shorter waits and less stress. This means not only cost savings for us, but the ability to handle more patients – a good equation for success! What’s more, implementing these DR solutions will help us attract patients and referring physicians, because it supports our image as a top-of-the-line clinic offering state-of-the-art technology.

Dr. Luis Felipe Uriza Carrasco, 
Head Director of Radiology, University Hospital San Ignacio, Bogotá, Colombia

The emergency unit handles a large number of patients, carrying out around 200 exams each day. Before, we would get patient queues for imaging, which affects care quality. We added another person to register data, but the backlogs continued. With our previous equipment, each exam took five minutes; now, with the DX-D Retrofit, an exam is complete in just one minute. When you multiply that time savings by 200 daily exams, the improvement is considerable.

Dr. Luis Felipe Uriza Carrasco, 
Head Director of Radiology, University Hospital San Ignacio, Bogotá, Colombia

Agfa HealthCare’s DR solutions will allow us to offer faster speed of service for our patients, with less downtime. So they will face shorter waits and less stress. This means not only cost savings for us, but the ability to handle more patients – a good equation for success! What’s more, implementing these DR solutions will help us attract patients and referring physicians, because it supports our image as a top-of-the-line clinic offering state-of-the-art technology.

Dr. Fabrizio Lamberti Castronuovo, 
owner and medical director of the radiology department, Istituto Clinico, Reggio Calabria, Italy
Since opening its doors in 2002, the Hospital e Maternidade SinoBrasileiro in Osasco – a mixed-income satellite city of São Paulo – has heavily invested in new technology to support its operations and delivery of patient care. In fact, it has become a trailblazer in adopting new systems in Brazil, often even before better-known institutions in the center of São Paulo itself.

The 145-bed hospital admits an average of 600 patients each month, while 20,000 people are seen by its accident and emergency department. Patients are cared for by the hospital’s 250 doctors, as well as by the several thousand consultants registered with the hospital to use its facilities.

By implementing Agfa HealthCare’s DR Retrofit direct radiography solution, the hospital can optimize the experience and care of the patients; provide a smoother, more efficient workflow for staff and consultants; and enhance the hospital’s productivity and financial results.

A reference center of medical excellence

When siblings Dr. Ko Chia Yin and Dr. Ko Chia Lin, and her husband Dr. Yeh Lun Chun, founded the Hospital e Maternidade SinoBrasileiro in Osasco, their goal was to become a reference in medical excellence for the entire western region of Greater São Paulo – an area in which increasing prosperity was not being matched by improved social infrastructure.

Moving to direct digital radiography (DR) in 2014 was a continuation of the hospital’s focus on being a technology leader. With DR benefits including potential patient dose reduction, high image quality, increased productivity and optimized patient care, the decision of which solution to implement was key. “Our goal was to improve productivity and profitability. It is important for us to invest in technology, but we must see a return on that investment,” says Dr. Ko Chia Lin, the hospital’s Administrative Superintendent.

To support it in going fully digital with DR, the hospital turned to Agfa HealthCare, its supplier for computed radiography (CR) solutions. This earlier experience gave the hospital confidence in Agfa HealthCare’s ability to deliver not only the desired technology but ongoing support after the installation. With the DR Retrofit, the hospital could use the existing CR solutions to upgrade to the benefits of DR, while maximizing the use of these investments.

In the few months since implementing the DR Retrofit, the hospital has seen excellent indications that its goals for the DR technology are being reached: optimized patient experience, increased staff agility for handling patients, and improved productivity that the hospital’s administrators say will improve its financial returns.

Reduced patient dose and greater image quality

The DR Retrofit provided the hospital with a quick, simple and non-invasive way to go direct digital. Its easy installation ensured that it would be up and running in next to no time, very cost-effectively. It offered a choice of detectors, plus the NX workflow, MUSICA intelligent imaging processing software and seamless connectivity. SinoBrasileiro opted for the DR Retrofit with a cesium iodide detector, which offers the potential for improved image quality with a lower radiation dose. “This was an important advantage to us: the patient dose can be reduced, for greater patient safety, while at the same time the high-quality imaging allows for more informed decisions,” says Dr. Ko Chia Yin, the hospital’s Technology and Diagnostics Director.

The installation and adoption of the DR Retrofit, at the end of 2014, went very smoothly, he says. “There was minimal disruption to our operations, and Agfa HealthCare provided training for the radiology technicians. But as we were already used to working with the Agfa HealthCare CR system, it was really easy to transition to the DR system,” he explains. Less waiting time means greater productivity,

Dr. Ko Chia Lin, Administrative Superintendent, Hospital e Maternidade SinoBrasileiro, Osasco, São Paulo, Brazil

Our goal was to improve productivity and profitability. It is important for us to invest in technology, but we must see a return on that investment.
There was minimal disruption to our operations, and Agfa HealthCare provided training for the radiology technicians. But as we were already used to working with the Agfa HealthCare CR system, it was really very easy to transition to DR.

Dr. Ko Chia Lin, Administrative Superintendent, Hospital e Maternidade SinoBrasileiro, Osasco, São Paulo, Brazil

And better patient experience While it is too early to provide data on the improvements since adopting the DR Retrofit, the administrators and staff are already seeing significant improvements. They note that the reduced waiting time means patients now spend less time in the imaging department, increasing the department’s throughput while also improving the patients’ experience. In the busy accident and emergency department, which sees 20,000 patients a month, this greater productivity is especially important, as it both decreases the patient’s waiting time for an X-ray to be taken, and speeds up the availability of that X-ray to the medical staff.

All the digital images, which are stored on a central server, can be accessed immediately by the staff, whether in the hospital or offsite: an important advantage for the doctors who use the hospital’s facilities but see patients in consulting rooms elsewhere. Dr. Ko Chia Lin comments, “For an administrator, productivity becomes profitability, so both the improved patient experience and the boost in productivity are key.”

A supportive partner for life
As a long-time Agfa HealthCare customer, Hospital e Maternidade SinoBrasileiro was already familiar with Agfa HealthCare’s commitment to its customer relationships and after-sales service. “After-sales service is crucial in our decision making,” says Dr. Lin. “A great price or even a great machine is no use if, when you need the manufacturer one or two years later, they have disappeared.”

With its quality care and infrastructure, supported by its technology investments, SinoBrasileiro enjoys a growing reputation, not only in Osasco, but increasingly across the greater São Paulo region. It is also proud to be an Agfa HealthCare demo site, further supporting its image as a ‘trailblazing’ hospital.

At the 1st Healthcare Business forum, which took place in São Paulo in October 2014, Hospital e Maternidade SinoBrasileiro received an ‘award of excellence’. On this occasion, José Laska, Business Group Manager Agfa HealthCare Brazil, also presented Ko Chia Lin, Administrative superintendent of the hospital, with a congratulatory plaque recognizing the hospital for being the first Brazilian hospital to purchase a DX Retrofit solution.

Agfa HealthCare’s innovative image processing software, MUSICA, has set the golden standard.

DX-D Retrofit
Key benefits
• All the workflow and image quality benefits of Direct Radiography
• Maximizes your existing imaging investment
• Easy installation, quickly up and running
• Choice of Cesium Iodide (CsI) or Gadolinium Oxy-Sulphide (GOS) detector conversion screens
• Potential dose reduction
• Specialty-tuned MUSICA, for gold standard image processing and NX workstation for smoother workflow
• Connectivity to PACS, HIS/RIS and imagers

© Shutterstock
High quality images
The practice at JoHo deals with a wide variety of patients. Some are transferred from the clinic as inpatients, others may be in-house outpatients, come from the Medicum clinic or be external referrals. Challengingly, on a day-to-day basis, there is no way to forecast how many patients radiology must handle. Bojan Gajic, the lead technologist, explains why: “The patients are registered on the hospital’s Medicum, but the doctors don’t know whether they need X-ray exams or whether X-rays are already available. That is only determined when the patient is sitting in the doctor’s office. If new images are required, we have to make them — and as quickly as possible, since the patients sometimes travel hundreds of kilometers and have waited a long time for an appointment with an expert, such as an orthopedic or spinal surgeon.”

When working with computed radiography (CR), often six to eight exposures had to be made in a short time. “We need fast imaging with good image quality for our diagnostic radiography,” says Liebisch. “This makes up well over half of all our exams.”

Switching to DR has lightened this load, minimizing waiting times and improving the service for patients and referrers alike. “DR also gives us a smoother, faster workflow, as we no longer need to read the image plates,” Gajic adds.

7.5% more X-ray exams
The success of the DR introduction is clear from the improved performance figures. “With the same number of staff, we can perform 7.5 percent more X-ray exams than with CR,” Liebisch adds. “This primarily to the two ceiling-suspended DR rooms.” Jörg-Uwe Liebisch calculates.

Bojan Gajic describes how automated workflows speed up patient throughput: “Before, we had to set the appropriate exposure and protocol values, overviews and distances between the X-ray tubes, for each examination. It was a lot of work. Now, the patient is registered in the radiology information system (RIS) and the type of exam, such as shoulder in two planes, is input at the same time. The DR system automatically selects the exposure parameters using preprogrammed codes. Then my colleagues only have to confirm, or, in exceptional cases — such as a particularly heavy patient — manually adjust them. We can quickly position and then X-ray the patient, so we gain a lot of time during each exam.”

Fast and reliable
The faster workflow means the radiologist receives the radiographic images more quickly, allowing them to move on to diagnosis. The technologist briefly checks the exposure, edits if necessary and then sends it to the picture archiving and communication system (PACS). By comparing the radiation dose with the reference values, Bojan Gajic can carry out continuous quality control. And as the examination parameters are stored, dose values do not need to be adjusted manually. “This is a huge benefit for us.”

For orthopedic examinations, the technologist uses Agfa HealthCare’s Full Leg Full Spine (FLFS) software. It automatically and completely integrates frames from the spine and legs into a single exposure. “We do up to 10 to 15 long-leg radiographs every day. Before, we had to expose and read three image plates and then manually integrate the images. Automation makes FLFS much easier.”

Dr. Rinast also finds the reliability of the system particularly important: “When the waiting room is full and we can’t take X-rays because the system isn’t functioning, we have a problem. So a fast and very reliable system is a necessity.”

Consistent operation with a simpler user interface
The RNS professional partnership made its decision to go fully digital with Agfa HealthCare after a thorough exploration of the market. In addition to the points already mentioned, one deciding factor for Dr. Rinast was ease of use: “The staff were already familiar with the user interface on the NX workstation from the CR systems, so they didn’t need to get used to a new one. The technologists should be able to work as optimally as possible, and in this respect having a similar user interface on all systems is a great advantage.”

This ease of use supports his own work, as well. “In addition to the DR X-ray room, we also have a DX-G and a DX-M digitizer. So I get the same impression of an image for all exposures, regardless of how they were created, because they have been optimized with the same image editing software. This makes diagnosis more efficient.”

Simple and fast workflow
For the RNS practice, the equipment’s ease of use is crucial. “The patients are registered in the radiology information system (RIS) and the type of exam, such as shoulder in two planes, is input at the same time. The DR system automatically selects the exposure parameters using preprogrammed codes. Then my colleagues only have to confirm, or, in exceptional cases — such as a particularly heavy patient — manually adjust them. We can quickly position and then X-ray the patient, so we gain a lot of time during each exam.”

The right service and quality
From an economic perspective as well, the DX-D 600 offered the best alternative, as Jörg-Uwe Liebisch shows: “Sometimes, the ‘best’ technology, according to the doctors or technologists, is also the most expensive. This time we found a solution that is best both medically and economically. And it’s not only for imaging quality, but also reliability and service. We cannot afford to have a system out-of-order for days. Agfa HealthCare gives us security in our investment.”

The two ceiling-suspended DR rooms have continued to fulfill all expectations, as Dr. Rinast summarises: “The image quality is convincing, even though we were already used to high quality with the needle crystal detector. We were able to reduce the radiation dose gradually by about 20 percent.”

The RNS professional partnership made its decision to go fully digital with Agfa HealthCare after a thorough exploration of the market. In addition to the points already mentioned, one deciding factor for Dr. Rinast was ease of use: “The staff were already familiar with the user interface on the NX workstation from the CR systems, so they didn’t need to get used to a new one. The technologists should be able to work as optimally as possible, and in this respect having a similar user interface on all systems is a great advantage.”

This ease of use supports his own work, as well. “In addition to the DR X-ray room, we also have a DX-G and a DX-M digitizer. So I get the same impression of an image for all exposures, regardless of how they were created, because they have been optimized with the same image editing software. This makes diagnosis more efficient.”

Simple and fast workflow
For the RNS practice, the equipment’s ease of use is crucial. “The patients are registered in the radiology information system (RIS) and the type of exam, such as shoulder in two planes, is input at the same time. The DR system automatically selects the exposure parameters using preprogrammed codes. Then my colleagues only have to confirm, or, in exceptional cases — such as a particularly heavy patient — manually adjust them. We can quickly position and then X-ray the patient, so we gain a lot of time during each exam.”

The right service and quality
From an economic perspective as well, the DX-D 600 offered the best alternative, as Jörg-Uwe Liebisch shows: “Sometimes, the ‘best’ technology, according to the doctors or technologists, is also the most expensive. This time we found a solution that is best both medically and economically. And it’s not only for imaging quality, but also reliability and service. We cannot afford to have a system out-of-order for days. Agfa HealthCare gives us security in our investment.”

The two ceiling-suspended DR rooms have continued to fulfill all expectations, as Dr. Rinast summarises: “The image quality is convincing, even though we were already used to high quality with the needle crystal detector. We were able to reduce the radiation dose gradually by about 20 percent, which means we are significantly below the reference values. The MUSICA image processing software plays a key role in this.”

He concludes, “Ultimately, as long as our referrers are happy, we will continue along this route.”
Global Services

At your service

How our Services team is helping customers enjoy maximum benefit and return on investment on their information systems solutions and imaging equipment.

In today’s high pressure environment, where you are increasingly being challenged to provide more capability for less funding, Agfa HealthCare’s Services team helps manage the people, processes and technologies that enable you to meet your targets and goals.

By enabling you to outsource, in whole or part, your IT systems, infrastructure, and equipment, both on-site and remotely, we empower you to focus your attention on your core business – your patients. With expertise in all key services – managed services, investments, Software-as-a-Service (SaaS), Pay-per-use, implementation support, customizing, project management and training – we enable you to enjoy efficient and consistent delivery, providing peace of mind.

Delivered by knowledgeable and experienced professionals

Our Services solutions rely heavily on the experience and knowledge of our professionals capable of providing a full suite of services in the technical, functional and management aspects of your businesses. Provided by our team of outstanding consultants – each of whom has a medical and/or IT background and follows a training program that is continually updated – Agfa HealthCare’s Services deliver high-quality solutions tailored to your individual needs.

Harnessing the power of global experience

As a global company, we gather knowledge and experience in hospitals and from customer sites around the world. We share this knowledge and experience with colleagues throughout the organization, enabling you to benefit from lessons learned and solutions developed elsewhere.

Working, as we do, on multiple sites across the world, we are able to learn more and develop solutions to help you reduce costs, increase efficiency, and enhance the delivery of patient care. Through the use of the same support platform, we are able to assure the best person for each service need is easily accessible as and when required. Our focus is not, however, always on fixing issues once they have occurred. The introduction of our Global Remote Incident Prevention (GRIP) services is all about helping prevent incidents rather than addressing those that have already presented themselves.

Preparing you for the future

Our focus on Innovation in Service also means we are actively developing new lines of service and specific offerings, to help you address both present and future challenges. Two key examples of this are in our Remote and Managed Services portfolios. With the combined challenges of constrained finances and the requirement of quality, more and more ‘remote’ services, such as remote monitoring tool, remote deployment tool, and beyond, will become crucial. Managed Services are also becoming increasingly vital as customers re-focus themselves on their key value areas.

These are just two areas in which we are committed to enhancing our offering to provide a complete and comprehensive solution portfolio that will meet your needs both now, and into the future.
Managed Services free up capacity for other tasks

With Agfa Managed Services, we are assured that our systems will operate smoothly 24 hours a day, seven days a week without being dependent on internal resources.

Frank Becker, IT Manager, Stiftung der Cellitinnen zur heiligen Maria, Cologne, Germany

One-stop IT for hospital-wide processes

Stiftung der Cellitinnen operates eight hospitals, three in Wuppertal and five in Cologne. “There are historical reasons for this situation,” explains Becker. “It all started with the Heilig Geist-Krankenhaus in Cologne. This was gradually joined by the Vinzenz-Krankenhaus, the Franziskus-Hospital and the Marien-Hospital, followed by the three hospitals in Wuppertal in 2009.” Today they are all networked with one another and the central data center. The IT systems are managed by a department of 35 people, with two on site at each hospital.

In 2009 and 2010, after the Wuppertal hospitals joined the group, the company developed a master plan which envisaged that each hospital would serve a particular district and develop individual competencies. At the same time, cooperation within the group was reinforced. “We wanted a shared hospital information system that would allow us to process and evaluate all information centrally no matter where it was created,” Becker explains. The central evaluation of information is vital for company-wide controlling.

Today, all eight hospitals use ORBIS® HIS, ORBIS® RIS, and the documentation management system HYDMEDEA++ from Agfa HealthCare. The first of them chose to switch to these solutions in 2000, the key factors being the scope of the solutions and the service provider’s solid approach to planning for the future.

A clearly defined service level agreement was an essential foundation for the smooth operation of the solutions from the very beginning. Becker recalls: “We defined availability guarantees and failure scenarios that would result in fines for Agfa HealthCare if the agreed standards were not delivered. I say ‘would’ because this scenario has never arisen.”

Procuring specialist knowledge with managed services

This service level agreement was the preliminary to the service package that Stiftung der Cellitinnen now uses, Agfa Managed Services (AMS). “With Agfa Managed Services, we are assured that our Agfa HealthCare systems will operate smoothly 24 hours a day, seven days a week without being dependent on internal resources,” says Becker. Although the IT department has a sufficient number of highly qualified staff, specialists are not available for every single solution. “The world of hospital IT is now so complex – virtual systems and archives, various databases, a wide range of information systems – that we can’t possibly have all the specialists know-how we need to keep everything running smoothly. That’s why we decided to outsource the management of all the systems supplied by Agfa HealthCare,” he continues. “Agfa HealthCare accepted a major responsibility toward the organization, which it delivers diligently and conscientiously.”

What exactly is involved in supporting 24/7 operation? First and foremost, it means proactively monitoring the systems to resolve issues before they develop into problems. This assures that the systems are available at a particular time and users only have to wait a defined amount of time for an application. Both the hardware and the software are kept updated to maintain a high level of performance.

Managed services allows IT team to take on new tasks

The clear service concept benefits the IT department, for example in terms of internal communication. “If a user is experiencing a problem we can predict fairly accurately when it will be resolved. This creates a level of certainty for both parties and we have no need to worry because we leave it to the service provider’s own specialists. As well as monitoring they also carry out the necessary maintenance, apply new patches, and not least, maintain orderly documentation,” says Becker.

The managed services concept also helps to counter the growing lack of trained IT specialists, who tend to gravitate toward jobs in industry rather than healthcare due to the higher salaries.

To remain attractive as an employer, in 2012 Stiftung der Cellitinnen started to reorganize its IT department, changing the focus from technical service provider to advisory service for the departments and users. “Increasingly, we are taking care of the operational platform rather than the technical one,” says Becker. As a result, the employee profile is changing. Employees must be able to give heads of department in the hospital the necessary ORBIS support in response to organizational challenges. This demands an in-depth knowledge of clinical processes as well as software systems. “AMS has also given us the extra time to train our team. This is an essential part of becoming a manager who can help the process to work.”

How do you achieve this? Stiftung der Cellitinnen attaches a lot of importance to ongoing training, both internal and external, and recruits staff with the right skills and knowledge. But Becker also believes that he himself has an important role to play in the transformation process: “Like all managers I need to lead by example, put the new structures into practice and show others how they work, while encouraging individual strengths. Then a reorientation of this type can succeed.”

Expanding managed services to rise to new challenges

To continue establishing this reorientation and devote more time and energy to users and processes, Stiftung der Cellitinnen plans to outsource more systems and tasks with managed services. The main focus this time is on IT security, primarily protection against unauthorized access to data from outside and the prevention of data loss. The IT manager is already thinking ahead to the next level of digitization, namely the mobilization of information systems and the necessary security infrastructure.

At present, a new agreement between service providers and financial supporters is presenting the Cellitinnen with new challenges. The agreement says that in disputed cases that are examined by the health insurance company’s medical service, the necessary documents must be made available in electronic form within four weeks. This is a classic case for the new type of process consultant, as Frank Becker agrees: “It’s our job to manage the information systems – from HYDMEDEA to ORBIS – in such a way that the medical controlling department can do its job.”

Another goal is to gradually improve the usage of IT systems. “We already have a powerful tool in ORBIS HIS, but at the moment we are only using about 50% of its potential. If we can increase this we can significantly improve efficiency on the wards and in the individual hospitals,” says Becker.

At present, a new agreement between service providers and financial supporters is presenting the Cellitinnen with new challenges. The agreement says that in disputed cases that are examined by the health insurance company’s medical service, the necessary documents must be made available in electronic form within four weeks. This is a classic case for the new type of process consultant, as Frank Becker agrees: “It’s our job to manage the information systems – from HYDMEDEA to ORBIS – in such a way that the medical controlling department can do its job.”

* ORBIS is not available in Canada and the U.S.
** HYDMEDEA is not available in the U.S.

Frank Becker, IT Manager at Hospitalvereinigung St. Marien in Cologne, is sure of one thing: “Without IT, we simply couldn’t do our job. If we shut all the systems down we could only treat emergency patients – regular operations would grind to a halt.” This, he says, is why the awareness of the value of IT to the company has changed. Today, the focus is less on scope of functionality – although this takes high priority for clinical users – and more on reliability and availability.

To safeguard these, healthcare company Stiftung der Cellitinnen opted for managed services: The supporting organization procures the hardware and software, which are then operated by Agfa HealthCare in a rented data center.

* ORBIS is not available in Canada and the U.S.
** HYDMEDEA is not available in the U.S.
GRIP takes the headache out of managing FIDI’s radiology network in Brazil

Major diagnostic imaging group uses monitoring service to reduce risk, lower downtime and boost efficiency at 24 public health sites producing 4.5 million images a year

By adding the GRIP remote monitoring and event management and reporting solution to its existing portfolio of Agfa HealthCare solutions, the Fundação Instituto de Pesquisa e Estudo de Diagnóstico por Imagem (FIDI) in São Paulo, Brazil, has the confidence of knowing potential incidents are being identified and resolved.

It’s a crucial result for this private, non-profit radiology service provider to Brazil’s public healthcare system. FIDI carries out a full spectrum of radiology exams at 80 public healthcare facilities, ranging from large hospitals to small clinics, and even mobile mammography vans. The overwhelming majority of FIDI’s annual production of 4.5 million images is generated at 24 of the facilities, and, ultimately, patients.

Managing this challenging infrastructure has been easier since 2014, when FIDI decided to implement Agfa HealthCare's GRIP solution for the 24 facilities. "In the end, GRIP reduces risk. Risk is difficult to measure in numbers, but with GRIP managing the system is definitely easier," says Armin Spirgatis, Superintendent of IT.

"With GRIP, monitoring comes together with issue resolution. Other tools can do monitoring, but the GRIP team also undertakes interventions to resolve problems before they cause downtime. Most of the time we don’t need to do anything," says Spirgatis.

He estimates that GRIP now resolves 80% of technical problems with the PACS/RIS before users are even aware there is an issue. "With our previous system, we only realized the server was not working when a user called us, which is bad. Now most issues are resolved even before the IT team is aware of them. Prevention is the key word with GRIP.”

Freed up technicians while ensuring uptime

In the past year the number of FIDI facilities using Agfa HealthCare’s RIS/PACS solution has jumped from 14 to 24. But with the support of GRIP, Spirgatis has not needed to add to his IT team to cope with the expansion. “We don’t have to look into the system anymore, so we have less work. GRIP has freed up technicians: we can handle more facilities with the same size team. This is a major indication of the efficiency we have gained, which is ultimately saving us costs,” he notes. The dramatic fall in downtime also means that patients and radiologists are no longer left sitting around waiting for the system to come back online. “So GRIP means greater productivity,” comments Spirgatis. “Downtime is so low, it is basically only planned downtime for upgrades.”

A GRIP on the future

With the success of GRIP for the 24 public healthcare facilities FIDI serves in São Paulo, the solution is now scheduled to be rolled out to cover another of the foundation’s customers. Soon five public hospitals in the state of Goiás will have their Agfa HealthCare PACS monitored by GRIP - with all the benefits it brings. “It is like an insurance plan, but with more,” says Spirgatis. “With GRIP, you also get a ‘medical check-up’ so you have additional protection against downtime and risk.”

Global Remote Incident Prevention

Key benefits

• Helps prevent downtime surprises that could affect operational efficiency
• Facilitates quick intervention before incidents occur
• Provides round-the-clock awareness via dedicated monitoring teams
• Reduces incident numbers and enables faster resolution
• Provides guidance for determining optimization in IT infrastructure
• Delivers high-level status information and alert details
• Enables cost-efficient deployment and quick adaptation to new technologies
• Offers a single secure approach covering Agfa HealthCare’s IT portfolio and beyond

Global Services

São Paulo, Brazil

By adding the GRIP remote monitoring and event management and reporting solution to its existing portfolio of Agfa HealthCare solutions, the Fundação Instituto de Pesquisa e Estudo de Diagnóstico por Imagem (FIDI) in São Paulo, Brazil, has the confidence of knowing potential incidents are being identified and resolved.

"In the end, GRIP reduces risk. Risk is difficult to measure in numbers, but with GRIP managing the system is definitely easier.”

Armin Spirgatis, Superintendent of IT, FIDI, São Paulo, Brazil
Upfront awareness of potential disruptions, 24/7, allows IT to intervene before outages or incidents occur and even help make sure they do not occur in the future. It brings a peace-of-mind that incidents will not affect us. The Agfa HealthCare GRIP solution is a watchdog for AMC Hospital, delivering this service in a reliable way. Constant monitoring by the Agfa HealthCare technical team allows them to quickly detect potential issues and take action, ranging from calling a local technician to intervening remotely to correct the situation. We are still fine-tuning, but the potential is huge.

Dr. Annette Bak,
Manager of Radiology and Nuclear Medicine, AMC Hospital, Amsterdam, The Netherlands

Moving from analog to digital medical imaging in the cloud provides efficiency improvements and saves time for clinicians at ZNA, as well as patients. We see far more empty waiting rooms in radiology, and patients feel confident when they see that their images are on their referring doctor’s screen in the consultation room by the time they get there. Archiving is impeccable and we don’t have to send someone to fetch the images – they come straight to us from the cloud.

Dr. Connie Buelens,
Head of Radiology, ZNA’s Stuivenberg and Sint-Erasmus Campuses, Antwerp, Belgium

Outsourcing the management of the various solutions, as well as the technical infrastructure that supports them including maintenance, updates, and technical assistance, laid the foundation for what is today called Agfa HealthCare Managed Services. In 2005, we were their first corporate customer to opt for full outsourcing. Last year, we renewed that contract through 2018. We have experienced a very positive relationship with Agfa HealthCare over the years, and all activities with them turned out to be successful. He also underlines the major strengths of Agfa HealthCare’s complete product portfolio that supports end-to-end administrative, diagnostic, therapeutic, and nursing processes, campus-wide.

Michael Thoss,
CIO, DRK Kliniken Berlin, Germany

Serving the wider healthcare community

The Agfa HealthCare cloud and data center solution will (also) act as a model for an upcoming project to build a central archive that will bring together all studies produced by Azienda Ospedaliera di Perugia and by up to 14 additional Umbrian local health units.

“Using the Agfa HealthCare solution as a model opens up new perspectives for us regionally as well as in the Azienda Ospedaliera di Perugia site itself. By allowing the regional centers to quickly and effectively access the information they need, diagnoses and treatment can be more efficient, saving time for caregivers. We expect to see an especially significant impact on emergency care.”

Dott. Roberto Tarducci,
Health Physics director of Azienda Ospedaliera di Perugia, Italy

“Outfront awareness of potential disruptions, 24/7, allows IT to intervene before outages or incidents occur and even help make sure they do not occur in the future. It brings a peace-of-mind that incidents will not affect us. The Agfa HealthCare GRIP solution is a watchdog for AMC Hospital, delivering this service in a reliable way. Constant monitoring by the Agfa HealthCare technical team allows them to quickly detect potential issues and take action, ranging from calling a local technician to intervening remotely to correct the situation. We are still fine-tuning, but the potential is huge.”

Dr. Annette Bak,
Manager of Radiology and Nuclear Medicine, AMC Hospital, Amsterdam, The Netherlands

First step towards a regional central archive

“Ultimately, we chose to make all the upgrades through a four year Managed Services Agreement. It enables us to know our costs over the next four years and as part of the agreement, it also means that Agfa HealthCare guarantees to leave us with the most up-to-date versions of their applications at end of the life of the agreement.”

Bill Lucas,
Senior PACS Administrator, Thomas Health System, Charleston, West Virginia, USA.
Financing your future

Keeping abreast of the ever-changing demands of medical technology is an ongoing challenge; particularly at a time when technology is moving quickly, projects can be large scale and require long-term investment, and budgets are under constant pressure.

The value of a strong relationship with your finance provider
Whether acquiring or upgrading a DR product or implementing an enterprise-wide IT or Managed Services solution, finding the right financial package—one that enables you to incorporate the advancements needed while making manageable financial commitments—often relies on a strong relationship between enterprise and finance provider. And the success of that relationship can depend heavily on how well those responsible for providing your finance understand the nuances related to the healthcare industry, and the challenges and drivers behind your decision-making processes.

Benefit from healthcare finance specialists
At Agfa HealthCare, as a long-term global leader in the healthcare field, we take pride in providing an alternative, informed source of finance to that offered by your principal banks or existing funding mechanisms. Whereas for mainstream financiers, healthcare is not their core business, our dedicated professionals combine financial expertise with a detailed understanding of the products, solutions and services you require to help you realize your goals.

Tailor-made solutions that help you manage your investment
For private or public institutions, large or small, we provide case-specific advice to help create flexible, comprehensive packages appropriate to your budget, and that cover everything from medical technology and IT hardware and software, to communications, archiving and information systems. In addition, our finance packages can include maintenance and future upgrades, giving you a clear view of your costs and payment schedules into the future, and without the need for major additional capital investments.

Swift application decisions
By bringing all the elements of your healthcare package together under one financial plan, application approval is fast and efficient and your accounting and documentation procedures are streamlined to become smooth and trouble-free.

Optimal repayment schemes
We create the optimum set-up between your operational and capital expenditure budgets. Our experts work with you to determine the best payment scheme and financial mix: from variable payment schemes and bridge financing, to special repayments and flexible or longer contract periods.

The result is financial management for projects of all sizes and scopes that enables you and your enterprise to realize your ultimate medical technology future.

Agfa HealthCare Customer Finance: Providing an efficient and effective alternative source of financial investment.

Agfa HealthCare Customer Finance – The benefits
• Provides an alternative informed source of finance from a healthcare specialist
• Facilitates your project implementation through flexible, comprehensive packages
• Fast decision-making on finance requests
• Delivers optimal repayment schemes

Global Services
Experience the possibilities of Augmented Reality (AR), with the Agfa AR+ app. The app allows you to access AR, enriching a wide range of objects. The simple AR mechanism overlays or attaches virtual content to a physical object such as a page of a book or magazine, a painting, a billboard, a packaging, a sign, etc., allowing it to be experienced with an extra dimension using mobile devices or smart eyewear.

Whenever you see the Agfa AR+ pictogram in this brochure, simply launch the app and point the camera of your smartphone, tablet or glasses at the pictogram. Instantly, additional content becomes available – ranging from a simple video or animation to highly interactive, context specific content.

Download the Agfa AR+ app via these links:
https://itunes.apple.com/us/artist/agfa-corporation/id448806868