Take it easy
Universal radiography/fluoroscopy (URF) flat-detector system helps increase return-on-investment in multi-application mix, including orthopedics/traumatology.

Transparent Value
A web-based PACS ensures radiology integrates seamlessly into the expectations of referring doctors.

The User’s Eye View
BovenIJ, a busy Amsterdam general hospital with an enthusiastic clinical team, provides the perfect site for field testing Philips’ latest multislice CT scanner.
Philips presence at ECR 2007 is under the motto "Simplicity is". This is the same motto that you would have seen at RSNA last December because this is a universal concern. It is often assumed that increasing the capabilities of medical equipment means making them more complex. In fact, we would turn this on its head to claim that taking the complexity out, while improving the technology and applications, means we can let you better apply your capabilities.

The results are obvious in articles in this edition. In “Take it Easy”, for example, the ease of use of the system, despite its flexibility, was a main reason for choosing Philips universal radiography/fluoroscopy. “The User’s Eye View”, on the other hand, shows how we achieve such simplicity by applying the feedback from real users of the system (in this case a multislice CT scanner) in real examinations, as part of the product development.

Our stand in the exhibition area highlights new functionality in our ultrasound, CT, SPECT/CT, PET/CT, MR, angiography and workstation solutions. In each case, we hope we have achieved a result that extends your capabilities and makes your job easier. Such as, by helping you increase the consistency of ultrasound examinations using fully customizable protocols, based on industry and accreditation guidelines.

As we mention in the supplement on the RSNA 2006 annual meeting, we are always glad to listen to your ideas. This is how we keep our leading position in medical imaging. So please drop by our stand in the exhibition area, or feel free to contact us at medical.perspective@philips.com. Together we can help simplify the tools you use for patient care.

 Yours,

Margrit Lelieveld
Marketing & Sales Director

Dear Reader

Philips presence at ECR 2007 is under the motto “Simplicity is”. This is the same motto that you would have seen at RSNA last December because this is a universal concern. It is often assumed that increasing the capabilities of medical equipment means making them more complex. In fact, we would turn this on its head to claim that taking the complexity out, while improving the technology and applications, means we can let you better apply your capabilities.

The results are obvious in articles in this edition. In “Take it Easy”, for example, the ease of use of the system, despite its flexibility, was a main reason for choosing Philips universal radiography/fluoroscopy. “The User’s Eye View”, on the other hand, shows how we achieve such simplicity by applying the feedback from real users of the system (in this case a multislice CT scanner) in real examinations, as part of the product development.

Our stand in the exhibition area highlights new functionality in our ultrasound, CT, SPECT/CT, PET/CT, MR, angiography and workstation solutions. In each case, we hope we have achieved a result that extends your capabilities and makes your job easier. Such as, by helping you increase the consistency of ultrasound examinations using fully customizable protocols, based on industry and accreditation guidelines.

As we mention in the supplement on the RSNA 2006 annual meeting, we are always glad to listen to your ideas. This is how we keep our leading position in medical imaging. So please drop by our stand in the exhibition area, or feel free to contact us at medical.perspective@philips.com. Together we can help simplify the tools you use for patient care.

Yours,

Margrit Lelieveld
Marketing & Sales Director

For further information please go to the official Philips web site: www.medical.philips.com/medicalperspective
Time to fly with PET/CT

New time-of-flight PET/CT technology is taking speed as well as resolution of PET/CT scanning to new levels of performance.

The 17th century Dutch scientist Antoni van Leeuwenhoek made some of the most important discoveries in the history of biology, including the discovery of bacteria and blood cells using self-made microscopes. The hospital that bears his name, the Antoni van Leeuwenhoek (AVL) Hospital, founded in 1913 in Amsterdam, is a true follower of the tradition set by him with a reputation for clinical research in the Netherlands second to none.

The Nuclear Medicine Department, in particular, has been responsible for important advances in the development of radiopharmaceuticals and in early cancer diagnosis. This work has been considerably enhanced by the recent installation of a GEMINI TF PET/CT scanner embodying Philips’ new TruFlight time-of-flight PET reconstruction technology. In time-of-flight PET, minute differences in travel times of coincident photons are measured. This additional information helps localize the origin of the photons, and significantly increases the S/N ratio in the data. Its introduction into the clinical environment has long been the dream of PET, and with the launch of its GEMINI TF, Philips created a new benchmark in spatial resolution and sensitivity. All reports so far confirm that TruFlight dramatically improves image quality, consistency and performance for all patients, large and small. This greatly enhances the detection of small lesions which helps to detect disease in its earliest stages. What’s more, it permits higher levels of patient throughput by shortening exam time – a full body scan can be performed in as little as 10 minutes.

Combined strengths

AVL is now integrated with the Netherlands Cancer Institute (NKI) and clinical specialists and scientists traditionally work closely in multidisciplinary teams. The center is also a Philips reference site, and the installation and clinical evaluation of the new GEMINI TF is just the latest episode in a long history of successful cooperation.

“For four years we have been using a mobile PET/CT service*. This was satisfactory but the limited time the system was available to us restricted the amount of research and imaging we could do,” says Dr. Sara Muller, NKI-AVL medical imaging physicist. “We decided we needed our own system just at the time that the Philips GEMINI TF was becoming available.”

The GEMINI TF PET/CT is a top-of-the-range system featuring a 16-channel Brilliance CT scanner in addition to the PET TruFlight system. “The relatively high cost of the system was initially an issue but we were able to make a very attractive business case to our management,” points out Dr. Renato Valdés Olmos, NKI-AVL nuclear medicine specialist. “The new machine is very sensitive even at low injection doses. This meant we would be able to reduce the dose of FDG** to 50% of the standard dose with no loss of resolution. The speed of the new system would also give us a higher patient throughput than a standard PET, and we calculated that the savings on the cost of FDG would pay back the extra costs of the system within 2 years.”

The system was also a joint purchase between NKI-AVL’s Nuclear Medicine and Radiology departments so costs were

---

*Mobile PET/CT service
**FDG

Dr. Renato Valdés Olmos, NKI-AVL nuclear medicine specialist
Dr. Sara Muller, NKI-AVL medical imaging physicist
Mariska Sonneborn, PET coordinator and NM technician
“After just one week, we were so pleased with the GEMINI’s performance, especially its small-lesion detectability even at FDG doses of only 50% of what we were previously using, that we completely discontinued the mobile service.”
Take it easy

Universal radiography/fluoroscopy (URF) flat-detector system helps increase return-on-investment in multi-application mix, including orthopedics/traumatology.

For Dr. Jean-Philippe Masson, senior radiologist and the founder of the Tivoli Radiology Centre, France, one sign of a good radiology department is the quality of the coffee. This shows the staff has enough control and confidence in their environment to attend to such details, and is reflected in an attentive ease that patients appreciate. But achieving this takes careful planning and management, not least of which is selecting the right equipment. An example is the new MultiDiagnost Eleva flat-detector system in Carcassonne, which is also the first installation in France.

The Tivoli Radiology Centre is a private practice with 7 radiologists. Its largest site is the radiology department of the privately run Montreal Polyclinic in Carcassonne. The hospital covers all the major surgical disciplines, except for cardiac and neurosurgery. With referrals also from outside the hospital, this means the radiologists deal with about 150 examinations a day.

Until early 2006, the radiology department had two traditional radiography machines and a universal radiography/fluoroscopy (URF) device. They replaced these as part of the modernization process. The new URF system had to cover a very wide range of applications. Apart from vascular, gynecology, gastrointestinal examinations and interventions (such as biliary, prostate), the biggest portion is orthopedics and traumatology (around 70% of the total caseload). Dr. Masson explains, “We really were looking for a multi-purpose system.”

Equipment and vendor selection
When choosing a system, Dr. Masson points out that along with the quality of the equipment and associated service, “the reputation of the vendor and the relationship with the representative is important.” This is one major reason for him and his team having selected Philips.

They needed a system for emergency cases (around 30 to 40 a day), and vascular exams, particularly peripheral arteriography. Obviously, it also had to be good for orthopedics, which is one of the reasons why they decided for the flat detector. Some of the colleagues initially had had reservations whether the MultiDiagnost Eleva would be good for small bones, such as hands or wrists. However, when they saw the high-quality images of hand exams with a MultiDiagnost Eleva flat-detector system at another hospital, they were more than happy.

And last but not least, there are the aesthetics. For Dr. Masson “a pleasant and relaxing atmosphere is important, particularly for anxious patients.” This influences the layout and color schemes of the new examination rooms. It also influenced choosing Philips. “We felt the system design was human,” says Dr. Masson. It gives a feeling of sophistication, without making the technology intimidating.

Simplicity, workflow efficiency and patient benefits
He also highlights simplicity of use as fundamental. Since a multi-purpose system is used by many people, it has to be easy to learn and to use. When they visited various departments where the kind of equipment they were looking for had been already installed, the radiologists from Carcassonne tried systems from different manufacturers to see how far they could get without training. The MultiDiagnost Eleva was the only one with which they got convincing results.

“A big reason why we chose the Philips equipment is because of its excellent ergonomics.”
"A big reason why we chose the Philips equipment is because of its excellent ergonomy," says Dr. Masson. This starts with a connection with the RIS by means of the modality work list. The radiographer only has to select the type of study of the patient, and the system automatically looks after setting the parameters. The staff quickly got familiar with the new user interface, and quickly adapted to positioning the C-arm in three dimensions.

Significant is that a single radiographer can run the system. The height-adjustable table makes it easy to get the patient on and off. The C-arm with full 180-degree isocentric rotation – a Philips-exclusive feature – gives enough projection flexibility, so there is no need to have a second radiographer to reposition the patient. That means, instead of having to turn the patients, the C-arm rotates around them. This is especially nice for older patients who may get dizzy when they turn too quickly, and for emergency or trauma ones where due to pain or safety, unnecessary moving of the patients should be avoided. Besides, the exams are done more quickly, also, only one person has to work nights and at weekends to cover emergency cases. And, because it’s easy to access the patient and work from all sides of the table, the anesthetists are also happier than before.

Another example is arthrography. The ease of use means a radiologist can perform such dynamic examinations, injecting the contrast media himself or herself, with just one radiographer to position the C-arm using fluoroscopy, and then capture the diagnostic images. This saves time, and “because this is a dynamic exam, I can see other things than in a CT,” he adds.

Automatic 3D reconstruction

Another feature much appreciated is the orthopedics advanced pack. It helps them reconstruct full spines or long legs much more easily, without having to manually match images “For us, this is a very comfortable change,” says Dr. Masson. He is also excited by the benefits of the forthcoming 3D-RX pack. He saw this as a work-in-progress at the RSNA in December 2005. For orthopedics, it would help diagnose and treat complex fractures more accurately, for example of the knee joints, hip, or cervical spine. This may cut out the need of additional CT exams in some cases. And used with 90-degree tilt, the MultiDiagnost Eleva is the only X-ray system currently that can provide fully integrated, instant 3D reconstructions, while the patient is in an upright, sitting or standing position.

Image quality and dose reduction

The radiography culture in France underlines the quality and presentation of the image. “What you cannot forget is you have to make a good diagnosis. That is your job as a radiologist,” says Dr. Masson. “And with the MultiDiagnost Eleva flat-detector system, you can both reduce X-ray dose and increase image quality in a balanced way,” he adds. Post-processing the image is simple, so this also eliminates repeat examinations.

Return on investment

The better ergonomy and decrease of repeat examinations have increased both productivity and the attention the radiographer can give each patient. “We can now manage more patients with more comfort,” says Dr. Masson. Indeed, complemented with a new flat-detector radiography system, also from Philips, he adds that “two new systems can do the work of the three older ones.”

In achieving this goal, it is vital however, that “the MultiDiagnost Eleva is a real multi-purpose system,” emphasizes Dr. Masson. “If you are looking for just one piece of equipment, it would have to be this one, because it can do almost everything.”
A Structural Challenge

Live 3D echocardiography helps a purpose-built Heart and Lung Centre meet its goal of superlative cardiac care.

Aging populations and unhealthy lifestyles mean coronary care is a problem that needs to be tackled at a structural, rather than a case-by-case basis. The special hospital facilities of New Cross Hospital’s Heart and Lung Centre, in Wolverhampton are part of the United Kingdom’s government-funded drive to improve coronary care. But building the £60 million centre is not just about bricks and mortar. It also means ensuring the specialists have equipment at their disposal that helps them deal with the increasing, and increasingly complicated, caseload. And that can grow with the changing needs of the centre.

Patients of the New Cross Hospital are drawn mainly from an area, traditionally known as the ‘Black Country’, because of its association with ironworking foundries and forges. Today the Black Country is made up of most of the four Metropolitan District Council areas of Dudley, Sandwell, Walsall and Wolverhampton, covering a population of over 1.3 million, with Wolverhampton alone covering a catchment area of 1.1 million. The area has one of the highest mortality rates from coronary artery disease (CAD) in the country. Pressures on the existing facilities at New Cross Hospital led the hospital to put in a bid what will be the first purpose-built centre of its kind and the largest new regional tertiary centre for heart disease in the UK. The new centre will provide long-awaited services, including cardiothoracic surgery, interventional cardiology, primary angioplasty for acute myocardial infarction and related services.

The right product at the right time
The United Kingdom National Health Service has always enjoyed the support of the general public, with numerous charities fund-raising on behalf of hospitals to supply specialised equipment and services that the hospital might otherwise not be able to acquire. Although traditionally not Philips users, the technical and clinical benefits of the tried and tested 3D package on the Philips’ iE33 persuaded the hospital to use some charity funding to expand their cardiac services.

The cardiologists were very interested in the package for 3D quantification of the left ventricle (3DQ LV), as they thought it would benefit the heart failure service, providing better continuity and follow-up of left ventricular (LV) function assessments. They were also very excited about the complementary information, such as the dyssynchrony index, the system would give the surgeons and cardiac consultants. Dr. James Cotton, Lead Consultant says, “It was very much a case of the right product at the right time. Just at the time when we were looking for another echo machine, Philips launched the iE33. We are now scanning many more patients’ pre- and post-valve surgery, where 3D assessment is now becoming a valuable tool.”
The User’s eye View

BovenIJ, a busy Amsterdam general hospital with an enthusiastic clinical team, provides the perfect site for field testing Philips’ latest multislice CT scanner.

The equipment, which is located in the Cardiology Investigations Department, has brought about several positive changes to the working practice within the department and improved patient outcomes. One prime example is a 45 year old female who was referred to the department, by the cardiac consultant, for an echo scan. She had a loud systolic murmur and increasing sobs. On scanning the patient using 2D, she was found to have a large mass, filling 80 percent of the left atrium. A cardiac consultant and a surgeon were both called and a suggestion was made to scan the patient using the 3D facility on the iE33, so that the surgeons could ascertain where the mass was attached, that is whether it was anterior mitral valve leaflet or inter-atrial septum.

“Due to the excellent images and the use of cropping facilities, we were able, with confidence, to conclude that the mass was pedunculated at the inter-atrial septal region,” says Dr. Cotton. This information was difficult to ascertain from 2D echo alone. All the information gained by the Philips iE33 was confirmed during surgery and the patient went on to make a full recovery.

Future plans
The acquisition of the iE33 with its 3D imaging has also opened doors into the area of cardiac research and the department is currently conducting several projects using the iE33 system with both 3D and carotid Doppler probes. This ensures that Wolverhampton’s Heart and Lung Centre is not only delivering a vital service to the current community, but will continue to do so long into the future. Dr. Cotton feels, “this new piece of cardiac equipment has become an essential part of our cardiac diagnostic future, and with its 3DQ package, dyssynchrony indexing and 3D imagery, the possibilities appear endless.”

Making confident decisions
The equipment, which is located in the Cardiology Investigations Department, has brought about several positive changes to the working practice within the department and improved patient outcomes. One prime example is a 45 year old female who was referred to the department, by the cardiac consultant, for an echo scan. She had a loud systolic murmur and increasing sobs. On scanning the patient using 2D, she was found to have a large mass, filling 80 percent of the left atrium. A cardiac consultant and a surgeon were both called and a suggestion was made to scan the patient using the 3D facility on the iE33, so that the surgeons could ascertain where the mass was attached, that is whether it was anterior mitral valve leaflet or inter-atrial septum.

“Due to the excellent images and the use of cropping facilities, we were able, with confidence, to conclude that the mass was pedunculated at the inter-atrial septal region,” says Dr. Cotton. This information was difficult to ascertain from 2D echo alone. All the information gained by the Philips iE33 was confirmed during surgery and the patient went on to make a full recovery.

Future plans
The acquisition of the iE33 with its 3D imaging has also opened doors into the area of cardiac research and the department is currently conducting several projects using the iE33 system with both 3D and carotid Doppler probes. This ensures that Wolverhampton’s Heart and Lung Centre is not only delivering a vital service to the current community, but will continue to do so long into the future. Dr. Cotton feels, “this new piece of cardiac equipment has become an essential part of our cardiac diagnostic future, and with its 3DQ package, dyssynchrony indexing and 3D imagery, the possibilities appear endless.”

Making confident decisions
The equipment, which is located in the Cardiology Investigations Department, has brought about several positive changes to the working practice within the department and improved patient outcomes. One prime example is a 45 year old female who was referred to the department, by the cardiac consultant, for an echo scan. She had a loud systolic murmur and increasing sobs. On scanning the patient using 2D, she was found to have a large mass, filling 80 percent of the left atrium. A cardiac consultant and a surgeon were both called and a suggestion was made to scan the patient using the 3D facility on the iE33, so that the surgeons could ascertain where the mass was attached, that is whether it was anterior mitral valve leaflet or inter-atrial septum.

“The new piece of cardiac equipment has become an essential part of our cardiac diagnostic future.”

Karen Nicholas, Cardiac Investigations Manager

Sarah Godwin, Echo Lead Physiologist

Jenny Tonkinson-Hoare, Cardiology Training Coordinator

Karen Nicholas, Cardiac Investigations Manager

Sarah Godwin, Echo Lead Physiologist

Jenny Tonkinson-Hoare, Cardiology Training Coordinator
Up close and personal
The radiology department’s first experience of beta-testing was in 1999 with the Philips CT Aura single-slice system. This test was a great success with the Philips development team being particularly impressed with the enthusiasm and accommodating attitude of the clinical staff. “The first priority in any hospital department is, of course, patient care and it’s essential that a beta test intrudes as little as possible on this,” says Cees Conijn. “The Philips engineers were naturally regular visitors to our department but they kept in the background when we were busy with patients.”

The new MX 6000 dual-slice is more advanced than the CT Aura which BovenIJ has been using continuously for the last six years. Like the CT Aura, the new system is aimed at busy departments and practices specializing primarily in routine CT, but it also offers possibilities for exploring more advanced applications. The department was therefore the perfect choice to act as a beta site since the experience on the CT Aura meant that the staff could make direct comparisons of features such as image quality, ease of use and patient comfort.

“We started the test using the general protocols supplied by Philips to see if there were any bugs in these. There were, but this is often the case when new software is used for the first time in the field,” says BovenIJ radiologist Dr. Sander Boerboom. “The Philips engineers were very pleased with the enthusiasm and accommodating attitude of the clinical staff. “The first priority in any hospital department is, of course, patient care and it’s essential that a beta test intrudes as little as possible on this,” says Cees Conijn. “The Philips engineers were naturally regular visitors to our department but they kept in the background when we were busy with patients.”

The new MX 6000 dual-slice is commercially available. The BovenIJ team was therefore the perfect choice to act as a beta site since the experience on the CT Aura meant that the staff could make direct comparisons of features such as image quality, ease of use and patient comfort.

“We started the test using the general protocols supplied by Philips to see if there were any bugs in these. There were, but this is often the case when new software is used for the first time in the field,” says BovenIJ radiologist Dr. Sander Boerboom. “The Philips engineers were very pleased with the enthusiasm and accommodating attitude of the clinical staff. “The first priority in any hospital department is, of course, patient care and it’s essential that a beta test intrudes as little as possible on this,” says Cees Conijn. “The Philips engineers were naturally regular visitors to our department but they kept in the background when we were busy with patients.”

The new MX 6000 dual-slice is more advanced than the CT Aura which BovenIJ has been using continuously for the last six years. Like the CT Aura, the new system is aimed at busy departments and practices specializing primarily in routine CT, but it also offers possibilities for exploring more advanced applications. The department was therefore the perfect choice to act as a beta site since the experience on the CT Aura meant that the staff could make direct comparisons of features such as image quality, ease of use and patient comfort.

“We started the test using the general protocols supplied by Philips to see if there were any bugs in these. There were, but this is often the case when new software is used for the first time in the field,” says BovenIJ radiologist Dr. Sander Boerboom. “The Philips engineers were very pleased with the enthusiasm and accommodating attitude of the clinical staff. “The first priority in any hospital department is, of course, patient care and it’s essential that a beta test intrudes as little as possible on this,” says Cees Conijn. “The Philips engineers were naturally regular visitors to our department but they kept in the background when we were busy with patients.”

Hands-on experience
Another improvement made during the beta test was getting the system to perform multiphase contrast-enhanced scans. “We discovered that it was simply not possible to perform a repeat scan within the time it takes for the contrast agent to pass through the blood system,” says Wybren Remery. “This was a software issue and, once it was discovered, Philips very quickly solved it.”

Philips also worked with the radiographers on the user interface during the beta test, particularly parts of the menu structure and the positioning of some icons. The user interface on the MX 6000 has the same look and feel as the other high-end Philips systems and radiographers Arianne Wietmarschen and Neelie Klaver found it very easy to learn. “There is a very logical menu structure with tabs, and it’s easy to go from one tab to another,” says Arianne Wietmarschen. “The icons are also clear and simple to use.”

“We found the system very easy to learn and also to teach,” adds Neelie Klaver, “so now practically all our operators are proficient on it. We also like the fact that it looks very similar to the other new Philips systems, so switching from one system to another is no problem.”

The beta test of the system is now complete and the MX 6000 dual-slice is commercially available. The BovenIJ team will soon start evaluating the second beta version of the software which features enhanced post-processing packages including brain perfusion, dental studies and enhanced virtual endoscopy.

“We have very good contact with the Philips development engineers. We get the feeling that they really listen to what we tell them and we see a lot of it back in the new software releases.”
Solutions for the Future of Neurotherapy

Philips Research hosts leading researchers at a neurotherapy symposium

In June, Philips Research in Eindhoven hosted a groundbreaking symposium about the challenges and opportunities in the diverse and complex area of neurotherapy. Keynote speakers provided insight into pain management, neurorehabilitation, and perhaps most significantly, brain stimulation treatments. The following workshops identified potential research subjects. The chief organizer of the symposium and Principal Scientist at Philips Research in Eindhoven, Prof. Dr. Ir. Michel Decré, ended the symposium with a perspective on the future of brain stimulation.

Current techniques in brain stimulation

Various brain stimulation techniques try to reduce neurological symptoms by applying electrical impulses to the brain. Deep Brain Stimulation (DBS), which implants a “brain pacemaker”, and Vagus Nerve Stimulation (VNS), for example are already FDA approved treatments for Parkinson’s disease and epilepsy, respectively. Clinical research is looking into new indications, such as depression. Imaging and monitoring of treatments are high on the agenda for the future of brain stimulation. During the symposium, Prof. Benaïhid – keynote speaker on deep brain stimulation – identified the most significant opportunities for improvements in localization, binning and correct positioning of electrodes in the brain. The best electrode position means optimal patient improvement, so imaging for target identification, trajectory planning for implantation and intraoperative control of placement is important in achieving better outcomes. Prof. Benaïhid also mentioned multipositionable electrodes as desirable to more accurately adapt to the spatial distribution of stimulation to the specific functional somatotopy of each patient.

Challenges and opportunities

The associated workshop sessions underlined the opportunities in planning, tracking and guiding interventions in neurosurgery. MRI compatible devices, increased spatial resolution for implant placement and merged modalities (supported by the right software) will be needed to offer a comprehensive solution. But it is not only DBS that would benefit from improved imaging solutions. Transcranial Magnetic Stimulation (TMS), a non-invasive method that uses powerful, rapidly changing magnetic fields to induce electric fields in the brain, would also greatly benefit from targeting improvement and new methods to reach deeper brain structures.

To a large extent, the accuracy of stimulation targeting depends on understanding the exact functional structure of the individual patient’s brain. This means imaging suppliers must collaborate more closely with researchers working on brain-mapping and functional networks. The goal would be to create a “4D” brain mapping solution that can be used interactively in neurosurgery. This would start with functional and diffusion-tensor MR, SPECT and PET technologies. This is already technically possible, but making it feasible remains a challenge of standardizing software to seamlessly blend brain imaging, mapping, and modeling. In the longer term, these imaging technologies will also need to work with – and benefit from – advances in molecular imaging.

Another expectation is that Clinical Decision Support Systems (CDSS) for neurostimulation therapies will become available in the next five to ten years. These will depend on neurostimulation becoming a more widely accepted, evidence-based medical practice, that is, as targeting, implantation and stimulation parameters become better documented and more accurate, universal and standardized. Such CDSS’s will help reduce the time taken to make decisions, thus improving average patient outcomes and bringing down the costs of treatment.

A further exciting prospect identified at the symposium is technology to stimulate the brain only as necessary – so-called “closed loop” stimulation. Most research groups and neurotech companies in this field are gearing their current work to offering neuroprostheses for patients suffering from post-stroke neurological impairment, traumatic brain injury, or spinal cord injury. Advances depend on gaining insights into the inner workings of in vivo neural circuits. Progress is slow, but as the expertise increases, other neurological indications, such as epilepsy, may also benefit from “closed-loop” brain stimulation.

A vision for the future

In the long term, a wider definition of brain stimulation could play a role for novel, curative therapies. Prof. Decré commented, “As we progressively get to know more about neurons and how to influence their function, we can develop more organic brain stimulation techniques, as opposed to the current electrical or systemic drug solutions.” These will make it possible to detect and correct neuronal dysfunctions by probing, influencing or controlling the relevant cells in the brain at the protein level.

The science of brain stimulation will therefore become more proactive than the current passive, “switch-off” approaches. It will at the same time be miniaturized and more integrated, with microsystems delivering specific therapies to their specific targets, making the best combined use of drug, genetic, protein-based or physical (for example, electromagnetic) approaches. This is how brain stimulation will claim its legitimate place in the neurotherapeutic arsenal.
S
ince they introduced OB TraceVue System, Philips’ surveillance, alerting, documentation and archiving system for obstetrical care, in 2005, births and pregnancy monitoring in the Obstetrics Clinic (Klinik für Geburtshilfe) of the University Hospital in Zürich have involved less disruption and less stress and anxiety for mothers-to-be. At the same time, safety and monitoring reliability have been improved and documenting births has become a paperless process. Multiple benefits, one system: OB TraceVue.

Leaving nothing to chance
In our modern world, less and less is left to chance. This trend is also affecting family planning. Increasingly, having a child is not simply an accepted product of chance, but a well-considered, conscious major project associated with many expectations, wishes and hopes. While contraception has actually become a relatively plausible event, this is still not always the case for pregnancy and birth, even today. As a result, two worlds regularly collide: the desire of the pregnant woman or the couple for the most natural, calm and sensitive birth possible and at the same time for maximum safety and comprehensive monitoring.

Prof. Roland Zimmermann, Head of the Obstetrics Clinic of the University Hospital in Zürich, is familiar with this problem. As head of a hospital with 2,300 births a year and a rising number of pregnant women at-risk or with chronic existing diseases, he is constantly treading a fine line between a “natural approach, if possible” and “high-tech, if necessary”.

Monitoring, documentation and archiving
In the end those needs also gave rise to the idea of creating a new information system for obstetrics on which exacting demands were placed: on the one hand it had to fulfill a monitoring role and provide online documentation and archiving, while on the other it had to help make procedures involving pregnant women easier and quicker, but with less obvious frenetic activity.

This last aspect in particular was a matter of concern for midwives. Cardiotocograph (CTG) monitoring at the University Hospital in Zürich is always carried out in the actual delivery room by the midwife attending the birth. There are many benefits to this system, but the main drawback is obvious: previously if a risk situation arose, the mother-to-be was directly exposed to the ensuing frenetic activity at close proximity. Several people who had been summoned then generally rushed into the delivery room one after the other or even all together to discuss and evaluate the CTG, in so doing unintentionally and often unnecessarily spreading anxiety and fear. This was to change.

After a thorough assessment of various systems Prof. Zimmermann, together with senior midwives, opted to introduce the OB TraceVue obstetrical data management system from Philips.

Technology in the background
Introducing the product now required the support and approval of the hospital’s internal systems manager, Christoph Burri. It was now down to him to examine and assess the mother-to-be’s actual delivery room by the midwife attending the birth. Carefully spreading anxiety and fear. This was to change.

After a thorough assessment of various systems Prof. Zimmermann, together with senior midwives, opted to introduce the OB TraceVue obstetrical data management system from Philips.

Technology in the background
Introducing the product now required the support and approval of the hospital’s internal systems manager, Christoph Burri. It was now down to him to examine and assess the mother-to-be’s current CTGs together in the report room via a beamer.

He is also the important technical link between the hospital and the Philips team in the background. If he is unsure of the next move, Philips’ staff can even link directly into the department via a remote service and access the server as senior trouble-shooter. In contrast, the hospital clearly does not want unauthorised people gaining access to data or the system, which is why ‘data protection’ and ‘data security’ are written large within OB TraceVue and supported by law for reasons of liability, by permanently storing the CTGs with associated data on a magneto-optic disk with a suitably long life. He is also the important technical link between the hospital and the Philips team in the background. If he is unsure of the next move, Philips’ staff can even link directly into the department via a remote service and access the server as senior trouble-shooter. In contrast, the hospital clearly does not want unauthorised people gaining access to data or the system, which is why ‘data protection’ and ‘data security’ are written large within OB TraceVue and supported by law for reasons of liability, by permanently storing the CTGs with associated data on a magneto-optic disk with a suitably long life.

Calm convinces sceptics
In April 2005 everything was ready: after half-day training sessions for the first users, in an initial stage the CTGs of pregnant women from the outpatients’ department and the monitoring ward were first recorded and monitored using OB TraceVue and made accessible from monitors throughout the hospital. Two months later monitoring, documentation and archiving of births in the maternity ward were added.

At the time of the interview the complete system has been in operation for precisely one year. Prof. Zimmermann sums up: “Not all staff were initially enthusiastic about computers in the delivery room; there seemed to be a certain scepti-
OB TraceVue at the nurses’ station

CTG monitoring

TraceVue can be minimized to an icon, but still flags alarm even if other applications are running on a computer. OB Zimmermann. Beyond the limits of room and ward, “notes Prof. Zimmermann. While disruption during the birth has decreased considerably, er-to-be and subjecting her to a flurry of frenetic activity.

“Disruption during the birth has decreased considerably, while at the same time monitoring security has improved as intimate and stress-free as possible to be combined with the security of comprehensive monitoring and documentation for the well-being of mother and child.”

Ongoing improvements

Obviously there are also features that can still be improved further in conjunction with the Philips team. For example, access to the system had had to be extended in the first year of operation, so that 200 members of staff now have access and have recorded and stored 15,000 CTGs. “While access was being extended, the system was briefly out of service, during which time we went back to the old method of writing the CTGs on paper. Interestingly enough, everyone could hardly wait for the system to be up and running again – a good sign of how quickly the OB TraceVue has taken hold,” says Prof. Zimmermann gladly. As a reference point for the OB TraceVue system, Prof. Zimmermann, Christoph Burri and the other members of staff of the obstetrics team at the University Hospital in Zürich will remain in close contact with the Philips team to further optimize practical aspects, prepare updates and implement new ideas.

The new monitoring and data management system should not merely guarantee maximum calm, supervision and safety for the mother-to-be and her child, but also support research, teaching and statistical and administrative evaluation. As a result, for the past year at the University Hospital in Zurich, OB TraceVue has enabled the benefits of a birth situation reliably. Documentation also satisfies the most exacting demands: the entire birth is accurately documented, with all the alarms, interventions and additional monitoring values for mother and child. And all legally, without bits of paper and with the enormous advantage that all data are in the same place at all times and remain there. With a quiet smile Prof. Zimmermann says: “Previously you’d see midwives or doctors running all over with paper CTGs for some report or other or to pass on and in the end the CTG went missing from the patient’s file. That can’t happen any more.” When transferring patients today midwives, nurses or doctors sit in front of a computer and, together, study the CTGs and reports from the stored data. With pride, Prof. Zimmermann adds: “Our morning doctors’ reports are now always bang up-to-date, because we can examine and assess the mother-to-be’s current CTGs together in the report room via a beamer, which also has a beneficial teaching effect for the less-experienced junior doctors.”

Mr. Ruud van der Marel, Business Manager of the Radiology and Nuclear Medicine Departments

Dr. Jurgen van der Velden, Head Radiologist

### Transparent Value

A web-based PACS ensures radiology integrates seamlessly into the expectations of referring doctors

With increasing competition for patients, the Sint Franciscus Gasthuis (SFG) in the north of Rotterdam, the Netherlands, is taking a doctor-centered approach to information, to ensure simple and effective treatments. At the end of 2005, this included the first stage in modernizing radiology services.

The motivations for changing to a Picture Archiving and Communications System (PACS) included getting rid of film costs, while ensuring easy and fast access to images. This fits into the hospital’s strategy for one-stop care, so outpatients, for example, need only make a single visit. By speeding up information, doctors can provide more timely treatments, shorten hospital stays and improve prognosis. For radiology, this means delivering reports within four hours. This is possible with PACS.

iSite PACS was popular with the radiologists, but was not the initial choice. For example, they were not confident the small presence of Stentor (the company that supplied iSite at the time) in Europe could support them adequately. When Philips acquired Stentor in July 2005, the support organization was no longer a problem. They changed their order to iSite.

Safe approach

Mr. Ruud van der Marel, Business Manager of the Radiology and Nuclear Medicine Departments, compares iSite to PACS that focus on optimizing the radiologist’s workflow. iSite, an embedded web application, tackles the needs of the SFG by satisfying IT requirements. This includes remote backup, 99.99% contractual uptime guarantee, and a low need for specialized expertise. “That is quite a relief for us,” explains Mr. van der Marel, “because
we don't need to have expensive technicians to run the system." Philips staff in Foster City, California, continuously checks iSite’s performance. This ensures proactive solutions, often before problems have become obvious. The SFG also has a dedicated phone number, available 24 hours a day, 365 days a year. In the first six months, they only needed phone support a few times, and the only downtime was for a scheduled update.

But most importantly, iSite’s transparent architecture makes it easy to connect to other systems. This benefits the workflow across the whole hospital. From the time the PACS contract was signed to clinical operation only took four months, despite new and varied interfaces to imaging modalities, the RIS, the speech processing application and the electronic patient record (EPR). They stopped most film printing early in December 2005. In March 2006, when they integrated the orthopedic templating application, they stopped all routine printing of film.

Fast and accurate
The radiologists chose to work from a single worklist and do all their reporting in a single, common room. The single worklist means an X-ray of a hand might be followed by a CT of an abdomen. Dr. Jurgen van der Velden, Head Radiologist, comments that this variety ensures they remain alert. The single room makes it simple and quick to confer with colleagues with specific expertise or experience. “This is very important for the quality of diagnosis,” he adds.

A single click loads the current study for the next patient. Mr. van der Marel adds that minimizing the menus and mouse operations was important. With between 500 and 550 examinations a day, even two unnecessary mouse clicks for each patient would quickly add up. With just-in-time access to previous examinations, Dr. van der Velden reckons they could turn a report around in under 50 minutes. With other commitments, they manage to report every examination within four hours. For even faster reaction times for emergency cases, the radiologist on call also has a connection to iSite from home. “Reporting is more comfortable, and this is what makes the timeline much shorter for us, for the referring doctors, and for the patients,” says Dr. van der Velden. The radiologists have a scan of the examination request, and full access to the EPR for further background information, such as histological findings or lab results. “We are better informed, and this improves the medical quality,” says Dr. van der Velden.

Applying the benefits
Dr. van der Velden confirms that it was easy to get used to the new possibilities presented by iSite. “We were used to working with screens because we work with ultrasound,” he says. He adds, “if you have worked with Windows, you can soon work with iSite.” His feeling is they are doing more reporting, but it is no more strenuous. In fact, because it is so easy to start the next patient, the problem can be having the discipline to stop!

For the referring doctor, the images and reports from radiology are now seamlessly integrated in the EPR. Because the user interface is consistent, training on the PACS took only 10 to 15 minutes. “Working with iSite is a lot more comfortable,” confirms Mrs. Astrid Polak, Orthopedic Surgeon. “We can enhance the image or zoom in,” Mrs. Polak adds, “or compare easily with older images. It’s less time-consuming and the quality is better.” It makes her life easier when planning an operation, but the real benefit is when consulting with the patient. The image is available even before the patient gets back from radiology. “You have to get used to it, but that took a very short time,” she concludes, “Now we would not want to work without it.”

"Reporting is more comfortable, and this is what makes the timeline much shorter for us, for the referring doctors, and for the patients."

“The direct savings from iSite are visible, because we don’t print film any more,” says Mr. van der Marel. Indirect savings, such as the increased convenience for referring doctors, are harder to assess. Because iSite works as part of the overall IT environment, it helps make radiology transparent to its end-users. The proof of this is the lack of feedback from the referring doctors. There are no complaints, there are no comments at all. For Mr. van der Marel this is confirmation the service is truly transparent, which is what they set out to achieve for the good of the whole hospital.
A Shift from Shape to Biology

Personalizing cancer therapies will improve clinical outcomes and quality of life

The emerging field of molecular imaging is opening up new opportunities for assessing and quantifying biological and molecular processes within cancer tumors. In the Philips vision, personalized cancer therapies will focus on the biology rather than the shape of a tumor and, within a few years, it will be possible to quantify tumor reactions to a given therapy at an early stage long before they materialize in anatomical changes. Optimizing and combining various cancer therapies based on the biological make-up of a cancer will lead to more effective treatments and fewer side effects, eventually improving treatment outcome and the patient’s quality of life.

Current approaches to customizing therapies to an individual patient are limited. For instance, radiotherapy used to treat lung cancer targets the tumor according to its shape only and the total dose is based on experience with the overall patient population. Once the decision to irradiate the tumor has been made, physicians will usually adhere rigidly to the radiation dose. Based on CT or MR imaging, which indicate whether the tumor has moved or shrunk, they continue treatment with a dose that is deemed sufficiently high (based on population data) to destroy the tumor. At the same time, it is attempted to avoid adjacent, healthy organs at risk. But tumors are very heterogeneous and feature regions with different sensitivity to the therapeutic agent, such as radiation or a chemical agent. Targeting individual regions of the tumor with a customized dose of the therapeutic agent could therefore improve treatment outcome and further reduce side effects.

New paradigm

Recognizing an opportunity to improve clinical outcomes and the quality of life, Philips Research is investigating personalized cancer therapies. Therapy definition is based not only on the individual tumor shape, but also on a detailed and spatially resolved quantification of tumor biology, e.g. perfusion and oxygenation status. The dose of the therapeutic agent is then modulated across the tumor according to the biological make-up. Changes of these parameters are then accounted for in the next therapeutic step. To do so, a reasonable understanding of the biological effect of the therapeutic agent on the individual disease is critical.

In the Philips vision, the future cancer care cycle will include biology-based cancer therapies. It comprises molecular imaging for defining the biological target volume and for assessing the effect of the chosen treatment on the target and organs at risk. Molecular imaging will be able to generate three-dimensional maps for each tumor that show the distribution of molecular parameters. Using positron emission tomography (PET), dynamic contrast enhanced magnetic resonance imaging (MRI) and other imaging modalities in combination with novel contrast agents, molecular parameters such as the oxygenation status, perfusion or metabolic activity across a tumor could also be assessed and even quantified. Treatment planning and adaptation will be based on the biological effect while integrating multiple forms of therapy. Physicians could thus continually adjust treatment based on the extra information acquired before, during and after the course of therapy.

As part of Philips’ current research activities, computer simulations of disease progression – using mathematical models synthesized from clinical evidence – will play a crucial role. A future flexible toolset of treatment planning will combine several therapy options such as chemotherapy, radiation therapy, minimal invasive surgery, ablation or targeted drugs. In order to optimize the entire “therapy-mix”, rather than each therapy individually, a multi-modal treatment planning platform that integrates the various forms of therapy is required.

In the Philips vision, in a few years from now molecular imaging will be able to detect the tumor’s reaction to therapy at an early stage, even before its shape begins to change.

In the Philips vision, the future cancer care cycle will include biology-based cancer therapies. It comprises molecular imaging for defining the biological target volume and for assessing the effect of the chosen treatment on the target and organs at risk. Molecular imaging will be able to generate three-dimensional maps for each tumor that show the distribution of molecular parameters. Using positron emission tomography (PET), dynamic contrast enhanced magnetic resonance imaging (MRI) and other imaging modalities in combination with novel contrast agents, molecular parameters such as the oxygenation status, perfusion or metabolic activity across a tumor could also be assessed and even quantified. Treatment planning and adaptation will be based on the biological effect while integrating multiple forms of therapy. Physicians could thus continually adjust treatment based on the extra information acquired before, during and after the course of therapy. Tumor areas with high activity levels receive stronger dose, while the dose for quieter areas is reduced to avoid exposing healthy organs to unnecessary risks. Customizing cancer therapies to the patient’s biological and molecular disease characteristics would thus improve outcomes and reduce side effects. An example, which becomes more and more clinical practice, is the combination of chemotherapy and radiation. The combination offers new degrees of freedom for fine-tuning the balance between toxicity of healthy and tumor tissue and thus increased toxicity to the tumor with less side-effects for the patient.

Individual disease model

As part of Philips’ current research activities, computer simulations of disease progression – using mathematical models synthesized from clinical evidence – will play a crucial role. A future flexible toolset of treatment planning will combine several therapy options such as chemotherapy, radiation therapy, minimal invasive surgery, ablation or targeted drugs. In order to optimize the entire “therapy-mix”, rather than each therapy individually, a multi-modal treatment planning platform that integrates the various forms of therapy is required.

This approach focuses on the transition from the dose of the radiation, the drug or another therapeutic agent to the biological effect as the optimization criterion. And this is where technology comes into play: the data collected over the course of a therapy enables treatment planning software to permanently update and fine-tune the individual disease model.

In the Philips vision, in a few years from now molecular imaging will be able to detect the tumor’s reaction to therapy at an early stage, even before its shape begins to change.
Philips continues focus on Quality Cardio Pulmonary Resuscitation (CPR) with release of HeartStart defibrillators compliant with the newest Guidelines for Cardiopulmonary Resuscitation (CPR) and Emergency Cardiovascular Care (ECC) from the American Heart Association (AHA), the European Resuscitation Council (ERC) and the International Liaison Committee on Resuscitation (ILCOR).

Philips HeartStart defibrillators were developed with the insight that the science behind resuscitation is constantly evolving. All HeartStart defibrillators now shipping support the new protocol of single-shock defibrillation, followed by immediate CPR, which is recommended in the updated guidelines. Clinical studies show that the technology in HeartStart defibrillators has a greater than 95% first-shock efficacy in out-of-hospital cardiac arrest victims.1 In addition, the FRx and OnSite models support the guidelines’ new protocol to perform cycles of 30 chest compressions followed by 2 rescue breaths.

Since the guidelines were last updated in 2000, numerous research studies have shown that effective CPR is an even more critically important element in helping save the lives of cardiac arrest victims. Responding to this science, Philips recently introduced a range of resuscitation technology solutions designed to ensure that quality CPR and early defibrillation are delivered quickly and effectively. Philips’ commitment to continually help improved survival from Sudden Cardiac Arrest (SCA) is evidenced through the introduction of innovative technologies such as:

- **Q-CPR™**: the first and only technology integrated into a monitor/defibrillator to provide real-time CPR monitoring and feedback for advanced life support (ALS)-trained responders. The new guidelines recommend CPR-prompting devices for both in- and out-of-hospital settings. Q-CPR, developed by Philips and Laerdal Medical, is a feature available only on the Philips HeartStart MRx monitor/defibrillator.

- **SMART CPR**: first-of-its-kind technology that automatically advises a responder whether to provide an immediate defibrillation shock, or CPR first, followed by a shock, when treating a patient with a shockable cardiac arrest rhythm. SMART CPR is a feature available only on the HeartStart FR2+ Automated External Defibrillator (AED).

- **Quick Shock**: technology which enables a defibrillation shock to be delivered quickly after CPR is stopped – up to three times faster than other solutions on the market. Quick Shock is available on the HeartStart MRx, FR2+, FRx, OnSite and First Aid Defibrillators. According to 2005 Guidelines, “Reduction in the interval from compression to shock delivery by even a few seconds can increase the probability of shock success.”

- **CPR Coaching**: the industry’s first and only coaching tool for both adult and infant/child CPR, provides audio cues for the appropriate number, depth, and rate of chest compressions as well as cues for each rescue breath. This technology is available on the HeartStart FRx, OnSite and First Aid defibrillators.

As a leader in CPR and defibrillation technology, Philips made adoption of the new guidelines a top priority to ensure we are providing our customers with tools that reflect the latest science in resuscitation.

Magnetic Resonance 7-channel SENSE Breast Coil

The SENSE Breast coil is a 7-element design which enables simultaneous scanning of both breasts. The coil harnesses the power of the FreeWave data acquisition system and SENSE parallel imaging technology to enable high temporal resolution imaging of both breasts. It provides complete coverage from the nipples to the adjacent axillary thoracic regions. The coil is capable of integrating bilateral localization/biopsy devices providing access for medial and lateral interventional procedures.

New reusable SpO₂ Sensors

Philips has expanded its family of reusable SpO₂ sensors to include a reusable clip design for both Philips (legacy HP and Agilent) monitors and validated Nellcor® R-Cal compatible monitors.

Our M1/N6A and M1/N6T clip sensors are ideal for spot checking or short term monitoring, especially in the low acuity environment. The sensor conforms to the patient’s finger and the adjustable hinge allows you to accommodate larger patients comfortably.

With a broader portfolio of sensors, our customers have greater flexibility to comfortably and accurately monitor patients in every area of the hospital.

Magnetic Resonance 4-channel SENSE Shoulder Coil

The 4-element, 4-channel SENSE Shoulder coil enables fast, ultra-high signal-to-noise imaging of the shoulder. It is designed to produce uniform signal throughout the shoulder joint with deep penetration into the labrum and can be positioned comfortably around the patient’s shoulder, thereby minimizing motion artefacts. Two coil sizes accommodate both small and large patients while maintaining a high SNR.

March

ECR 2007 – European Congress of Radiology
9th – 13th March 2007
Vienna, Austria
www.ecr.org

British Nuclear Medicine Society
19th – 21st March 2007
Manchester, England
www.bnms.org.uk

27th ISICEM Intensive Care and Emergency Medicine
27th – 30th March 2007
Brussels, Belgium
www.intensive.org

May

AEPC (Annual Meeting of European Pediatric Cardiology)
16th – 19th May 2007
Warsaw, Poland
www.aepc.org

EuroPCR (The Paris Course on Revascularization)
22nd – 25th May 2007
Barcelona, Spain
www.europcronline.com

ESNCH 12th Meeting of the European Society of Neurorsonology and Cerebral Hemodynamics
26th – 29th May 2007, Budapest, Hungary
www.esnch.org

June

ESSR European Society for Musculoskeletal Radiology Congress
1st – 2nd June 2007, Izmir, Turkey
www.essr.org

Euroanaesthesia 2007 – ESA/EAA European Society of Anaesthesiologists
9th – 12th June 2007, Munich, Germany
www.euroanaesthesia.org

UK Radiological Congress 2007
11th – 13th June 2007
Manchester, England
www.ukrc.org.uk

Europace 2007
24th – 27th June 2007
Lisbon, Portugal
www.escardio.org
Neuroradiologist uses the Philips Allura Xper FD20 interventional angiogram to visualize the finer details of life.

Retired health care worker, Vivian Shepherd, doesn’t recall much of what happened on Saturday, December 4, 2004, other than she started the day making pancakes for her three granddaughters only to wake up hours later in the recovery room at Royal Columbian Hospital (RCH), New Westminster, B.C., Canada. Missing from 76-year-old grandmother’s memory is the moment she collapsed and fell to the kitchen floor, the frantic call for help made by her then 9-year-old granddaughter, and the ambulance ride to RCH. The hours that followed were a blur as she faded in and out of consciousness. “When Mrs. Shepherd arrived at the ER, we determined that she had suffered a major stroke. She was paralyzed on the right side, unable to speak and obtunded,” says William Siu, M.D., Interventional Radiologist, RCH. “I recall thinking how sad for this patient and her family to have this happen so close to Christmas. Fortunately, time and technology were on our side that day.”

Following the hospital’s acute stroke protocol, Mrs. Shepherd was rushed to Medical Imaging where a CT scan showed a clot in the left middle cerebral artery. That, along with her clinical picture, was enough for on-call Neurologist, Sheila Saveda-Cayabyab, M.D., Neurological Associates, to start intravenous thrombolysis therapy and to consult with Dr. Siu for further evaluation for intra-arterial thrombolysis. “When you’re dealing with a stroke patient, every second counts. The fact that Mrs. Shepherd got to the hospital as soon as she did was critical to her prognosis,” says Dr. Saveda-Cayabyab.

With no time to waste, Dr. Siu and his team, using their new Philips Allura Xper FD20 interventional angiogram lab, performed an angiogram of Mrs. Shepherd’s left carotid artery. “We saw a severe narrowing at the origin of the left internal carotid artery. After the narrowing there was an extensive blood clot in the carotid artery from the neck extending into the left middle cerebral artery. We performed angioplasty and stenting of the carotid artery to open up the narrowing and then advanced a microcatheter into the middle cerebral artery. We dissolved the clot by injecting t-PA, a powerful thrombolytic medication, through the microcatheter directly into the clot and restored blood flow to the left cerebral hemisphere. The procedure took less than 60 minutes, performing repeated angiographic runs without fail. A feat that would not have been possible with our previous angiography system.”

According to Dr. Siu, visualization is key when performing neurological interventions. He credits the Philips Allura Xper FD20, installed just three weeks earlier, with Mrs. Shepherd’s positive outcome. “There’s no room for doubt when you’re deep within the brain and feeding microcatheters a couple of millimeters in diameter through delicate and complicated vessels. We chose the new Allura system because of its exceptional image quality.”

Mrs. Shepherd says that while she’s back to normal, her life has been forever changed. “Having a stroke smartened me up. It made me realize that I simply can’t stress out. I wake up each morning and thank God I’m alive. I’m also thankful that I was the recipient of such great care and technology. I feel very privileged to have been given a second chance. I intend not to waste it.”

For more information on this story and Philips Medical, go to www.philips.com/patientstories