Complete Monitoring
Man and machine in team work across departmental boundaries — reality at Triemli Hospital

A Clear View on Diagnostics
The power of modern multichannel CT is changing the approach to examinations. In the Hôpital Pitié-Salpêtrière, Paris, this is making them far less stressful for patients and dramatically increasing diagnostic accuracy.

More with Less
The evolutionary cath lab in the General Infirmary, Leeds, combines advanced low-dose imaging with substantial cost savings.
Though it is complex, cardiology is one of the most exciting medical sectors in which to work. We have always prided ourselves at Philips with applying our resources and experience to provide solutions that help meet the challenges cardiologists face.

Today dealing with the dramatic increase in the numbers of cardiac patients means finding new ways of working and new ways of working together. Here in Barcelona, at the World Congress of Cardiology 2006, we are showing how Philips Medical Systems is Cardiac Care Connected. This uniquely gathers, integrates and makes information accessible across the CCU and interventional and non-invasive areas of the cardiology department. It helps you focus on the needs of your patients throughout the cardiac care cycle. Focusing on patients rather than technologies helps you optimise procedures. This lets you act earlier, react faster, and make more traceable and more specific treatment decisions, based on quantitative data.

The Xeleris multi-modality cardiovascular information solution is a good example. It offers patient-centric access to all the relevant images and information to help you view, evaluate, report and streamline your cardiovascular care workflow.

We look forward to meeting you at the show, and discussing how Cardiac Care Connected can help you meet the challenges you face.

Yours,

Margrit Lelieveld
Marketing & Sales Director
Coping with Quantity

Volume Inspection, a comprehensive reconstruction package for the PACS ensures radiologists reap the full advantage of volume acquisitions with CT or MR

The Radiology Department of Elkerliek Hospital, in Helmond, The Netherlands, started working with PACS (Picture Archiving and Communications Systems) in June 2003. “There is no question about whether you should install PACS,” stresses radiologist Dr. B. R. De Witte, “it is important to make the right choices. Ideally, the PACS has to fit in perfectly with your way of working”. One of the more recent additions in this respect is the clinical application package called Volume Inspection, that is fully integrated in the PACS, which allows radiologists to create Multi Planar Reformat (MPR), Maximum Intensity Projection (MIP) and 3D volume rendered views for diagnosis.

Smooth Integration

The Volume Inspection functionality is derived from the ViewForum modality workstation, and can be launched automatically as part of a hanging protocol or via a menu, just one click away. Dr. De Witte says, “the PACS workstation is the ideal place to work with such an application: you don’t have to walk to a dedicated workstation in another room, you have all the relevant prior results at your disposal in the PACS and you have the benefit of the 21 inch monitors that are ideal for looking at MPR/MIP’s.”

After the images are loaded in the Volume Inspection plug-in, the data are processed. During processing the first slices are already available for preliminary review. “Once loading and processing is done, everything works very slick and smooth,” says Dr. De Witte. This fluent scrolling is important in tackling examinations with several hundreds of images. “In this way you can really focus on the interpretation of the scan, without having to wait on the series to catch up. This helps me with the diagnosis”.

Looking in multiple planes

Dr. De Witte is using the Volume Inspection package for various 3D-MRI scans and most of his CT exams of the chest, abdomen, spine, and extremities. “With modern multislice CT-scanners it is important to be able to look in every image plane,” he says. “This gives so much more information.” The full-screen MPR, MIP and 3D images are considerably smoother and faster to work with than the native image stacks in the PACS.

Though Dr. De Witte does not claim an improvement in productivity, thanks to the Volume Inspection package he can reap the benefits of all the information that is available. “These kinds of applications help you cope with the enormous number of slices,” says Dr. De Witte. He estimates he works as quickly and easily with the Volume Inspection package looking at an examination with 1 mm slices as he did previously in the PACS with 5 mm slices. “You could continue to work the way you worked ten years ago,” he explains, “but then you don’t use the full potential of a multislice CT scanner. And you don’t deliver the quality diagnosis that is possible with these scanners.”

The Volume Inspection package has a consistent user interface that you find across Philips modalities, workstations and PACS, making the users more assured. One of the benefits is that frequently used functions are available directly from the mouse. “This is a strong point for me,” says Dr. De Witte, “there are 7 functions on the 3 button mouse”. Scrolling, changing slab thickness, adjusting brightness or contrast, panning, zooming or accessing the context menu are all directly available via the mouse and quickly become intuitive. Apart from being fast and efficient, this also results in the largest possible screen area for images, because the screen is not cluttered with menus and toolbars.

The speed comes from the clear presentation of the data. Though radiologists to a certain extent are able to reconstruct volumes in their head, leaving this to the computer certainly has added value. For example, a partly collapsed vertebra is easily missed when scrolling through the axial slices of a CT, but immediately obvious on a sagittal MPR. Or by scrolling smoothly through the volume, it is much easier to differentiate a lymph node from a vessel, a pulmonary artery branch from a venule, a small embolus from an artefact, or a phlebolith from an arterial stone. Or simply taking advantage of scrolling in the coronal, rather than the more familiar axial direction, helps review an entire data set faster.
Vienna’s Rudolfinerhaus installs the latest MRI technology

Since autumn 2005, Vienna’s Rudolfinerhaus has been using a Panorama 1.0T open MRI scanner. Offering an image quality comparable to closed 1.5T systems, the advantages of the new scanner are obvious: 98% of patients prefer open MRI, claustrophobic and obese patients need them, and because children find them less traumatic, they often produce better scan results in a fraction of the time. Open systems also allow examinations that were previously impossible: the ease of access is a major benefit for interventional examinations and for orthopaedic examinations that need images in various positions. The Panorama 1.0T is the ideal solution.

Open design

The decision for the Panorama was not a hard one for lecturer Dr. Andreas Neuhold, head of the Diagnostic Imaging Department: "The Panorama 1.0T is the first open MR scanner offering a 360-degree all-round view. Traditional tunnel systems have a 60- to 70-cm tunnel, opening which causes claustrophobia in many patients and restricts movement, limiting the clinician’s opportunity for diagnosis." Dr. Neuhold sees the open design as ideal for larger patients: "We can even scan patients weighing 120 to 150 kg and over without difficulty, as well as patients with severe claustrophobia." Almost half of all patients experience panic attacks in traditional closed scanners thus compromising the examination. In contrast, the Panorama’s open design creates a pleasant environment. The patient is examined in a relaxed and comfortable position. It is also much easier for them to maintain direct contact with the medical team.

Ideal for children

Dr. Neuhold is convinced that "the new Philips scanner is also ideally suited for our young patients“. "Children often want their parents with them when they’re being scanned. In the past a parent had to go into the tunnel with the child. Now parents can sit comfortably next to their child holding their hand during the scan and maintaining physical contact.”

Broader range of diagnoses

"Whole-body scans, interventional examinations and examinations of joint function are all now possible with the Panorama MR scanner as well as studies of spinal movement, something which cannot be performed with a conventional tunnel scanner.” It opens new horizons for Dr. Neuhold and his patients. The Rudolfinerhaus team can benefit from the range of diagnostic options offered by the open scanner which is particularly suitable for orthopaedic examinations as it allows maximum joint mobility.

Comparable image quality to a 1.5T system

With its open design, the Philips Panorama offers the highest field strength of any open system on the market. This ensures an image quality comparable with that of a closed 1.5T system at the same acquisition speed. The Field of View (FOV) of 45 cm allows a wide range of standard and complex applications. Often, the highly-sensitive, integrated, quadrature body coil makes additional coils unnecessary. This even applies for whole-body images, resulting in reduced preparation time and increased patient comfort.

Faster patient throughput

Scans are comparable with a 1.5T system too. Patient throughput can be further increased with a dockable FastTrak patient table. While one patient is being scanned, the next can be prepared for their examination on a second table in an adjoining room. The dockable FastTrak patient table, with integrated coil and various attachments, optimises the examinations.

Simple to operate

ScanForum, the Panthera 1.0T user interface, ensures images are scanned and viewed effectively. Important here are the Philips ExamCards. These are fully pre-programmed sample examinations which can be downloaded from NeoForum on the Internet.

Since the Panorama 1.0 Tesla went into service on 3 October 2005, countless patients have benefited from the convenience of an open system coupled with the clinical performance of a closed 1.5 Tesla system.

Philips was able to offer the perfect solution with its Media & Distribution Center which is already used in several small hospitals and clinics in Austria. The Media & Distribution Center is a complete solution that can be used to distribute X-rays cost-effectively in digital format to shared workstations, store them online, provide them to patients on CD and archive them on DVD for long-term storage.

The advantage of the Media & Distribution Center also lies in its compact system design and the fact that 90% of the components are pre-configured. This enables installation to be completed within one day. Its simple intuitive operation also enables users to be trained within a short time (one day at most). The number of workstations and modalities connected to the Media & Distribution Center can be extended at a later date, as can the online storage capacity. The future of the system is therefore safeguarded and the Rudolfinerhaus clinic’s investment in digital technology is secure.

Archiving

When it came to archiving their large quantities of data, the main priority was to find a flexible yet cost-effective solution. The staff of the Rudolfinerhaus also wanted the benefits of being able to work digitally at multiple workstations. To extend the digital process right to the patient, they also wanted to be able to give patients their images on CD-ROM, rather than on film as in the past.

“A Finger on the Pulse”

“The Panorama 1.0T is the first open MR scanner offering a 360-degree all-round view.”
the 23rd week) from its sister hospitals. The NICU has 20 beds, 12 of which have ventilators available.

Continued satisfaction

With a wealth of experience, the NICU prides itself on always being at the forefront of what is possible. The move to a newly refurbished location in the hospital provided an opportunity to update the monitoring in the unit to the new IntelliVue central and bedside monitors. The general satisfaction with the existing Philips monitoring was a major reason in deciding for Philips monitors again. “Obviously with the flat, touchscreens they are easier to work with” says Mrs. Dorothee Rissler, Neonatal Intensive Care Nurse. Staying with Philips also means less difficulty getting used to the way the new monitors work, and reusing the measurement modules they already have.

Also in Philips favour was that, because they are developed locally, there are various opportunities for cooperation. The neonatal intensive care unit (NICU) has already been involved in testing many developments. This not only helps Philips improve their products, but as Dr. Gerald Nachtrodt, Head of the Neonatal Intensive Care Unit, points out, it keeps the clinicians abreast of emerging technologies. It also gives them a chance to evaluate new applications fully. The most important feedback here is from the nursing staff, as they are the ones who have to work most closely with any new equipment. They would not have the same chance to experience the equipment fully in a normal evaluation, or influence how it works.

Competitive advantage

“With good monitoring and a good laboratory,” explains Dr. Nachtrodt, “we can save the children from many examinations and most antibiotic treatments,” by detecting risks or symptoms at an earlier stage where they are more easily treated and the prognoses are better. This is something that parents notice, to the benefit of the clinic’s standing. “Monitoring is becoming increasingly important,” adds Prof. Dr. Manfred Teufel, Head of the Children’s Clinic, “and not having good monitoring would be a competitive disadvantage.” He has found that, with electronic aids for every part of daily life, many parents now expect measurements of the vital parameters, even for healthy newborns. Dr. Nachtrodt connects this trend to the number of
planned, single-child families too. Many of these parents invest a lot of emotion in the health and future of their only child and expect the reassurance of electronic monitoring. Prof. Teufel expands: As financial pressures mean fewer nurses on duty, it is technology that ensures continued high-quality care. This, for example, is why they monitor the vital signs of all the premature and sick babies in their intermediate care unit until they are stable enough to go home. For the less stable patients they use Philips M3 monitors, where the ECG, respiration and SpO2 curves help them diagnose problems. The plan is to network the monitors in this area and use central monitoring at the nurses desk. This will mean the two nurses on the night shift have an even better overview of all their charges, at all times.

Whole solution
Apart from continued good experiences with Philips monitoring, the quality of Philips accessories and consumables was also important in the choice of monitors. “What we particularly liked were the blood pressure cuffs,” says Dr. Nachtrodt. “What I find good is that they are so gentle on the skin,” adds Mrs. Rissler, “and the edges are not as hard as others, so they don’t leave pressure marks, or injure the babies.”

They are using single-patient neonatal NBP cuffs, ECG electrodes and reusable and (for transport) single-patient SpO2 sensors. The unit regularly evaluates competitive products, and is currently looking at other ECG electrodes. Mrs. Rissler points out that some other electrodes have better adhesion. This can be important if the air in the incubator is humid, or for neonates with vernix caseosa. However, the Philips electrodes can be removed without discomforting the baby or damaging the skin. “What is also nice about the Philips electrodes,” she adds, “is the colours of the pre-attached leads match the colour-coding on the cable connector.” This means that even if parents accidentally disturb the connection, for example, it is easy to reconnect without having to undress the baby to identify the positions of the electrodes.

As the new generation of SpO2 sensors from various manufacturers hit the market, the NICU tested them all. In the end, the nurses — whose opinions in such cases are critical, Dr. Nachtrodt points out — decided to stick with the Philips sensors. The main reasons are because it is among the easiest to apply, and gives a good signal for reliable measurements even when the child is not still. “We are very satisfied with the Philips supplies,” says Mrs. Rissler.

Working together well is an important part of providing a rounded solution. And it is competitiveness in their individual services, as well as in the network that ensures satisfaction for patients of the South-west Clinic.

50 defibrillators in action at the 2006 Turin Olympics

The 20th Winter Olympic Games held in Turin, Italy, on 10 – 26 February, 2006, witnessed the use of Philips HeartStart MRx defibrillators on the Piedmont Regional Administration’s healthcare system’s emergency vehicles.

The long awaited Turin Olympics witnessed the participation of hundreds of thousands of people numbering athletes, coaches, accompanying people, voluntary personnel and spectators. A situation that involved a remarkable effort on the part of Mobile Accident Unit personnel called to ensure speedy and effective assistance in case of sudden illness and accidents. Operational experience proved on the field that Philips HeartStart MRx defibrillators can provide aid and become an effective life-saving device.

But how was the decision made to provide rescuers with such an innovative technological tool as the HeartStart MRx defibrillator? The request was issued by the Collegno Local Health Administration, which needed to create First Aid Centres in all sites where Olympic events took place. There was also a special need for devices to transfer data from Emergency Centres to hospitals in real time to establish targeted and effective intervention and treatment. Philips met the request with its excellent quality, being chosen as the best supplier in the call for tenders organised for the occasion.

The experience of previous Olympic Games
The next stage was to organize the operational structure of mobile accident units at the Turin Olympics, explained Dr. Danilo Bono, Director of the 118 Operations Centre
“The software can be modified to enable the input of other data, besides cardiological information. It is, in short, a multivalent device.”

Ensuring that defibrillators could get where they were needed on site, in order to maximise their efficacy they need to be integrated in a well-defined structure. A special project and the creation of an organised network have to be thoroughly planned,” specifies Dr. Bono.

To achieve good results we must start by accurately surveying the community’s requirements to then form a workgroup with competent people in charge: this is needed to guarantee the necessary quality standards, compliance with protocols, training and backing. The next phase involves creating an implementation plan, which envisages the definition of an emergency medicine plan, the assignment of the programme’s coordinator, the choice of devices, and training. The cost estimate and data collection on cases of sudden cardiac arrest and intervention methods are also very important elements to consider. Finally we must appropriately inform and sensitize the project’s target community.

The Piedmont Regional Administration’s planning phase began in 2003, but we had tested operators’ reactions already in 2001. We then moved on to the phase of issuing a call for tenders for the purchase of equipment. It is relevant to emphasize that our choice was not restricted to the mere purchase of technology, but it envisaged the integration of the equipment into an overall project designed to guarantee a prompt, effective and efficient assistance in cases of sudden cardiac arrest during the course of the Olympic Games,” concludes Dr. Bono.

A new product concept
HeartStart MRx is actually a new product concept: it is a defibrillator monitor, whose large backlit colour monitor can display 12 leads at the same time, thus providing healthcare data organised in logical order. “The monitoring system is not physically bound to the patient, hence it is easier to carry out an intervention and immediately interpret the data obtained. The software can be modified to enable the input of other data, besides cardiological information. It is, in short, a multivalent device”, says Dr. Bono.

Lightweight and easy-to-use
Another much appreciated feature of the defibrillator was its “remarkable low weight” (6 kg) for this kind of device: it is a decidedly important factor for those working in the field. The HeartStart MRx defibrillator has been specially designed for medical teams, which operate during intensive care and emergency transport: everything is packed into a single easy-to-use device, which is resistant, light and optimised to meet the many requirements of Mobile Accident Units. The personnel training process is also quick, accessible and complete.

Forming an organised network
“The Olympics’ experience once again proved that a rapid diagnosis is essential. It is not enough to have defibrillators on site, in order to maximise their efficacy they need to be...
Since summer 2005, the IntelliVue Monitoring System with its flexible monitors adapted to actual needs, and an intelligent hospital network, has made work easier in intensive care and anaesthesia at the Triemli Hospital, Zürich, Switzerland, and guaranteed seamless monitoring of patients across departments.

10.28, Friday morning, Triemli Hospital Zürich, a call to the emergency centre: a 56-year old patient with suspected myocardial infarction is on his way in the ambulance. Condition unstable. For Dr. Luc Weibel, Head of Intensive Medicine, a routine request. The various possible scenarios, patient examinations and wards play before his sharp eyes like a film. One thing is clear: now is the time for fast, competent action and reliable teamwork. It is not only nursing staff and doctors who have to work hand in hand, but the equipment that monitors and accompanies the patient must fit into the team and provide suitable support for all activities. Only in this way can valuable time be gained for the patient.

With these requirements, there was no question for Dr. Luc Weibel when considering the purchase of a new patient monitoring system for the central hospital in the west of Zürich, with a catchment area of around 230,000 inhabitants and 550 beds: emergency care, intensive care, cardiac catheter, operating theatre and recovery room must all be fitted with the same system. This avoids problems in operation, makes life easier for doctors and nurses, and guarantees smooth transitions for the patient. Of course it had to be user-friendly with as few cables as possible, adaptable to the special needs of the departments and last but not least able to process data from other departments such as laboratories, radiology etc.

Following a tendering process, with 6 companies on the short list, after a practical assessment phase the Philips IntelliVue Monitoring System was the clear winner. “It is so simple and logical to operate the monitors with touchscreen – if you know one, you know them all!”, said Dr. Weibel, clarifying one of the practical reasons why the staff opted for the Philips patient monitoring solution. In summer 2005, after just a short introduction period, the intensive care unit with 12 beds was the first department to switch practically overnight during operation to the IntelliVue system with Philips IntelliVue MP70 monitors and an IntelliVue Information Centre. By the autumn, this had been followed by the recovery room, operating theatres, emergency care, shock room, cardiac catheter and the telemetry equipment for night monitoring of up to four patients on the normal ward.

A clear view allows fast decisions

While Dr. Weibel is still considering the further possibilities of the complete Patient Data Management System planned for 2007, his beeper sounds: the patient has arrived, been transferred from emergency care directly to the shock room, and ventricular tachycardia with incipient pulmonary oedema make intubation and respiration necessary. The doctors can clearly and easily see the patient’s vital parameters, pulse, ECG curves, respiration values and blood pressure, on the IntelliVue MP50 patient monitor. The values are unambiguous: when the circulation has stabilized, the patient must be transferred to the cardiac catheter laboratory immediately for coronary angiography. There the doctor’s snips-
"It is so simple and logical to operate the monitors with touchscreen – if you know one, you know them all!"

Data stays with the patient – smoothly
On arrival at the intensive care unit, as well as the usual transfer of key information from person to person, there is now a transfer from monitor to monitor: the Multi Measurement Server on the MP30 monitor from emergency care, with all the patient’s existing monitoring data and trends, accompanies the patient and is simply inserted compactly in the MP70 monitor at the intensive care unit – seamless monitoring is perfect. "The simple and reliable transfer of data from one monitor to the next with the Multi Measurement Server is one of the best innovations from Philips Medical Systems" praises Dr. Weibel. No data are lost, and data can be retrieved at any time without extensive searching.

Reliance on intelligent alarm system
New invasive measurement data since the cardiac catheter examination of the newly relocated intensive care patient are displayed continuously on the clear IntelliVue MP70. Its practical size and image clarity help the nursing and medical staff at this intensive care monitor get a clear overview between the infusion pump stands and respiration equipment, and clearly indicate that the patient is now stable for the first time.

It’s night on the intensive care unit: the central information centre displays the vital measurement values of the 11 current intensive care patients. In the booths, the relevant data is retrieved again on the patient monitor and trends assessed to support treatment decisions. During all this, alarm limit values are exceeded repeatedly. Not always, but whenever necessary the alarm also sounds. "The system is intelligent and can reliably distinguish between important and unimportant data, detect dangerous trends and prioritize critical data, which makes work much easier", Dr. Weibel explains.

Progress and practicality thanks to close collaboration
Just one day later, the patient is back on the normal cardiology ward, awake and almost fully clear of wires. But monitoring still functions: using wireless IntelliVue Telemetry and a portable ECG recorder, the patient can move practically freely about the ward while his ECG and pulse data are still transmitted to the information centre of the intensive care unit and monitored there until this too is no longer necessary. For the patient who is only just beginning to appreciate the drama of his story, rehabilitation with his "second life" is now beginning.

Dr. Weibel however is already on the track of more innovative progress and optimum implementation into practical everyday use, and is discussing suggestions for change and improvement which have arisen in practical experience directly with the Philips staff at the office, because: "The Philips staff are really accessible, take your suggestions and criticisms seriously and are constantly working on implementing new ideas. You also get feedback immediately – and it’s great to work together in finding the best solutions for colleagues, staff and patients".

Introduction of the complete Patient Data Management Systems (PDMS) must however wait until the conversion and extension of the Triemli hospital with its 24 intensive care beds and 10 operating theatres is complete in May 2007, but integration of laboratory, radiology and electronic patient history in the Philips IntelliVue Patient Monitoring System should however become reality before then.
The General Infirmary at Leeds, in the UK, now part of Leeds Teaching Hospitals National Health Service (NHS) Trust, has a long tradition of pioneering new technology for diagnosis and treatment. It is also the home of the Yorkshire Heart Centre, which serves a population of about five million people, and treats over 35,000 adults and children per year. In October 2005, the Allura FD10 system in Cath Lab 5 underwent a complete revision, upgrading it to an Allura Xper FD 10 installation with a new Xper user interface and advanced interventional tools.

Dr. Jim McLenachan, Clinical Director of the Department of Cardiology, explains: “Our five cath labs are used intensively for the whole spectrum of cardiac applications, including diagnostic angiography, coronary angioplasty and electrophysiology”. Some 3,000 interventional procedures are performed each year, with a planned increase to 4,500 by 2009. He continues: “Because the Yorkshire Heart Centre is a tertiary center, many of the procedures tend to be rather complex, demanding the utmost in image quality.”

The Allura Xper FD 10 installation makes Cath Lab 5 one of the most advanced cath labs in the world but, as Prof. Mohan Sivananthan, Consultant in Cardiac Imaging and Intervention and Lead Clinical Investigator in the Imaging Research Projects, points out: “It is not revolutionary, but ‘evolutionary’. Philips’ future-safe technology allows any Integris H5000 or Allura image-intensifier system to be upgraded with the latest innovations to create a state-of-the-art cath lab. This gives us confidence in the solid protection of the hospital’s investment.”

Dr. Campbell Cowan, Consultant Cardiologist and Electrophysiologist, says: “I am delighted to have worked in a partnership to provide the best possible care at the lowest possible dose.”

The high performance of the flat panel detector and the advanced image processing have already made it possible to reduce patient skin dose in EP fluoroscopy by as much as 80%, with clinically acceptable image quality, while new developments offer the possibility of reducing the dose still further.
Arnold Cowen and his colleagues of the Leeds X-ray Imaging Research Group aim to reduce the dose in electrophysiology imaging by a whole order of magnitude, and are already close to achieving their goal.

Dose reduction is particularly important in paediatric electrophysiology. Many patients are adolescents who may already have a long history of surgery and X-ray examinations, so that any additional radiation exposure must be kept to the absolute minimum. According to Dr Mike Blackburn, Paediatric Cardiologist and Electrophysiologist: “Because of the very low dose requirements, Cath Lab 5 is always our first choice”.

Dose saving is also important for staff. Department of Health guidelines dictate a 50% increase in patients by 2009, which means that staff will be spending even more time in the cath lab.

Easy, intuitive operation
According to Janet Moore, Superintendent Radiographer, the staff are very impressed by the easy, intuitive operation: “It’s a popular lab – people like to work there”. The new Xper user interface is a significant improvement, while the clear, bright images on the flat screen monitors are easy and unstraining to view. The telescopic ceiling suspension allows the monitors to be set at the optimal viewing height for every user, which is an important consideration in lengthy procedures, where an uncomfortable posture soon becomes painful. Prof. Sivananthan adds: “It’s good to be able to work from either side of the table, and to have left-sided access for pacemaker implantation, whilst providing other research opportunities. In fact, everyone loves this lab – it’s the lab of choice”.

Efficiency and cost-effectiveness
Stacey Hunter, Interventional Cardiology and Radiology Matron, assesses the value of the conversion: “In a healthcare service funded by public money we have to be sure that any new technology provides benefits in an affordable manner. It has to be efficient and cost-effective”. The platform conversion met both criteria. The increased efficiency allows the cath lab to cope with increased demand and has cut waiting times. The positive experience with the conversion led the hospital to select a similar system for a new, sixth cath lab, freeing this system for more electrophysiology work.

Customer-focused full support
The complete platform conversion from the existing Allura FD10 system to the new Allura Xper FD10 installation took less than ten working days but, as Dr Campbell Cowan explains, future conversions will be faster. “This was the first conversion up to this level, and people kept on coming up with new ideas which took time to realise and incorporate. We particularly appreciate the willingness of Philips staff to listen to our proposals for system improvement, and their enthusiastic technical support in implementing them”. One example was a short-lived problem with the Biosense CARTO® system, which caused interference patterns in the images. The Philips people eliminated this problem using a sophisticated software solution. Dr Cowan adds: “We were impressed by the way in which the Philips systems can ‘evolve’ to take account of new technological developments”. The Allura FD10 system was based on an earlier image intensifier system, and has now been upgraded to the new Allura Xper FD10 platform with the very latest innovations. Dr Cowan concludes: “The future-safe design means that any existing Philips X-ray cath lab system could be upgraded to this level cost-effectively”.

“Philips future-safe technology gives us confidence in the solid protection of the hospital’s investment.”
Embracing Advances

The most important breast pathology centre in Spain is undoubtedly the Fundación Tejerina, in Madrid. Every year it sees over 40,000 women for everything from complete diagnoses to individualized treatment for demanding conditions. The newest imaging equipment ensures it stays at the forefront.

In the words of its director, Doctor Armando Tejerina, “We have always sought to have the most advanced diagnostic methods. We are aware that we can identify any pathological signs, the better the prognosis will be”. That is the objective: to use the most advanced technology in an integrated breast examination service, and follow up with a multi-disciplinary treatment according to the needs of each patient.

The first Unit

It was Doctor Tejerina’s father, Dr. Florencio Tejerina who founded the first breast pathology unit in Spain. That was in 1961 and in the “Instituto Provincial de Obstetricia y Ginecologia” in Madrid he had created a multidisciplinary clinic dedicated exclusively to mammary diseases. He had the immediate support of Prof. Botella Llusiá, Professor of Gynecology. Soon they were giving courses for Hispanic-American graduates and for Spanish private doctors. This was the start of a new specialty and the way was open for reconstructive surgery.

Other disciplines

After this experience and having seen the advantages of comprehensive, integrated treatment, Doctor Armando Tejerina founded the Breast Pathology Centre in the mid-seventies. This incorporated new disciplines, including pathological anatomy, endocrinology, molecular biology and reconstructive surgery.

“Our aim,” says Dr. Tejerina “is to be permanently up-to-date with anything that could benefit our patients. If a better diagnostic system is available to us, we feel obliged to have it.”

The center has 21 highly qualified professionals in radiology, oncology, mammography, pathological anatomy, nuclear medicine, internal medicine, molecular biology (including a research and teaching laboratory), forensic medicine and health law, laboratory work, cytopathology, endocrinology, plastic and reconstructive surgery and medical information technology.

The image department expands

In recent months the foundation has extended its Imaging Department with the purchase of a 1.5 Tesla Achieva Intera magnetic resonance system. This has special software for breast pathology, and a kit for positioning needles for biopsies. In an agreement with Philips the center has joined a program for researching and updating examination protocols for the diagnosis of breast pathologies.

The MR system was complemented by acquiring a high-performance Philips iU22 ultrason system. This will enable more comprehensive vascular and interventional diagnoses of breast pathology.

The plan for the near future is to replace their single-slice computed tomography scanner with a 40 slice multi-detector. Having a single Imaging Department with these high technology diagnostic resources, with the research projects and its proven experience in this field, ensures the foundation is among the best equipped and most highly rated in all Europe.

Greater use for MR

High-field magnetic resonance is not only used for diagnosing breast disease, but also for monitoring patients after operations or who are in chemo- or radiotherapy. It is also used for pre-therapeutic examinations and surgical planning.

As part of the magnetic resonance examination for metastasis scanning, in patients with malignant neoplasias, the Breast Pathology Centre makes whole-body examinations using an automatic moving table. This achieves a better diagnosis of the extent of the breast cancer. With this technique, the overall evaluation of the patient is superior to that obtained by bone scintigraphy. It is even possible to diagnose extra-osseal metastasis related to the breast tumour (pleural dissemination, liver metastasis, disturbance of the urinary pathways, genitalia, soft tissues or of the neural axis.)

The process

The protocol uses:

- Whole-scan sagittal sequence in T1 and T2. The sagittal examination is divided into cervical, dorsal and lumbal, with a package of 12 images for each area.
- Axial sequences of thorax, abdomen and pelvis. The whole-body examination, not exceeding 35 minutes, uses a 200 cm-long tabletop extension specially designed for this study. Sweeps can be made over up to 220 cm.
- Sweeps can be made over up to 220 cm.

The examination has proven comfortable for the patient and because it is done as a single examination, there is no real increase in cost over previous methods.

Three generations

The whole center contributes to delivering advanced medicine. Unlike a clinic or hospital, people are dealt with directly, cordially, without unnecessary extras, but not without the detail that makes a stay more pleasant.

It is 55 years since the first unit was set up. Dr. Armando took over from his father Dr. Florencio, and now the third generation, the founder’s grandchildren, are joining the center. Doctors Antonio and Alejandro Tejerina will carry on the tradition of furthering the diagnostic and therapeutic possibilities of mammary pathology.
Multichannel CT probably means little to most patients referred for a CT exam. But those referred to one of the centers operating with the new Philips Brilliance CT 64-channel system will definitely notice differences if they've had experiences of earlier systems. While 64-channel CT offers dramatic improvements in imaging quality and speed, spin-offs from these benefits are in many instances completely changing the way examinations are conducted. The result is not only more accurate diagnoses but often greatly improved patient comfort and safety. This, at least, is the experience of the Pitie Salpetriere Hospital in Paris. The largest hospital in France, Pitie Salpetriere has three main radiology departments – Neuroradiology, General Radiology and Nuclear Medicine. Since July 2005 the General Radiology Department has been a Beta Site for the new Brilliance CT 64-channel system and throughout the system’s testing phase, the hospital has been in close collaboration and clinical contact with the Philips CT Development Centers in Haifa, Israel and Cleveland, US.

High-speed cardiac imaging
"Philips originally supplied a Brilliance 40-channel system which was later upgraded to 64 channel when this became available," says Professor Philippe Grenier, Head of General Radiology at Pitie Salpetriere. “Our main objective was to improve the quality of cardiac imaging and reduce acquisition time by almost doubling the coverage to around 40 mm per rotation. And the system has certainly lived up to expectations. The quality of the coronary artery imaging is exceptional, even compared with the Brilliance 40-channel which itself is an outstanding system.”

But the upgrade was not in hardware alone. On receiving the 64-channel system, the department also received Philips’ new software for cardiac imaging, including the latest Rate Responsive™ cardiovascular CT (CVCT) Technology allowing reliable scan at variable and high heart rates. “This new software is really fantastic,” points out Professor Grenier. “We can now manually extract the extra systoles and automatically adapt the reconstruction phase to the variation of heart rate during acquisition. These improvements allow motion artifacts due to heart rate variation to be eliminated and mean that we seldom have to administer beta blockers to slow a patient’s heart rate before an exam.” This provides advantages, not just in workflow, but in reducing the anxiety of patients who no longer need to take beta blockers before their CT exam. Another benefit for patients is that the larger coverage means acquisitions are faster so breath holds can be shorter.

According to Professor Grenier, the department’s cardiac specialists are very satisfied. “64-channel CT angiography of coronary arteries is highly effective at detecting stenoses. The same CT data-set can also be used to evaluate the regional and global function of the ventricles. It also makes it feasible to assess the patency of coronary artery bypass grafts and stents. Follow-up investigations of coronary grafts after surgery are now routinely done by CT on the 64-channel system. We can, in fact, now survey a complete coronary bypass, covering the entire chest and survey the complete cardiovascular system.”

Shedding new light on lung disease
Professor Grenier’s personal field is the lungs, and according to him multichannel CT has completely changed the nature of lung examinations. “Now the complete volume of the lungs can be acquired in one 8 second breath hold using very thin 0.6 mm slices. We use the workstation on which the 600 to 800 slices are processed to move in real time through the volume, change orientation and follow the bronchi from their origins to the divisions. When lung disease is detected, we can select, archive and print the plane that is most informative for diagnosis.”
"With the new system we acquire the entire volume during a single continuous expiration," he explains. "This way, we're sure that the patient achieves full expiration and we're better able to detect air trappings due to obstructions in the small airways. The maneuver also significantly improves contrast between normal and abnormal areas of the lungs, enabling us to identify other conditions such as tracheobronchomalacia in which the lumens of the airways may collapse completely."

The department is also evaluating new (COSMIX) filters developed by Medisys, Philips Medical Systems, Suresnes, France. Using these filters on the 64-channel system, 10-fold reductions in X-ray dose have been achieved with no loss of diagnostic quality. "These results, which can only be described as spectacular, will provide major benefits for patients suffering from chronic lung disease," stresses Professor Grenier.

Virtual colonoscopy

A valuable alternative to traditional screening for colon cancer, virtual colonoscopy combines the power of ultra-fast CT scanning with sophisticated 3D reconstruction software. While the high speed of the Brilliance 64-channel system again offers obvious advantages here, the major benefits come from the new Philips CAR (Computer Aided Reading) software. "The new software is very fast and efficient. The 3D images it generates clearly show the inner surface of the colon and permit the detection of polyps with good sensitivity," Professor Grenier points out. "And, of course, the patient is spared the discomfort and risk of an invasive procedure."

"From that experience I've no doubt that virtual colonoscopy using multichannel CT will become a valuable tool in the future fight against colon cancer by allowing increasing numbers of people to be regularly screened for early indications of the disease."

"I can personally vouch for the patient-friendliness of this procedure since I was one of the department’s guinea pigs for testing it," says Professor Grenier. "From that experience I’ve no doubt that virtual colonoscopy using multichannel CT will become a valuable tool in the future fight against colon cancer by allowing increasing numbers of people to be regularly screened for early indications of the disease."

Salpetriere, the procedure is performed with the colon inflated using carbon dioxide which, with its higher absorbability, is less painful and safer than air. The one-day preparation to eliminate stool is also more acceptable to patients than the procedure necessary for optical colonoscopy. The day before the CT exam, the patient drinks a combined barium/gastrografin preparation. This infiltrates the residual stools that are then visualized as high-density images. These are eliminated by a special ‘cleansing’ program (part of the CAR software suite) to allow any polyps within the colon to be clearly visualized.
Breaking Boundaries
The Starnberg Clinic is evolving from regional clinic to international healthcare provider by concentrating on core competences and outsourcing services such as biomedical engineering.

In Starnberg, south of Munich, the imminent disappearance of governmental subsidies has been a motivation over the last few years to make the regional clinic attractive to people from elsewhere in Germany, and even internationally. The resulting “Clinical Future” program maximizes value from existing resources, partners to provide comprehensive services, and controls costs, such as by outsourcing biomedical engineering services to Philips.

Having studied hospital management while working as a surgeon, Dr. Ulrich Wenning understands both the clinical and economic concerns facing hospitals. “It is important not just to decide on economic grounds,” he explains. Today he is business manager of the Health Guide subsidiary that offers preventive diagnostic services, and clinical director of the functional facilities (that is, those areas not delivering bed-based care). His criteria for whether a service is part of the in-house operation or provided by a partner depends on the availability of know-how, the demand, and the efficiency with which it can be delivered.

A full spectrum of care
Strategic partners broaden the range of care the clinic offers, ensuring it keeps its critical mass. For example, the polyclinic, which offers day surgery, hand surgery and endoscopy, has both hospital clinicians and external consultants, and treats both private and hospital out-patients. Further, complementary medical disciplines, like pediatric dentistry, ophthalmology or a training centre for the elderly are provided by private practices on the hospital campus.

Working with external practices and consultants also ensures the best possible use of the clinic’s facilities. The 10 operating theatres, for example, are available to local consultants from eight in the morning to seven in the evening. Despite its relatively small size (300 beds), the hospital manages 9,000 operations a year.

Extended offering
But just as important is the expansion into less traditional medical services. A guest house, modeled on a five-star hotel, is open to anybody using the medical services of any part of the hospital, people associated with patients, and cooperation partners of the clinic. It provides accommodation for visiting out-patients, as well as more comfortable accommodation for patients with higher expectations. Apart from hotel type rooms, there are also nine rooms equipped with hospital beds and intermediate care equipment. It is also popular with parents after the birth of their child, who can stay together for a little more than the price of a private room on the obstetric ward.

Another new venture, called “Health Guide”, applies the clinic’s existing expertise and experience to deliver preventive medicine. This consists of advice based on both a fundamental check-up and focused diagnostics for particular risk areas, such as stress, or cardiac conditions. The specialists then offer advice on avoiding possible problems. This is marketed as a premium service for key employees in large companies, and self-employed individuals. It also has a large Arabian clientele, because of the focus on staying healthy in that culture.

Controlling costs
However, securing and expanding the clinic’s core competences is only part of the story. The other part consists of upholding or improving other supporting functions, while controlling costs. A prime example here is biomedical engineering. The increasing complexity of medical technology and regulations governing their use would have taken a team with considerable expertise, able to react quickly, cover for one another seamlessly, and with reliable contacts to industry. Such a team was not affordable for a clinic of this size. “We needed a service provider that knows this business, and this is the reason for the close work with Philips Maintenance Management,” says Dr. Wenning.

Since April 2002, Philips Maintenance Management (PMM) has been responsible for the technical support in the Starnberg clinic. The team of Philips technicians provides first line service. They are on-site three days a week and on call always. They can diagnose many problems by phone, to
“It makes economic sense, not just in the direct costs we would have had working with various individual service providers.”

talk the user through a repair, or organize the necessary visit from the second level service. Obviously they have excellent connections to the Philips service organization, but because PMM is active in many hospitals, it can also negotiate the best possible conditions with support organizations for other makes of equipment. These savings are passed on to the clinic. “It makes economic sense, not just in the direct costs we would have had working with various individual service providers,” says Dr. Wenning. “There are important savings in the internal processes, effort we would otherwise have to put into gathering information and contacting different people.”

The power of information

What makes Philips a premium partner, in Dr. Wenning’s opinion, is solid reporting that saves him further effort gathering and evaluating equipment data. This includes information on the state of the current equipment, and reliable, objective, technical information for investment planning. By tracking support costs, the service life of equipment, the availability of repair parts and replacement costs, PMM can suggest which investments the clinic needs to consider both for the medium and the longer term. “Just the objective know-how PMM puts into preparing a 5-year investment plan for all the different areas,” he says, “is an incisive benefit from this cooperation.”

Philips uses a comprehensive inventory and incident management software for information on the history, the reliability and the direct costs associated with each piece of equipment. This software is also linked into the hospital intranet. End-users can register failures on-line, any time. This information is available to the PMM team, wherever they are, to plan their reaction. And both technicians and users can also track the status of the repair as it progresses.

Taking good care

Breaking down the borders between different ways of delivering healthcare is already proving a powerful model for improving standards, and increasing cost-efficiency. As part of the value chain, defined by clear strategic goals, partnerships with consultants, private practitioners and service providers ensure the clinic runs as efficiently as possible. “We are an independent organisation, and we need to run economically,” says Dr. Wenning. “We need to make considered investments, and maximize our return on them. And we need to take good care of them.”

Better, faster and safer biventricular pacemaker implantation in the operating room

Biventricular pacing can vastly improve the quality of life of some heart patients, particularly the elderly. However, the implantation makes heavy demands on the X-ray equipment, which has to provide top-quality images throughout a lengthy procedure.

In terms of the volume of procedures, the Cardiothoracic Centre is among the three largest centres in the UK, and in terms of pacing procedures it is number one in the UK and among the top two or three in Europe.

A demanding procedure

Typically, patients receiving biventricular pacing have a very poor ejection fraction of less than 30 %, and the heart has to be paced 100 % of the time. In biventricular pacing, both sides of the heart work together. To achieve this, a second pacing lead is passed through the coronary sinus into the back of the left ventricle, providing synchronised pacemaking of the two ventricles. This is a complex and
The Cardiothoracic Centre Liverpool is very much a Philips centre historically. Dr. Rod Stables, Consultant Cardiologist & Cath Lab Director, sums up the background to the choice: “We’ve been extremely happy with the performance of the equipment, and with the nature of the relationship and partnership in terms of ongoing service. That said, we always perform a genuine, thorough evaluation of the market place before a new purchase. In this case, once again, Philips emerged as the natural choice for us.”

“We always perform a genuine, thorough evaluation of the market place before a new purchase. In this case, once again, Philips emerged as the natural choice for us”.

Dr. Jay Wright, Consultant EP Cardiologist

Chris Abell, Superintendent Radiographer, describes the search for a versatile, modern mobile unit that could meet the demanding imaging requirements: “We tried several different machines from various companies and we favoured the Philips system because the imaging seemed excellent, and we were able to visualize the fine coronary wires and needles into the veins and to insert the initial guide wires. Procedure helps to fill up the veins, so that it is easier to get the needles into the veins and to insert the initial guide wires.

The Cardiothoracic Centre, pacemaker implantation generally takes place in a dedicated operating room. Dr. Johan Waktare, Consultant Cardiologist, says: “The major concern with implanting hardware into patients is infection, and obviously you get better sterility in a dedicated surgical unit than in a standard cath lab”. Another advantage is the use of a surgical table. A Trendelenburg tilt at the start of the procedure helps to fill up the veins, so that it is easier to get the needles into the veins and to insert the initial guide wires.

High-quality images

The BV Pulsera is a mobile C-arm fluoroscopy system specifically designed for interventional procedures in the operating room. It was installed in the CTC in February 2005. Dr. Jay Wright, Consultant Cardiologist, describes the background to the choice: “Our fluoroscopy times can be up to an hour per case, so we needed a system that does not overheat, and can give us high-quality images with the spatial and contrast resolution to show the fine pacing leads within the contrast-filled vessels. The Philips system really meets these requirements”.

Dr. Derick Todd, Consultant Cardiologist, adds: “The optimal imaging obtained with this system is a great help, and has significantly improved our success rate”.

The high continuous output of the rotating- anode tube provides the long fluoroscopy times without overheating, and maintains the highest image quality even in patients with an unusually thick chest wall.

The images are displayed on flat-screen monitors, mounted on a swinging arm that allows them to be swung round for optimum viewing during the procedure. This allows the monitors to be placed in the optimum viewing position when the room is crowded with people and equipment.

Lowest achievable dose

Dose management is an important consideration, not only for the patient but also for cardiologist, who has to stand close to the patient throughout the procedure. The BV Pulsera provides high-quality images with a choice of low-dose or very-low-dose operation, while the image storage facilities of the ViewForum mean that radiation is only applied when it is needed in order to observe the live image. A further benefit is that because of the excellent heat management, it is no longer necessary to stop the procedure for cooling off, eliminating the extra 15 minutes of radiation sometimes needed to get back to the point where the procedure was interrupted.

The high spatial and contrast resolution also reduce the amount of contrast agent required. This can be important with seriously ill patients in view of the risk of contrast-induced nephropathy.

Workflow efficiency

The high continuous output of the rotating anode tube reduces the amount of time needed per procedure, and also ensures that procedures no longer have to be abandoned because of poor imaging or overheating, resulting in more efficient planning and higher patient throughput.

The ability to view the diagnostic images from other modalities in the operating room represents a further gain in efficiency, particularly when the system is connected to the hospital PACS.

A successful partnership

The Cardiothoracic Centre Liverpool is very much a Philips centre historically. Dr. Rod Stables, Consultant Cardiologist & Cath Lab Director, sums up the background to the choice:

“..."
Power from the People

Reliable relationships are a powerful, positive differentiator for Philips radiology in a leading Italian clinic.

The Humanitas Clinical Institute, in Rozzano, just south of Milan, Italy, prides itself on the humanity of the healthcare it provides. Central to this are investments in technology to support the clinicians so they can concentrate on their patients. The efficacy of the approach is proven by national certification from the Italian public health service and international recognition from the Joint Commission International, an international accrediting agency. In the Division of Radiology and Diagnostic Imaging, the importance of a personal touch extends to the equipment. A solid relationship and valued partnership has made Philips a de facto preferred supplier.

Meeting objectives

The hospital opened in 1996, is one of the most innovative in Italy, and is constantly striving to increase its standards of care. As a purpose-built hospital, it has been able to set up best practices, supported by the most recent technology. Dr. Giorgio Brambilla, Head of the Radiology and Diagnostic Imaging Division, points out that this is a never-ending development. The radiologists review their equipment once a year, and specify their long- and short-term needs to the purchasing department, who plan and budget.

A solid network of relationships has developed with Philips, right from the planning stage of the hospital, right up to the recent renewals and expansions, such as the new big bore CT in the Department of Radiotherapy and Radiosurgery. There are connections at all levels of the organisation, with Philips representatives, clinical specialists and business managers. This extends up to Dr. Ivan Colombo, the Managing Director of the Humanitas group and the head of Philips Medical Systems in Italy. This mutually valuable exchange means Philips can continue to address the clinical and administration objectives of the hospital.

"Apart from the universally high quality of the images, Philips’ other strengths are the quick response of the service and maintenance organisation," says Dr. Brambilla, "and the solid relationship, and easy communication between users and PMS representatives from service, administration and management." In the end, despite the hospital not having a single-supplier policy, there is often strong inclination in Philips’ favour.

Range of equipment

The Radiology Division has a wide range of modalities to cope with the more than 800 examinations it makes each day. These include four MR systems (three of which are from Philips), three Philips CTs, 2 mammography units (1 of which is from Philips), and three traditional radiography rooms—all Philips equipped, with column or ceiling mounted Buckys. The division also has an angiography suite, with eight to ten interventions a day, ranging from vascular interventions to chemoembolization. Finally there is a fluoroscopy room. "Regardless of the modalities, Philips obviously devotes a lot of attention to the user interface, to the simplicity and speed of use, even for advanced technologies," comments Dr. Brambilla.

In the Emergency Unit, the radiologists also have a further 6-slice CT, and a DigitalDiagnost direct digital system, with a Compano Philips Computed Radiography reader to ensure they can cover all the angles they need quickly and conveniently. Adding to the convenience is a single workstation for both direct digital and computed images, so the radiographer can handle all the patient’s images as a single examination.

Quality and productivity

Because the hospital was designed for filmless radiology, all the modalities were ready to go digital from the beginning, the CT and MR over DICOM, and the others using computed radiography. In the emergency unit the CT and radiography even connect to an extranet. This means the radiologists can review the images from home, and teleconsult with the emergency doctors in the hospital to get further details on the patient, to ensure the fastest possible reporting to start treatment without delay.

There is a lot of cooperation between the various divisions and departments. Dr. Brambilla points out that this is some-
thing that cannot always be taken for granted, though it is the key to being able to decide on procedures that ensure the best possible outcome for the patient. In one recent case, the interventional radiologists worked closely with the vascular surgeons for a patient unsuitable for a surgical intervention for an aneurysm. Of course, the high standards of interventional radiology in the division mean their colleagues elsewhere in the hospital value their skills – reciprocal respect at the heart of the relationship.

**Personal contact**

Another focus of the radiologists in Rozzano is CT-guided needle work, such as for biopsies. Other hospitals in the region take a cytological approach to biopsies, using small needles. CT guidance lets the Humanitas Clinical Institute guide bigger needles with great precision to take larger samples for a more accurate and reliable, histological diagnosis. Using large needles also allows them to guide catheters, especially at wavelengths greater than 600 nm. With this in mind, the Royal North Shore Hospital and School of Optometry at the University of New South Wales established the Cyanosis Observation Index (COI). This index defines the suitability of fluorescent lamps for use in hospitals and requires these lamps to have a COI of less than or equal to 2.4, making them more than acceptable for hospital use.

TNO Health, an independent consultancy agency specialising in the healthcare sector, recently undertook an independent study into the effects of using Optiview lighting. The results of the TNO analysis confirm that Philips Optiview lamps offer significant improvement regarding colour rendering. It has also been proven that the application of these lamps improves the early diagnosis of pathopsychological conditions that can be detected by a change in skin colour and that medical tasks that require good colour discrimination (e.g. injections and infusions) are made easier.

Extensive research has been undertaken to determine the required lighting conditions for medical tasks. One important aspect of medical diagnosis is the detection of cyanosis: the bluish discolouration in the skin of patients, caused by a drop of the oxygen level in the blood. The ability of medical staff to detect cyanosis by visual observation may be critical to a patient’s well-being.

It has been proven that most of the changes in skin colours become visible when light sources contain an appropriate light output in the red part of the visible spectrum, particularly at wavelengths greater than 600 nm. With this in mind, the Royal North Shore Hospital and School of Optometry recently undertook a study into the effects of using Optiview lighting. The results of the study confirm that Philips Optiview lamps offer significant improvement regarding colour rendering. It has also been proven that the application of these lamps improves the early diagnosis of pathopsychological conditions that can be detected by a change in skin colour and that medical tasks that require good colour discrimination (e.g. injections and infusions) are made easier.

**Master TL5/TL-D Optiview lamps are recommended for examination and treatment areas, dermatology rooms, pre-operation and recovery rooms, operating areas, intensive care units, colour inspection areas, autopsy rooms and mortuaries. These areas typically cover approximately 30% of the total hospital surface.**

**For further information please go to the official Philips website: www.lighting.philips.com**
Staying Safe

Finnish Sokotel acquires Automatic External Defibrillators for all its hotels

S okotel Oy, the hotel and restaurant branch of the major Finnish retailing chain S Group, leads the way in the Nordic countries by acquiring life-saving Automatic External Defibrillators (AEDs) for all its 20 hotels. “It is very natural to deploy AEDs in hotels. Hotels are always full of people and they have personnel who are trained to use the devices,” points out Juha Teirilä, Chief Medical Officer for the S Group, at a Sokotel Oy’s press conference in Helsinki held at the end of April 2006.

An AED is a device that is attached to the patient to analyse the patient’s heart rhythm. It prompts the user either to defibrillate and/or to check the patient’s status and, if required, start Cardiopulmonary Resuscitation (CPR).

Safety training
AEDs are a part of the Health and Safety Passport training that was launched together with the Finnish Red Cross a couple of years ago. The aim is to improve client and staff safety by systematic training of personnel in emergency first aid.

“We want to be a responsible, humane and customer-oriented hotel operator, and in this sense AEDs are a natural element in our operations,” explains Hotel Manager Marjo Risku.

Sokotel Oy’s decision to acquire AEDs came after the company’s international Radisson SAS hotel chain had recommended that AEDs be acquired for all Radisson SAS hotels. AEDs can now be found in all Sokotel Oy’s 13 Sokos hotels and 7 Radisson SAS hotels. The six Holiday Club spa hotels recently acquired by the S Group will also get AEDs. Sokotel has provided AED user training to the reception staff and restaurant department heads of each hotel. Sokotel Oy’s partner in device supply and training is the Norwegian company Laerdal.

Risks of travelling
Deploying AEDs in hotels is a sensible idea also in the light of recent studies indicating that travelling increases the risk of sudden cardiac arrest. Long flights, work-related stress, lack of sleep and partying are possible background factors when a hotel guest is suddenly stricken with a heart attack, say, in a hotel breakfast room.

“Growth in tourism adds to the probability that a sudden cardiac arrest may take place in a hotel. We want to prepare for this eventuality in advance, although we hope that we never need to use defibrillators,” Mrs. Risku adds.

He says the staff have been very positive about defibrillator training. “An AED is very easy to use and safe. This is important because just having an AED on site is not enough. You have to dare to use it when necessary. That is why one of our main messages in the training has been that you cannot hurt anyone with the device.”

Four crucial minutes
The most common cause of sudden unconsciousness is cardiac arrest. According to studies, each year about 80 people in 100,000 suffer sudden cardiac arrest, which is usually caused by an arrhythmic condition called ventricular fibrillation.

“If you consider, for example, that Greater Helsinki has a population of about a million, every year around eight hundred of them suffer from ventricular fibrillation,” explains Juha Teirilä, Chief Medical Officer for the S Group.

“The longer a person suffers from ventricular fibrillation, the less likely he or she is to survive. The chances of survival go down by 10 per cent every minute, which means that the chance of recovery is negligible after 10 minutes. The victim’s best chance of survival is to receive shock within 5 minutes of collapse. This is why the new resuscitation guidelines emphasise the importance of defibrillation as part of CPR.

Safe defibrillator
According to Mr. Teirilä, defibrillation is risk-free because the device does not work if defibrillation is not needed.

The device is very safe because it analyses the patient’s status automatically. In my view, an AED is the crucial factor in first aid, considering how fast the minutes until professional help arrives are reached. I believe AEDs will increasingly be seen in places with a lot of people on the move and where staff can be trained to operate the device.”

AEDs have been in use in Finland since the 1980s, primarily in ambulances and hospital wards. In recent years, the devices have become cheaper and technologically more advanced, they have also become more common among lay responders. In Finland, AEDs are used not just by professional rescuers, but also by voluntary fire fighters, Finnair cabin crew and the coast guard at Helsinki port terminals, among others. An AED can also be found at Helsinki Central Railway Station, Helsinki Fair Centre and Stockmann’s Department Store.
The first MR with IQ

Philips Achieva 1.5T, Achieva 3.0T, Panorama 1.0T now come with SmartExam, the breakthrough technology that redefines efficiency in MR. An intelligent approach to MR, SmartExam is a huge step forward in simplifying the MR exam, providing fully automated planning, scanning and processing with a single mouse click.

The results:
- reproducible scan quality with any patient, any operator, any day
- 30% increase in operator efficiency

SmartExam recognizes anatomical landmarks, remembers what the operator wants and automates the complete process, including planning, scanning and processing. Once the system has adopted your set-up, it provides absolute consistency of the clinical examination for every patient, automatically.

SmartExam benefits the patient, the operator, the physician and the administrator. Why?
- Patients will spend less time in the system
- Operators can focus on the patient, not the technology
- Physicians get consistent results, every time
- Administrators get operational excellence.

Fast, simple Cardiac imaging

Magnetic Resonance k-t BLAST

New k-t BLAST technique offers significant scan time reductions in dynamic cardiac imaging, with excellent image quality.

Motion correction, image quality and scan speed are key issues in cardiac MR – clinicians require images of a beating heart, within reasonable scan times and with maximum detail. Though MR developments in recent years have enabled ultrasound-like frame rates in MR sequences, obtaining highest quality images still traditionally required long scan times and multiple breath hold scans. This can be problematic when imaging, elderly, pediatric or claustrophobic patients.

Now, k-t BLAST provides fast high-quality cardiac MR with all the detail that clinicians need, within patient-friendly scan times. The k-t BLAST method is a highly efficient approach to dynamic cine MR imaging. It adapts the MR acquisition for optimized scan speeds and quality.

Strategic partnership with EDDA Technology for computer-aided detection (CAD) of lung lesions

In April 2006, Philips entered a strategic partnership with EDDA Technology. Philips has licensed EDDA Technology’s CAD solution for chest X-rays, making it easier for clinicians to identify, quantify, evaluate and report pulmonary nodules at an early stage. The first real-time interactive system offered by Philips under the name xLNA – supports analysis by integrating advanced computer technology into the diagnostic process.

Early diagnosis can dramatically improve the prognosis of cancer and other life-threatening diseases. By combining the clinician’s expertise with computer analysis of the radiographic image data, xLNA helps increase the speed and accuracy of detection. In clinical environments, xLNA has been shown to increase the discovery rates of small nodules by up to more than 85%.

The innovative xLNA is available as part of the Philips digital radiography portfolio, including the fully integrated CR (computed radiography) and DR (direct digital radiography). Clinicians can benefit from a powerful array of diagnostic tools, resulting in greater diagnostic confidence and better patient care.

News
Acquisition of Witt Biomedical for fully integrated cath labs

In April 2006, Philips completed the acquisition of Witt Biomedical Corporation, the largest independent supplier of hemodynamic monitoring and clinical reporting systems for use in cardiac cath labs. Witt Biomedical has been integrated within the Cardio/Vascular X-ray business of Philips Medical Systems. Witt Biomedical has quickly become a global recognized leader in hemodynamic monitoring and clinical reporting solutions for interventional cardiology. It was recently awarded the overall number 1 KLAS 2005 in the vendor review of Hemodynamic Monitoring and Clinical Reporting, and received the 2005 Award for Customer Service Leadership from Frost & Sullivan as well.

Philips and Witt Biomedical share a vision for healthcare – to serve and help clinicians optimally focus on patient care, by offering innovative, integrated cath lab solutions that consist of best-in-class products and services. This latest acquisition continues the Philips strategy of bringing the best companies together to create a world-class organization focused on healthcare.

Spectroscopy Specialist Package – Easy, fast clinical spectroscopy

Spectroscopic data provides valuable biochemical information supporting diagnosis and staging of diseases everywhere in the body. The new Spectroscopy Specialist Package provides fast, powerful acquisition, data processing and display capabilities (SpectroView). It includes a complete range of single voxel, multi-voxel and multi-slice proton spectroscopy acquisition methods, and is the first to include the SNR-6E technology to speed up 2D spectroscopic imaging. The SpectroView analysis package enables visualization and processing of all spectroscopic data in just a few mouse-clicks. All acquisition techniques are automatically executed by ExamCards.

Scanning from head to toe
Magnetic Resonance Whole Body Specialist

The Whole Body Specialist package enables rapid automated whole body imaging with an effective field of view of 2.1 m (7 ft). With ExamCards, it delivers complete multi-station head-to-toe coverage in a single pass, through the ability to combine all imaging sequences per station (requires Scan Tools Pro). Whole Body Specialist supports whole body oncology imaging studies and whole body MR angiography studies. Achieving 53 cm FOV allows full coverage in a reduced number of stations.

September
ESC & World Congress of Cardiology
2nd – 6th September 2006
Barcelona, Spain
www.escardio.org

ISUOG-2006 European Society for Ultrasound in Obstetrics and Gynecology
3rd – 7th September 2006
London, UK
www.isuog2006.com

ESNR European Society of Neuroradiology
13th – 16th September 2006
Geneva, Switzerland
www.esnr.org

EuroSon 2006 in conjunction with SIUMB
15th – 19th September 2006
Bologna, Italy
www.euroson2006.com

ESICM 19th Annual Congress
24th – 27th September 2006
Barcelona, Spain
www.esicm.org

EANM 2006 European Association of Nuclear Medicine
30th September 2006, Athens, Greece
www.eanm.org

5th Int. Symposium on Highfield MR in Clinical Applications
29th – 30th September 2006
Bonn, Germany

October
Europaediatrics
7th – 10th October 2006
Barcelona, Spain

9th Biennial ESTRO Meeting
8th – 12th October 2006
Leipzig, Germany

ESICM 19th Annual Congress
24th – 27th September 2006
Barcelona, Spain
www.esicm.org

The World of Health IT – Conference and Exhibition
10th – 13th October 2006
Geneva, Switzerland
www.worldofhealthit.org

November
Medica 2006
15th – 18th November 2006
Düsseldorf, Germany
www.medica.de
Doug McWhorter remembers Saturday, May 1, 2004 like it was yesterday. “It was the worst day of my life,” recalls the now 19-year-old college student. “It was my junior year in high school and Coach had mandated that we get our yearly physical at the TOPS event. I got up early but by the time I got to the school, there was a line out the door. I was irritated; I had a baseball game that afternoon. I remember thinking it’s a free physical, how good can it be? When my ECG came back abnormal, they had me stand in line for an echo test. I tried to talk the staff into clearing me to play without the ultrasound. Fortunately, they refused.”

William J. Rappoport, M.D., F.A.C.C., Arizona Heart Institute (Phoenix, Arizona, USA), was the cardiologist who evaluated Doug that day. “Doug’s ECG was grossly abnormal. We did an echo on site and found that he had Hypertrophic Cardiomyopathy (HCM). He had no murmur and no positive features in his family history so a normal physical would have missed it. Because it’s a genetic disorder, his entire family was screened. It was a good thing because both his father and brother were also diagnosed with HCM and all had rhythm problems that could have caused sudden death.”

Dr. Paul Steingard, D.O., Steingard Medical Group (Phoenix, Arizona, USA) and founder of TOPS, the Arizona-based organization that provides free physicals to high school athletes, credits his volunteer staff and Philips Medical Systems for saving Doug’s life. “Without Philips support, the cardiovascular portion of our physicals would not have been possible. They stepped up to the plate when other medical manufacturers brushed us off. They even let us borrow ECG and echo equipment while we were raising funds to purchase our own.” Dr. Steingard says the day TOPS purchased 35 Philips PageWriter cardiograph machines was a happy day. “We’re so grateful to Philips for seeing value in what we were trying to accomplish and for being so community-minded and supportive.”

As for Doug, he says the TOPS physical was the best physical he has ever had. “As it turns out, the free physical I was so skeptical of ended up being the one I value most.”