

EUROPEAN HOSPITAL

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Estonia leads the way in Baltic eHealth links

Tallinn, the capital of Estonia, boasts the country's third-largest hospital. East-Tallinn Central Hospital (ETCH) has 587 beds, 26,000 inpatients and last year recorded 425,000 outpatient visits. It dates from 1785 when the former Tallinn Central began to operate as a town hospital. However, in 2001, four hospitals and two polyclinics were merged to form ETCH. It has six clinics: internal medicine, obstetrics and gynaecology, long-term care, surgery, diagnostic, and ophthalmic. About 1,850 employees work there, among them 255 doctors and 630 nurses. Its 2005 turnover was more than €30 million. ETCH provides a wide range of healthcare services, including active care for inpatients and outpatients, as well as rehabilitation and long-term care. The hospital also provides a day surgery service and a

24-hour emergency department. It lacks only neurosurgery, cardiac surgery, nephrology and haematology services. More than 200 GPs, other hospitals and healthcare providers are buying ETCH's services. During the past three years much work has been done to develop the hospital information system (HIS). It now integrates all five hospital buildings, providing access to all electronic patient records except the diary. PACS (Picture Archiving and Communication System) for radiology was set up in 2003. The hospital's IT strategy extends the HIS into patient diagnosis and treatment. Over the next 10 years, it aims to establish a paperless hospital, to integrate other ancillary equipment with HIS and open patient data to GPs and other hospitals under the rules of the Data Protection Inspectorate. ETCH utilises a web-based system called ESTER 3.4, provided and managed by a local software company. The same system is used by approximately 20 hospitals in the country and by using a local

By Peeter Ross, MD
R&D Director, East-Tallinn Central Hospital, Estonia



Peeter Ross has been the Director of Research and Development at the hospital since August 2004. He is a member of the supervisory board of the Estonian Health Insurance Fund and Estonian eHealth Foundation. He studied medicine in Estonia's Tartu University and at Helsinki University, Finland between 1985 and 1991. After completing his residency in radiology in Tartu University in 1996, he went on to study his subject at Oulu University, Finland. Later, he attended the Armed Forces Institute of Pathology, in Washington DC, and studied healthcare management in INSEAD, France.

firm, the hospital enjoys the full flexibility to tailor HIS to its particular needs. Design models are prepared by an internal group and sent to the software company, which programmes the HIS. The involvement of the hospital software group in process design and quality control keeps the HIS working reliably. During the past years the growth of digital patient data has grown exponentially. Numeric and text data have been accompanied by imaging and bioelectric records that need greater storage capacity, along

with dedicated software and hardware. The question then arises about how far the hospital should develop its own HIS and which IT solutions should be either bought or outsourced. ETCH has decided that its system should not include PACS other than interfacing it with ESTER 3.4. In our view, PACS has to cover not only radiology images but also other medical images such as endoscopies, eye imaging etc. From 2003, ETCH has been an almost completely filmless hospital. This has had a positive impact on *continued on page 2*



The protective slide mobile (SLIMO) wheelchair cover was entered for the Fresenius Inventors' Prize - Page 13

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Five win certificates in pain free hospital pilot scheme

A pain-free Hospital pilot project launched in Germany three years ago has ended with the first five of 25 hospitals being awarded a Qualified Pain Therapy certification. The scheme's aim was to optimise pain control for patients through regular monitoring, staff training and standardised treatment procedures, thereby shortening recuperation times. Pain levels were recorded with questionnaires, interviews and observation and the collected data formed the basis for customised optimisation concepts that were put into practice then rechecked from summer 2005. Doctors and nursing staff now regularly measure patients' pain levels, a procedure that enables them to administer more effective

painkillers. This leads to increased mobility and improved quality of life. Patients also became actively involved in their own therapy; at the Martha-Maria Hospital in Halle-Dolau, near Magdeburg in Saxony, the proportion suffering afternoon pain decreased from 70% to 30%. Night-time pain levels were reduced by 15%. The five clinics to be awarded the certification are the Malteser Hospital St. Franziskushospital in Flensburg, the Municipal Hospital Martha-Maria in Halle-Dolau, the Bethanien Hospital for the County of Moers, the Clinic for General Surgery/Clinic for Accident Surgery/Clinic for Anaesthetics and Operative Intensive Medicine at the University Hospital of Munster and the Accident Hospital for Industrial Injuries in Tubingen.

Patient dies after X-Ray blunder

ONE patient died and 13 others were seriously affected by an overdose of X-ray radiation at a hospital in Epinal, north-east France. The Jean-Monnet hospital has admitted that the blunder was caused by inadequate training procedures with the equipment. It said when the machines were installed, initial training in their use was carried out by the manufacturer. However, staff then explained to newcomers how to operate the programmes, who later explained to subsequent trainees, and so on. To add to the confusion, the procedures were all in English. Eventually, an incorrect default setting was made that resulted in a number of patients being given overdoses of between 20% and 40%. The patient who died was suffering from prostate cancer and some of the other 13 affected have had colostomies as a result of damage to their intestines.

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EH 6/06

NEWS & MANAGEMENT

HELIOS INTRODUCES NEW GENERATION OF QUALITY INDICATORS



The Helios group of hospitals recently introduced a new scheme for a unified, comparable set of indicators to describe the most important services and quality parameters in hospitals. The model is a trend-setting step towards greater transparency - with less administrative effort.

With the new indicators, Helios has further enhanced its quality management system, which is unequalled in Germany. On the basis of standardised codes, referring doctors and patients are set to receive a far more comprehensive impression of the services and quality of results in Helios hospitals.

At the same time, the results are the basis for competition between the hospitals and will enhance overall treatment quality. Dr Thomas Mansky, above, head of medical development, said: 'The new indicators are a big step towards the type of transparency in the hospital market that enables us to compare services and quality.'

'We want to make the know-how available to all other interested hospitals to promote more openness and quality in the healthcare system.'

The group has been developing a standardised reporting system for the description of services and results quality in acute hospitals. This has been refined through its use in 30 hospitals and has evolved continuously through input from senior doctors.

Helios is now introducing the second generation of the indicators for acute hospitals. This set of

codes comprises most important illnesses, shows them in a comparable way and gives, wherever possible, clear information on results quality. All indicators are defined in a way that they can be derived from routine hospital data.

Nineteen of the so-called inpatient quality indicators of the AHRQ (Agency for Healthcare Research and Quality) are included in the Helios set of indicators in a significantly improved, medically more appropriate form. Moreover, the Helios codes contain many indicators for which the AHRQ has yet no definition, making it the most advanced set internationally.

They provide information about 30 groups of illnesses and

procedures. These are shown with 142 codes in a clearly defined way. The indicators are chosen in a way that provides information on typical, common disease patterns such as heart attacks or pneumonia, as well as on rarer, more intricate problems such as complex surgery on the oesophagus.

This mix of indicators provides information about 28.2% of all patient admissions to the Helios hospitals in standardised form. As the treatment spectrum at Helios hospitals does not differ from the average provided by other German hospitals, this set of indicators can make almost a third of all German hospital services transparent in a standardised, medically appropriate form.

Medical files trial scheme launched

THE French health ministry recently launched a pilot scheme to place millions of patients' medical files on a central database.

The project is being trialled in 17 areas around the country with the aim of keeping a patient's complete medical history - to be known as the dossier medical personnel (DMP) - on a central database that any doctor can access via a computer terminal, providing the patient gives permission. Although participation in the scheme will not be compulsory, patients who do not choose to take part will have their refunds for consultation and prescription fees reduced. At present, these are handled through a number of regional centres and a percentage of each fee is usually credited to a patient's bank or post office account.

The DMP would contain information on each patient's prescription history, drug allergies and blood group. Patients may add or delete certain information to their files if they wish, including whether they wish to donate vital organs in the event of their death or to stipulate that information be withheld from certain doctors. The health ministry says the scheme will help improve diagnoses, avoid potentially dangerous drug interactions and save time and money. France spends a huge proportion of its gross domestic product on funding its healthcare system.

continued from page 1
radiology images management. During our three years' experience of using PACS purely for radiology images, we have seen that clinicians are also able to call up other images quickly and reliably.

Furthermore, their access to images should be seamless from HIS, so using different browsers for HIS, PACS or other data storage systems is not desirable. The idea of using electronic patient data is to give clinicians a holistic approach to their patients. Unfortunately, this frequently leads to complicated software solutions that are time-consuming and not user-friendly.

In our case there was one additional requirement for PACS. The hospital has been connected to the Baltic eHealth network. This allows the secure exchange of health data between approximately 200 institutions around the Baltic Sea area. As part of this project, ETCH has helped to develop a radiology pilot that includes exchanging images between Denmark, Lithuania and Estonia. We also provide an image storage service for the networked hospitals.

With these requirements in mind, ETCH recently opted to procure PACS. We chose the bid made jointly by Kodak Nordic AB and Medical Insight A/S, which

includes PACS System5/Carestream 10, VIParchive and EasyVIZ. The solution will be integrated with our HIS using ESTER 3.4.

Kodak VIParchive's image management system will provide archiving for all medical images including non-radiological. Virtually separated sub-archives would allow other healthcare providers to use them.

In the hospital, clinicians can access images through HIS using an integrated Kodak web solution.

User-friendly

They can use a wide range of viewing tools, including orthopaedic software for implants and its quick and user-friendly data management permits access to reports and images on one browser.

To access remote radiology examinations outside the hospital HIS is integrated with EasyVIZ. This program uses streaming technology for image transmission, which needs less network capacity than conventional systems.

For radiologists, the use of dedicated PACS workstations offers fast image processing and lets them create personalised work

lists. Our PACS system sends images to others throughout Estonia, thanks to the foundation created by the country's two biggest hospitals - Tartu University and North Estonia Regional.

Two PACS servers, about 200km apart, use the same operating software and their databases are synchronised. Most Estonian hospitals send images to this central PACS, from where they can be viewed by radiologists, GPs and others with access rights.

ETCH has become one of the fastest-growing hospitals in Estonia. The growth and development of its organisational culture has meant that in three years six different healthcare institutions successfully became a single integrated unit with clear views and future objectives.

A key factor is the wide use of IT solutions in all hospital processes. We have chosen which solutions should be programmed locally and which should be outsourced. In implementing our PACS solution, we have found a successful balance between commercially available products and a locally tailored HIS. This was achieved by customer-focused co-operation between Kodak Nordic Health Group, Medical Insight and the East-Tallinn Central Hospital.

Help for the helpers

Healthcare systems in Africa are facing a huge threat in their fight against AIDS – an increasing short-fall of nursing staff. Workers are either infected themselves or can no longer cope with the daily fight against the disease. Despite this, there is hope – the first wellness centre for healthcare workers, which provides medical and psychological help to nursing staff and their families, was opened recently in Swaziland.

More than 40% of the 1.8 million inhabitants of the South African state, the continent's smallest, are now affected by HIV and AIDS, among them many nursing staff. It is becoming daily more difficult for the diminishing number of healthcare workers to fight the virus; often, the only solution for skilled staff is emigration to a country with lower rates of infection.

The medical infrastructure is on the brink of collapse. The Swaziland Nurses Association (SNA) recently opened a centre in Manzini, the largest city in

Swaziland, to counter this worrying development. The International Council of Nurses (ICN), medical products manufacturer Beckton Dickinson and the Stephen Lewis Foundation all helped to set up a centre dedicated to the care of healthcare workers.

Apart from looking after patients and their families, the centre offers health workers prenatal advice, tests and the opportunity of medical observation for needle prick injuries. An integrated training centre imparts medical knowledge and

provides training for dealing with stressful situations and violence encountered at work.

Linda Carrier-Walker, director of external relations and communications at the International Council of Nurses said: 'The training is particularly important because many nurses are completely demoralised. They have to fight a disease about which they don't know enough. This is why we teach them how to treat HIV as well as ancillary infections such as tuberculosis.'

Healthcare workers' feedback

since the opening of the centre in September has been cautious. Linda Carrier-Walker explains that this is due to those affected being too scared to be open about their illness and their fears. Even though almost half of the country's population is either infected with HIV or already suffering from AIDS, having the disease is still considered a stigma.

However, the centre's founders are convinced that their work will soon be better received and become successful through word of mouth. Its 2006 objective is to provide help for up to 3,000 nursing staff; numbers are expected to increase to 8,000 next year.

John Hanson, executive vice-presi-

dent of Beckton Dickinson, said: 'We have taken a step in the right direction in Swaziland, but are scraping only at the tip of the iceberg. If we look at Botswana, where most people don't live beyond 33 because of AIDS, it becomes clear how desperately we need more projects such as this.'

However, a start has been made, and the first step is always the hardest. Further centres are planned for Lesotho and Zambia in 2007 and for Malawi in 2008. Providing help for the helpers also helps everybody else around them.

By Meike Lerner

BENELUX NEWS ROUNDUP

By EH correspondent
Michiel Bloemendaal

Dutch doctors close to burn-out

A recent survey of more than 2,000 trainee hospital doctors in the Netherlands has revealed that many are close to burn-out. Researchers said almost 40% of doctors claimed they were chronically overworked and exhausted. They often work up to 80 hours a week and shifts of 10 hours or more are common. When study time is added, the survey found that the interns were more liable to make mistakes when dealing with patients, especially in A&E.

Hospitals fine 'no-show' patients

Dutch hospitals are cracking down on patients who fail to keep appointments by fining them, a report has revealed. More than two-thirds of participating members of the Dutch Association of Hospitals (NVZ) say staff are most irritated by patients who do not turn up. A 'no-show' system of fines, initially set at €20 and increased to €40 during 2006, is now in operation in about 20% of hospitals.

Alarm over medication blunders

Healthcare inspectors in Belgium say that more than 25% of medications prepared in hospital pharmacies were found to have the wrong labels or incorrect dosages. Out of 115 pharmacies inspected, only eight have been certificated.

Small is beautiful

In Holland, small hospitals are medically and financially better than large ones, says a report by strategic consultant Roland Berger. Those in the north of the country score better than average. This year, Dutch taxpayers will pay more than €62 billion for their healthcare.

Information error led to wrong operation

The Wilhelmina Hospital in Assen, Holland, accidentally removed half a patient's lung after an information mix-up. Wrong patient details of the patient were supplied by the pathology department at the University Hospital of Groningen, which handles all the laboratory work for the Wilhelmina Hospital, but the operation had already been carried out before the mistake was discovered.

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HealthCare

From November 26 to December 1, 2006, the Windy City - Chicago, Illinois - was the destination for radiologists from all over the world. More than 62,000 visitors attended the 92nd Scientific Assembly and Annual Meeting of the Radiological Society of North America, where 738 exhibitors showed their latest technology. Six days of educational programmes attracted radiologists, oncologists, medical physicists and affiliated healthcare professionals to the largest annual worldwide gathering in this medical field. By **Guido Gebhardt**

Strengthening professionalism

'Strengthening professionalism' was the motto of this year's congress quoted by president Robert R. Hattery MD. During his opening speech he encouraged his colleagues always to maintain their professionalism, no matter how much pressure they may be under. The wellbeing of the patient should always be at the centre of the treatment process. One ongoing objective for the RSNA is continuously to improve the quality of diagnosis and results. Respect, trust and motivation are only three of the qualities, he stressed, adding that continuous professional training and the standardisation of processes were two basic requirements for medicine.

The industry seems to have taken on the congress motto as well. As last year, everything was more about evolution rather than revolution. Improvements in the application and integration of RIS and PACS systems



were the focus for all systems. Target-oriented, standard examination procedures and diagnostic processes are to achieve more safety and quality in diagnoses.

In the field of computed tomography, Toshiba announced a system with a 256-slice detector,

although visitors were told that a beta-system is to be installed at the Johns Hopkins University in Maryland in February. The advantages of a 256-slice system for cardiac diagnostics are obvious. The new CT will be able to scan the entire heart within one rotation.

Apart from image quality and speed of the examination all manufacturers are also focusing on the integration of this high-capacity examination equipment into hospitals' IT environments. A comprehensive RIS-integration of modalities is the basis for efficient improvements of the workflow.

In the field of MRI, Siemens introduced an MRI-PET modality combination. The compact PET scanner is mounted in the tunnel of the MR gantry. This design facilitates the acquisition of PET and MRI images during the same examination; this is a system for highly sensitive, simultaneous PET and MRI measurements on the brain. The simultaneous measurement of MRI and PET parameters opens up a multitude of new examination procedures with dynamic, time-critical processes.

In the future, radiologists will be

able to determine differences with regards to localisation, spatial dimension and chronological sequence of images in both image modalities in the same environment, and will be able to compare the activation in functional MRI directly with the activation of receptor and neurotransmitter systems in the PET.

Conventional imaging is dominated by digital technology. CR (computed radiography) and DR (digital radiography) systems still compete for customers' favour. However, due to falling prices and further developments in the area of flat-panel detectors, DR technology is likely to win this race. Philips introduced a mobile flat-panel detector that transmits images into a PACS via WLAN (wireless local area network).

The hospital-wide, flexible use of DR-technology is likely to replace memory foil technology. With RIS



2007 CONGRESS WILL WELCOME RADIOLOGISTS TO VIENNA

The European Congress of Radiology (ECR) is a never-ending story of surprises, excitement, and success. Year after year, more scientists, radiologists eager to learn, and partners from industrial companies flock to this excellent meeting. It is now recognised as one of the most innovative forums within the scientific community, setting new standards in IT solutions and advanced technology.

This year, with 16,000 delegates, saw the highest attendance ever - a 7% increase over 2005. Overall, numbers have grown by almost 20% since 2003. The statistics demonstrate the attraction of ECR to radiologists and other healthcare professionals who seek information and education.

And ECR 2007 is just around the corner! Its motto, 'Imaging Generations', refers to the unique position radiology and imaging methods have in providing healthcare and help to our patients. Moreover, it reflects the fact that several generations of radiologists are now making use of the most modern imaging technology and are themselves driving new developments. 'Imaging Generations' also underlines the growing need for the high-quality education provided by ECR.

Next year will offer more than 260 scientific and educational sessions, 800 proffered papers and almost 900 electronic scientific exhibits. Key international experts will share their knowledge and latest research findings in all fields of medical imaging. Presenters will again enjoy the most recent technologies, from abstract submission to onsite editing and uploading of their presentations, using EDIPS, ECR's user-friendly digital preview system.

One offer at ECR 2007 will be an excellent educational programme, with four state-of-the-art symposia; two categorical courses - a new one on Multidetector CT Made Easy, and

the repeat course What I Should Know About Imaging for Staging Cancer?

There will be two mini courses on Women's Imaging and Molecular Imaging; a foundation course on cardiac radiology; two image interpretation quiz sessions; four interactive image teaching sessions; an interactive teaching course on 'Useful Signs in Imaging'; three interactive sessions on lung cancer, breast imaging and How to do a Successful Presentation with simultaneous translation from English to Chinese.

Also featured will be five ESR sessions: Challenges for European radiology; one EuroAIM session; one RTF - radiology trainees forum; highlighted lectures sessions, and four hands-on workshops on image-guided breast



biopsy, experience vascular procedures using simulators, tips and tricks in radiofrequency ablation, and dancing with workstations.

An e-learning centre with the possibility for voluntary self-assessment will complement the formal lectures and interactive teaching programme. The hospital manager symposium, an EFOMP workshop, 19 satellite symposia and workshops will round off the programme.

Eminent radiologists have accepted the invitations to hold honorary lectures. William R. Brody, president of the Johns Hopkins University (Baltimore, USA), will present the Wilhelm Conrad Röntgen Honorary Lecture 'Healthcare and the Ford Model T: Unsafe at any Speed - How to make hospitals safer places for patients', Martine Rémy-Jardin from Lille, France, will present the Felix Fleischner Honorary Lecture 'Why thoracic imaging must evolve toward car-

By **Christian Herold**
ECR 2007
President



diothoracic imaging'. And the inaugural lecture 'Lessons from our European Motherlands: What we forgot on the boat trip across the Atlantic' will be given by Stephen Swensen, chairman of radiology and director of quality services at the Mayo Clinic, New York, USA.

Following a well-liked tradition, the congress will again welcome three nations within its special 'ECR Meets ...' programme, this year saluting China, the Czech Republic and Austria. And, anticipated as always, an outstanding and in many ways surprising social programme will help guests to relax in the welcoming atmosphere of traditional and modern Vienna. And let's not forget the newly designed and renovated Austria Centre, which will provide greater space and an attractive environment for teaching and enjoying the offerings of the new congress.

ECR 2007 will also underline its commitment to provide excellent education to young professionals. Continuing and expanding its Invest in the Youth programme, the congress provides financial help to 400 young radiologists from all over the world, with a focus on East European countries, who otherwise would be unable to visit the meeting and improve their knowledge.

Last but not least, ECR 2007 will be the second official congress of the ESR, a society open to all European radiologists and a unique opportunity to represent the scientific, educational and political needs of radiologists in Europe and worldwide.

It is my privilege and pleasure to welcome you to ECR 2007 in my home town of Vienna. Enjoy!

A world of innovation



Versatility, integration and optimised workflow - these are the objectives of the innovations presented by Agfa HealthCare at RSNA. Here, Marcus Ostländer, global marketing manager, radiology IT business unit, is our expert tour guide through the world of Agfa innovation and leads us from digital mammography solutions via integrated information to intelligent data archiving and management systems.

The first highlight is the expansion of IMPAX 6, the globally successful web-based PACS for diagnostic mammography. The new feature allows digital mammography images, be they generated by mammo-CR or by digital direct detectors, to be displayed on the PACS workstation and integrated into diagnostic workflows.

To further improve diagnostic outcome, ultrasound and MR images can be called up at the workstation. Moreover, CAD supporting systems benefit from this new option, which allows the regions defined as critical by the CAD to be highlighted by a marker function.

From diagnostic mammography we move on to digital mammography screening. The Agfa screening workstation, especially designed for the screening workflow, can be flexibly configured to comply with the diverse workflow and integration requirements. These may encompass regional or national screening regulations as well as different user preferences. The new functionality supports the high diagnostic pace as

well as the integration into local and regional screening administration software prescribed, for example, in Germany by the Kassenärztlichen Verbände.

The next stop on our tour is RIS/PACS. IMPAX 6 was expanded to include not only digital mammography but also further clinical applications that play an increasingly important role in radiology. These include 3D visualisation and reconstruction, nuclear medicine, image registration and fusion or virtual colonoscopy.

All applications are integrated into the workflows on the IMPAX PACS workstation. Radiologists can access these directly, and only a single workstation is required to view all available image data.

A further innovation is Agfa's decision support tool, which integrates the PACS workstation with a case database. This allows call-up of organ-specific references to case-typical images and differential diagnostic data. Agfa

and PACS, interfaces are becoming less of an issue each year. Comprehensive interoperability is now part of the basic environment without nobody can work. Information systems have all become much more user-friendly.

They control the workflow of departments with a complex organisational structure. It is probably only a matter of time until both systems will grow together. One makes no sense without the other.

The chief attraction of a PACS is - and will be - image distribution. Whereas only a few years ago the manufacturers distinguished between work and viewing stations, this year they showed applications that make it possible for hospitals to carry out 3D reconstructions with the help of server technology. Image editing software and the computing processes run on a central, powerful server.

A workstation is required only for visualisation. It is only the quality of the display which limits the areas of application, and the manufacturers of display systems leave nothing to be desired. Everything is possible, and the highlights at the show were colour widescreen diagnostic monitors of at least 24 inches (60cm).

plans to expand integration to the hospital information system. With its clinical information system ORBIS, the company has the necessary know-how in-house and the further integration of ORBIS with RIS/PACS is presently in development.

Transparency of clinical data is crucial so it is envisaged that in the future clinicians can view all relevant patient data, from admission to discharge, from a workstation. This is far more ambitious than traditional RIS/PACS and requires integration of all departments - from cardiology through pathology to surgical. Agfa is presently developing specific solutions.

But how to handle the ever-increasing data these new systems generate? Intelligent archiving and

Meaningful

storage solutions are rare, so at RSNA Agfa presented IMPAX Data Centre, designed to support the archiving strategy of an entire hospital.

Data volumes will continue to increase exponentially and so will the need to integrate all departments and to manage data in a meaningful way. One crucial issue is the varying life-cycles of different types of data: Not all are created equal and have to be stored for the same length of time. X-ray images have a long life-cycle so storage technologies will need to develop over the next few years.

The final stop on our tour through the world of Agfa innovations is CR-30-X, a compact digitiser that offers image quality absolutely identical to that of larger systems. The new table-top product is a clever complement of the Agfa CR portfolio and is considered best-in-class.

At this year's RSNA, Agfa once again presented an impressive range of innovations that will begin their conquest of the radiological practice in 2007. We already look forward to our next Agfa world of innovation tour at the 93rd RSNA in 2007.

What used to be known as Hall D at the McCormick Place venue was known as the Lakeside Learning Center this year. Delegates found the scientific presentations arranged in a hub-and-spoke format and were able to obtain information from numerous posters as well as a number of computer workstations. The Molecular Imaging Zone was also situated in the Lakeside Learning Center this year. Increasing demand for, and numerous activities in the area of Molecular Imaging moved the conference organisation committee to give this new field of application its own exhibition space this year. They offered visitors an overview

over technologies and procedures of the future. The focus was on clinical introduction and new visualisation techniques with the help of image superimposition of nuclear medical

Glimpse of the future

and radiological applications as well as bioinformatics.

In its technology pavilion, GE showed us what the world of radiology may look like in only a few years. The company offered radiologists detailed insights into the work of the scientists at the company's

four research centres worldwide. Continuously increasing integration of IT and smaller examination equipment will not only ensure that information is available everywhere in multimedia form, but also that examination equipment can be brought to patients with severe injuries, rather than the other way round. One example was an ultrasound scan system that looked like and was roughly the same size as a PDA, with the transducer delivering images via a USB-connection. A display of 5cm x 10cm and a resolution of around 1000 x 600 pixels showed pin-sharp images.

Next year's congress president will be R. Gilbert Jost, MD,

Professor of Radiology, chair of the Department of Radiology at Washington University School of Medicine, director of the Mallinckrodt Institute of Radiology and radiologist-in-chief at Barnes Jewish Hospital in St Louis.

Fascinating technology and information about the latest applications and procedures are again likely to attract more than 62,000 visitors to McCormick Place in Chicago between November 26 and 30, 2007. But why, with all this technology around, does it take more than half an hour to get a cup of coffee? Strengthening professionalism - an objective the congress organisers should also note!

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A special exhibition in Paderborn's Heinz Nixdorf MuseumsForum (HNF) is demonstrating the use of state-of-the-art computer technology in medical science. With more than 100 exhibits, a third of them interactive, it runs until May 1, 2007. EH correspondent *Holger Zorn* was one of the first visitors

High-tech for healthy living

How would you like to determine your biological age, combat your arachnophobia when confronted with a virtual spider, or measure your optic nerve for the early detection of glaucoma and related diseases with the Heidelberg retina tomograph? You can do all these and more at this fascinating exhibition, called *Computer.Medicine*. You can also compete against the marathon world record-holder on a treadmill, gain fascinating insights into the workings of the body, test your hearing, perform a virtual appendectomy or play an active part in a similar head operation.

HNF managing director Dr Kurt Beiersdorfer said: 'Rather than focusing on a specific topic, the *Computer.Medicine* exhibition provides a comprehensive overview of medicine and healthcare, an area no longer conceivable without computer support.'

'The great degree of interactivity ensures that the exhibition's contents are exciting for visitors to



discover - high-tech developments are presented with high-tech support. We hope to appeal to laymen as much as to those in the healthcare sector.'

Aids for the body

Implants, artificial limbs and computer-supported processes are featured in the most spectacular section, Aids for the Body, where the world's leading prostheses are on show. In prosthetic upper arms and forearms, the grasping impulse is relayed to the prosthesis via electrodes. Microprocessor-controlled above-the-knee prosthesis enables patients to walk and run in a completely natural fashion.



Philips Speech Recognition Systems acquires Kuhlmann-Informationssysteme

Philips Speech Recognition Systems has acquired Kuhlmann-Informationssysteme (KIS), a provider of dictation and speech recognition solutions for healthcare. 'Why, after a successful co-operation spanning a decade, has Philips taken over KIS now?' asked *Denise Hennig*, of *European Hospital*, during a discussion with *Marcel Wassink*, managing director of Philips Speech Recognition Systems, Vienna, and *Holger Ladewig*, managing director of Kuhlmann-Informationssysteme, at MEDICA 2006.

Marcel Wassink described Philips' immense growth throughout Europe over the past few years. 'Today, speech recognition is employed not only in individual hospital departments but also in regional health and hospital associations. In Spain, an entire region has recently introduced our system. About 8,000 organisations in 45 countries use our Speech-Magic technology - and demand is increasing continuously.'

'In future it will be crucial to make medical information available digitally. KIS has been a reliable partner for 10 years, covering the service area. This is important since our product is not a simple box you throw at a



From left: Marcel Wassink, Holger Ladewig and Denise Hennig

client, then take the money and run.'

Holger Ladewig explained: 'Philips supplies the package - hardware and software - and KIS takes care of after-sales. Thanks to co-operation with our sales partners the product can be integrated easily into a client's existing IT environment. Once speech recognition has been implemented and introduced in a hospital, the processes change. This is where KIS comes in. We train staff, develop tailor-made solutions and offer help should problems arise.'

'Since our clients have a constant need to optimise their processes,

KIS is a long-term partner. In turn, this close co-operation helps us further to develop our product and adapt it to users' individual needs. Currently, KIS has about 400 installations in hospitals and 500 in physicians' offices.'

Asked how they foresee developments in this market, Marcel Wassink predicted that, medium to long term, speech recognition will become an integral component of hospital information systems.

'This is not merely about transforming dictations into text,' he pointed out. 'We want to streamline the entire workflow, make it simpler and more efficient.'

Remember how long it used to take for all findings and physicians' letters to be completed? Now we want to improve the quality of document generation.

'Imagine the system warns a physician - while he's dictating - that medication he has just prescribed is contra-indicated. This information is drawn from a medical database within the system and is continually expanded.'

A survey by the EU Directorate-General of Health and Consumer Protection found that almost four in five EU citizens classified medical errors as an important problem in their country. In Italy alone, medical errors have been reported to result in up to 90 deaths a day.

Marcel Wassink added: 'When we succeed in improving healthcare documentation we will contribute to reducing the number of medical errors - and improve patient safety.'

Holger Ladewig revealed that additional services were also planned, including *Check Contra-indication*, *Check Medical Error*, *Check for Completeness*. He said: 'That's why direct discussion with our clients is so important - to improve and expand our portfolio. We need it.'

Also impressive is the robotic treadmill: People with spinal cord injuries can practise walking with the aid of it, as it helps redevelop damaged nerve tracts. There is also a Japanese whole-body robot, and an exo-skeleton which is used to help paralysed patients to walk again.

A wheelchair designed especially for epileptics and those who suffer from similar conditions detects obstacles in its path and stops automatically before a collision can occur.

Another spectacular exhibit is the retina implant which in future will be able to restore the gift of sight to the nearly blind. Medicine pumps and electro-stimulators will also be able to combat chronic pain in specific areas of the brain and spinal cord.

One technology of the future featured here is telemonitoring. For those with heart problems, *Computer.Medicine* is exhibiting



ST&D offers wireless vital signs platform



ST&D is an internationally recognised and leading innovator in targeted vital signs monitoring. It has developed a solution to the issue of remote monitoring with its flexible wireless vital signs platform that can be customised to provide various monitoring products.

The elements provided include a miniaturised short-range body-worn wireless monitor with long battery life, on-board intelligence to monitor for and trigger on medical events such as arrhythmias. Also available is a matching belt-worn device using cellular links to send data immediately to the clinician. It has non-irritant, easy to apply patch electrodes for high-quality collection of vital signs.

Examples of products developed from this platform include instantaneous Holter monitors, in-hospital multiple vital signs monitors and pulse-wave velocity screeners.

a mobile phone and cardiac pacemaker capable of automatically carrying out an ECG and forwarding it to a medical centre via radio. A 'LifeShirt' which can measure a range of vital parameters, from pulse rate to body temperature, is also on show.

Dr. Beiersdorfer added: 'Computer.Medicine presents knowledge that assists and supports humankind and ensures its wellbeing. It is a highly topical area, offering a wide range of future prospects



for employees and companies alike. To put the exhibition into a topical context, the healthcare sector already provides more jobs than any other in North Rhine Westphalia.'

Computer.Medicine is based on items loaned from Germany and abroad. Many requests to hire and stage the exhibition have already been received from institutions overseas and it is expected to tour the world for several years. Firm joint projects with Ontario Science Centre Toronto, Canada, and with Singapore Science Centre, Singapore, are already planned.

Opening hours:

Tuesdays, Thursdays and Fridays: 0900 to 1800; Wednesdays: 0900 to 2000; Saturdays and Sundays: 100 to 1800. Closed Mondays.

All texts and multimedia terminals are in English and German.

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Markus Braun



NOSOCOMIAL INFECTIONS

Study finds stainless steel beats plastic in combating bacteria

Nosocomial infections are all too common in our hospitals. For example, in Germany alone (according to the German Company for Hospital Hygiene - Deutsche Gesellschaft für Krankenhaushygiene), each year 40,000 patients contract bacterial infections, some fatal. Reasons are not only attributed

to shortcomings in medical or nursing care, but also by the use of materials that should never be used in hospitals – among them, plastic. Where stainless steel replaces plastic the mortality rate of bacteria rises enormously.

In comparative tests conducted by research scientists Professor Wolfgang Wildfuhr and

Dr Annerose Seidel, at the Hygiene Institute at the University of Leipzig, a range of micro-organisms, such as bacteria found in wet and dry environments, and pathogenic fungi including *escherichia coli*, the bacterium responsible for smear infections, were examined in detail.

The purpose was to determine the materials on which the pathogens survived to greater or lesser degrees. The team's conclusion was that the survival rate of the bacteria and other pathogens was twice as high on plastic as on stainless steel or glass. The study was commissioned by

Hans Hergert, owner of Frelu, a firm that produces utensils for hospitals and care homes.

The disposal of faeces in hospitals represents a particular hazard. Markus Braun, left, chairman of the German Healthcare Export Group, said that, for public health reasons, stainless steel and nothing else should be used everywhere where large numbers of people are cared for, particularly when excreta disposal is necessary. Stainless steel is easy to clean and recycle, which is certainly not the case with plastic.

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Posters: Deadline for abstract submission: December 15, 2006

Simplifying precise urinalysis

Sysmex urine fluorescence flow cytometers offer a wide variety of clinical benefits to the user, including determination of WBC, bacteria and yeasts to exclude urinary tract infections and/or inflammations very quickly; RBC count plus morphology information to give a clear hint as to the possible origin of a haematuria, and urinary conductivity as a marker for patients' diuresis status.

'Sysmex's latest urine fluorescence flow cytometer, the *UF-1000i*, is based on diode laser technology using polymethine dyes that specifically stain nucleic acids for sensitive particle analysis,' its manufacturer reports. 'With two separate analytical channels, *UF-1000i* offers selective analysis of either bacteria alone, or the full range of parameters.'

'Additionally, for raised sensitivity and precision it permits the selection of a special mode for bacteria counting from an increased sample volume.'

The maker also points out that the instrument is controlled by a Windows-based 'information processing unit' (IPU) that offers the easiest operation of a UF instrument ever, and state-of-the-art information technology with large storage capacity, flexible connectivity to peripheral devices and multilingual operator software.

To extend standardisation beyond the analysis itself, the urinalysis work area management system *SIS-U* complements the UF-series analysers, offering standardisation also for result interpretation and the following workflow, regardless of operator, date and time.

CARDIAC DIAGNOSTICS: MRI, CT OR ECHOCARDIOGRAPHY?



Thanks to more precise imaging, cardiac diagnostics is becoming more reliable and technological advances in imaging procedures are rapid. Looking at the costs involved in purchasing equipment, the question is always whether investment in the latest technology can be justified by its diagnostic benefits. One also has to look at which technology should be used for what types of diagnoses. **Dr Torsten Sommer (TS)**, above, head of the

Radiological University Clinic at the University Hospital in Bonn, spoke to *European Hospital (EH)* about the state of affairs in cardiac diagnostics and the possible fields of application for MRI, CT and echocardiography.

By Meike Lerner

EH: What are the specific characteristics of the three procedures - MRI, CT and echocardiography - with a view to their use in cardiac diagnostics?

TS: Echocardiography is the primary imaging procedure for diagnostics. It is cheap, can be carried out at the patient's bedside and suffices for many problems, such as assessment of heart valve function.

It is also useful for the analysis of heart wall kinetics or the pumping capacity of the heart. However, echocardiography has its limits when strong calcification is present, for instance in the aortic valves. And at around 15%, the percentage of people on whom the procedure cannot be used is quite high.

In these cases, MRI is a good alternative. It can also be used for a follow-on diagnosis after an initial echocardiography, as its main strength lies in tissue characterisation, due to its high intrinsic soft tissue contrast. For instance, if the echocardiography shows up a space-occupying mass, the MRI images reveal the percentages of water and fat in this mass and to what extent it is vascularised.

A further strength of MRI is vitality diagnostics, i.e. the characterisation of the myocardium. Studies have shown that it is the most precise *in vivo* procedure for the detection and quantification of myocardial infarction. This can also be achieved with PET, but

'We can also carry out functional ischemic diagnostics and assess possible stenosis'

MRI is much faster and can produce extremely rapid images of the entire myocardium. Moreover, the spatial resolution is faster and the radiation dose is lower. Due to the display of perfusion we can also carry out functional ischemic diagnostics and assess any possible stenosis.

Currently, the main strengths of computed tomography are in the display of the coronary artery. A typical case for a CT examination would be a patient with an atypical angina pectoris with a low expected pre-test probability for coronary heart disease, but where significant coronary disease needed to be ruled out. If the CT examination does not show any pathological findings there is a negative predictive value of almost 100%.

EH: A lot has happened in the area of MRI. Tesla 3 opened up entirely new diagnostic possibilities and now we even have Tesla 7 - what are its advantages for cardiology?

TS: It is not realistic to expect using Tesla 7 for cardiac applications in the foreseeable future. This is because artefacts increase in proportion to the field strength, which means that the diagnostic value for cardiology is not yet sufficiently refined.

We initially had the same problems with Tesla 3. However, through enhancements in coil technology, adaptation of the sequences and improved homogeneity of the magnetic field, Tesla 3 has turned into a huge asset for cardiac imaging. The increased number of artefacts compared with Tesla 1.5 is offset by increased diagnostic precision.

The applications for Tesla 3, such as myocardial perfusion, flow quantification, vitality diagnostics and tagging, have been established over the past few years and are now an essential part of diagnostics. With

tagging in particular we can see big differences compared with Tesla 1.5. With this method, a magnetic grid is put over the myocardium and a certain myocardial volume is marked; this can then be monitored across the entire heart cycle and makes it possible to show the complex heart contraction.

The method is not particularly new, but clinical use with Tesla 1.5 was not possible because the grid remained present only over part of the heart. Tesla 3 has basically facilitated the tagging procedure. However, Tesla 1.5 still has advantages

over Tesla 3, with its higher number of artefacts for other applications such as abdominal examinations.

EH: So new is not always better. When is which investment worthwhile?

TS: It depends on the application for the equipment. Tesla 7 is not yet refined enough for use in cardiology. If a hospital has to decide on which equipment to buy, I would recommend Tesla 3. New technological acquisitions make sense only if used to full capacity, for example in co-operation with other departments. The consolidation of competencies from radiology and cardiology has proved successful here.

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CAROTID STENTING SUFFERS A SETBACK

By Karen Dente



The debate between carotid artery stenting (CAS) and carotid endarterectomy (CEA) - the surgical approach - for treating a narrowing of the carotid artery in the neck to prevent stroke has tipped in favour of the more proven procedure of operation.

Two European trials have failed to show stenting to be equivalent or better than carotid endarterectomy in symptomatic patients - the current standard of care for stroke prevention in patients needing treatment for carotid artery stenosis.

At the 33rd annual Veith Symposium for vascular surgeons in New York last month, experts discussed the results of the most recent randomised trials - the

German SPACE and the French EVA-3S, both of which looked at how stenting compares with surgery. At this year's meeting, a lot of the heat surrounding the debate dissipated compared with the previous year, given the latest data emerging from these two trials that concluded that carotid stenting comes with a greater procedural risk than surgery.

Every year in Germany, 200,000 people suffer from a stroke. Around 30,000 are caused by carotid stenosis, a narrowing of the carotid artery because of plaque. Removal of this plaque is one of the most successful means of preventing strokes in these patients, and the benefits outweigh the risks of further strokes or death after operations. Past clinical trials reveal that in professional hands, the perioperative risk of stroke in symptomatic patients is 6% and in asymptomatic patients as low as 3%.

Some physicians questioned the conclusions reached by these trials because both were halted before they were finished, resulting in fewer numbers of patients and leaving them unable to prove statistically significant results from which to draw definitive conclusions.

D. Peter Bell is a vascular surgeon at the Leicester Royal Infirmary in the United Kingdom and an outspoken critic of carotid stenting. He says: 'As far as symptomatic patients are concerned, the EVA-3S and SPACE trials have shown no benefit for CAS in patients with symptoms who need treatment.'

The only trial that has shown a benefit for CAS is the SAPPHERE trial, which Bell describes as 'deeply

MECHANICAL HEART PUMPS COULD BEAT TRANSPLANTS

Almost one in three people over 55 will develop congestive heart failure, research has revealed. The Rotterdam Study, a prospective population-based study of cardiovascular and other diseases in the elderly, monitored 7,983 inhabitants of Ommoord, a Rotterdam suburb (source: *Eur Heart J* 2004; 25, 1614-19). Although the ideal mechanical heart pump is not yet available, modern devices can prolong life by up to five years. EH Correspondent **Holger Zorn** recently visited the first European Mechanical Support Summit in Bad Oeynhausen, Germany, to speak to **Pascal Leprince** of the Hospital La Pitié-Salpêtrière in Paris, and **Aly El-Banayosy** of the Heart Centre NRW in Bad Oeynhausen, two of the most advanced centres in Europe for mechanical circulatory support therapy.

EH: The epidemiologic study has shown that five years after the first diagnosis of congestive heart failure, only 35% of patients were still alive. The median remaining lifetime was 2.1 years. How many extra years you can give them with a help device?

Leprince: Probably five. After that, we can change the device and gain a further five years. A modern device provides time to develop new strategies, e.g. stem cell therapy, or to replace the sick heart with a donor organ.

EH: Do you have already the ideal device to work for such a long time?

El-Banayosy: We are working on that. The new generation, magnetically levitated assist devices (see EUROPEAN HOSPITAL 5/2006 page 23) have run for 15 years in the laboratory. We have patients living well with these devices for two years. Now it must be proved that they will live five years and longer with them under normal circumstances.



From left to right: R. Körfer, L. Arusoglu, P. Leprince and A. El-Banayosy

EH: When you look at all these novel pumps, what are you still missing?

Leprince: We miss the experience of five years and longer in a significant number of cases. Furthermore, the quality of life should be improved. In the past, the industry has concentrated on developing safe and proper working pumps. Now the other components - batteries and controllers and cables - must become smaller and lighter.

EH: In your opinion, when will mechanical heart pumps better the results of heart transplantation?

El-Banayosy: Patients receiving a mechanical device are sicker than patients eligible for heart transplantation. In a few years, we will be able to implant such a pump earlier, then our patients will be on a par with those who have had organ transplantation. In the future, human hearts will be reserved for patients who will gain most from that therapy.

Enhancing acute



Dräger's Acute Care System is reported to be the first to offer a totally new approach to managing and delivering care across the entire acute care process - from emergency care to operating theatre, to critical care and neonatal care.

The company says: 'All devices utilised throughout the entire acute care process have the same base hardware and software architecture, user interface and nomenclature. The system integrates most key acute patient care functions as patient monitoring, ventilation and anaesthesia.'

Dr Wolfgang Reim, Dräger Medical's president and CEO, added: 'Today, the patient environment is extremely complex. There are many devices with diverse functions, user interfaces and operating philosophies, and increasing volumes of real-time and archived data.'

'The problem is that these devices do not communicate with one

SALES UP FOR PAINLESS WOUND CLOSURE DEVICES

A dramatic change in the market for painless wound closure devices is predicted during the next five years due to advances in medical and surgical technologies. According to a report from business research group Frost & Sullivan (www.healthcare.frost.com) the European markets for the wound closure devices earned revenues of €286 million in 2005. F&S estimates this will reach €776 million in 2012.

F&S research analyst Kezia Jasper attributes this to a distinct shift towards painless wound closure, with significant change occurring in cer-

tain segments, such as absorbable sutures, skin adhesives and tissue sealants. Surgeons are already moving away from non-absorbable sutures towards absorbable sutures, F&S reports. It says the rising number of plastic surgeries is promoting the use of synthetic absorbable sutures. Along with synthetic absorbable sutures, skin adhesives are also projected to generate high revenues, thereby enhancing overall market expansion.

Skin adhesives are safe, easy to

use compared with conventional sutures and staples, and they relieve the patient of painful suturing, then removal.

However, the report points out that the rising demand for minimally invasive surgery (MIS) affects the growth prospects of the overall wound closure markets, because it not only reduces suture usage but also mechanical wound closure devices and wound strips.

It says: 'With significantly lower bleeding, another outcome of minimally invasive surgeries, the use of

ligating clips, has also been eliminated, while reduced infection rates have substantially limited the need for wound strips.'

The report advises manufacturers to broaden skin adhesives and absorbable suture applications in MIS. It adds: 'Currently, skin adhesives are used only during emergencies and for small cuts and incisions. Arresting the ongoing decline in product sales is possible by advocating the usage of skin adhesives in the closure of surgical incisions. At the same time, encour-

aging the use of synthetic absorbable sutures for closure of external wounds will boost unit sales.'

For a virtual brochure, which provides an overview of the F&S analysis 'European Markets for Wound Closure Devices' (BA02 - 54), e-mail Radhika Menon Theodore - Corporate Communications at rmttheodore@frost.com, giving your full name, company name, title, phone number, e-address, city, state, and country.

flawed'. It has now been discredited, since the principal investigator was also involved in the trial design. The results showed higher risks for stroke for CAS and CEA groups in a largely asymptomatic patient population, for which the necessity for intervention remains questionable anyway.

For these patients, a risk of having a stroke without any treatment would be as low as 2% a year, rendering unacceptable the results of the SAPHIRE trial that showed a perioperative stroke risk rate of 5.8% at 30 days.

With no trials demonstrating clear evidence in favour of stenting, this procedure should not be used more widely. Dr Bell warns: 'These [EVA-3S and SPACE] trial results show that the CAS procedure is dangerous even in the hands of experts and should not be used more widely. Otherwise, disaster will occur.'

Dr Wolfgang Reim



patient care



The Infinity system at work

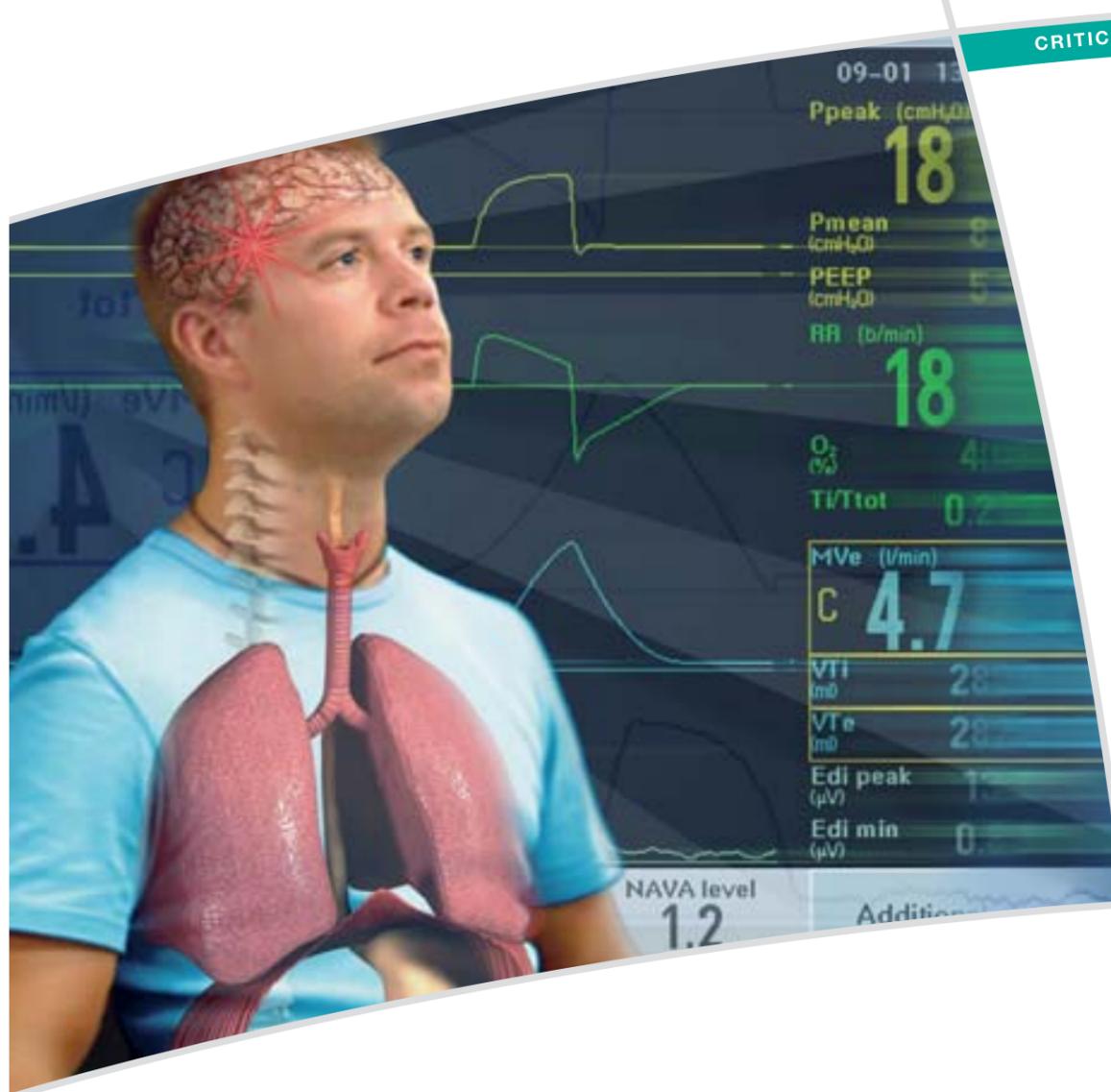
another and therefore we only receive isolated information, which makes it difficult for clinicians to assess a patient's status quickly.

'This system significantly simplifies the technical environment around the patient, integrates diverse data sources and generates information from the data that can enable better, faster decisions.'

The system works with small, mobile plug-and-play recorders, through which a patient's data is entered. The recorders accompany that patient throughout his or her stay in the acute care ward and can be connected with several medical devices. So the specific data is always moved around with that patient.

The data is also transmitted to the medical cockpit - a standardised control unit that enables hospital staff to access patient data, monitor patients and manage therapy devices.

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If something doesn't fit we make it fit, and if it doesn't exist we invent it: Pragmatism combined with imagination and idealism are the foundation stones of groundbreaking inventions that improve daily life in medicine. This was confirmed at the Fresenius Inventors' Fair at this year's MEDICA, held in Düsseldorf, where, for the ninth time, Fresenius held a forum for 20 selected researchers and developers to present their work. Four of the most ingenious inventions were awarded the Fresenius Inventors' Prize 2006.

The Fresenius Inventors' Prize

The top Fresenius prize, along with €5,000, went to Professors Jürgen Kempf, Christian Hook and Georg Scharfenberg, of the Regensburg Technical College, and their colleagues Dr Bernhard Sick and Christian Gruber of Passau University.

The team had equipped a pen with sensors to record neuromuscular activity of the hand. Within the pen, the refined sensors record tilt, position and movements of the pen's tip, as well as the pressure applied to the tip and the fingers that grip the pen. Hand movements are a key guide to neuromuscular activity, so data provided by the sensor pen could prove very useful in the diagnosis of diseases such as Parkinson's, schizophrenia, or stroke.

'Additionally, neuromuscular activity highlights the impact of medication dosages, or their side effects from medications' reveals drug use or reflect stressful situations,' Professor Jürgen Kempf explained. The sensor pen is now undergoing tests in various clinics and laboratories.

Two orthopaedic surgical instruments that can remove worn implants in hip or knee joints with less bone damage, developed by Dr Michael Arnhold, who works in orthopaedics at the Rudolf Elle Hospital, Eisenberg, Germany, won him the second prize of €3,000. Few implant makers deal with the removal of worn implants, he said. His universal removal tool for hip and knee joint replacements either supports itself, or is attached



SLIMO fits on wheelchairs to provide more safety and comfort

directly to the implants to provide better use of force during removal. Dr Arnhold has applied for the patent.

The third award was shared by two inventors: university lecturer Dr Christoph Suschek, of the University Hospital Aachen, for a nitrogen monoxide machine, and Bernd Riedmüller, from Aalen, Germany, for his cold-light source that illuminates the wrists of newborns. Each receives €2,000.

Dr Suschek's invention could dramatically reduce costs for medical procedures that use nitrogen monoxide during acute lung failure or in newborns with breathing difficulties, because it can expand vessels even at low dosages. According to Dr. Suschek, the normal daily dosage for a child can cost as much as €3,500, but his device can produce the same amount for less than €1. He described the procedure as simple, and said it delivers gas with a high level of purity. As for the expense, it wouldn't only help to save money, but also make nitrogen monoxide treatment possible in non-

The Smart Pen measures neuromuscular activity when writing



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Early warning systems for cardiac

Various record systems that transfer patient data directly from an emergency site to physicians' monitors for diagnosis of cardiac incidents were demonstrated at MEDICA 2006.

alarm if life-threatening conditions occur. The device is used just like any conventional recorder. The maker points out that it has an integrated motion sensor that reduces false positive event detections and, due

is also small. This recorder provides a three-lead measurement of all the patient's standard ECG parameters. The measuring device is placed on the patient's chest, where it registers a multi-lead ECG signal. Computed data is transformed into a 3-D heart portrait, shown in real time on the colour display.



CorBelt

These included CorBelt (Corscience GmbH & Co.KG - www.corscience.de) a small, mobile event recorder with automatic alarm reported to be the first device of its kind with integrated Bluetooth data telemetry, which will automatically transmit an

to its dry electrode technology, the belt can be used without electrode gel or adhesive electrodes, making it suitable for a continuous monitoring of high-risk cardiac patients.

The viport event recorder (Energy-Lab Technologies GmbH - www.vicardio.de)

At risk patients can be measured at home or on the way to hospital, for current heart rate, cardiac arrhythmia and current intensity of the cardiac stress load. Storing up to 20 data sets, these are transmissible via Bluetooth to a physician.

Researchers from the Health Telematics Group at the Fraunhofer



viport



Schema TopCare Box

Copyright: Fraunhofer-IBMT

specialist clinics and even doctor's surgeries.

Bernd Riedmüller's invention, the intensive cold-light source, enables tiny arteries to be picked out for needle insertion, in order to continuously monitor the blood pressure of newborn and premature babies in intensive care, for example.

Exhibitors not awarded prizes had nonetheless presented impressive innovations, particularly for those with physical disabilities. The slide mobile, SLIMO, for example, is a comfortable and variable device for wheelchair users; it protects from rain and also ensures more safety in traffic due to a clear-view roof.

With his text input aid for those with little mobility (e.g. ALS patients), Tobias Denninger demonstrated a system that allows them easier communication. Patients can control their thoughts in a way that, via electrodes, they can prompt single letters to appear



Communication via thoughts, electrodes and a monitor

on a monitor. The principle is not new but the system, based on a colour-coded letter-matrix, is relatively easy to use.

* The international healthcare group Fresenius provides products and services for dialysis, hospital and the ambulatory medical care.

care

Institute for Biomedical Engineering (www.topcare.info) presented a really sophisticated solution - the TOPCARE-Box, a multipurpose tele-care system designed for telemonitoring patients at home, which enables supervision of homecare therapies by healthcare centres. According to the patient's illness pattern, several diagnostic or therapeutic medical devices can be connected to the box, e.g. Bluetooth ECG, Bluetooth pulse oxymeter, or a cycle ergometer. All data are transmitted via the internet to a server, where they can be accessed by authorised health professionals using the web browser.

Pacemakers

In the pacemaker market, ECG monitoring features are quite common, but now Concerto, a new pacemaker generation from Medtronic GmbH (www.medtronic.de), is the first device to incorporate an early warning system for heart insufficiency, and to have integrated fluid control that gauges electronic resistance in the thorax. A decrease of impedance signals dangerous water accumulation in the lung, which can result in death. In the case of a decrease, Concerto gives an early signal, so that the patient has enough time to take his or her medication and avoid the worst.

ANAESTHESIOLOGY

TRAINING FOR AIRWAY MANAGEMENT

The recently formed company Trucorp, a spin out from the anaesthetics department in Queen's University Belfast, aims to research, develop and manufacture innovative systems for medical skills training and competency assessment.

Using real-time CT scan data and working closely with anaesthesiologists and materials engineers, the firm reports that it is now marketing its 'highly realistic and anatomically accurate

AirSim airway management trainer'. Trucorp adds that the AirSim trainer is ideally suited for training on difficult airway scenarios that may be encountered during anaesthetic procedures, such as intubation using laryngeal masks and endotracheal tubes.

'In 2005 we augmented the product range to include the AirSim Multi and AirSim Bronchi, both developed using novel manufacturing techniques, the emphasis still on true-to-life feel

AirSim Bronchi



product contains the key features of the Multi with the addition of a bronchial tree, ideal for bronchoscopy training.

'The AirSim range is rapidly gaining acceptance as the airway management trainer of choice amongst our key markets in

anaesthesiology and critical care/emergency response training.

'True anatomy, true training, true to life.'

and use,' Trucorp reports. 'The Multi product includes a realistic nasal passage and chin in addition to the AirSim airway. The Bronchi

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JEEP AND QUAD TO THE RESCUE



Islanders on Usedom, in Germany's Baltic Sea, will be the first to see two unique rescue vehicles in action. The Jeep Grand Cherokee ambulance with Kawasaki rescue quad trailer, both adapted by vehicle specialists Binz and Karmann, carry emergency medical equipment that includes GE's new ECG /defibrillator and emergency medical bags made by Lührs Rescue. The vehicles also provide the latest Hella



blue light LED technology. The quad - flagship of the Kawasaki fleet - has the most powerful engine in its range. Contact for full details: Dr Lührs. Phone: +49 172 5300668.

High-tech

The new single door PG 8527 and two door PG 8528 large-cabinet decontamination units for instrument reprocessing (on sale from March 2007) adapt easily to changing workloads in hospital CSSD units and a variety of other needs, their manufacturer Miele reports. Both units use either the firm's new OxiVario or OrthoVario disinfection programmes.

Light pressure on outlines drawn on an easy-clean glass screen, protecting the 'PerfectTouch' display and controls beneath, activates functions and launches programmes. Line navigation, using intuitive controls, makes

Leica MDRS3 for microsurgery videos and stills



The compact, medically tested Leica Medical Digital Recording System MDRS3 from Leica Microsystems allows video and uncompressed still images recording from multiple cameras without interruption of the video recording. The high-resolution data stored on the internal 80 GB hard drive can be synchronously exported to other systems via USB ports for further processing or saved by the integrated CD/DVD burner.

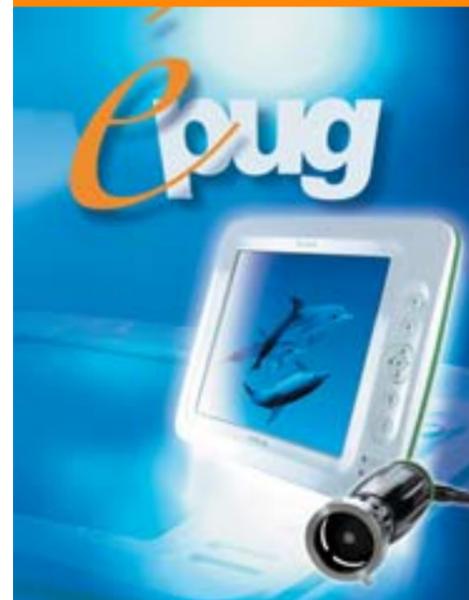
Leica reports that the touchscreen, with icons and keyboard, guides users through the application in several languages, and no training is needed. A surgeon starts video recording by pressing the foot pedal, interrupts when necessary, and records individual sequences. Individual steps are accompanied by an acoustic signal. It is also possible to connect a camera control unit (CCU) to transmit an analogue signal.

All the usual camera makes and output devices can

be easily integrated with the system, and it can be connected to all microscopes, e.g. for microsurgery or endoscopy. Leica adds that as a stand-alone solution it is also suitable for room supervision and laboratory use.

Many hospitals already have their own solution for incorporating images other than X-rays into the PACS (Picture Archiving and Communication System) patient data system. Where this is not the case, and the surgeon needs to store photos and videos together with X-rays and MRI scans, the pre-installed Etiam DICOM-izer can be used. This converts photos and videos into the international standard format for medical recordings. The data can then be forwarded to any DICOM central computer.

The first portable endoscopy device



The épug portable endoscopy device was demonstrated at this year's MEDICA fair in Germany. Currently, this is the only battery operated, digital integrated camera, monitor and digital capture device that has been designed to give surgeons more flexibility to work in various departments. épug can be rotated by 180 degrees and the digital images easily stored and transmitted to another computer via a CF card. It also features a mini flat-screen monitor, on-screen text generation, camera head and footswitch image capture and a PS2 keyboard interface. The device includes simple button features to set white balance, image capture and video capture, and enables simple, fast and economic endoscopic procedures. Details: www.wisap.de



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engineering ensures instrument decontamination



operatives and the disinfection phase programmed to self-terminate as soon as the required level of disinfection has been reached.'

Both models contain a PerfectSpeed spray arm monitoring unit, so that the display can indicate whether rotational speeds are within a specified range, or if intervention is necessary, e.g. if rotation of the lower spray arm is slowed due to an excessive build-up of foam. The device monitors and documents the rotational speed of each of spray arm and

magnetic coding strips on mobile injector units provide the machine with precise information on how many spray arms require monitoring. All readings are continuously compared with the predefined target range. Among the programming possibilities is automatic cycle abortion if out-of-range readings occur, so that users can correct the problem.

A new dispensing PerfectFlow volume control system provides precise volumetric control, irrespective of a product's viscosity or on-site conditions

(uninterrupted continuous operation and installation sites with fluctuating climatic conditions). In addition, a maintenance-free PerfectPure conductivity unit detects any wash liquid residue that might cause problems in delicate surgical procedures.

The PerfectTouch display can be set up to relay data wirelessly to a technician's laptop computer. Link-ups also can enable remote trouble-shooting, as well as programme and patches downloads.

To visually monitor reprocessing, all-glass doors are an option

selection and programming straightforward.

The units also incorporate new Profitronic⁺ controls, so that staff can fully control display contents and data contained in optional protocol printouts. Actual and target temperatures and dispensing volumes can be indicated in the display, Miele adds. 'The on-board unit saves up to 150 programme protocols. A graphic representation of wash liquid and drying temperatures in conjunction with the A₀ value is possible using peripheral units. For greater convenience, the A₀ value can be entered by machine



BACK TO BED SAFELY

Patients can be unpredictable and, if they leave their beds, some might come to harm if their movements go unnoticed. WeSpot SecNurse, a new monitoring system produced by the Dutch firm Secumatic, transmits an alarm to an existing nurse call system when its sensor detects a patient's departure from bed.

In addition, according to the level of care an individual patient needs, the system can be set to send an alarm only after a specified time lapse. For example, if a patient is capable mentally and physically to go to the toilet alone, the alarm could be set to go off only if they do not return to bed after ten minutes.

No video images are provided. The camera technique in the SecNurse is used to monitor and interpret within the sensor. The only output contacts are two simple relays.



Secumatic also points out that the system not only provides privacy for patients, but reduces false alarms and is cost-efficient and, the firm adds, it is, '...easy to install, can be placed everywhere (both permanent and ambulant), is easy to integrate in each nurse call system, maintenance free, hygienic and does not need physical contact with the patient.' Details: info@secumatic.nl

New surgical procedure for effective thermofusion and dissection of vessels

SurgRx and ERBE Elektromedizin sign international distribution agreement

The Californian company SurgRx and ERBE Elektromedizin of Tübingen, Germany, have negotiated an international distribution agreement for the EnSealTM PTC tissue sealing and hemostasis system.

Erbe Elektromedizin agreed to be the exclusive distributor in Europe for the sale of the EnSeal product, which will be powered by the ERBE VIO 300D electro-surgical system.

SurgRx will retain manufacturing rights and sell the EnSeal product to Erbe, which has the exclusive distribution rights in Europe. Both products have recently been shown with great success at Medica in Düsseldorf, the world's largest medical trade show. EnSeal sales activities start at the beginning of December 2006.

SurgRx designs, manufactures and markets the EnSeal PTC tissue sealing and hemostasis system. The company is committed to the research and product development that provides effective, safe and cost-effective solutions for challenging surgical problems. Its system makes it possible for surgeons to seal and transect small and large vessels, large pedicles and tissue bundles while achieving surgical hemostasis.

SurgRx president and chief executive officer David Clapper said: 'This agreement will combine two state-of-the-art technology components for optimal tissue sealing and hemostasis. We are proud to join Erbe to provide this quality combination to our customers across Europe.'



ERBE VIO 300D electro-surgical system

Erbe managing director Christian O. Erbe added: 'The combination of the superior EnSeal instrument and the universal VIO 300D electro-surgical workstation provides our customers with an even wider range of applications and state-of-the-art tissue and vessel-sealing technology.'

Erbe Elektromedizin GmbH has been researching, developing and producing electro-surgical and other electromedical equipment and accessories for generations.

The EnSeal PTC (positive temperature control) combined with the intelligent regulation of the ERBE VIO electro-surgical system offers improved vessel-sealing quality. A US study has shown it is possible to thermofuse vessels up to 7mm diameter to create a seal capable of withstanding burst pressures of up to 900mmHG. Figures of this magnitude have not been achieved by any other comparable procedure to date.

The electrical resistance of the PTC electrodes embedded in the thermo-synthetic material of the jaw of the EnSeal changes depending on the temperature, thereby regulating the flow of current and the development of heat in the tissue.

This temperature regulation reduces lateral damage (thermal spread) to a minimum and spares adjacent structures. Irrespective of the individual properties of the tissue, the grasped tissue is homogeneously thermofused without carbonisation and with only minimal smoke plume. The operating

surgeon has good visibility at the operative site and can carry out coagulations, preparations and dissections quickly and safely with a single instrument.

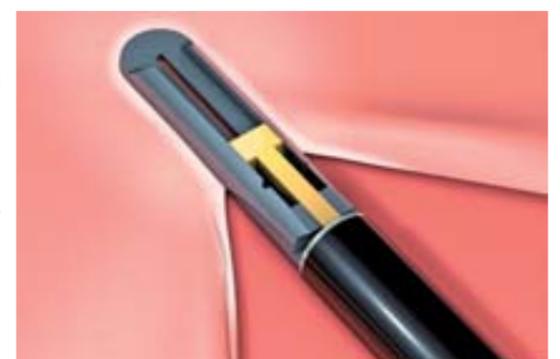
In addition to the thermoenergy advantages, the clamping/cutting function integrated in the jaw also contributes to the effective sealing of vessels and tissue. During subsequent dissection, injuries to adjacent structures are excluded. The embedded cutting mechanism (I-blade) severs the fusion seam exactly down the middle, leaving a homogeneous, identically fused margin on either side, creating a good safety margin.

When combined with the ERBE VIO system, the VIO's BiClamp mode reacts dynamically to the quality of the individual tissue and automatically adjusts the current output. Once the optimal degree of vessel or tissue fusion has been achieved, the electro-surgical activation is automatically switched off - an additional safety factor.

High standards of tissue sealing are an important contribution to safety during applications - particularly in laparoscopic procedures - for an optimal surgical result and the wellbeing of the patient.

For more information: www.erbe-med.de or www.surgrx.com

Thermofusion with a high degree of compression and a low energy output; safe dissection using the integrated cutting blade



2007

JANUARY

17-19 Washington DC, USA
Health & Human Capital Management Congress www.worldcongress.com

FEBRUARY

26-27 Frankfurt, Germany
European Regulatory Affairs Organised by the Drug Information Association. www.diahome.org

26-28 Bucharest, Romania
EudraVigilance: Electronic Reporting of ICSRs in the EEA 07521
 Organisers: Drug Information Association. www.diahome.org

26-28 Barcelona, Spain
3rd Annual World Health Care Congress Europe 2007 Organised under EC patronage, the event will be attended by over 500 executives from key organisations that are advancing healthcare in Europe, as well as ministers, government officials, hospital directors, healthcare industry suppliers. www.worldcongress.com

26-28 Phoenix, Arizona, USA
Radiological Society of North America (RSNA) highlights: Clinical Issues for 2007 www.rsna.org

26-28 Singapore
Medical Tourism Asia 2007
 Organisers: IBC Asia (S) Pte Ltd www.ibt-asia.com/medtourismasia

MARCH

9-13 Vienna, Austria
European Congress of Radiology - ECR 2007 Attendance of over 16,000 people from 92 countries makes this Europe's biggest medical imaging gathering. www.ecr.org

15-18 Athens, Greece
MEDIC EXPO 2007 Medical and Hospital Exhibition. www.medicexpo.com

19-21 New Delhi, India
Disaster Management 2007 www.dmindiaexpo.com

19-20 Manchester, United Kingdom
3rd National Conference on Obesity & Health 2007 www.obesityandhealth.co.uk

22-23 Geneva, Switzerland
International Health Workforce Migration Conference
 Organised by the International Hospital Federation & Health Research & Education Trust www.hret.org/hret/publications/ihwm.html

26-28 Paris, France
The World Health Care Congress - Europe 2007 www.worldcongress.com

27-30 Cairo, Egypt
Egyptian E-medicine International Conference www.onlinediabetes.net/emedicine

APRIL

11-13 Vienna, Austria
15th International Conference on Health Promoting Hospitals (HPH)
 'Contributions of HPH to the improvement of quality of care, quality of life and quality of health systems'. Venue: AKH Wien - University Clinic
 Details: www.univie.ac.at/hph/vienna2

13-14 Lisbon, Portugal
Annual European Forum of Medical Associations (EFMA)
 The Portuguese Medical Association will host visitors from the World Medical Association (WMA); Standing Committee of Doctors in the European Union (CPME); Permanent Working Group of European Junior Doctors (PWG); European Union of General Practitioners (UEMO); European Medical Students' Association (EMSA); European Working Group of Practitioners and Specialists in Free Practice (EANA.); European Federation of Salaried Doctors (FEMS); European Association of Senior Hospital Physicians (AEMH), and more.
 19-22 Prague, Czech Republic
IHOF Technology www.ihofforum.com

22-24 Beijing, China
China Med 07
 19th International Medical Instruments and Equipment Exhibition. www.chinamed.net.cn
 E-mail: chinamed@mdc.com.cn

GLOBAL

23-24 London, United Kingdom
Reporting Adverse Events
 www.smi-online.co.uk

25-28 Santo Domingo, Dominican Republic
Annual Investment & Healthcare Conference Organiser: American Hospital Management Company. www.americanhospitalmanagement.com/

29-2 May, Prague, Czech Republic
ICNC 8 International scientific nuclear cardiology meeting, with additional focus on PET and cardiac CT imaging.

MAY

1-3 Sydney, Australia
CeBIT Australia 2007 Organised by Hanover Fairs Australia. www.cebit.com.au



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21-23 Singapore
World Health Care Congress Asia
 https://www.worldcongress.com

EVENTS

JUNE

9-12 Hamburg, Germany
Heart Failure 2007
 Hfsecretariat@escardio.org

18-19 London, United Kingdom
Pharmaceutical Portfolio & Product Life Cycle Management smi-online.co.uk

20-22 London, United Kingdom
NHS Confederation Annual Conference & Exhibition www.nhsconfed.org

24-27 Lisbon, Portugal
Europace 2007 The European Heart Rhythm Association (EHRA), a registered branch of the European Society of Cardiology. Focus: arrhythmias and cardiac pacing in Europe. europace@escardio.org

27-30 Berlin, Germany
CAD 2007 - Computer Assisted Radiology and Surgery
 www.cars-int.org

27-1 July Glasgow, Scotland
World Congress on Design and Health
 Organiser: International Academy for Design and Health. www.designandhealth.com
 E-mail: academy@designandhealth.com

JULY

2-5 York, United Kingdom
Society of Occupational Medicine Annual Scientific Meeting
 www.som-asm.org.uk

4th HOSPITAL MANAGER SYMPOSIUM AT ECR 2007 Management, IT and finance for hospitals and radiologists 10 March 2007, Austria Center Vienna



Presented and organised by:



Preliminary Programme

Welcome address and introduction by Professor Christian Herold, President of ECR 2007
 Moderation by Dr Wolfgang Brandtner, Austria

Session 1 – Management

This session is dedicated to a broad spectrum of current issues in hospitals such as

- Efficiency and ethics in hospitals – a contradiction?
- Process management in companies – a model for hospitals?
- Business intelligence in healthcare – turning strategies into action

Session 2 – IT

Session 2 will show that IT and workflows in hospitals are progressing towards an integrated approach: guiding the patient from admission to recovery

- Key requirements for archiving in IT healthcare systems
- How to integrate IT in hospital groups
- IT requirements for risk management in hospitals

Session 3 – Finance

Session 3 will focus on the changing needs of financing models in the European healthcare market

- PPP projects in Europe – conditions and challenges
- What financing models does the healthcare market need and what do leasing companies have to offer?
- Private equity funds as a means of financing healthcare projects

High-level speakers from the industry and hospitals from Austria, France, Germany, Greece, the Netherlands and Scandinavia will present the latest trends and technologies for radiologists and hospital managers in Europe.

Preliminary list of sponsors:

