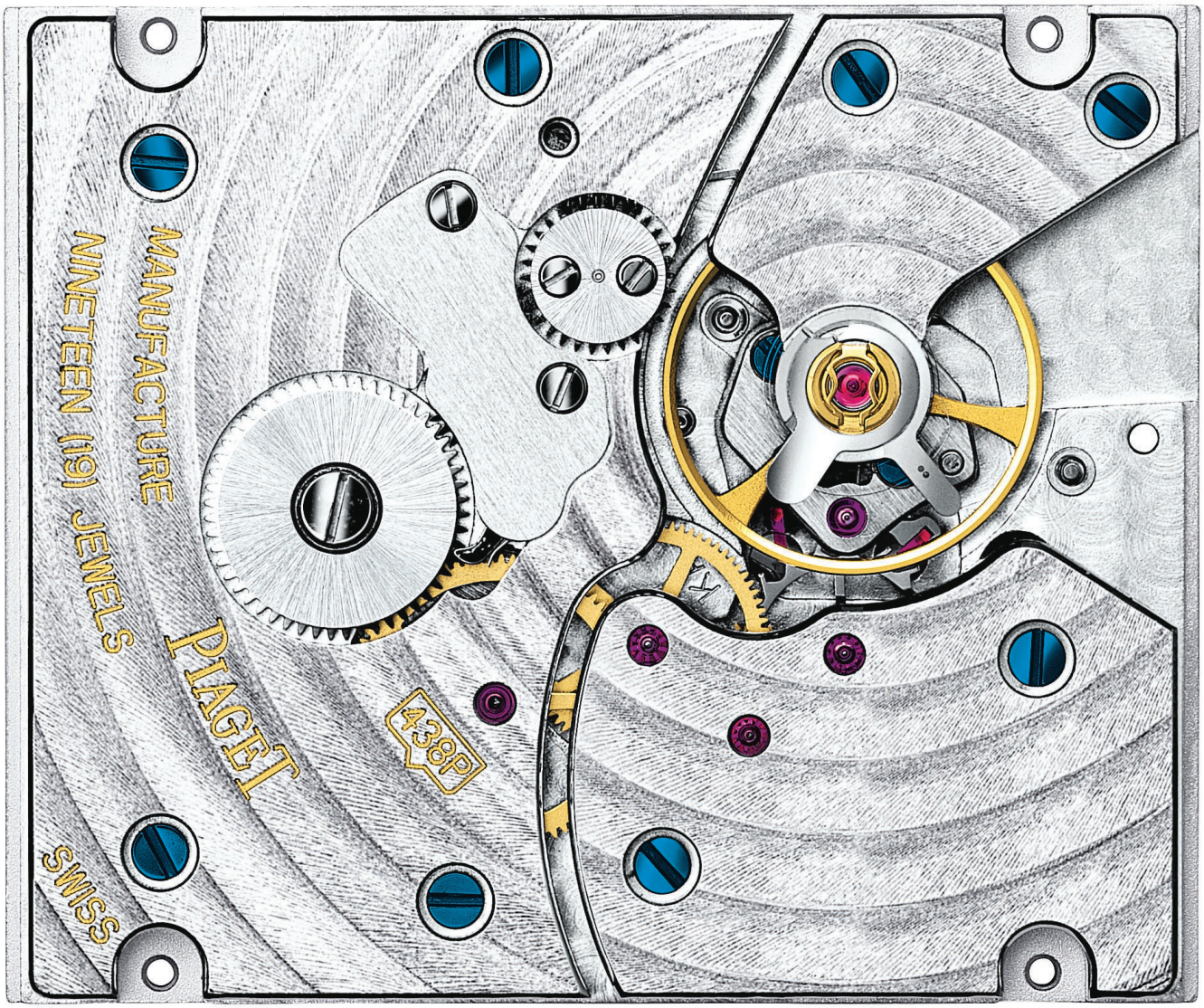
Healthcare transformation, we'll take you...

THERE

AGFA HealthCare

Edition 13, 2012



INTERVIEW INSIDE WITH:

» Bruce Apgar & Rawa Al-Saigh, Dose Management Experts at Agfa HealthCare:
The right dose of expertise

A mobile world needs mobile solutions

Nothing stands still today. Mobile technology not only creates opportunities, it drives expectations at every level. And it gives rise to new demands and needs, for time management, for accessibility, for service, and more.

This is as true for radiology and healthcare as it is for every other aspect of life these days. In this world of tablets, smartphones and anywhere/anytime availability, radiologists want – and need – to have access to their data and images 24 hours a day, regardless of where they are.

In our solutions and our services, Agfa HealthCare keeps moving, too. To meet these expectations, to respond to the changing world of our customers, to play our role and fulfill our responsibilities to the medical community and the people it serves. We do this by developing solutions that keep the caregiver closer to the patient, or that let the caregiver participate remotely. By offering systems that are available even in the most distant parts of the globe, or that improve the productivity and time management of a hospital's own radiology department.

The opportunities this mobility creates will truly change the face of healthcare, globally. Imagine: anywhere in the world, no matter how far away from a hospital, care providers in the field will be able to access data and consult with each other, to improve the care of the people there. And emerging countries as well as economically developed countries will be able to reap the benefits of top technology. Our collaboration with Doctors Without Borders (Médecins Sans Frontières) has exactly this same goal.

But this mobility and this vision are only possible when they are founded on precision. Like the movements of the Piaget timepiece on the cover of this magazine, each cog, each component must move harmoniously and accurately every second. Each must do its part, reliably, responsively and robustly – especially as it all must serve in a mobile environment. And it isn't only about the technology and tools; people and service are an integral part of the precise movement. By providing quality service, by quickly adapting to rapidly changing patient needs, Agfa HealthCare aims to offer the dependability, trustworthiness and responsiveness the healthcare world requires.

We want the healthcare community to see for itself how we are a dynamic company, committed to providing mobile solutions. That's why we will focus on this at the 2012 RSNA. With mobile applications that empower staff with productivity enhancements while staying close to the patient. With technology that delivers patient data to the point of care. With solutions that let any facility, no matter how remote, move to digital radiology – and therefore to mobile radiology. With technologies that let clinicians access data and images how and where they want, with their tablet, smartphone, laptop…

It's a mobile world: and Agfa HealthCare is helping to keep it moving.

Enjoy!

MARC DE FRÉ
Director Marketing Communication

AGFA HEALTHCARE EDITORIAL TEAM Marc De Fré, Editor-in-Chief • Geertrui De Smet, Managing Editor • **CONTENT & DISTRIBUTION** Agfa HealthCare NV • Septestraat 27 • 2640 Mortsel • Belgium **CONCEPT, CONTENT & DESIGN** www.livingstone.eu • **PRINTING** Artoos • Oudestraat 19 • 1910 Kampenhout • Belgium • **PHOTOGRAPHY INSIGHTS** Piaget

The Agfa HealthCare editorial team would like to thank its customers, staff members and interview partners for their contribution to this publication.

On the cover of this edition of THERE magazine:

Since its foundation in 1874, Piaget has cultivated a spirit of luxury while emphasizing creativity and attention to detail. The Piaget 438P ultra-thin hand-wound movement is a masterpiece in miniature, turning timekeeping into art.

New perspectives on accuracy

Mobility and vision are only possible when they're founded on precision. For Piaget, a blend of style, imagination and technical mastery has transformed the watchmaker's craft into a new perspective on time.

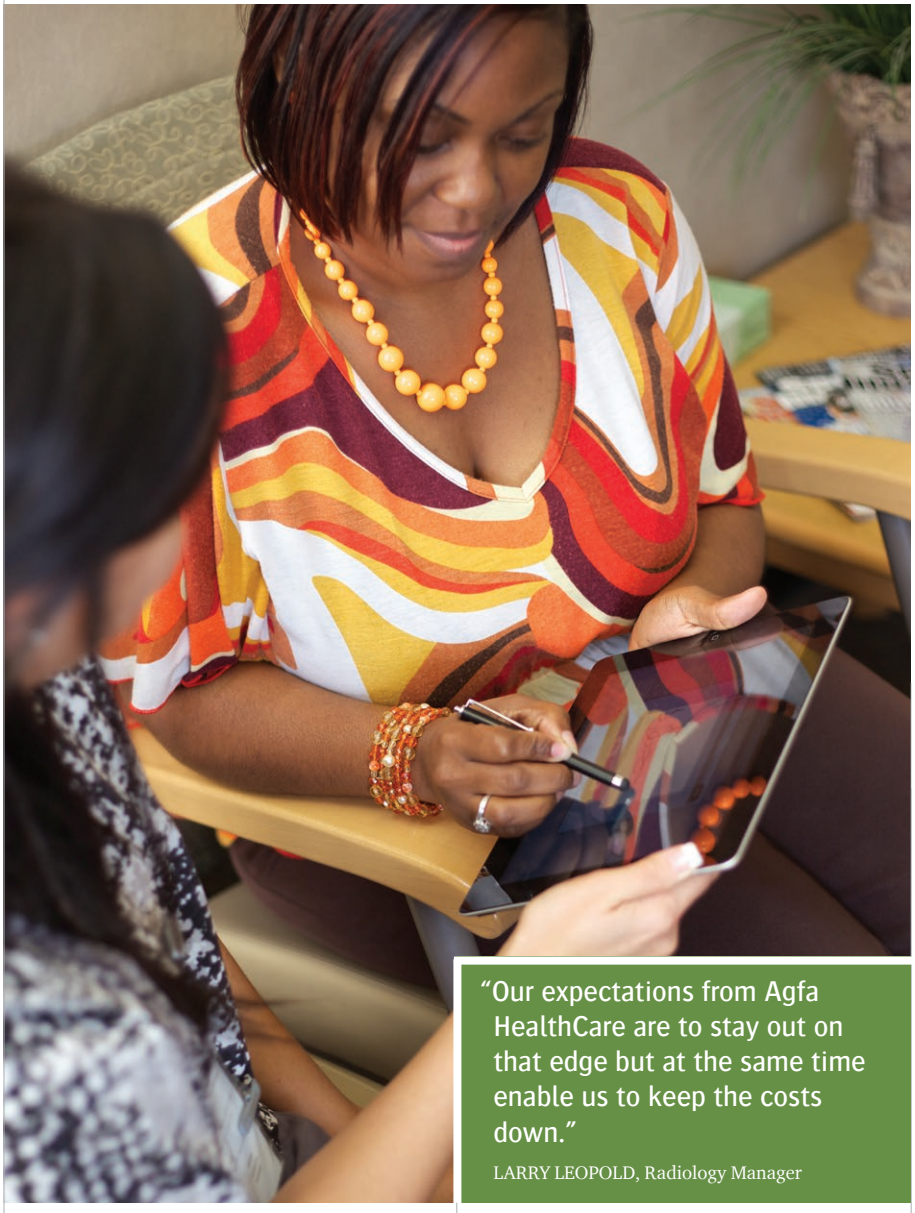
Every cog and component works in harmony, guaranteeing accuracy and efficiency. The over-arching principle that underlies the craft of watchmaking also applies to the development of new mobile healthcare solutions. The Piaget Altiplano, with its ultra-thin mechanical self-winding movement, sheathed in an 18-carat case of white gold and bedazzled with jewels, is a timepiece that's ahead of its time.

VIA CHRISTI CLINIC, WICHITA, KANSAS, USA

Reducing delays at reception with self-service check-in

Technologists like the IMPAX Mobile Worklist for its speed and reduced use of paper

INTERVIEWEE Larry Leopold, Radiology Manager



Via Christi Clinic in Wichita was the ideal place to test-drive the new IMPAX Mobile Worklist. The Clinic's focus on finding technologies to help improve the delivery of patient care, workflow and the bottom line has turned it into the largest multi-specialty clinic in the state of Kansas.

> "Our expectations from Agfa HealthCare are to stay out on that edge but at the same time enable us to keep the costs down."
>
> LARRY LEOPOLD, Radiology Manager

For the technologists, the savings in steps back and forth to the department desktop, and no longer having to remember details 'on-the-fly' for each computer entry or change, makes their tasks much easier. The IMPAX Mobile Worklist, which lets technologists manage a wide range of RIS functions on a tablet, from signing consent forms to processing real-time procedure status updates, is easier for the patients as well. "The patients are filling out forms on the tablet computer instead of a piece of paper, and when they're done, they just hand it back to the technologist. There's no paper to be lost, or scanned," says Larry Leopold, Radiology Manager.

The IMPAX Mobile Worklist allows care providers to bring the IMPAX RIS directly to the patient – wherever the patient may be. For technologists at Via Christi Clinic, who are using it in CT, on tablets, the IMPAX Mobile Worklist is used to access and enter information on exam scheduling and status, lab work and diagnosis codes, and also to complete patient questionnaires and consent forms.
Via Christi Clinic is also piloting IMPAX Kiosk, a self-service way for patients to sign themselves in, without having to check in at administration, in its mammography department. Connected to the IMPAX RIS, the IMPAX Kiosk solution also serves to streamline service, both for patients and for management.

STAYING AHEAD OF THE PACK IS KEY

For Larry Leopold, staying ahead of developments in healthcare technology is crucial. "We try to be on the cutting edge," he says. "In today's market, if you're not at the front, you're at the back of the line." Piloting the IMPAX Mobile Worklist and the IMPAX Kiosk are just the latest chapters in Via Christi's long-time history with Agfa HealthCare.

The Clinic first implemented IMPAX in 1998. The system has since expanded to include IMPAX RIS, IMPAX Data Center, IMPAX for Cardiology, IMPAX for Breast Imaging, TalkStation Integrated Solutions for medical reporting, the XERO Technology Viewer, as well as Agfa HealthCare Computed Radiography and Direct Radiography systems.

> "Agfa HealthCare makes products that help radiologists to be as efficient as they can."
>
> LARRY LEOPOLD, Radiology Manager

"Agfa HealthCare hasn't stayed status quo – it continues to keep its product line moving forward, with trends in the medical community, with governmental regulations, and also continuing to help to reduce cost and improve productivity," concludes Larry. •

Eight of the Clinic's 20 locations offer radiology services; all are linked by the RIS/PACS solutions.

The XERO Technology Viewer is a favorite of physicians. "The doctors really like the XERO solution because it is at the most 10 buttons, whereas a full-blown PACS has 100 different buttons to select to make it dark, make it light, measure, rotate, etc.," says Larry. "So XERO is very simple to use, and to see the image."

UNDERSTANDING CUSTOMER NEEDS IS PART OF AGFA HEALTHCARE'S VALUE

In fact, Agfa HealthCare's understanding of the necessary ergonomics of healthcare systems is part of its value, says Larry. "Agfa HealthCare makes products that help radiologists to be as efficient as they can, also products that are ergonomically correct for the doctors. This lets them work as many hours as they want, without being constrained by too many mouse clicks, or monitors that are too bright, or not bright enough, or voice recognition systems where they have to make a lot of follow-up corrections. All of these things make the radiologists' jobs as smooth as possible; at the same time keep us in front or near the front of advances in technology."

But it is not enough just to make solutions that are comfortable to use. "Our expectations from Agfa HealthCare are to stay out on that edge but at the same time enable us to keep the costs down," says Larry. "And it is just as important to follow the government regulations that are coming down the pipe, especially in the U.S., to make sure that we're not left behind. Agfa HealthCare has been able to do that for us."

> "In today's market, if you're not at the front, you're at the back of the line."
>
> LARRY LEOPOLD, Radiology Manager

EXTENDING THE BENEFITS OF IMPAX MOBILE WORKLIST TO OTHER DEPARTMENTS

The next steps for the IMPAX Mobile Worklist pilot project are to expand it into other areas at Via Christi Clinic. "In the next 30 days we'll open it up to mammography. We'll be doing the same flow in the MRI department, the ultrasound department, and the nuclear medicine department, once we're through this initial step, making sure the verbiage, look and feel is right. We'll be buying a minimum of two tablets per department to move forward. Ultrasound will be the trickiest – the technologists there use a lot of forms with diagrams on them, and we will have to decide what the forms in the worklist will look like."

SOLUTIONS

IMPAX Mobile Worklist

» Takes functionality of IMPAX RIS directly to the patient, via mobile devices such as a tablet computer

» Provides mobile access to clinical information, real-time procedure status, can record study acquisitions and complete consent forms

IMPAX Kiosk

» Unique self-service kiosk that simplifies patient check-in

IMPAX RIS

IMPAX Data Center

XERO Technology Viewer

IMPAX for Breast Imaging

IMPAX for Cardiology

TalkStation Integrated Solutions

AGFA HEALTHCARE'S CONTRIBUTION

» Focus on product developments that improve the delivery of patient care, workflow and the bottom line

» Forward-thinking, continual striving for efficiencies and breakthroughs

» Ability to mesh innovation with real-world practicalities

DID YOU KNOW...

» Via Christi Clinic had over half a million patient visits for all Clinic branches in 2011. It has approximately 200 physicians and over 40 specialties.

» Founded as the Wichita Clinic by a group of 10 physicians in 1948, the Clinic became part of Via Christi Health (the largest healthcare organization in Kansas) in 2010, and was renamed Via Christi Clinic in 2011.

» Wichita is the largest city in the state of Kansas.

DRK KLINIKEN BERLIN, GERMANY

Outsourcing IT helps hospital attain key quality honors through clear data structure

Agfa HealthCare's Managed Services relieves staff of time-consuming technical support for improved IT reliability, availability and cost savings

INTERVIEWEE Michael Thoss, CIO

"Agfa HealthCare systems are a complete, unified solution supporting a full integration path even though they have independent HIS, RIS and PACS functions. Furthermore, their process support is outstanding. The combined solution is a key enabler for decisions by the group regarding clinical strategies."

MICHAEL THOSS, CIO

DRK Kliniken Berlin is a non-profit group of five hospitals that includes a unique geriatric care unit as well as oncology, vascular surgery, and other comprehensive services. Each year, approximately 3,300 staff serve 200,000 hospitalized individuals and outpatients from Germany's capital region. The five facilities and the care unit combined have more than 1,500 beds in 35 medical departments, 26 centers of competence, and three large emergency wards. Selected facilities are teaching hospitals of Charité, the medical school of the Humboldt University. DRK Kliniken Berlin recently outsourced the maintenance and daily support of its Agfa HealthCare RIS/PACS, HIS, and Document Management System (DMS)*, as well as the technical infrastructure that sustains them, to Agfa HealthCare to ensure optimum IT availability and transparent cost.

DEFINED WORKFLOWS AND TRANSPARENT INFORMATION ARE KEY QUALITY ENABLERS

Excellent quality and a broad portfolio of medical services, combined with a highly patient-centric organization, make DRK Kliniken Berlin a model provider of care. The hospital group has for years pursued and attained numerous outstanding quality certifications including the European Foundation for Quality Management as well as a 'pain-free hospital' designation from the German Association for Qualified Pain Therapy.

DRK Kliniken Berlin's many competence centers are oriented to specific quality goals for mammography, oncology, vascular surgery and others. The group is among the few German healthcare providers certified under the stringent requirements of the Joint Commission International, a U.S.-based independent accreditor and quality overseer. Digital information management using Agfa HealthCare solutions plays an important role in achieving these certifications because it supports defined workflows, fosters transparency and a clear structure of patient information.

As a result, IT plays an ever-essential role in today's healthcare environment. "Asked what they would do without daily IT support of the many technologies they count on, hospital staff reply they would no longer be able to work because necessary information would not be available," says Michael Thoss, DRK Kliniken Berlin's CIO.

This commitment to IT goes back to 1995 when the group sought a comprehensive redesign of all information management and care processes. The market was analyzed and a vendor chosen because of its dynamic and motivated team and modern end-to-end solution. The selection has proven extremely worthwhile to this day.

UNIFIED SOLUTION FROM SINGLE SOURCE SUPPORTS FULL INTEGRATION PATH

The initial choice involved Agfa HealthCare's ORBIS* Information Management System which more than met DRK Kliniken Berlin's expectations. The hospital later upgraded to the company's RIS, IMPAX PACS, and a DMS. Clinical departments soon received support for their workflows from these solutions through the HIS.

Says Michael Thoss, "Other vendors combine separate components from various sources. But Agfa HealthCare systems are a complete, unified solution supporting a full integration path even though they have independent HIS, RIS and PACS functions. Furthermore, their process support is outstanding. The combined solution is a key enabler for decisions by the group regarding clinical strategies."

He adds quality is greatly enhanced by these solutions which make patient information available to everybody in the care process no matter where they are, which is a great plus.

"Out of 28 staff handling IT and communication technology, eight are now directly involved as highly qualified end-user consultants for ORBIS. The rest pursue other more meaningful activities, such as a qualified first level support hotline, related to our overall quality goals."

MICHAEL THOSS, CIO

OUTSOURCING MANAGED SERVICES FOR IT PROVIDES MANY COST AND STAFF EFFICIENCY BENEFITS

Information continuity and availability are paramount, says Michael Thoss. In realizing this, the group recently carved out a new business model with Agfa HealthCare. "We decided to discontinue maintaining the HIS, RIS/PACS, and DMS on our own and contract these services to Agfa HealthCare. 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," he explains. "In 2005, we were their first corporate customer to opt for full outsourcing. Last year, we renewed that contract through 2018."

Managed Services contracts from Agfa HealthCare, based on the company's dedicated software solutions and a clinical infrastructure platform, offer a scalable set of options fitting customers' needs. Choices range from remote management to managed hosting in data centers on- or off-site. Customers benefit by having the latest tools and technology at their disposal; they enjoy peace of mind and increased productivity which means more time for staff to spend on core, patient care processes. Agfa HealthCare's cloud-based services help safeguard a higher level of availability than an in-house solution and help reduce cost, according to the CIO. "We have experienced a very positive relationship with Agfa HealthCare over the years, and all activities with them turned out to be successful."

FEWER IT CHORES MEANS MORE TIME TO PERFECT QUALITY PATIENT CARE

One significant result is freeing the group's internal IT professionals to focus on optimizing services and customizing solutions versus handling daily trouble-shooting or routine IT tasks. "Out of 28 staff handling IT and communication technology, eight are now directly involved as highly qualified end-user consultants for ORBIS. The rest pursue other more meaningful activities, such as a qualified first level support hotline, related to our overall quality goals," Michael Thoss says.

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. "This, and not the use of highly dedicated isolated solutions, is the only way to achieve optimization and return on investment." •

AGFA HEALTHCARE'S CONTRIBUTION

» Allow customer to react in a flexible manner to changing user demands, and to calculate costs reliably for providing the desktop.
» Reduced risk of staff shortages while ensuring 24/7 operation.

DID YOU KNOW...

» DRK Kliniken Berlin's 'pain-free hospital' certification ensures no patient shall fear pain in preparation of, during or after required treatment.
» DRK Kliniken Berlin combines 150 years of tradition with high-tech medicine at the top level.
» Centers of Excellence include hip resurfacing as well as specialty facilities for breast, lung, bowel and pediatric urology among others.

SOLUTIONS

Agfa HealthCare's Managed Services
» IT resources are at a fixed rate per desktop and a defined Service Level Agreement (SLA) includes 24/7 operation.
» Extensive operational knowledge is no longer needed by hospital staff to run/maintain a complex IT infrastructure.

ORBIS Information Management System
IMPAX RIS/PACS and DMS

* ORBIS and DMS are not available in Canada and the United States.

CENTRE HOSPITALIER INTERCOMMUNAL DE TOULON, FRANCE

Global, unique and integrated patient information

By implementing the IMPAX RIS/PACS solution, the Centre Hospitalier Intercommunal de Toulon can provide better support to patients, while optimizing workflows, interdisciplinary communication, data quality and security, and the working conditions for the various teams.

INTERVIEWEES Thibaud Arnauld Des Lions, Deputy Director of IT · François-Xavier Gavalda, Chief Engineer · Dr. Michael Kubasch, Medical Consultant

"The aim is to have the right information at the right moment, throughout the healthcare enterprise, which requires a multi-purpose, single and integrated tool."

THIBAUD ARNAULD DES LIONS, Deputy Director of IT

"IMPAX has helped us to optimize workflow and to share information, but it also guarantees the quality of information input, especially in terms of patient ID data. The traceability of the information access has increased the safety of this data, as well."

FRANÇOIS-XAVIER GAVALDA, Chief Engineer

Located in the busy Var basin, with its 500,000 inhabitants, the 1,200 beds of the Centre Hospitalier Intercommunal de Toulon (Intercommunal Hospital of Toulon) are spread out over three facilities, with a new site currently being set up. As part of its Hospital Plan 2012, the hospital began the implementation of an Electronic Patient Record (EPR) starting in 2009, using Agfa HealthCare's ORBIS* solution.

The hospital and Agfa HealthCare have worked together for over 20 years. For the ORBIS deployment, 23 projects were foreseen, including one dedicated to integrating the IMPAX solution, in order to connect the patients' administrative and medical data. "The aim is to have the right information at the right moment, throughout the healthcare enterprise, which requires a multi-purpose, single and integrated tool," comments Thibaud Arnauld Des Lions, Deputy Director of IT.

IMPROVING PRODUCTIVITY AND QUALITY

The implementation of the IMPAX RIS/PACS met the growing needs of the medical community to access images and medical file data simultaneously. "IMPAX has helped us to optimize workflow and to share information, but it also guarantees the quality of information input, especially in terms of patient ID data. The traceability of the information access has increased the safety of this data, as well," explains François-Xavier Gavalda, Chief Engineer. The simplification of information collection has resulted in an overall improvement in information quality and a reduction in transmission times for the various information flows. "The updating of worklists for the users ensures their safety: there are fewer errors regarding the type of modality, as well as the patient ID thanks to this process-oriented tool, that runs from patient identification through to billing," adds François-Xavier Gavalda. More comprehensive and reliable, and easier to use, IMPAX also plays a role in improving working conditions.

75 TO 80% OF PATIENTS LEAVE WITH THEIR REPORT IN HAND AFTER THEIR EXAM

The digital dictation and the voice recognition systems allow optimized report production. "Digital dictation does transfer a task from the secretaries to the doctors, but it results in an overall time saving for the department and an improvement in patient handling," comments Dr. Kubasch, Medical Consultant. The secretaries use the time saved for supporting patients, for administrative tasks or even for taking appointments. These tools meet the

SOLUTIONS

IMPAX RIS/PACS

» A fully integrated solution offering a single interface for radiologists
» Optimized workflow providing efficiency and convenience for all users
» Access to a single patient data base from anywhere – locally or remotely
» Maximum patient privacy and data security
» Easy, centralized management of users and software
» Connectivity, for an integrated view of the patient data
» Seamless integration (specialty modules, departmental PACS, EPR, etc.)

ORBIS

» Share administrative data anywhere, anytime
» Better collaboration between care professionals
» Fewer errors, thanks to control and validation functions

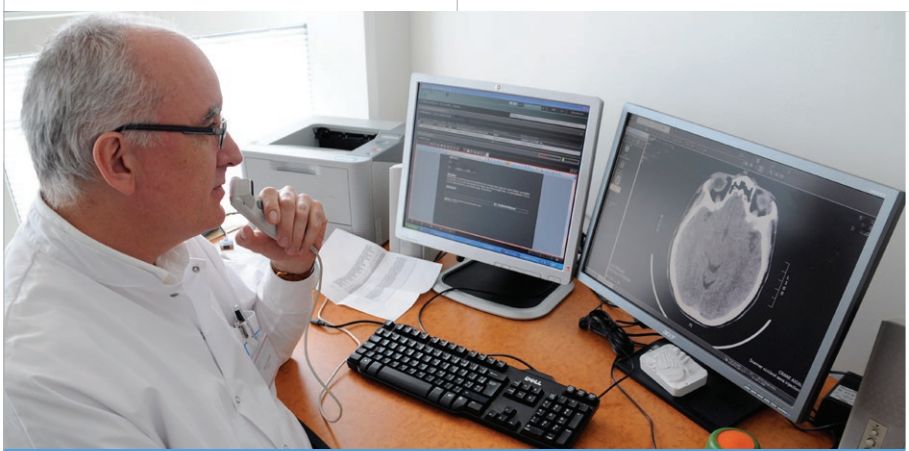
need to shorten both report creation time and patient care delays. "Today, 75 to 80% of patients leave after their exams with their report in hand. This is a significant advantage that has contributed to improving the image of the hospital, which has to provide the same quality of service as a private clinic," describes Dr. Kubasch.

SIMPLIFYING INTERDISCIPLINARY COMMUNICATION

Sharing information becomes increasingly critical as medical decision-making becomes more and more collective. Physicians need to access the original information in real time, from anywhere, to support their diagnosis determination. "Direct access to all departments is key in neurology and surgery, for example; urgent examinations are available before the patient arrives in the department where he is expected. The doctor can already prepare," says Dr. Kubasch. During multidisciplinary oncology meetings, a medical history that combines images and reports makes it possible to clearly see the evolution.

ENSURING SERVICE CONTINUITY DURING THE CHANGE OF SITE

The challenges of moving to the new site included the need to ensure continuity of service and the management of the risks associated with moving a fragile and complex architecture. "The application was unavailable for between 16 and 24 hours. The users defined and implemented the 'off' operating procedures during the interruption of the applications. All of the physical infrastructure in the new server room had been defined and adapted, and each person was able to fulfill his mission, in a defined and organized process. For Agfa HealthCare, this was completed the next morning with a systematic control of each station to verify for proper operation," says François-Xavier Gavalda. Everything restarted normally. All that remains now to remind people of the move are some photos. •



"Today, 75 to 80% of patients leave after their exams with their report in hand. This is a significant advantage that has contributed to improving the image of the hospital, which has to provide the same quality of service as a private clinic."

DR. MICHAEL KUBASCH, Medical Consultant

AGFA HEALTHCARE'S CONTRIBUTION

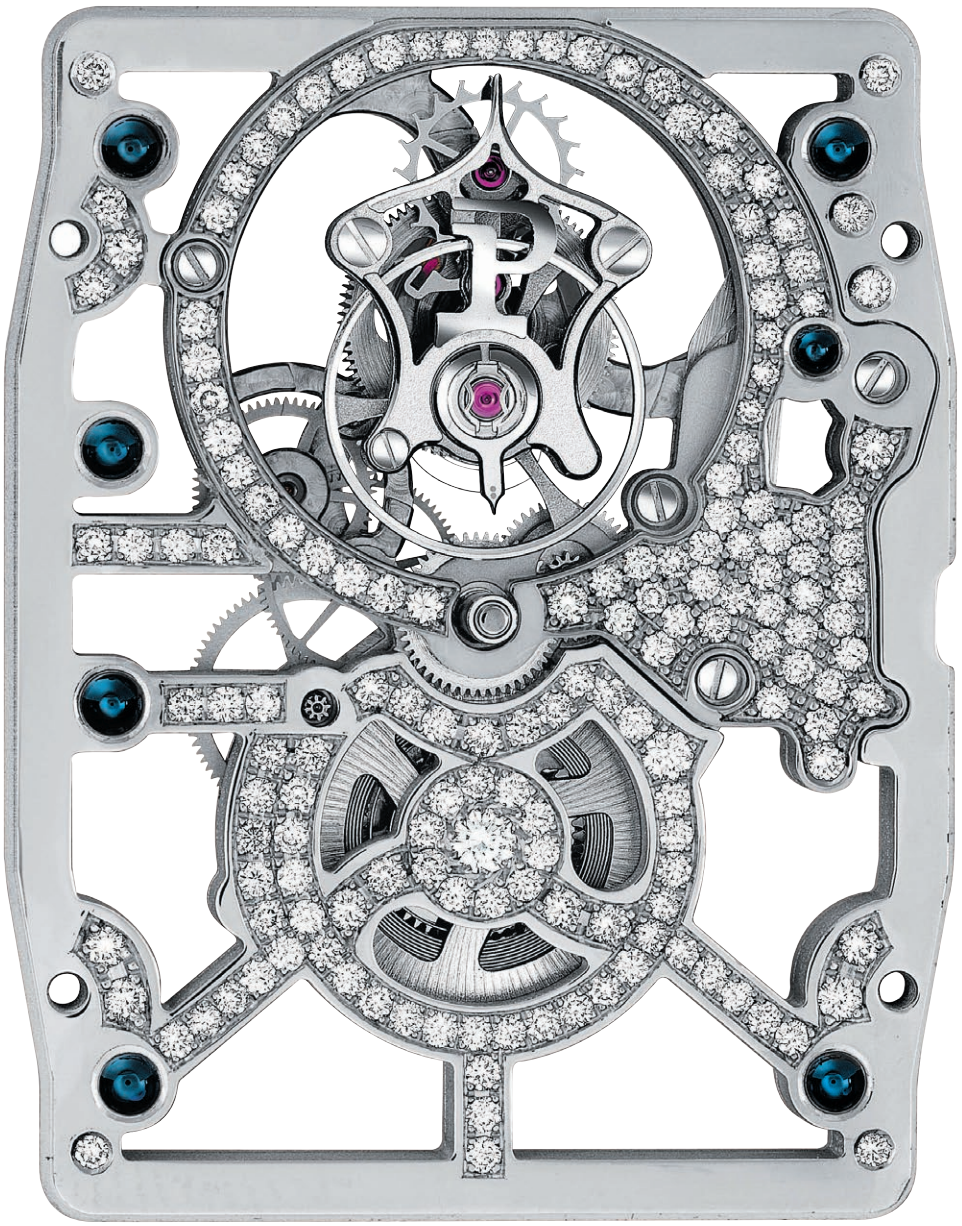
» Agfa HealthCare has contributed to the development of the Centre Hospitalier Intercommunal de Toulon in a highly competitive environment with a solution that supports the hospital in providing quality service to the patient.

DID YOU KNOW...

» Relocating the almost 10,000 m^3 of equipment to the new hospital in Sainte-Musse required the efforts of 400 people and 1,000 meeting hours.
» The sharing of information and access to the clinical history involved the integration of ten years of digital document production, i.e. 500,000 reports.
» The military port of Toulon is the main naval base in France, along with the port in Brest.

* ORBIS is not available in Canada and the United States.

Technology as art.



Whether it's transforming lives through new mobile healthcare applications, or powering one of the finest timepieces available in the world, there is a beauty inherent in technology. The Piaget 600P Gem Skeleton watch is a masterpiece combining opulence with technological brilliance. Set with 160 brilliant-cut diamonds and seven cabochon-cut sapphires, it features the world's thinnest shaped tourbillon.

DX-D Retrofit
Empowering the X-ray department

Agfa HealthCare's DX-D Retrofit solution lets healthcare facilities go direct digital, without replacing their existing X-ray equipment. Quick and easy to install, it provides all the benefits of DR, including excellent DR image quality, workflow improvements and faster examination speed.

The solution consists of a flat panel detector, a retrofit box and an NX workstation with MUSICA² image processing. The simple connection to the X-ray modality is risk-free and fast – and doesn't change the modality's functionality.

MUSICA² IMAGE PROCESSING AND A CHOICE OF DETECTORS

Agfa HealthCare's gold-standard MUSICA² image processing technology has been specially adapted and tuned to enhance the already excellent DR image quality. It provides superb imaging performance, consistent image quality and high contrast detail.

DX-D Retrofit comes with a choice of Cesium Iodide (CsI) and Gadolinium Oxysulphide (GOS) detectors; the DX-D 30C CsI panel offers wireless capability and superior image quality, while the tethered DX-D 10 uses GOS.

WORKFLOW AND PRODUCTIVITY BENEFITS

The NX workstation provides fast previews and low cycle times, as well as an excellent connectivity with Radiology Information Systems (RIS), Picture Archiving and Communication Systems (PACS) and Hospital Information Systems (HIS).The detectors are interchangeable and fit into any standard bucky tray.

With the retrofit, patient positioning and image quality can be verified on the spot, and images sent immediately to the PACS or imager in DICOM

format. All these features mean the DX-D Retrofit delivers excellent ease of use and maximum productivity, at an affordable cost.

Supporting healthcare access wherever it is needed

Doctors Without Borders / Médecins Sans Frontières (MSF) and Agfa HealthCare share a common vision: making healthcare available to those who need it, no matter where they are. Active in nearly 100 countries worldwide, both organizations are dedicated to achieving the delivery of patient-centric, informed care based on open standards.

At Agfa HealthCare, we are unique within our industry in focusing on offering highly integrated, open standards-based healthcare IT solutions that help caregivers improve patient outcomes. Our purpose-built systems with MUSICA² software provide high quality imaging data at the point of care. Our IMPAX solutions are designed to help facilities increase productivity, knowledge sharing and cost control, while our ICIS enterprise imaging strategy solution improves workflows for radiology and other disciplines, driving EHR access to multidisciplinary, multimodality studies. And by deploying XERO, our revolutionary browser-based viewer, users can have access to imaging at the point of care: wherever that is.

The Healthcare Without Borders theme honors the work of MSF and the individuals who carry out its mission, which is in many ways so similar to our own. We are proud to have made a substantial donation to MSF on the occasion of RSNA. We encourage others to join us in supporting this humanitarian organization.

SRL JANKHARIA IMAGING, MUMBAI, INDIA

Leading breast cancer radiologist stresses cancer awareness to tackle rise in disease

Full mammography solution assists Mumbai imaging center in addressing expected breast cancer increase in large Indian cities

INTERVIEWEE Dr. Bijal Jankharia, Co-Owner and Radiologist

Breast cancer incidence in India is expected to double by 2020. The disease has overtaken cervical cancer in the past two decades as the leading cause of cancer deaths among women in India's largest cities. New breast cancer cases now number more than 100,000 yearly and are expected to rise to 250,000 new annual cases by 2020.

While breast cancer incidence per 100,000 population is lower in India compared to the US, France and Britain, mortality from the disease is very high. It is now quite commonly seen in younger women under age 50.

BREAST CANCER PREVENTION A LOW PRIORITY AND FINANCIAL DRAIN SINCE ALL TESTS AND PROCEDURES MUST BE PAID OUT-OF-POCKET

Aging, smoking, lack of childbearing or westernized life style mask more profound risks such as minimal awareness of the disease due to poor education and misinformation. Compounding the situation is a lack of government support for breast health education and funding of screening mammography.

"As a result, breast cancer awareness is trivialized among some women by their families, especially those with little education or financial resources," says Dr. Bijal Jankharia, a breast imaging radiologist and co-owner with her husband, Dr. Bhavin Jankharia, of SRL Jankharia Imaging in Mumbai. "Many women struggle to provide food, clothing and shelter, making breast cancer knowledge a low priority. It is also a financial drain since all tests and procedures must be paid out-of-pocket; there is no social safety net. By the time symptoms can no longer be ignored, it is often too late. Roughly half of all

patients visit the doctor with palpable lumps of more than two centimeters."

It is therefore not surprising screening constitutes less than 15% of the center's mammographic procedures. These are typically self-referrals among educated women aware of the risks. The remaining diagnostic studies come mostly from private physician referrals and large, multinational employers that encourage preventive health.

Dr. Jankharia often speaks at these companies, along with schools, social and religious groups open to her breast health advocacy. She is among the few radiologists in India specifically trained in mammographic interpretation.

The center has been the region's diagnostic imaging leader since opening in 1969 and initiated many pioneering modalities like the first digital X-ray system in private practice by Agfa HealthCare, the first 64-slice CT scanner in Asia, open MRI, and the first private PET/CT installation in India, among others. It was therefore natural that SRL Jankharia Imaging should again lead the profession by installing the first complete CR mammography solution from Agfa HealthCare in Mumbai and Western India to support Dr. Jankharia's outreach efforts promoting breast cancer awareness.

NIP PLATES OFFER "EXCELLENT IMAGE DETAIL" MORE ECONOMICALLY THAN FFDM

Though the center's other imaging is all-digital, mammography was a holdout relying on a legacy unit to perform about 10 screening and 50 diagnostic procedures weekly. "While FFDM offers exceptional image quality and improved workflows, it is way too expensive for facilities where so little screening is done," Dr. Jankharia says. "We sought a cost-effective means of going digital with the quality needed to properly visualize the skin line, soft tissue and microcalcifications, among other pathology," explains Dr. Jankharia.

> "The NIP plates provide excellent detail that I'm very pleased with. The DX-M's 50-micron resolution makes detecting subtle masses and microcalcifications easy."
>
> DR. BIJAL JANKHARIA, Radiologist

Her knowledge of current mammography trends stirred interest in Agfa HealthCare's DX-M, a CR solution that works with needle-based detector plates (NIP) in cassettes. "Using our original exposure unit to capture images for processing on the DX-M and manage them on a digital workstation was very cost-effective," she adds. "We studied solutions from two vendors, and the deciding factors in Agfa HealthCare's favor were the NIP cassettes, MUSICA^2 image processing, ease of use, convenience and speed.

DID YOU KNOW...

- Each year 10.9 million people worldwide suffer from breast cancer; 6.7 million die from it.
- Over 50% of Indian breast cancer patients present with large tumors, which markedly lowers survival.

AGFA HEALTHCARE'S CONTRIBUTION

» Ability to propose realistic solutions that address customer needs, complemented by reliable, consistent and knowledgeable support.

> "The number of patients we can handle has already increased by 25%, and we hope that the graph will keep rising."
>
> DR. BIJAL JANKHARIA, Radiologist

Another was our personal rapport with Agfa HealthCare's specialists over the last 12 years."

MUSICA^2 software comes with the DX-M for consistently high image quality and enhanced detail. The dedicated NX workstation and DRYSTAR AXYS imager for hardcopies rounds out the total solution. The workstation and imager are located in the procedure room with the DX-M. Dr. Jankharia also has an Agfa HealthCare SE Suite client/server viewing station in her office for manipulating and managing breast images.

"The fine contrast and high resolution from MUSICA^2 sealed our decision," she said. "And the NIP plates provide excellent detail that I'm very pleased with. The DX-M's 50-micron resolution makes detecting subtle masses and microcalcifications easy."

Once the total solution was installed and running, two interesting benefits resulted: a rise in patient throughput and staff productivity. She credits the operational speed of the DX-M's five-cassette drop-and-go buffer and the pace at which images are displayed for preview; typically a matter of seconds. "Everything happens fast. There's less waiting time for patients, which makes them happy because they can go home quicker. The number of patients we can handle has already increased by 25%, and we hope that the graph will keep rising." •

SOLUTIONS

DirectriX needle-based detector plates (NIP)

» Excellent image quality with a much higher Detective Quantum Efficiency (DQE)
» Image quality necessary for mammography with high throughput
» Potential for dose reduction

MUSICA^2 image processing software

» Visualizes subtle details of all sizes, enhancing reading comfort
» Assists radiologists and technologists by automatically applying the appropriate grade of image enhancement regardless of exam type
» Optimizes image quality by auto-adjusting density and relative contrast of anatomic detail in a robust and consistent manner

BETHESDA MEMORIAL HOSPITAL, BOYNTON BEACH, FLORIDA, USA

Busy community hospital delivers speedy service with new DX-D 100

Mobile DR solution brings excellent image capture right to patient bedside

INTERVIEWEES Dr. Steven J. Rooney, Radiologist · Fran Lutz, Administrative Imaging Director · Anne Osowski, PACS Administrator

For Bethesda Memorial Hospital, home to the Bethesda Stroke Center and the Bethesda Heart Hospital, quick and comprehensive access to patient images is key. Thanks to its two new DX-D 100 mobile DR solutions from Agfa HealthCare, physicians and patients throughout the hospital enjoy excellent image quality as well as speedy service.

The flagship hospital of the not-for-profit Bethesda Healthcare System, Bethesda Memorial Hospital has 401 beds, 600 physicians, 2,300 employees and more than 40 specialty areas. It is a community hospital offering a full array of services to residents of Boynton Beach and beyond. The hospital will open the doors of its newest facility, Bethesda Hospital West, in January, 2013. This new 80-bed hospital has been designed for growth: it is five stories now, but can go as high as nine, and it has been built so it can expand up to 400 beds. The population of the area is expanding, and Bethesda aims to be ready with the facilities and services it will need. "The community has grown tremendously, and it continues to grow," says Fran Lutz, Administrative Imaging Director.

NEW DR SOLUTIONS TIE INTO CURRENT NEEDS AND SUPPORT FUTURE PLANS

Looking to the future is a central part of Fran Lutz's approach. Five years ago she developed a strategic plan to shift the radiology department at Bethesda Memorial Hospital further towards digital; the recent acquisition of two DX-D 100 mobile DR solutions from Agfa HealthCare is part of that evolution.

> "We do a lot of post-operative chest X-rays, particularly for our heart unit, and with our previous portable X-ray machines the contrast and the detail were just light years away from what it is now."
>
> DR. STEVEN J. ROONEY, Radiologist

"What I like is that Agfa HealthCare didn't try to re-design how the solution looks and feels to use. The functionality of it is what the technologists are used to."

FRAN LUTZ, Administrative Imaging Director

DID YOU KNOW...

» 160,000 procedures are performed per year at Bethesda Memorial Hospital. The radiology department alone performed 67,000 procedures last year.
» The radiology department has six different digital rooms.
» The Bethesda Center for Women and Children is the winner of the 2012 Kids' Crown Award for the Best Pediatrics Hospital in Palm Beach County—voted by the readers of South Florida Parenting magazine. This is the fifth year that the hospital has won the award.
» Bethesda offers a two-year, full-time radiography program through the Bethesda College of Health Sciences, which has been offering programs for more than 40 years.

"Over the past five years we've been replacing our equipment, and the new mobile DR systems are part of that transition," she says. And over at Bethesda Hospital West, the imaging department will offer the best DR solutions for all modalities.

Bethesda Memorial Hospital uses one DX-D 100 in the emergency department, and another on the floors. They've also purchased another two for use at Bethesda Hospital West, in the ER and OR, and are looking to purchase a third that will be used in the surgery department at the main hospital site.

NEW STANDARDS OF CONTRAST AND DETAIL WITH MUSICA²

For the hospital's radiologists, it is the image quality that is most important. "We do a lot of post-operative chest X-rays, particularly for our heart unit, and with our previous portable X-ray machines the contrast and the detail were just light years away from what it is now," says Radiologist Dr. Steven J. Rooney. "It would be a constant challenge to decide where the tip of the endo-tracheal tube is, where the chest tubes are, where the intra-aortic balloon pump is.

Now, with MUSICA² image processing software, it is a pleasure to wade through the dozens of images of ICU, CCU and cardiac patients, instead of being frustrated and complaining about poor images."

From the technologists' point-of-view, the functionality and ease-of-use are just as significant as the image quality. "These three things are equally important," says Anne Osowski, PACS Administrator. "MUSICA² is extremely user-friendly, there's very little manipulation on our part. We probably post-process, other than annotation, less than 1% of the images we acquire. That really saves on turnaround time when you don't have to post-process an image."

"MUSICA² is extremely user-friendly, there's very little manipulation on our part. We probably post-process, other than annotation, less than 1% of the images we acquire. That really saves on turnaround time when you don't have to post-process an image."

ANNE OSOWSKI, PACS Administrator

SOLUTION

DX-D 100 mobile DR solution

- Fast high-quality image capture
- Immediate image validation, transfer and access (HIS/RIS/PACS integration)
- Specially-tuned MUSICA², for gold-standard image processing
- Integrated NX workstation, for an optimal workflow
- Dose reduction potential

AGFA HEALTHCARE'S CONTRIBUTION

- Understanding of radiology department workflow
- Experience with preferred ways of working for technologists
- Expertise in shortening turnaround times while continuing to improve image quality

WIRELESS FOR FASTER TURNAROUND

The DX-D 100 wirelessly sends images to the hospital's PACS, using a Wi-Fi network. Technologists can review worklists, and send images, right from the patient's bedside. "The fact that it is a mobile solution just saves a whole other level of turnaround time on the exam itself," continues Anne. "Because it is wireless, the radiologist can read the image while the technologist is technically still in the patient's room.

I'd estimate it is a 20-minute time saving for the technologist, from the time it used to take for them to take the image to the time the radiologist can see the image. From the technologists' standpoint, this is huge."

INTUITIVE INTERFACE FOR TECHNOLOGISTS

For the technologists, the familiarity of the DX-D 100 contributes to efficiency as well. "The technologists have adapted very well to using the software; we have an advantage because we've used Agfa HealthCare software in the past," says Anne. "The icons are all the same, so by looking at the icons they already knew what each one's function was."

"What I like is that Agfa HealthCare didn't try to re-design how the solution looks and feels to use," concludes Fran. "The functionality of it is what the technologists are used to." •

HOSPITAL UNIVERSITÁRIO CAJURU, CURITIBA, PARANA, BRAZIL

Major university hospital and trauma center turns to technology to treat more patients, more efficiently

Consultative approach, in-depth expertise and ability to adapt solutions to hospital needs behind contract win

INTERVIEWEE Lilian Rosana Kaiber Buse, Hospital Manager

The Hospital Universitário Cajuru (HUC) of the Marista Group, in Curitiba, Brazil, is renowned for its trauma service as well as orthopaedic and neurological surgery. As a trauma center, it is considered the major provider of trauma emergency care in the state of Parana. The recent implementation of IMPAX and CR solutions from Agfa HealthCare has enabled the HUC to treat more patients, more efficiently, with a significantly improved ecological footprint.

The 207-bed HUC is accredited and licensed by the Brazilian Ministry of Health as a high-complexity hospital in orthopaedics, neuro-surgery, trauma and renal transplant. It's also a teaching hospital associated with a large Brazilian university (PUC-PR), and has 109 resident doctors in training. For Hospital Manager Lilian Rosana Kaiber Buse, maintaining the standards of excellence required for a leading teaching center is a primary objective. "The biggest goal for us is to continue to excel as a teaching hospital," she says. "Other goals are to continue to be a reference high-complexity hospital and trauma center, and to receive Accredited Hospital certification."

The city of Curitiba is renowned for its inspired urban planning, extensive green space and ground-breaking transit system. For Lilian Buse, the hospital's technological approach is linked to the innovative way that the city approaches resource management and planning. "It all ties in with the efficiency that Curitiba is known for, for being cost-effective and ecologically friendly," she says.

HUGE ECOLOGICAL GAIN WITH NEW TECHNOLOGY

The implementation of the IMPAX PACS, IMPAX RIS, IMPAX Reporting*, and CR solutions from Agfa HealthCare marked a major shift for HUC. "With the complete elimination of the previous analog system, there was a huge ecological gain since the new process does not use any chemical products," says Lilian Buse.

> "The biggest benefit to the hospital, in addition to reducing our costs, is the increase in treatments, due to major improvements in productivity with the new solutions."
>
> LILIAN ROSANA KAIBER BUSE, Hospital Manager

Reduced costs and the ability to treat more patients were also key gains. "The biggest benefit to the hospital, in addition to reducing our costs, is the increase in treatments, due to major improvements in productivity with the new solutions," she says. The most important improvements are those in patient care. "For patients, the biggest benefit is the improved accuracy in diagnosis, and the agility with which tests and reports are done. The patient starts to own a digital history, avoiding loss and mix-up of documents, and allowing for faster access to that history."

IMAGE ACCESS THROUGHOUT THE HOSPITAL

The HUC treats about 5,000 trauma patients who come via the emergency rooms, and about 7,000 clinic patients, per month. The radiology department provides approximately 1,200 CT scans, 10,000 X-rays, and 300 ultrasounds each month. An interface links the hospital's information system to the Agfa HealthCare solutions, which enables

SOLUTIONS

IMPAX PACS

» Integrated reporting solution that provides easy and convenient access to reports
» Streamlines enterprise workflow and delivers increased efficiency and productivity

IMPAX RIS

» Electronically manages radiology operations, from patient registration through worklist generation and transcription, to medical reporting and business intelligence

IMPAX Reporting

» Fast, flexible, digital dictation and speech recognition, embedded in Agfa HealthCare's diagnostic station

Computed Radiography solutions

AGFA HEALTHCARE'S CONTRIBUTION

» In-depth understanding of imaging and information management processes in hospitals, from analog systems though to multi-site EHRs
» Consultative and adaptive approach for most effective project management and implementations
» Strong local team supported by global experts

physicians and other healthcare providers to scan, store and review all of a patient's tests. "This is a huge benefit, allowing us to access this information throughout various units in the hospital," says Lilian Buse.

All of the patients at HUC are from the SUS, or Sistema Único de Saúde, Brazil's publicly-funded health system. Operating within this system offers challenges, says Lilian Buse. "For every R$100.00 in treatments, the SUS reimburses R$60.00 to the hospitals, or, in other words, we receive only 60%. For this reason, we need an effective cost management framework to be able to continue to survive." (R$100 Brazilian reais equals about $50 USD.)

NEW VIEW OF METRICS ENABLES ONGOING QUALITY AND PERFORMANCE IMPROVEMENTS

Maintaining a sharp focus on efficiency and costs is necessary also to manage the high volume of emergency cases at HUC. "For this we must have well-defined processes with on-going training of health professionals, effective identification and management of patient health risks, top-of the-line equipment, agility in diagnostics, and a Trauma Treatment Plan."

> "Since May 2011, this solution has been fully operational and extremely reliable."
>
> LILIAN ROSANA KAIBER BUSE, Hospital Manager

The new technology allows Lilian Buse and her team to continue to refine processes and procedures. "The solution allows us to monitor all areas, with metrics and graphs that help us to improve the performance and quality of services," she says.

> "The solution allows us to monitor all areas, with metrics and graphs that help us to improve the performance and quality of services."
>
> LILIAN ROSANA KAIBER BUSE, Hospital Manager

The ability of Agfa HealthCare to provide the insight that the HUC required at the onset of the project, and to craft an implementation plan in line with HUC's financial model and budget, were key factors in the hospital's selection of a technology partner. "First and foremost the Agfa HealthCare team provided us with information on the commercial viability of this change from analog to digital," says Lilian Buse. "Then, we worked together on planning how to bring the project to life, determining and defining the workflow, creation and specification of the project and management of the implementation crew to ensure that the project would be finalized within the agreed-upon timing." Now that the implementation is complete, Lilian is turning her attention to the next project with Agfa HealthCare. "Since May 2011, this solution has been fully operational and extremely reliable," she concludes. "Next, we are working on a project to digitize all of the hemodynamic images." •

DID YOU KNOW...

» HUC launched the first master degree in trauma surgery in Brazil.
» U.S. magazine Reader's Digest named Curitiba the best 'Brazilian Big City', and it was listed as a 'Smart City' on Forbes.com. Curitiba has about 3.5 million residents, and is the 8th most populous city in Brazil.
» Curitiba's BRT (Bus Rapid Transit) system is renowned for its innovation and efficiency.
» Thanks to a focus on green urban planning, residents of Curitiba enjoy more green space per person than most other cities around the globe.

* IMPAX Reporting is not available in the United States.

The right dose of expertise:
How Agfa HealthCare is helping stakeholders balance "imaging gently" with quality imaging

In the days of film-on-a-lightbox, dose seemed easier to control. If you overexposed film, the image would turn black. If you underexposed, the image would be too light. These technical realities exercised subtle control over the range of dose that would produce a useable image. With the advent of digital imaging, those subtle nuances changed.

INTERVIEWEES Bruce Apgar, Application Lead for Imaging Services and Applications, North America · Rawa Al-Saigh, Dose Registration Global Solution Manager

"Recent studies have shown that CsBr needle phosphors in particular can reduce radiation exposure by up to 50%. It's a huge step towards effective dose management."

BRUCE APGAR, Application Lead for Imaging Services and Applications, North America

DIGITAL DOSE CREEP

Technologists soon learned that slight overexposure in digital imaging could create a better looking image. So there was a natural tendency for doses to slowly edge higher in the name of image quality. Add to this the steady increase of new types of modalities coming on line and the patient's potential for increased radiation exposure began to creep higher and higher.

These trends have given rise to intensified interest in dose management from both medical professionals and regulatory bodies. The industry has formed advocacy groups such as Image Gently, an alliance dedicated to raising awareness of opportunities to lower radiation dose in pediatric imaging. Government bodies are also becoming involved. In the United States for example, the State of California has passed legislation making it mandatory for imaging centers to record radiation exposure from CT exams.

As a leader in medical imaging, Agfa HealthCare has taken a key role in understanding and contributing to best practices for dose management. Teams have also developed new technologies and solutions that help reduce radiation dose on the front lines of imaging (while delivering high quality images) and provide intelligence to manage dose appropriately on the back end.

A SERIES OF DOSE MANAGEMENT FIRSTS

"Agfa HealthCare is all about achieving optimal image quality," explains Bruce Apgar, Application Lead for Imaging Services and Applications, North America. "It's a logical extension to apply that expertise to dose management, since image quality is a function of dose. If our technology can produce a higher quality image because it is more efficient, then there should be an opportunity for dose reduction, depending on the needs of the department."

Although dose reduction is universally important in all patient populations, it becomes even more important when applied to an area like pediatrics. For example, when you consider that a premature infant may receive 30 to 40 exposures over the course of their treatment, it's clear that finding ways to reduce radiation exposure makes sense for preserving long term health.

One way Agfa HealthCare is helping to reduce exposure is by introducing high efficiency needle phosphors – Cesium Iodide (CsI) for Direct Radiography (DR)* and Cesium Bromide (CsBr) for Computed Radiography (CR). Due to their higher X-ray absorption and conversion efficiency, needle phosphors have the potential to produce higher quality images at a significantly reduced dose.
"It is like installing technology that gives you twice the gas mileage from your car," explains Apgar. "In fact, recent studies have shown that CsBr needle phosphors in particular can reduce radiation exposure by up to 50%. It's a huge step towards effective dose management."

This needle phosphor technology is complemented by Agfa HealthCare's MUSICA^2, a leading tool for optimizing

"IMPAX REM collects disparate data and then stores it in a standardized format so that it can be easily shared and used for further analysis and reporting."

RAWA AL-SAIGH, Dose Registration Global Solution Manager

image quality. When you further add in the productivity and centralized dose monitoring capabilities of the NX Multi-Modality workstation, you have a powerful set of tools for dose management.

Another significant move towards stabilizing radiation dose was the introduction of the exposure index standard by the International Electrotechnical Commission (IEC) and the American Association of Physicists in Medicine. Agfa HealthCare was the first company to fully implement the exposure index standard in its modalities. Using this standard method for tracking exposure reduces the possibility for exposure errors, because technologists only need to remember one method for monitoring exposure changes, regardless of which manufacturer's technology is being used to capture the image. The exposure index has since become an industry accepted standard by manufacturers around the globe.

INTRODUCING VISUAL SAFEGUARDS

Agfa HealthCare complements the standardized exposure index with a color-coded exposure bar in the NX workstation. Apgar explains the significance: "The exposure bar appears green, yellow or red to indicate whether the radiation exposure is acceptable, slightly out of range or dramatically out of range. This technology, which we pioneered, provides a simple visual way for the technologists to verify that they have a good exposure when capturing the image."

Exposures can be tracked and monitored for trends, such as an overall drift up or down or even comparisons among technologists. "Quality control and monitoring tools help to verify that you don't have inappropriate dose in your procedures," says Apgar. "You need safeguards in place and Agfa HealthCare is providing the technology to help keep the dose appropriate."

LOOKING AT THE BIGGER PICTURE

Automating the collection of exposure data is an important next step in dose management. Agfa HealthCare's IMPAX REM** (Radiation Exposure Monitoring) is a soon-to-be-released solution that tracks, stores and performs analysis on radiation dose data from multiple modalities.

"Up until recently, dose wasn't something that was always automatically recorded," explains Rawa Al-Saigh, Dose Registration Global Solution Manager at Agfa HealthCare. "Innovations in technology and the introduction of standards are making this information more accessible than ever before so that we can perform patient dose tracking with ease. IMPAX REM is PACS and modality vendor neutral. It collects disparate data and then stores it in a standardized format so that it can be easily shared and used for further analysis and reporting."

The IMPAX REM product includes a data modelling tool that looks at the dose information in the system. It then applies statistical algorithms to determine if there are abnormalities that need to be highlighted in the dose levels at the patient, study, and machine or institute level. Built-in capabilities also allow easy comparison with dose management guidelines (when available). And simple integration with other radiology department systems means that dose history can be accessed from anywhere.

"We want to help staff to be able to react quickly, meet best practices and comply with mandatory regulations," says Al-Saigh. "The whole idea behind dose management is, if we can perform imaging studies with less radiation, then we should. IMPAX REM is an effort towards empowering imaging centers to establish that fine balance between imaging techniques and dose levels."

HELPING TO MAP OUT THE FUTURE OF DOSE MANAGEMENT

Agfa HealthCare stays closely involved with industry groups and alliances to understand the current realities and future of dose management while being a key part of the conversation. Working closely with the American College of Radiology, Agfa HealthCare teams work to develop technology solutions that meet and exceed the needs of the industry. They provide funding to the Medical Industry and Technology Association and sit on its Computed Radiography and Digital Radiography group. They participate in American Association of Physicists in Medicine meetings, providing technical guidance and support. The IMPAX REM software is born from a close collaboration between the National Research Council of Canada, McMaster University and Hamilton Health Sciences Corporation.

"I ultimately believe that dose management is going to become more comprehensive and automated," says Apgar. "There is a good chance that dose tracking will be mandated by legislation in the future. National Dose Registries will likely be the norm in the not too distant future. I can honestly say that Agfa HealthCare is very well equipped for whatever the future brings."

"Various teams within Agfa HealthCare are working closely together on a cohesive dose management strategy," concludes Al-Saigh. "We don't want to simply design solutions that satisfy the legislation or guidelines for today; we aim to anticipate future needs as well. Our philosophy is to advance efforts in the dose management arena because, ultimately, that could protect people's long term health." •

DID YOU KNOW...

- According to the International Atomic Energy Agency (IAEA) the use of CT has increased significantly over the last two decades.
- A premature infant could receive upwards of 30 or 40 radiation exposures over the course of their treatment.
- Agfa HealthCare was the first company to fully implement the IEC exposure index into their modalities.
- Agfa HealthCare's MUSICA^2 software lets you see bony detail, soft tissue and details in-between in a single image so you're less likely to overexpose.
- Automating the collection of radiation exposure data is an important next step in dose management.

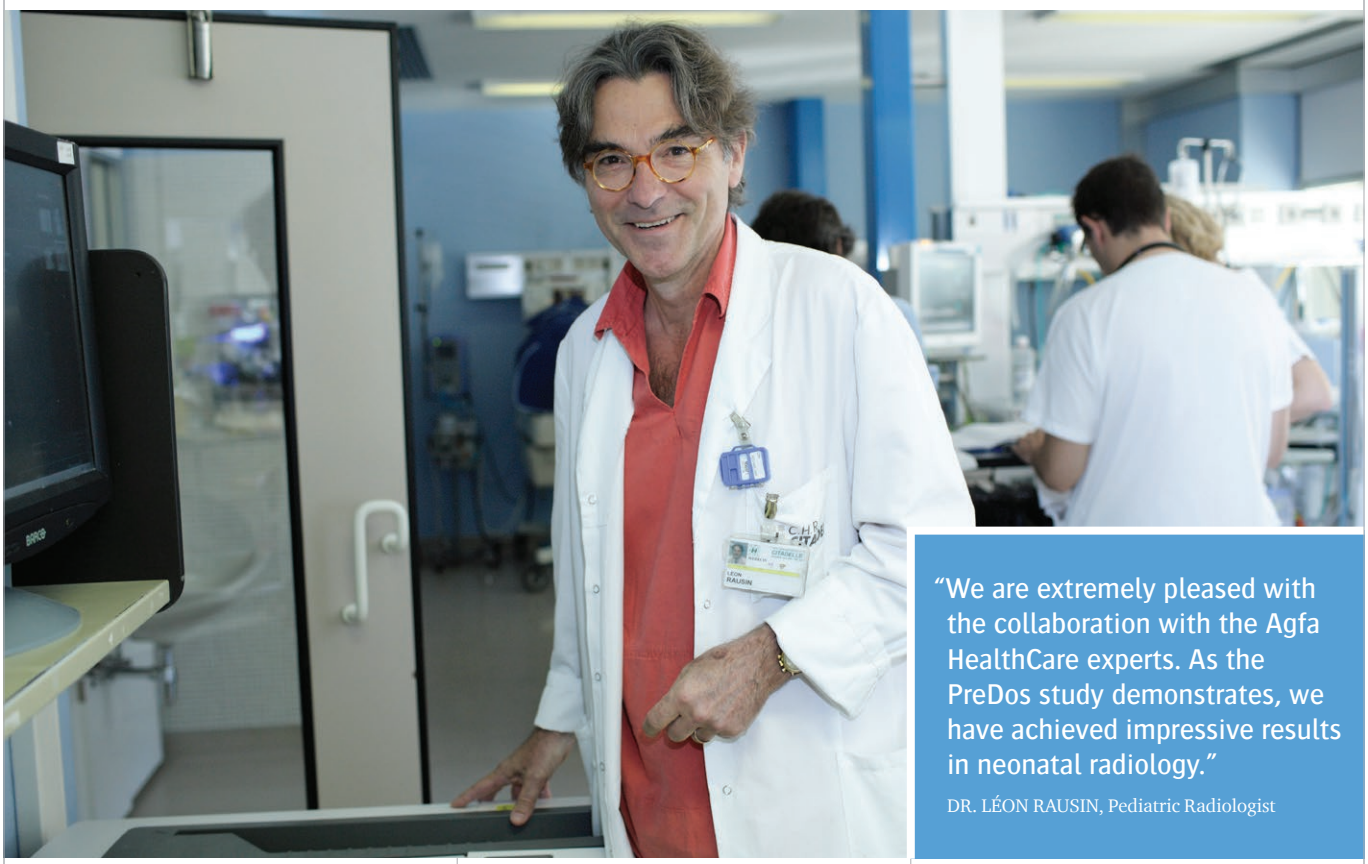
* Potential dose reduction is indicated only for select DR units.
** REM is a works in progress.

CITADELLE REGIONAL HOSPITAL, LIÈGE, BELGIUM

Reduced radiation dose and fewer exams for neonates

Adherence to ALARA principle and collaboration with Agfa HealthCare leads to better care for babies in Liège

INTERVIEWEE Dr. Léon Rausin, Pediatric Radiologist



"We are extremely pleased with the collaboration with the Agfa HealthCare experts. As the PreDos study demonstrates, we have achieved impressive results in neonatal radiology."

DR. LÉON RAUSIN, Pediatric Radiologist

The Citadelle Regional Hospital's NICU is a top achiever in terms of low radiation dose and reduced number of examinations per neonatal patient, as shown in the Belgian PreDos study[1]. Driven by a passion for neonatal radiology, Dr. Léon Rausin, Dr. Paul Jamblin and their team worked closely with neonatologists and Agfa HealthCare experts to bring the hospital's philosophy and systems in line with the ALARA principle.

In Neonatal Intensive Care Units (NICUs), diagnostic radiology is key to effective diagnosis and treatment of premature babies. The PreDos study, conducted by Belgian nuclear control and nuclear energy agencies FANC-AFCN (Federal Agency for Nuclear Control) and SCK-CEN (Study Center for Nuclear Energy), examined the radiology doses delivered to 285 premature babies born before 37 weeks of gestation in NICUs across Belgium, who were administered a combined total of 830 examinations during their hospital stays.

The study measured tube output for every contributing X-ray system in the participating hospitals, and for each of the patients the number of examinations was extracted from the facilities' PACS systems. According to the report, a wide variation of estimated doses was observed across the hospitals, caused by factors including a wide variation in examination settings, significant variance in focus-detector distance and a large variation in tube output for the different X-ray machines.

CITADELLE REGIONAL HOSPITAL: LOWEST RADIATION DOSE OF ALL PARTICIPATING CENTERS IN PREDOS STUDY

The Citadelle Regional Hospital has 25 beds in its NICU, and takes care of 480 neonatal patients per year. The pediatric department has 100 beds, treats approximately 4,800 patients per year, performs 30,000 day clinic consultations

SOLUTION

DX-S Computed Radiography solution

- Offers reduced X-ray dose and improved pediatric imaging
- Features the integration of NIP (needle-based imaging plate system) and Scanhead technologies, providing high levels of image quality, speed and flexibility
- MUSICA² image processing software, for a simplified workflow that analyzes the image and automatically applies the appropriate image enhancement parameters independent of the examination

AGFA HEALTHCARE'S CONTRIBUTION

- Calibrate the CR solution with NIP (needle-based imaging plate system) and MUSICA² image processing software in line with the needs of neonatal radiology.
- Work closely together with the neonatal radiologists to adhere to the ALARA principle for neonatal patients.

"In addition to the use of diagnostic reference levels, we also need to keep our staff focused."

DR. LÉON RAUSIN, Pediatric Radiologist

and has another 16,000 emergency room visits annually. Pediatric radiologists Dr. Léon Rausin and Dr. Paul Jamblin, and their team, whose cohort was one of the largest in the study, showed the lowest radiation dose of all participating centers. They were also among the best-performing centers in terms of the number of examinations administered to each patient.

COLLABORATION WITH AGFA HEALTHCARE SPECIALISTS CONTRIBUTES TO CALIBER OF PREDOS STUDY RESULTS

The explanation for this success starts with the passion of Dr. Rausin for pediatric radiology and in particular neonatal radiology. "The reduction of pediatric radiation dose is the biggest challenge facing pediatric radiologists today," he says. "A European study from 1997, in which we also participated, showed a radiation dose variation in different European centers of a factor of 70. This was unacceptable, particularly since premature babies as a rule used to get two to three exams per day."

"The Agfa HealthCare CR solution with NIP (needle-based imaging plate system) and MUSICA² image processing software is very effective in terms of dose reduction."

DR. LÉON RAUSIN, Pediatric Radiologist

Dr. Rausin was compelled to find ways to reduce the patient dose. He began working with his colleagues and with Agfa HealthCare experts to pinpoint the optimum balance between radiation dose and image quality. "The Agfa HealthCare CR solution with NIP (needle-based imaging plate system) and MUSICA² image processing software is very effective in terms of dose reduction.
Even so, we had to work several weeks to fine-tune the image processing algorithms and the examination parameters for neonatology. Agfa HealthCare has now integrated our findings into its solutions. I am extremely pleased with the collaboration with the Agfa HealthCare experts. As the PreDos study demonstrates, we have achieved impressive results in neonatal radiology."

INVOLVING STAFF AS IMPORTANT AS SETTING THE RIGHT TECHNICAL PARAMETERS

The goal of the PreDos study was to calculate national diagnostic reference levels, explains Dr. Rausin, so that all hospitals can strive to be in the lowest quartile of radiation dose administered. The aim is to harmonize and implement best practices across NICUs in Belgium.

Although the study recommendations that Dr. Rausin and Dr. Jamblin plan to implement focus mainly on technical settings, they realize that the issue is broader than the technical aspects alone. All staff involved in the imaging process should take an active part in the optimization procedure, says Dr. Rausin. "We found out during the study that our technologists were exceeding the kVp settings determined in the study protocol by 5 kVp. We have had them adjust this, but it proves that in addition to the use of diagnostic reference levels, we also need to keep our staff focused."

NEONATOLOGISTS' SUPPORT OF ALARA PRINCIPLE KEY TO DOSE REDUCTION

The PreDos study also showed a large variation in the number of examinations performed on patients during their NICU stay. The Citadelle team did well on this criterion too. "We only examine when we suspect a complication," says Dr. Rausin. "We decided to stop the 'obligatory' examinations that would occur twice, or sometimes even three times a day. We managed to convince our neonatologists to accept the ALARA approach – as low a radiation dose as reasonably achievable. They monitor the patient with biological parameters, and if these do not sufficiently explain a patient's condition, we of course will examine." •

[1]Jérémie Dabin, Lara Struelens, Filip Vanhavere, Evaluation of the doses delivered to premature babies in the Belgian Neonatal Intensive Care Units (PreDos Project), FANC-AFCN (Federal Agency for Nuclear Control) and SCK-CEN (Study Center for Nuclear Energy), 2012.

DID YOU KNOW...

- The PreDos study shows neonate patients may receive a radiation dose up to 70 times during a typical stay in a NICU center.
- The first official ICU for neonates was established in 1961 at Vanderbilt University, US.

CHILDREN'S MERCY HOSPITALS AND CLINICS, KANSAS CITY, MISSOURI, USA

Reducing pediatric radiation dose by nearly 60%

Meeting the specific needs of pediatric patients with next-generation CR solution

INTERVIEWEES Dr. James C. Brown, Chairman of the Radiology Department and Associate Professor of Radiology at the University of Missouri - Kansas City School of Medicine · Corliss Panis, Director of Radiology · Nanci Burchell, Radiation Safety Officer

"To reduce radiation dose by almost 60% and still have the same image quality is a significant step forward for Children's Mercy and our neonatal patients."

DR. JAMES C. BROWN,
Chairman of the Radiology Department

Children's Mercy Hospitals and Clinics, one of the nation's top pediatric medical centers, provides services in more than 40 specialties, including nephrology, oncology, cardiology, heart surgery, orthopaedics, neurology and neurosurgery. Located in Kansas City, Missouri, the state-of-the-art 335-bed facility recently purchased a DX-G CR solution that allows it to reduce radiation dose by 57% compared to its previous CR system.

The hospital's 600-plus pediatricians and researchers are actively involved in clinical care, pediatric research and education. In addition to its primary facility, Children's Mercy serves the community and the greater Midwest with outpatient facilities and outreach clinics throughout the city, county and surrounding communities.

CHALLENGES OF PROVIDING CARE FOR BABIES BORN PREMATURELY

Neonatal radiography of premature infants is one of the most demanding areas of radiography, according to Dr. James C. Brown, Chairman of the Radiology Department and Associate Professor of Radiology at the University of Missouri - Kansas City School of Medicine. "Because the patient is so small, radiographic contrast is low and it is difficult to visualize details," he says. "Yet we still want to use the lowest possible radiation dose because in some cases, premature infants may receive 30 to 40 exposures over the course of their treatment."

"Premature infants are born with a lot of problems," Dr. Brown goes on to explain. "Their underdeveloped lungs don't have enough surfactant to breathe on their own, so their lungs must be monitored via X-ray up to three or four times a day. The same goes for babies with congenital heart disease."

Many radiography systems use technology and processing that limits their ability to reduce dose and improve image quality. In 2012, Children's Mercy purchased new Computed Radiography equipment from Agfa HealthCare. The Agfa HealthCare DX-G CR solution has allowed Children's Mercy to reduce radiation dose by 57% compared to its previous CR system.

IDEAL FOR NEONATAL AND STANDARD PEDIATRIC RADIOGRAPHY

Children's Mercy is using the DX-G to process approximately 10,000 neonatal chest X-rays each year. The DX-G combines several innovative technologies and features that allow the radiology department to reduce and better monitor radiation dose: DirectriX CsBr needle-based phosphor detectors, the NX workstation with MUSICA^2 Platinum Pediatric image processing, color-coded dose bar, extended dose monitoring analysis and automated repeat/reject analysis.

SIDE-BY-SIDE COMPARISON SHOWS SAME IMAGE QUALITY WITH REDUCED DOSE OF NEARLY 60%

"We did a side-by-side comparison of the DX-G with our previous digitizer, and the outcome was very clear," says Corliss Panis, Director of Radiology. "We achieved the same quality in the diagnostic image at a reduction in radiation dose of nearly 60%."

The DX-G includes a deviation index that helps technologists determine if an image is under- or over-exposed with an easy-to-read color-coded (red/yellow/green) dose bar. "The technologists love how easy it is to determine if exposure is correct compared to our previous digitizer," says Nanci Burchell, Radiation Safety Officer. "It is very simple – you just have to make sure that you stay in the green zone."

> "We can review and measure the performance of the department as a whole, as well as the individual technologist."
>
> CORLISS PANIS, Director of Radiology

"It is linear, and visual," Burchell continues. "Before, you saw a number, and the higher the number was, the lower the dose was. It was counterintuitive and confusing."

EXTENDED DOSE MONITORING ANALYSIS SOFTWARE MARKS INDUSTRY FIRST

The system incorporates Extended Dose Monitoring software, the first in the industry to use the newly-established International Electrotechnical Commission (IEC) Exposure Index standard. The exposure monitoring results are displayed at the workstation and can be configured as structured reports to detect dose drift within the department or even to monitor the performance of an individual technologist over time. The DX-G also provides an automated method for analyzing and tracking repeat exposures, again allowing the department to monitor departmental or individual performance.

"We can review and measure the performance of the department as a whole, as well as the individual technologist," explains Corliss. "If there are any outliers, we can work with them to optimize their technique to bring their exposures in line with the department norm."

"Premature infants are so much more susceptible to the risks of radiation. The DX-G with DirectriX CsBr plates allows us to give them the care they require while lowering the corresponding risk of radiation-induced cancer," concludes Dr. Brown. "To reduce radiation dose by almost 60% and still have the same image quality is a significant step forward for Children's Mercy and our neonatal patients." •

> "The technologists love how easy it is to determine if exposure is correct compared to our previous digitizer."
>
> NANCI BURCHELL, Radiation Safety Officer

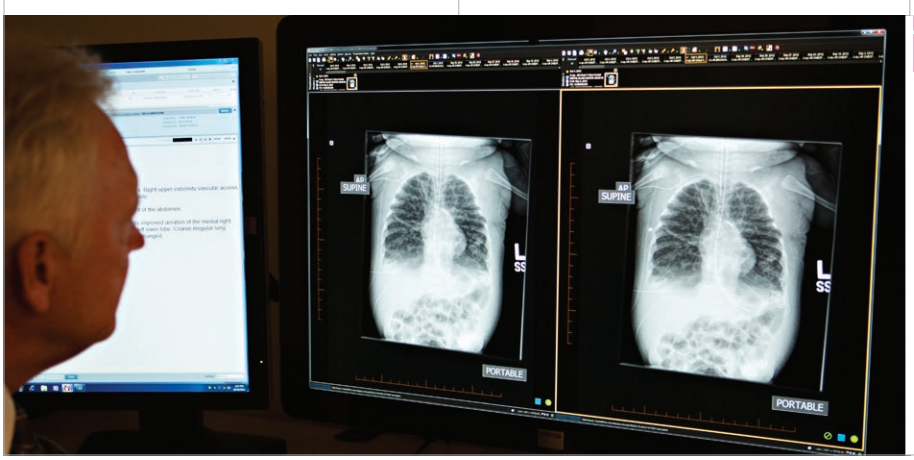
SOLUTION

DX-G CR solution

- Bridges the gap between high performance needle detector imaging and traditional phosphor cassettes
- Features DirectriX CsBr needle-based phosphor detectors, with nearly twice the detection quantum efficiency (DQE) of powdered phosphor systems
- Touch screen NX workstation integrates with in-room equipment and other hospital systems to streamline workflow
- MUSICA² Platinum Pediatric image processing offers age-specific image processing for enhanced detail and minimizing image adjustment time

AGFA HEALTHCARE'S CONTRIBUTION

- Understanding of and adherence to industry regulations and standards
- Industry-leading technology that delivers patient care and efficiency benefits
- Expertise in imaging and hospital workflows and needs



DID YOU KNOW...

- For two years in a row, Children's Mercy has been named as one of the country's best children's hospitals by U.S. News & World Report.
- It has also been recognized by the American Nurses Credentialing Center for excellence in nursing services.
- Children's Mercy Hospitals and Clinics recently opened a new pediatric emergency department to serve the south side of the city, and it was just named as a participant in a national effort to improve the quality of pediatric patient care and safety.

METRO SPECIALIST HOSPITAL, KEDAH, MALAYSIA

Metro Specialist Hospital chooses Agfa HealthCare's CR technology

High quality image processing leads to faster patient turnaround times

INTERVIEWEE Dr. Azmi bin Nordin, Head of Radiology

"After six months experience with the CR solutions, our staff are still highly enthusiastic about the workflow efficiency and user-friendliness of the NX workstation."

DR. AZMI BIN NORDIN, Head of Radiology

TODAY'S CR SOLUTIONS PROVE TO BE PRODUCTIVE

Metro Specialist Hospital in Kedah, Malaysia decided to move into computed radiography with Agfa HealthCare's CR solutions after a lengthy selection process. Dr. Azmi bin Nordin and his colleague were immediately convinced by the image processing quality of MUSICA², and his staff greatly appreciated the user-friendly NX workstation interface. The department tested four competitive systems and found Agfa HealthCare's solution that included the CR 35-X and CR 85-X digitizers beat the competition in terms of workflow and image quality. "We found the images to be sharper and crisper which help us detect faster and with more ease. MUSICA²'s detail visualization quality leads to fewer exposures during examination, potentially lower X-ray doses, faster patient turnaround times and more reading and reporting comfort for us.

AGFA HEALTHCARE'S CONTRIBUTION

» A complete, cost-effective CR solution that improves the quality of chest studies.

SOLUTION

MUSICA² image processing software

» Visualizes subtle details, enhancing reading comfort

» Assists radiologists and technologists by automatically applying the appropriate grade of image enhancement regardless of exam type

» Optimizes image quality by auto-adjusting density and relative contrast of anatomic detail in a robust and consistent manner

After six months experience with the CR solutions, our staff are still highly enthusiastic about the workflow efficiency and user-friendliness of the NX workstation." Both the CR 35-X and CR 85-X are used in a separate digital examination room. The in-room location is strongly valued for its point-of-care convenience and Dr. Azmi bin Nordin and his team also found that the workflow required far less steps than for competitive solutions. "The throughput speed of Agfa HealthCare's CR solutions was about 50% higher than the competition."

Currently looking at PACS as the next step in the digital radiology environment, Dr. Azmi bin Nordin has a keen eye on the future: "We want to expand to even faster solutions. Our CR solutions are advanced versus competitive systems. We expect to build on this leading edge." •

"The throughput speed of Agfa HealthCare's CR solutions was about 50% higher than the competition."

DR. AZMI BIN NORDIN, Head of Radiology

Pushing the boundaries of what is possible today

New mobile applications are bringing advances in healthcare to more people than ever before. Extending the boundaries of what is possible is also a part of Piaget's creative vision. The Piaget 1208P caliber represents the thinnest automatic movement in the world, equipped with a micro-rotor.

CLÍNICA ANGLO AMERICANA, LIMA, PERU

Business Intelligence raises hospital's leadership

Peru's first private hospital to install IMPAX and IMPAX Business Intelligence with novel business intelligence software to further validate its role as nation's number one clinic

INTERVIEWEES Dr. Ernesto Quevedo, Head of Radiology · Alfredo Cubillas, IT Manager

"The information produced by IMPAX Business Intelligence documents the improvement actions the radiology department takes."

ALFREDO CUBILLAS, IT Manager

The concept of personalized, "boutique" medical care is becoming well-known worldwide. At Clínica Anglo Americana in Peru, it is already been practiced for 90 years since opening as The British American Hospital shortly after World War I. At that time, its emphasis was to have a specialized medical corps from the world's best teaching hospitals offering high quality care.

This principle is still part of the 64-bed hospital's mission providing diverse services from a modern-day building with the latest medical technology. In 2011, it vaulted to number-one ranking in Peru and 19th in Latin America in "América Economía" magazine's annual list. The hospital is strategically located in Lima's San Isidro district, the Peruvian capital's financial and commercial heart.

So devoted is the hospital to meeting the region's healthcare needs through high medical standards, it this year applied for accreditation by the US-based Joint Commission International (JCI).

MORE PRIVATE TIME WITH PATIENTS SINCE THE IMPLEMENTATION OF IMPAX

To further foster its near century of leadership, Clínica Anglo Americana became Peru's first private hospital to implement a complete RIS/PACS integrated with its pre-existing HIS and enhanced by new business intelligence software. After a thorough review of three globally-recognized suppliers, early this year it installed Agfa HealthCare's IMPAX solution along with IMPAX Business Intelligence, an advanced platform that enables healthcare managers and care providers to compile, organize and manage clinical, quality, financial and administrative data.

No more than three months after installing IMPAX, Dr. Ernesto Quevedo, head of the hospital's radiology department, says the combined solution has met his expectations, as well as those of his radiology colleagues and the hospital's technical and administrative staffs. Since implementation, all workflow processes have been optimized which he says expands the time now given to patients as well as patient care.

> "The IMPAX solution lets the doctor spend more private time with the patient for individual attention, as well as the detailed evaluation of every case. This supports our vision of providing boutique care."
>
> DR. ERNESTO QUEVEDO, Head of Radiology

THE IMPACT OF THE IMPAX SOLUTION IS VISIBLE IN HOW PATIENT WAITING TIMES HAVE DECREASED

As an example, Dr. Quevedo says X-ray results reports used to take three to eight days to complete, especially if the radiologist was absent due to meetings, travel or illness. "Now, thanks to the dictation features of IMPAX RIS, these reports are ready in one day at most," he adds. "Radiologists save time by using the voice recognition system as it is no longer necessary to manually transcribe, validate and sign the report." The result is a highly accurate account promptly dispatched to the attending physician which expedites attention to patient care.

Interestingly, in a hospital known for 'boutique' care, it is not just radiologists, clinicians and attending physicians who notice and appreciate this change. Alfredo Cubillas, engineer and IT manager, says the impact of the IMPAX solution is visible in how patient waiting times have decreased. He noticed exam throughput has quickened, from the moment the patient arrives at the radiology department. "The patient registers at the department's counter and, since all databases are interconnected, the technologist assigned to the exam is instantly notified before the patient completes registration. It is said that now, the technologist has to wait for the patient; not the other way around."

There are other benefits. "When a father brings his child to our pediatric emergency services, he appreciates that the doctor can view images quickly, make a medical decision, and e-mail a report to a pediatrician or private physician for follow-up," Dr. Quevedo explains. "Best of all, the IMPAX solution lets the doctor spend more private time with the patient for individual attention, as well as the detailed evaluation of every case. This supports our vision of providing boutique care."

IMPAX BUSINESS INTELLIGENCE MANAGES DATA, TRACKS TRENDS, AND AIDS ACCREDITATION QUEST

Thanks to IMPAX Business Intelligence's advanced Data Warehouse, a key component of the solution, managers and care providers have access to data that help them identify opportunities as well as potential issues. Trends and cost-saving opportunities are noted, as well as workflow bottlenecks, enabling an increase in efficiency for a high level of patient satisfaction and better understanding of their market. Alfredo Cubillas says the solution is part of the hospital's JCI accreditation application through the detailed documentation it provides.

He says an important element of the JCI accreditation is patient security. One key component is providing the correct demographic identification that verifies that a procedure is being performed on the right patient. The integration of the HIS with IMPAX RIS/PACS eliminates the risk of error from manually transcribing demographic data. On the other hand, JCI standards also assess the efforts health organizations make in continuous quality improvement. The information produced by IMPAX Business Intelligence documents the improvement actions the radiology department takes. As a result, two issues addressed and assessed by JCI are combined: security, and quality improvement.

A personalized approach is how patients view the care at Clínica Anglo Americana. Thanks to IMPAX and IMPAX Business Intelligence, the hospital now maintains highly detailed databases and procedures customized for each patient, which reinforce its long-held image as a highly specialized, attentive hospital.•

SOLUTIONS

IMPAX 6

- Optimized workflow for all users
- Allows access to data from local and remote sources
- Simplification of the centralized administration of users, systems and software
- Provides an integrated view on the patients' data
- Complete integration of RIS/PACS with delivery of reports in the workplace

IMPAX RIS

- Complete support of the radiologist's workflow and integration with management reports
- User profiles in order to increase efficiency
- Includes a series of reports and results
- Integration with the existing IT infrastructure

IMPAX Business Intelligence

- Makes medical processes and workflows more transparent and efficient
- Improves the patient's experience
- Accelerates decision-making processes
- Identifies trends and cost-saving opportunities
- Understands referring physician and patient patterns
- Improves data quality and integrity over time

AGFA HEALTHCARE'S CONTRIBUTION

- IMPAX with Business Intelligence to enhance workflows for significantly reduced patient waiting times and increased staff productivity.
- Regional knowledge, experience and responsive technical support which is proven at similar facilities in nearby countries such as Chile.

DID YOU KNOW...

- Clínica Anglo Americana is growing rapidly with plans to nearly double its bed count in 2013.
- The earthquake of May 24, 1940 severely damaged the original hospital. As a result, it was fully demolished and rebuilt where it stands today.

FRIEDRICHSHAFEN HOSPITAL, GERMANY

Continuing 100-year history of innovation with installation of new DR solution

DX-D 600 offers Full Leg / Full Spine* and features MUSICA² image processing software

INTERVIEWEES Johannes Weindel, CEO · Gerhard Blauert, Head Technologist

Friedrichshafen is the second largest city on the shores of Lake Constance, in the south of Germany. Over one hundred years ago, the hospital that would become Friedrichshafen Hospital was built here, in line with standards considered modern at that time. As a result of the city's expansion, it became clear in the early 1970s that further modernization of the hospital was necessary. Founded in 2005, Friedrichshafen Hospital continues to be the key provider of care in the area. The recent implementation of Agfa HealthCare's DX-D 600 direct radiography solution is the latest step toward the hospital's goals of diagnostic accuracy optimized processes, and economic viability.

Patients today are very well informed, both about medical conditions and the progress medicine is making in science and routine practice, says Johannes Weindel, CEO of Friedrichshafen Hospital. "Patients demand the best quality care – and this is what we offer," he says. When it comes to making healthcare decisions, patients in the 21st century have more options than ever before. The medical technology in place at a hospital or clinic plays a central role for patients in making these choices.

The focus at the hospital is on ensuring the well-being of patients, at all stages in the treatment process. "They should be entering the hospital campus with a positive feeling, and leaving it again in a good state of health. We aim to provide more safety and comfort to patients, in every respect," says Weindel.

> "From the beginning of the project until operation started, we received great support from Agfa HealthCare including all questions and interfaces concerning hardware, software licensing, and more."
>
> JOHANNES WEINDEL, CEO

DX-D 600 MARKS FIRST INSTALLATION OF ITS TYPE IN GERMANY

In the context of these goals, when looking for a new DR solution, hospital administration at Friedrichshafen decided in favor of Agfa HealthCare's DX-D 600, a fully automated direct radiography solution. Installed in November 2011, it marks the first system of this type in Germany. The price-performance ratio was a major factor in the decision-making process, recalls Weindel; as was the advanced state of its technology, and the hospital's positive experience with the Agfa HealthCare support and sales team.

Benefits the hospital expects to achieve with the DX-D 600 include high image quality, improved accuracy in readings, and optimization of processes in the areas of radiology, outpatient care, surgery, and post-therapeutic care. Other advantages are the ability to archive and share images, and the option of transmitting images electronically to referring physicians and post-therapeutic care organizations.

HIGHER LEVEL OF AUTOMATION ADDS CONVENIENCE TO DAILY ROUTINE

Compared to its predecessors, the new DX-D 600 offers a higher level of automation. In addition to horizontal and vertical auto-tracking, an auto-positioning function has been integrated: thanks to stored protocols, the DX-D 600 applies the correct acquisition position for the various types of exams. At the click of a button, all components are positioned automatically. Horizontal and vertical tracking supports technologists by maintaining the focus-detector geometry despite movements of the table or wall stand.

Further options include Full Leg / Full Spine with automatic image stitching. The intelligent self-adapting MUSICA² image processing software automatically analyzes the characteristics of each image and ensures consistency of image quality for mobile as well as fixed acquisitions. This characteristic, according to Head Technologist Gerhard Blauert, is offered only by Agfa HealthCare, and significantly enhances reading for radiologists.

FULL SUPPORT DURING INSTALLATION

During the installation phase, staff at the hospital experienced full support from Agfa HealthCare, says Weindel. "From the beginning of the project until operation started, we received great support from Agfa HealthCare, including all questions and interfaces concerning hardware, software licensing, and more."

"With a total of 400 full leg and 5,000 thorax acquisitions annually, the fully digital solution will act as our workhorse for routine exams."

GERHARD BLAUERT,
Head Technologist

"With a total of 400 full leg and 5,000 thorax acquisitions annually, the fully digital solution will act as our workhorse for routine exams," says Blauert. The technologists have adapted their workflows; now they define the required parameters and the suitable detector before each acquisition. Inserting and transporting cassettes is a thing of the past, and there is no longer any prolonged waiting time for image read-out. After 6 to 8 seconds, the preliminary image is available for a quality check. Image quality, says Blauert, is higher in comparison with existing cassette-based systems.

One of the key benefits is the added convenience for technologists, reports Blauert. Images are immediately available for processing or reading, and there are no unnecessary waiting times for staff or patients. Re-acquisitions due to any questionable image quality are no longer necessary. After the adaptation of processes, the solution has been embraced by the technologists; added time for interaction with patients, longer intervals between exams, and reduced stress are welcome improvements. There is also the potential to increase the number of exams performed, says Blauert.

NEEDLE-BASED DETECTOR PLATES FOR CONSISTENT QUALITY

A next step for management at Friedrichshafen will be to replace remaining plates with the most advanced needle-based detectors from Agfa HealthCare. "This will help us achieve consistent quality of legacy analog systems and images in comparison with the images from this fully digital solution," says Weindel. "There is a significant benefit from this also for referring physicians and post-therapeutic care organizations: they will no longer receive images of differing quality from an individual hospital or radiology department." •

SOLUTIONS

DX-D 600

» Higher level of automation
» Offers horizontal and vertical auto-tracking as well as an auto-positioning function which positions all components automatically for defined exam types

AGFA HEALTHCARE'S CONTRIBUTION

» MUSICA² image processing software automatically analyzes the characteristics of each image and provides consistency of image quality for mobile as well as fixed acquisitions, facilitating reading.
» The fully automated DR solution increases productivity; reduced exam and waiting times result in increased satisfaction on the part of staff and patients.

DID YOU KNOW...

» The hospital was inaugurated in 1892 under the name of 'Karl Olga Krankenhaus'. At the time, Friedrichshafen had 3,500 inhabitants. Today, approximately 60,000 people live here.
» Friedrichshafen used to be a hub for dirigible construction. Even today, companies with roots in that industry are the largest employers in the region.

* Not available in Canada and the United States.

CLEVELAND CLINIC, CLEVELAND, OHIO, USA

Visualization strategy gives physicians a true picture of patients

'Leave no image behind' concept drives image-enabled EHR project at leading US hospital

INTERVIEWEE Louis Lannum, Director of Enterprise Imaging

"If an enterprise truly wants a comprehensive imaging program, it is imperative to have an overarching strategic group that looks at imaging at the enterprise level, and not just at the department level."

LOUIS LANNUM, Director of Enterprise Imaging

Cleveland Clinic is well on its way to achieving an image-enabled EHR (Electronic Health Record) that provides a complete picture of a patient's medical encounter, from X-ray images to endoscopy exams. Starting from the concept of a radiology PACS, the project team developed a vision and a plan that has extended the benefits of digital image management across the enterprise, and established a new focus on 'imaging as a resource' that has taken hold in the executive suite.

For Louis Lannum, Director of Enterprise Imaging, the ICIS enterprise image management technology solution, which makes multimedia imaging data easily available across the enterprise, is changing more than just the ways in which information is accessed. "We're developing a visualization strategy that allows physicians to look at images associated with reports, and develop a true picture of what's going on with the patient," he says. "Every doctor I know is extremely visual, and now we're providing that visualization layer for them. Once physicians and practitioners and other hospital providers are able to see beyond the EHR, into a more visual world, it is going to enable better medicine, and better clinical practice."

For Cleveland Clinic, the journey to an image-enabled EHR started with a PACS upgrade. The Imaging Institute (radiology department) needed to replace a legacy PACS, along with its image distribution component. They opted for Agfa HealthCare's IMPAX solution, with ICIS as the 'storage container', along with the XERO Technology Viewer.

"We were smart enough so that when we bought a radiology solution, we also bought a strategy," says Louis. "We recognized very quickly that we could build an overarching strategy based on this infrastructure." Agfa HealthCare's Imaging CIS, or ICIS, is a new class of enterprise image management solution that offers an innovative workflow-centric platform. At Cleveland Clinic, the ICIS

> "The XERO imaging viewers are very, very fast, access to the images within the EHR is fast, there is a high level of satisfaction among our physician group."
>
> LOUIS LANNUM, Director of Enterprise Imaging

technology is enabling a truly global view of patient information that can be viewed at any of 35,000 workstations.

COLLABORATION BETWEEN RADIOLOGY AND IT OPENS UP GREATER POSSIBILITIES FOR IMAGE AND INFORMATION SHARING

The team at Cleveland Clinic making the purchase decision included people from the Imaging Institute, and from the Information Technology Division (ITD). "Right from the start there was a collaborative effort between ITD and radiology to take advantage of the ICIS capability. While radiology was focused on replacing its PACS, ITD took the opportunity to explore how it could broaden the scope of imaging inside the Cleveland Clinic space," says Louis.

The project has achieved all of its first-year milestones. "We have successfully completed an integration between the women's health image system and the ICIS solution, so we are now capturing all the maternal fetal ultrasounds, and we have successfully integrated the Digestive Disease Institute's ambulatory surgical endoscopy system. A month ago we began capturing ophthalmology images from the Cole Eye Institute, so although they have their own image management layer system, all the images that they capture are sent to ICIS and are displayed within the patient context inside of our EHR."

CREATION OF IMAGING COUNCIL AND SUPPORT FROM THE C-SUITE KEEP STRATEGY ON TRACK

This collaborative approach has been critical to the project's success, as has the buy-in from top-level hospital executives. "If an enterprise truly wants a comprehensive imaging program, it is imperative to have an overarching strategic group that looks at imaging at the enterprise level, and not just at the department level," says Louis.

The newly-created Imaging Council reviews all of the projects across the enterprise that have to do with imaging. The Council provides executive oversight, and ties together department and unit needs with Cleveland Clinic's overarching goal: to provide a complete longitudinal visual record for every patient.

"Our goal with the formation of the Imaging Council was to take the collaborative effort that we already had with the Imaging Institute, ITD, and Agfa HealthCare and bring it up to the executive level, and include the CIO, and the CMIO (Chief Medical Information Officer), representatives from medical areas, the chairman of radiology, administrators, and so on," says Louis. "The existence of the Imaging Council also emphasizes that imaging is a strategic initiative and a strategic resource, and here are all the departments involved in making this resource happen."

FAST IMAGE ACCESS AND GLOBAL PATIENT VIEW FOR PHYSICIANS

The reaction to the new access to images and information has been very positive, says Louis. "The XERO imaging viewers are very, very fast, access to the images within the EHR is fast, there is a high level of satisfaction among our physician group. We have a global view of the patient, and the fact that the physicians have remote access to the EHR from their offices, from their homes, from outside our firewall, means that we are truly making imaging delivery mobile."

> "Once physicians and practitioners and other hospital providers are able to see beyond the EHR, into a more visual world, it is going to enable better medicine, and better clinical practice."
>
> LOUIS LANNUM, Director of Enterprise Imaging

The next step is to incorporate a number of ultrasound silos and medical digital photography into ICIS. In cases where there is no department image management system, ICIS serves as a surrogate PACS. ICIS creates the metadata needed to render patient-centric imaging that's easily retrievable across the enterprise, key to the ICIS image management strategy.

For Louis and his team, this positive response has generated momentum for the project. "Before, image access was strictly radiology. Now, the minute that we display a new department's images inside our viewers, our phone starts to ring. People want to know what they can do to get their images, photographs, or reports into the EHR." •

SOLUTIONS

Imaging Clinical Information System (ICIS)

- Enables hospital enterprises to capture, store, exchange, and access medical images
- Unifies the patient record across regions, facilities, and departments, creating a true longitudinal patient-imaging record by integrating and linking multi-facility, multi-departmental, and multi-specialty imaging data
- Provides the reliability and scalability required by large health networks that generate tens of millions of medical imaging studies annually

XERO Technology Viewer

- Zero-footprint viewer that provides secure access to standard healthcare data from existing workstations anywhere on the network, via the user's choice of an internet browser and simple network connection; requires no software download or installation

AGFA HEALTHCARE'S CONTRIBUTION

- Develops and supports IT solutions to maximize the clinical benefits of patient-centric imaging data, while streamlining operations
- Provides the tools needed for enterprise-wide imaging workflows and intelligence strategies
- Helps hospitals equip their physicians to provide better care and outcomes for patients

DID YOU KNOW...

- Cleveland Clinic includes a main campus near downtown Cleveland, eight community hospitals and 18 Family Health Centers in northeast Ohio, plus other centers worldwide.
- Combined, Cleveland Clinic has 4.6 million patient visits per year.
- It is staffed by 2,800 physicians and scientists, and 11,000 nurses.
- Cleveland Clinic has pioneered many medical breakthroughs, including coronary artery bypass surgery and the first face transplant in the United States.
- Cleveland Clinic is consistently ranked among the top hospitals in America by U.S. News & World Report, and its heart and heart surgery program has been ranked No. 1 since 1995.
- In 2012, its urology and nephrology programs were also ranked No. 1 in the nation.

Commitment to the most advanced mobile solutions

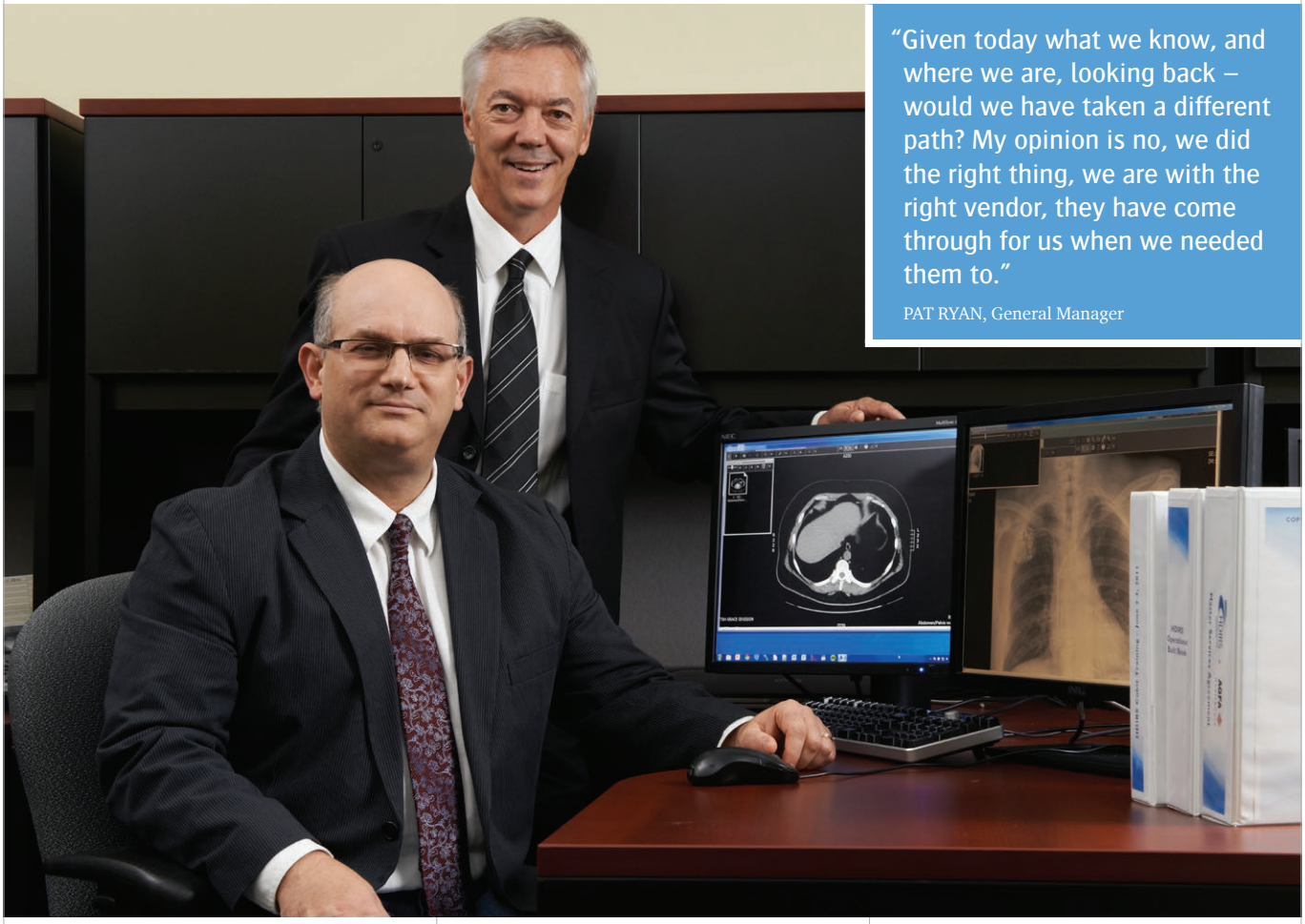
The Piaget 1270P caliber, Piaget's first ultra-thin automatic tourbillon movement with a thickness of just 5.55 mm, is a marvel of engineering. New mobile healthcare solutions that also represent engineering achievements are transforming the way that healthcare is delivered around the globe.

HOSPITAL DIAGNOSTIC IMAGING REPOSITORY SERVICES (HDIRS), ONTARIO, CANADA

Canada moves closer to a national EHR

Major provincial repository project links 38 member hospitals

INTERVIEWEES Pat Ryan, General Manager · David Macdonald, Director of Operations



"Given today what we know, and where we are, looking back – would we have taken a different path? My opinion is no, we did the right thing, we are with the right vendor, they have come through for us when we needed them to."

PAT RYAN, General Manager

Creating a shared repository for the diagnostic images of 30% of the people of Ontario, Canada's most populous province with more than 13 million residents, turned out to be one of the most complex projects of this type ever undertaken in the country, because of the high number of clinical professionals and patients served.

All 38 member sites can now view close to 10 million exams that are stored in the repository, which is growing at a rate of about 3 million exams per year. The Hospital Diagnostic Imaging Repository Services (HDIRS) project is sponsored by Canada Health Infoway, a federally-funded organization investing in the implementation of health information systems that will lead to the eventual goal of an Electronic Health Record (EHR) for each of Canada's approximately 34 million inhabitants. The project is also sponsored by eHealth Ontario, which coordinates IT strategy and projects aimed at improving quality and access to healthcare for the province.

PATIENTS ALREADY EXPERIENCING BENEFITS

In addition to the over-arching goals of providing healthcare more efficiently, the project is delivering other benefits as well. "In our role we archive studies for a number of hospitals, which has meant that they either didn't need to create a local archive, in the case of those sites where we installed IMPAX as part of this project, or some sites have retired their own local infrastructure to leverage HDIRS," says David Macdonald, Director of Operations.

Cancer patients, in particular, are already seeing the benefits of the consolidation. "We have been able to improve the efficiency of oncology rounds," says Pat Ryan, General Manager. "There are sites in our group that are major oncology centers, and they can now pull exams from other facilities and go through a higher number of exams in their rounds, so we know from that we are affecting the speed of treatment in oncology."

PROVEN REGIONAL EXPERIENCE AND EXPERTISE

The choice of Agfa HealthCare for this venture went well beyond its PACS and data center expertise. "There were several reasons why we chose Agfa HealthCare," says Pat. "One reason is its ability to help us lower operational costs. Another is its proven solutions. Agfa HealthCare already had a strong footprint in Canada. The Canadian examples were the most relevant to us, because Canada has progressed quite a bit towards the cross-provincial, cross-country concept of an EHR. The health system within Canada was blossoming into this virtual EHR concept, and we were able to look at some of the other jurisdictions in Alberta, Quebec, and Nova Scotia, in making a decision. And because there were two components, the operational PACS and the diagnostic imaging repository, Agfa HealthCare was able to fill both of those roles, and that was an advantage."

"In this type of venture, a good strong relationship and commitment from the vendor is critically important in order to overcome challenges and continue to make progress."

DAVID MACDONALD, Director of Operations

NEW R&D FACILITY BRINGS GREATER BENCH STRENGTH TO CANADA

Another benefit is Agfa HealthCare's new R&D facility and global data center in Waterloo, Ontario, which opened in May, 2012. This new home for the worldwide development and introduction of software and advanced enterprise imaging solutions is a welcome addition to Canada's Technology Triangle, a region of Ontario centered on Waterloo and home to more than 450 technology companies, and an added bonus for healthcare IT organizations nearby.

"The fact that Agfa HealthCare has a global approach to development, and that one of the global development centers is right here in Canada, just an hour down the highway, certainly reinforces the decision that we made several years ago," says Pat.

STRONG VENDOR RELATIONSHIP KEY TO MEETING CHALLENGES

Because it links so many hospital sites and disparate on-site vendors, resource coordination was one of the primary complications for the project, explains David.

SOLUTION

IMPAX Data Center

- Scalable and fault-tolerant regional imaging management solution
- Stores imaging data from many departmental imaging systems, as well as from disparate hospital PACS
- Developed for regional systems and for large, multi-site and multi-facility healthcare enterprises
- Unified, tightly-integrated and centrally-managed system
- Key building block for longitudinal imaging-enabled EHR

AGFA HEALTHCARE'S CONTRIBUTION

- Flexible, responsive team able to meet needs in complex, dynamic environment
- Product development aimed at reducing cost while improving productivity and patient care
- Regional experience tied to global vision

"There were several reasons why we chose Agfa HealthCare. One reason is its ability to help us lower operational costs. Another is its proven solutions."

PAT RYAN, General Manager

DID YOU KNOW...

» The population of the province of Ontario is more than 13 million people, and accounts for 38% of the population of Canada.
» The healthcare system in Canada is publicly funded, and is administered by the provinces and territories of Canada, following guidelines set by the federal government.
» Eventually, there will be 19 shared diagnostic imaging repositories across Canada. HDIRS will be the second largest.

"In this type of venture, a good strong relationship and commitment from the vendor is critically important in order to overcome those challenges and continue to make progress."

And in a project of this size and scope, access to global experience and expertise is also critical. "The entire industry is a challenge to work with when we're doing something like this, it is leading edge, we are carving new ground," says Pat. "Given today what we know, and where we are, looking back – would we have taken a different path? My opinion is no, we did the right thing, we are with the right vendor, they have come through for us when we needed them to."

A DATA CENTER SOLUTION THAT'S POISED TO EXPAND

"It is important to recognize that these large regional repositories are still evolving," says Pat. "An important component of being able to do what we want to do is the scalability and further adoption of different imaging types. The IMPAX Data Center is a key factor in this; it is really the first version of a true regional data center product. And that's what we're seeking to leverage through this, to prepare for future growth, scaling up to larger volumes."

Pat explains that member hospitals would like to expand into other modality types such as cardiology, pathology or ophthalmology. "The idea of filling that role as a repository for all imaging records for healthcare, that's a core strategic piece for us as well."

NEXT STEP: CONNECT TO INDEPENDENT HEALTH FACILITIES AND OTHER ONTARIO REPOSITORIES

The next step for the HDIRS is to incorporate independent health facilities (smaller clinics that offer X-ray and other exams and procedures) into the network. "We've completed the group of hospital members that are in our region, we're now moving on to connect independent health facilities, which could potentially double our volume, so just the organic growth within core diagnostic imaging will lead to some substantial increases in volume and scale," says David.

eHealth Ontario is sponsoring this initiative, as well as a project to link all four of the diagnostic imaging repositories in Ontario together, creating a giant provincial archive that will deliver even greater economies and improvements in the delivery of patient care. •

"Delivering Insight Through Innovation": new state-of-the-art R&D center in Canada

"Delivering Insight Through Innovation" was the theme of the opening celebrations in May 2012 for our new state-of-the-art worldwide R&D facility for clinical imaging IT. Located in Waterloo, Ontario, Canada, it will be a center of excellence for designing innovative solutions. It will also house a global data center for Agfa HealthCare.

Our goals are to improve outcomes in healthcare around the world and to constantly innovate. In this new R&D center we will push the boundaries of imaging, in order to bring about innovative developments in radiology, as well as in healthcare in general.

The strategic location of the center in Waterloo's high tech David Johnston Research and Technology Park will allow us to leverage the renowned technological advances and the skilled human resources of the area. The facility will be part of a thriving community of other high tech companies, and will also strengthen our ties with the faculty and students of the nearby University of Waterloo.

"Opening this new center is a big step forward into the future for Agfa HealthCare," Christian Reinaudo, CEO, Agfa-Gevaert Group, explains. "We are offering a new home for the worldwide development and introduction of software and advanced enterprise imaging solutions. These innovations will continue our mission to enable healthcare facilities, doctors and patients to share images and access the complete patient record, wherever they are in the world!"

HOSPITAL PABLO TOBÓN URIBE, MEDELLÍN, COLOMBIA

Top-quality care and new technology solutions help Colombian hospital attract patients from all over the world

Meeting unique needs of medical tourism patients

INTERVIEWEE Dr. Francisco Londoño, Chief of Planning Division

Medical tourism is a growing healthcare trend. Today, many people travel to other countries for medical treatment, often because they cannot find the special treatment or required quality at home. The Pablo Tobón Uribe Hospital uses Agfa HealthCare's RIS/PACS and CR solutions to provide better care to its patients, opening up new opportunities for the hospital, and making it an important option for foreign patients.

> "A key consideration for foreign patients seeking medical care in the hospital is the scientific and technical quality of the hospital, its equipment and processes."
>
> DR. FRANCISCO LONDOÑO, Chief of Planning Division

Medellín is Colombia's second largest city, known for its commercial and industrial activity as well as its bustling cultural nightlife. Known worldwide as "the city of the eternal spring", travelers have long visited Medellín for its festivals and fashions. In recent years, it has also become known for the quality of its health services, specialized health professionals and hospitals.

Pablo Tobón Uribe Hospital is a general teaching hospital, founded 41 years ago. It's named for philanthropist Pablo Tobón Uribe, who died in 1954 and left funds in his will to go toward the construction of the hospital. Its work has been recognized by numerous national institutions, and it is the only Colombian hospital to have been awarded "Health Care Accreditation with Excellence" by the ICONTEC (Colombian Institute of Technical Standards and Certification), an Institutional member of ISQua (International Society for Quality in Health Care). It is also listed among the 25 best Latin American hospitals in América Economía magazine.

One of the hospital's key challenges is to be among the leading centers of excellence in high complexity treatment serving Medellín and Colombia, and in line with the hospital's vision, to be a hospital that is open to the world.

HEALTH TOURISM PROVIDES NEW GROWTH OPPORTUNITIES

In order to achieve these goals, the hospital has adapted its technical and human resources and created a care office for international patients. According to Dr. Francisco Londoño, chief of the hospital's planning division, there are five key considerations for foreign patients seeking medical care in the hospital: first, the scientific and technical quality of the hospital, its equipment and processes, and its healthcare professionals; second, the security offered during the procedure; third, availability, since in many countries care is delayed because of long wait times that hold up treatments; fourth, the hospitality in terms of the reception of the patient and their relatives; and fifth, the cost of treatment, as there is often a considerable difference in cost for the same procedure carried out in the patient's home country.

IMPAX RIS/PACS TECHNOLOGY HELPS HOSPITAL TREAT MORE PATIENTS AND SUPPORTS EXPANSION GOALS

The hospital is undergoing a major expansion. In 2011, 54 beds were added; the hospital has a current total of 371 beds. The hospital plans to continue expanding to reach 650 beds, all destined for patients undergoing complex treatments.

SOLUTIONS

IMPAX RIS/PACS and IMPAX Reporting

» Fast and easy access to information, images and reporting tools from a single desktop
» Improves efficiency in the radiology and diagnostic departments by providing radiologists and physicians fast and easy access to all relevant information residing in both Agfa HealthCare's RIS and PACS
» Complete workflow solution that fully supports the diagnostic process, resulting in improved interpretation and report turnaround times

The expansion plan also includes the implementation of new technologies to support the evolving goals of the hospital. When the requirements for RIS/PACS were reviewed, the hospital opted for Agfa HealthCare's RIS/PACS and CR solutions. According to Dr. Londoño, these solutions provided all the functionalities necessary to manage the full administration cycle in all diagnostic areas, as well as radiology.

The Agfa HealthCare RIS/PACS now in place at Pablo Tobón Uribe Hospital is an integrated system that incorporates radiology as well as all the diagnostic areas throughout the hospital, providing fast and easy access to information, images and reporting tools from a single desktop. The medical order travels quickly to the RIS, which is also integrated with the hospital's HIS and EHR. Images are available quickly throughout the hospital, or even outside the hospital. An extensive set of viewing and annotation tools helps radiologists work more efficiently, and they also have access to a wide range of state-of-the-art image processing functions.

The hospital conducted an average of 9,480 studies per month in 2011, for a total of 113,755 studies over the course of the year. The Agfa HealthCare solutions allow the hospital to better manage the time between the moment the radiology exam is scheduled and the moment the report is available. For inpatients the exam request is automatically handled by the system, decreasing the time necessary for clinical decision-taking processes while increasing the availability of information. Radiologists can read and report on exams from abroad, and have 24/7 access to results. The solution provides greater data security and features increased privacy safeguards.

DID YOU KNOW...

» In 2011, the hospital treated patients from 23 different countries.
» These patients generated income for the hospital of approximately $1.5 million.
» For foreign patients, treatments are most often in the areas of oncology, orthopaedics, urology, transplantations, neurology and neurosurgery.

AGFA HEALTHCARE'S CONTRIBUTION

» Understanding of the workflows of radiology and diagnostic departments, and the reporting needs of radiologists and physicians
» Strong local team backed by global expertise
» Experience in streamlining hospital processes to achieve efficiency and cost gains

NEXT PHASE: DIGITAL VIRTUAL HOSPITAL TO SHARE INFORMATION WITH GENERAL PRACTITIONERS

The next step in the hospital's plan is the development of a digital and virtual hospital, which will increase the availability of information through the internet and allow patients' general practitioners to plan and consult the examination results from a distance. The electronic results and images will be sent securely (in an encoded, non-changeable format) with enough flexibility to provide the information regardless of the electronic device that is used to view it. •

"Agfa HealthCare's RIS/PACS and CR solutions provide all the functionalities necessary to manage the full administration cycle in all diagnostic areas, as well as radiology."

DR. FRANCISCO LONDOÑO,
Chief of Planning Division

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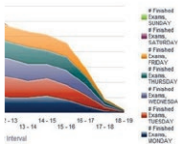

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