

EUROPEAN HOSPITAL

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Tele-oncology proves successful in Canada

An estimated 6.7 million people in developed countries were diagnosed with cancer in 2007. Delivering their care is no easy matter. Tele-oncology, the remote provision of oncology services, could not only reduce the costs of consultations for cancer departments, but also for patients. Kerry Heacox, of i.t. Communications, reports on the success of remote consultations in Labrador and Newfoundland

First introduced in the late '80s, by the mid-90s pilot tele-oncology programmes were implemented. However, when the funding ended, most were discontinued, either as not cost-effective or inadequately utilised.

Today, the ubiquity of the Internet and the sophistication of streaming video and audio technology eliminate the highest hurdles of adding teleradiology consultations to the repertoire of services provided by cancer treatment centre. Other than cost, now the biggest hurdle is specialist acceptance.

A model tele-oncology programme has flourished since 2003 in the far north-eastern Canadian provinces of Labrador and Newfoundland. This was the brainchild of **Dr Max House**, an



emeritus professor at the Memorial University of Newfoundland. Dr

House is not a household name, yet his pioneering initiatives, started in 1980, to put the earliest commercial telemedicine equipment on offshore North Atlantic drilling rigs to deliver remote triage to seriously injured rig workers, was instrumental in the development of teleradiology and telemedicine.

Since then, the clinical culture of the Memorial University of Newfoundland has been keen on implementing cost effective and beneficial ways to use telemedicine and has been a global leader in this field. In 2003, the Newfoundland Cancer Treatment and Research Foundation and Memorial University's Telehealth and

Education Technology Resource Agency began an 18-month pilot programme to demonstrate the effective development, integration and sustainability of delivering oncology clinical services remotely.

The Newfoundland and Labrador Tele-oncology Programme originates from the Dr H Bliss Murphy Cancer Centre in St. John's, Newfoundland, and initially served 24 communities, some located a four-hour distance away. The video-conferencing system is used by patients for pre- and post-surgical and radiation therapy treatment consultations with an oncologist. The patient visits a participating clinic or hospital, where a clinician or nurse is in attendance.

Utilisation has increased dramatically. In the second half of 2005, Dr House, the principal *continued on page 2*

Luhacovice

A tongue twister town (but easy on the eye, body and soul) is all set to welcome EU VIPs

Admittedly not one of the easiest names to pronounce but a name to note: Luhacovice in the Czech Republic. Nestled in the rolling White Carpathian hills of Moravia this small spa is a renowned centre for the treatment of a substantial



Spa medical director Jiri Hnatek (left) with European Hospital correspondent Christian Pruzsinsky

beautifully restored period buildings, is currently under review as a UNESCO World Heritage site.

The spa town boasts 16 sodium hydrocarbonated acidulous springs, with water temperatures fluctuating between 10 and 12°C. Due to their high CO₂ content, the springs are deemed to be the most effective in central Europe.



number of disorders (respiratory tract, digestive and metabolic systems, musculoskeletal, diabetes, certain vascular diseases and some cancers) with procedures including inhalations, carbonated baths and other hydrotherapies.

During the EU Presidency of the Czech Republic in the first half of 2009, Luhacovice will host a three-day meeting of the Council of the European Union this January, which prompted the organisers to proudly point out that their little town of just 5,000 inhabitants triumphed over the famous three Czech spas Karlovy Vary, Mariánské Lázně and Františkovy Lázně. Perhaps the choice was influenced by the fact that the entire Spa Square, with its



The spa reached a height of popularity from the beginning of the 20th century. Architecture, and particularly Moravian art deco, are significant attractions

For over 300 years, these springs have been used for their health-giving properties. The current spa operator, Bad Luhacovice AG, offers 1,300 beds, and 15% of patients/guests are foreigners, primarily from Germany, Austria and Israel, but more recently also from the US, Asia and Russia. The ratio of private payers to insurance patients is currently 50:50.

Don't wait to watch them die Take health services to men!

Compared with women, the lower life expectancy of men is only to a very limited extent the result of genetic determination. The main reasons are an unhealthy lifestyle and the fact that men use healthcare services too little and too late. 'That's the bad news. The good news is: We can change this,' said Ian Banks, British Medical Association (BMA) spokesperson for men's health issues and president of the European Men's Health Forum at the 2008 European Health Forum Gastein. Urging a radical change in the attitude of health professionals and healthcare systems towards men's obvious disregard of health issues, he added: 'As long as we sit around and wait for them, it makes no sense to lament about men's neglect of their health needs and inadequate use of our great health system. If men do not come to us, we must go to them.'

Where? Men who are faced with health issues in the workplace,

- The lower life expectancy of men is mainly due to insufficient uptake of healthcare services and an unhealthy life style
- Low social status influences men's health far more than women's health
- Medical care must address men at work, at sports centres, and other gatherings

where it is made obvious that better health is linked with greater success and higher professional standing, are more open to advice and lifestyle changes. Information campaigns at football or rugby stadiums have also proved quite successful, Ian Banks pointed out. 'No matter what someone may think about it – it works.' He also expressed regret that too little political backing is placed on men's health issues: 'There were already two EU reports on women's health but we are still

waiting for the first one on men's health.'

There is little doubt about the urgency. A striking fact is that low social status affects men's health far more than for women. In socially deprived areas of Great Britain, for example, men's life expectancy is as low as 54 years, whereas in other areas their life expectancy is up to 80 years. There are no similar differences between women with low or high social status, he pointed out. 'Furthermore, we know the health of women and men is often inextricably linked. Whoever wants to seriously tackle the problem of inequalities in health has to deal with men's health issues.'

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ENTRY COUPON

COMPETITION QUESTION

Which part of Nintendo's new home video game console is wireless and motion sensitive?

Your answer

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Please complete the above questions and we would like you to answer the following additional questions by ticking yes or no or filling in the lines as appropriate.

What is your speciality? _____

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Are you head of the department? Yes No

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How much influence do you have on purchasing decisions?

I can only present an opinion Yes No

I tell the purchasing department what we need Yes No

I can purchase from manufacturers directly Yes No

Do you consider that your equipment is out-dated Yes No

relatively modern Yes No

state-of-the-art Yes No

Do you use/buy second-hand equipment? Yes No

If so, what do you use of this kind? _____

Is your department linked to an internal computer network? Yes No

Is your department linked to an external computer network? Yes No

Is your department involved with telemedicine in the community? Yes No

Do you consider your department is under-staffed? Yes No

Are you given ample opportunities to up-date knowledge? Yes No

Do you attend congresses or similar meetings for your speciality? Yes No

This information will be used only in an analysis for European Hospital, Theodor-Althoff-Str. 39, 45133 Essen, Germany, and for the mailing out of future issues and the EH electronic newsletter. EH 6/08

READERS' COMPETITION

Your chance to win a Wii console

Enter today! Simply fill in the Reader Survey (left) and send it in

For games players, Nintendo's new home video game console, the Wii (pronounced we), is described as 'the next level of gaming'.

Along with their ever-increasing popularity, video games have also increased in complexity. With *Wii*, Nintendo has focused on minimising the fuss, whilst maximising the actual physical involvement during play. 'The Wii console returns gaming to simpler times while innovating game development at the same time,' the maker explains.

Wireless and motion-sensitive, the *Wii Remote* offers an intuitive, natural way of playing. The ergonomic controller reacts with the conventional motions we make everyday. When hitting a drum, swinging a tennis racket, bat or golf club, the player does not have to press a button to replicate these movements. Nintendo points out that its *Wii Remote* is the most multifaceted gaming device ever created. 'It can be a sword in one game, or a steering wheel for racing games. It's your paintbrush, your golf club, your aeroplane, but most of all, it's your key to unlocking a world of fun you've never imagined. The *Wii* console makes you feel less like a player and more like you're in the game.' All these activities, without having to push a button.

So, even if our competition winner is not a player, this is likely to make a really stimulating gift for a member of his or her family or a friend or, another thought, why not for your hospital's rehabilitation unit?

To be in with a chance of winning this delightful prize, all you need do is enter the EH competition – so, why not today?



No buttons to push: the motion sensitive remote reacts to your own movements, whether a golf swing, steering wheel turn or other gaming activity

Wii™

HOW TO ENTER

Simply answer the questions in the Readers Survey (left), fill in your details as appropriate, then send as directed at the top of the coupon.

PLEASE NOTE:

- The closing date for entries to the EH 6/08 competition: 30 January 2009.
- Coupons received after that date cannot be entered in the draw.
- The winning coupon will be drawn from the correct entries.
- Only the winner will be contacted directly.
- The winner's name and location will be published in a future issue of *European Hospital*.
- NB: The prize is not exchangeable for cash.
- The usual competition rules apply

The winner of the European Hospital issue 5/08 competition

Dr Maximilian Kellner, Head of the Paediatric Radiology Department at Kliniken der Stadt Köln gGmbH, in Cologne, Germany, has won the iPod nano prize featured in issue 5/08



Healthcare and the 2009 EU Presidencies

The next two countries to preside over the EU Presidency – the Czech Republic (first half year of 2009) and Sweden (second half) recently presented the priorities of their presidencies for healthcare at the European Health Forum Gastein (EHFG).

In cooperation with France, holder of the previous six months EU Presidency, five common key themes were defined:

- Promoting an EU for patients
- Improving health security at European level
 - Ensuring safe and efficient pharmaceuticals
 - Addressing disease prevention and health promotion
 - Promoting actions for healthy, active and dignified ageing

In terms of healthy active and dignified ageing, the Czech Republic will focus on financial sustainability, while Sweden will highlight the dignity aspects of elderly care, promoting

closer cooperation between health and social policy areas.

Another focal point for both presidential periods will be the antimicrobial resistance in and beyond hospitals. Sweden will focus on the poor development of new antibiotics, and evaluating the possibilities of accelerating research for new antibiotics.

E-health implementation to improve patient safety and quality of care is also on the agenda during both presidencies.

The Swedish presidency will also follow up on the EU alcohol strategy. A conference, which will examine progress made in its implementation and to explore possible improvements, may include topics such as young women and fatal alcohol syndrome, children in families with alcohol problems and the identification of the 'drivers' that contribute to alcohol-related harm.

Report: Christian Pruzsinski

Tele-oncology proves a success in Canada

continued from page 1
investigator of the pilot programme, reported that 132 patients with prostate, breast, colorectal and lung cancer had remote consultations. In 2006, the success of the programme led to its transfer as a full-fledged, and fully funded Telehealth Programme operated by the Newfoundland and Labrador Centre for Health Information.

The Telehealth Programme now encompasses treatment for kidney disease, neurology, occupational therapy and in 2009, diabetes, as well as oncology in 42 rural communities. The Centre for Health Information reported that, between July 2006 and October 2008, more than 22,000 patient visits and physician case reviews with specialists had been conducted.

Tele-oncology has become one of the largest components in oncologist Dr Jonathan Greenland's practice. He attributes the tele-oncology programme for being able to reduce

2009 economies

Costs and job cutting expected at GE Healthcare

At the dawn of 2009, amid economic gloom worldwide, GE Healthcare has predicted that sales of its higher-priced (imaging equipment will be down in the USA in 2009, compared with 2008, and it is anticipating cost-cutting, which would include a reduction of employee levels. The price of MRI or CT scanners range from \$500,000 to \$2 million. Capital expenditure by US hospitals on tighter budgets has been cut back. A recent American Hospital Association (AHA) study indicates that 45% of the hospitals surveyed reported they were delaying purchases of clinical technology and equipment; 39% were deferring investments in new IT systems.

The GE Healthcare Global Diagnostic Imaging business unit, in Waukesha, Wisconsin, has about 7,000 employees working on CT, MR, and molecular imaging equipment as well as X-ray and digital mammography machines.

However, speaking at the RSNA meeting in Chicago, Mark Vachon, President and CEO of GE Healthcare Global Diagnostic Imaging, pointed out that the US sales losses in the US are alleviated by better sales in other markets, and that the diagnostics unit's overseas sales amount to around 50% of output. In China, for example, sales are expected to rise by 5-10% next year, and in Russia and Eastern Europe he expects double-digit sales growth rates. Sales in Western Europe are expected to grow in the lower single digits next year, whilst Japan should remain stable in 2009.

Fortunately, revenues from GE Healthcare's services division took some of the edge off its US sales losses.

Predicting better economic conditions in 2010, he added that a 'pent up demand' will again drive up purchasing, particularly due to the healthcare needs of ageing populations.

his in-person travel to clinics in Central Newfoundland from five days to two days per month. 'Elimination of two days of travel enables me to schedule more consultations with patients, whether remote or at our centre. Overall, the percentage of patients from rural areas in my practice has increased significantly. Patients are always welcome to meet with me in person. But many can be examined by the local physician or nurse. I can fit more patients into a video clinic than a real one because it is more efficient. Delays are eliminated or newly diagnosed patients, because I can now see that patient almost immediately after referral, optimise their symptom control, and arrange for appropriate treatment before they travel to our hospital.'

A cost-evaluation of the Tele-oncology programme has not yet been issued by the Newfoundland and Labrador Centre for Health Information. However, from the perspective of patients, having access to oncology specialists available rapidly and efficiently is priceless.

Healthcare sector to fight ATB over-consumption

Czech hospitals are seeking powerful inspiration regarding antibiotics (ATB) consumption from France, where a recent public campaign helped to decrease ATB consumption by 30%. It is generally recognised that Czech physicians over-prescribe antibiotics, leading to the genesis of new antibiotic-resistant bacterial stems. According to Dr Vlastimil Jindrak, who heads the antibiotic unit at Prague Homolka Hospital, it is more than likely that antibiotics worth over CZK one billion are prescribed and used improperly each year. Czech officials and healthcare sector leaders are preparing a public campaign similar to French one, expect-

ing that both health professionals and the public will gain better knowledge of appropriate ATB usage.

Another Nobel Prize winner? The Czech Academy of Sciences has announced that its representatives will nominate Professor Antonin Holy for Nobel Prize for Medicine in 2009. Interviewed by a newspaper, Academy Chairman Professor Vaclav Paces said: 'We will do our best to make the Nobel Prize committee members change their thinking in a way to recognise not only exceptional minds working in basic research but also those who developed instruments directly saving patients'

lives. This is the case for Prof Holy's discoveries.'

Prof Holy is certainly one of the brightest brains Czech science has ever had. His numerous discoveries include antiviral drugs used for the treatment of herpetic eruptions (Duvira, 1980, or Vistide, 1996), AIDS/HIV (Viread, 2001 or Truvada, 2004) or hepatitis B (Hepsera, 2002). He invented the above mentioned drug, Viread, in 2001; it is currently the most powerful treatment available for AIDS/HIV infection. Should the Academy of Sciences efforts be fruitful, Prof Holy would be just third Czech and Nobel Laureate in this country's history. So far,

the Nobel Prize for Chemistry (polarography) was awarded to Jaroslav Heyrovsky in 1959, and to Jaroslav Seifert in 1984 for literature.

Air ambulances are ineffective – Several Czech hospitals have inappropriately situated helipads for air ambulances landing, according to recent reports. Helipads have been located too far from the hospitals, resulting in double-transportation for patients: first by helicopter to the hospital, then by ambulance to the emergency room. Usually, helipads should be located on hospital roofs or at nearest accessible area. However, this is not the case in some locations, and time needed for patients' transportation becomes unnecessarily long (in some cases by almost 12 minutes) resulting in undue risk in emergencies.



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SIEMENS

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Despite the poor market outlook Medica 2008 proved a superlative event

Dusseldorf, November – Medica's anniversary had many significant facets: in its 40th year, and for the 40th time, this spectacular international medical trade fair broke its previous year's record in visitor numbers – but, only just. The event was not only struck by the snow and ice of a sudden winter onset, but also by a storm that brought a level of chaos to Messe Dusseldorf's outdoor environs.

Meanwhile, the 17 exhibition halls, hosting 137,000 visitors, were so manic that even mobile phone networks overloaded and transmission intermittently ceased.

Nonetheless, MEDICA and COM-PAMED again offered a superlative stage on which to present the world's most up-to-date medical technologies manufactured by over 4,300 exhibitors (50% of them from countries other than Germany). Along with the exhibition the congress programme provoked stimulating discussions between and with medical experts.

Apart from the customary high interest in medical technology and electronics, interest was high in physiotherapy procedures and medical IT.

Among the individual country's pavilions we visited, New Zealand showed us innovations from Pulsecor and WinScribe.

Pulsecor was demonstrating its mobile, non-invasive measuring device, which is already in use at university hospitals in Edinburgh and Aarhus. This provides a simple, accurate and quick assessment of aortic stiffness and central blood pressure; measuring various echocardiographic values takes a minute.



WinScribe focuses on equipping mobiles, e.g. blackberries and PDAs, with a dictating function, so that physicians can update medical records wherever they are and transmit them to a typist automatically. It

was pointed out that this improved communication can result in up to 50% savings in diagnosis management costs.

Draeger introduced Drug Test 5000, a saliva-based, quick drug test that recognises six different classes of substances: cannabis, cocaine, opiates, amphetamines, metamphetamines (so-called designer drugs) and benzodiazepines (tranquillisers). In up to 10 minutes the system indicates a clear result for each substance, firm reported. This not only leads to fast information about potential drug misuse but also helps to reduce the number of more costly and time intensive blood tests in a laboratory.



The 2008 head-turners

To present various mobile applications for the world's smallest heart-lung machine (Cardiohelp), Maquet showed an original and completely equipped ADAC rescue helicopter, causing a stir and much interest among visitors.



No less impressive were accessible plastic models of the human anatomy, for use by doctors to explain their illnesses or surgical interventions more clearly to patients who often cannot understand what is being said. Even experts in various medical fields were markedly impressed by the oversized dimensions of the organs.



Chicago, November – At first glance, the 94th Scientific Assembly and Annual Meeting of the Radiological Society of North America appeared to be bigger than ever and impervious to the massive economic recession of its host country. RSNA 2008 ate into every inch of Chicago's McCormick Place trade centre. To reduce crowd congestion, technical exhibitions had been expanded to include a third massive exhibit hall.

With so many US companies filing bankruptcy or shutting down, some RSNA attendees also appeared very cautious about ordering products from smaller vendors. The topic of vendor survival and the robustness of the diagnostic imaging industry to withstand a recession successfully appeared to have been discussed more than the RSNA 2008 scientific programme itself.

exams, managed through the cooperative efforts of the world's radiology societies.

Professor Maximilian F Reiser MD, Chair of the Department of Clinical Radiology, Munich University, was named Honorary Member, the highest tribute the RSNA bestows to radiologists who do not work in North America. Dr Reiser was recognised for his leadership in European radiology, specifically cited

Recession fears penetrate RSNA 2008

Crowding and congestion in the aisles were indeed reduced. In fact, there were 24 fewer companies exhibiting and 3,373 fewer vendor employees, a drop of 12% compared to the record vendor participant attendance of 2007. And even though more exhibit hall space was now available, the total area rented was 47,759 square metres, a reduction of 4% in rented space compared to the previous year.

Throughout the RSNA meeting, the visual effect was that each exhibit hall was sparsely populated and professional attendance had plummeted. In fact, it had not. The RSNA reported a decline in professional attendance of only 1%, or 778 fewer medical professionals and a total attendance of 58,795.

Judging by the size of the crowds in the hallways and sky bridge linking exhibition halls and seminar rooms, it appeared that a good number of professional attendees were not keen on physical expansion of the exhibits. At the RSNA, where a stroll around exhibition halls can lead to the discovery of new products and services, the three-hall layout may have had a totally unexpected, very detrimental effect. With the exception of the smaller vendors lucky enough to find their booths strategically positioned near the huge displays of Agfa Healthcare, Fuji Medical Systems, GE Healthcare, Philips Healthcare and Siemens Healthcare, many vendors were publicly saying that radiologists and their administrative staff were not visiting the exhibit halls in the way they had done during the past decade.

This does not bode well for the economic well-being of diagnostic imaging vendors. Just prior to the RSNA meeting, Philips Healthcare had announced that 1,600 jobs would be cut in 2009.

Mark L Vachon, GE Healthcare's president and CEO for global diagnostic imaging, said in an interview with international news agency Reuters that GE Healthcare probably would also reduce jobs and cut costs (see report on Page 3). Additionally, the American Hospital Association (AHA) had recently published a report stating that 45% of US hospitals surveyed stated they were delaying purchases of clinical technology or equipment, and that 3% were delaying IT investments.



Some programme highlights

During the opening session the focus was on the RSNA's goal to work with other international radiology societies to establish a uniform global standard of practice. RSNA President Theresa C McCloud MD, said that universal availability of images electronically, and the potential of universal access to global specialists through Internet technology, has 'flattened' the world, and made the need for worldwide uniform standards for radiology professionals of critical importance. She recommended that 'radiology training and residency curricula should reflect international changes in our specialty and the need for subspecialisation'. In addition to the implementation of a core curriculum for three years of residency training, Dr McCloud recommended that all radiologists should have two years of subspecialty training. Global certification should include a national board to oversee standardised



for his vision and work for the European Congress of Radiology (ECR), the European Society of Musculoskeletal Radiology, and the German Radiological Society. Another new Honorary Member was neuroradiologist Dr Jian-Ping, President of Beijing Tiantan Hospital, who is also principal advisor for radiology to the Chinese Ministry of Health.

More than 1,800 scientific papers, 1,606 education exhibits and 729 scientific posters were accepted.

Ways to reduce the use of CT exams by replacing them with procedures where patients would be exposed to less or no radiation dose was emphasised, and an entire session was dedicated to paediatric CT dose reduction.

Virtual colonoscopy, cardiac CT angiography, breast imaging, and ways to use 3-D and CAD software also took up whole sessions. Breast imaging – mammography, ultrasound, MRI and positron emission mammography – were also emphasised.

The relationship of radiologists with industry vendors, the rationing of scarce radiology services and better utilisation through the use of examination results software, minimising the retake of procedures for emergency patients via the better use of DICOM CDs, better workflow allocation and performance using PACS, speech recognition systems, and structured reporting, and the acknowledgement of job stress and methods to reduce it were also key topics.

For more detailed information *European Hospital* readers are encouraged to visit our online magazine www.european-hospital.com or *AuntMinnie.com*, which provided daily on-line coverage of the most important and provocative sessions and posters.

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LISA

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At **MEDICA 2008** – the world's biggest medical trade fair – *Life Science Austria (LISA)* placed 16 companies and institutions firmly under the international spotlight. At the Austrian stand visitors examined their impressive range of innovations, which included medical implants and instruments, neurological rehabilitation equipment, video communications systems for healthcare, such as e-health systems using NFC and other innovative IT solutions, bio-safety and clean-room technology, mechatronics and precision engineering. Along with these were inspiring presentations of research projects carried out at the Medical University Graz

Product innovations in neurological rehabilitation and traumatology

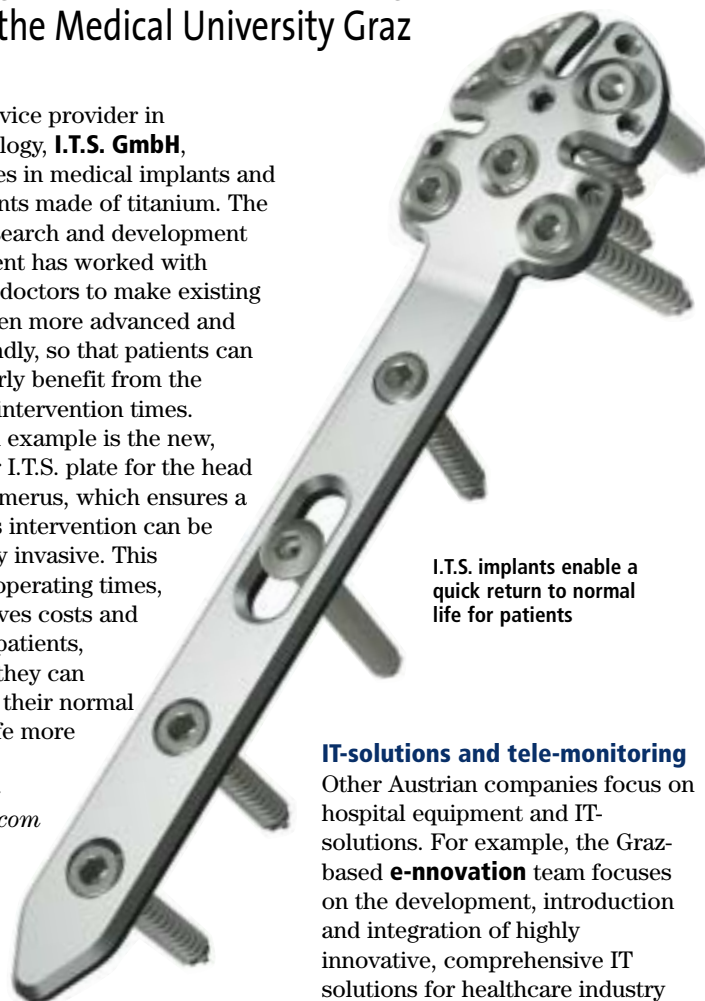
tyromotion GmbH presented a truly sensational and innovative neurological rehabilitation device, named PABLO. Developed with the help of top physicians and therapists, the device measures hand and arm functioning and has an additional sensor system to provide interactive training programmes. PABLO is simply plugged in to the USB interface on a patient's PC or laptop and then the tailor-made software provides the appropriate therapy.

The core competence of tyromotion GmbH and its extensive network is in its combination of mechanics, electronics and software, which promises all-in-one product development in medical technology.
www.tyromotion.com

A full service provider in traumatology, **I.T.S. GmbH**, specialises in medical implants and instruments made of titanium. The firm's research and development department has worked with Austrian doctors to make existing plates even more advanced and user-friendly, so that patients can particularly benefit from the reduced intervention times.

A good example is the new, narrower I.T.S. plate for the head of the humerus, which ensures a surgeon's intervention can be minimally invasive. This reduces operating times, which saves costs and benefits patients, because they can return to their normal way of life more quickly.

www.its-implant.com



I.T.S. implants enable a quick return to normal life for patients

IT-solutions and tele-monitoring

Other Austrian companies focus on hospital equipment and IT-solutions. For example, the Graz-based **e-nnovation** team focuses on the development, introduction and integration of highly innovative, comprehensive IT solutions for healthcare industry and its service providers, together



tyromotion's innovative neurological rehabilitation device PABLO

with complex e-government applications and their integration with local authorities and existing healthcare structures. At Medica 2008, the company's presentation focused on the development of mobile solutions based on the Apple iPhone as an all-in-one end device for doctors and healthcare staff, and on the introduction of RFID components in the healthcare industry. There was a live demonstration of a support application for logistical and clinical processes in healthcare based on intelligent RFID systems.
www.e-nnovation.at

By using the Near Field Communication (NFC) standard **eHealth systems** provide an out-of-the-box solution for easy-to-use and wireless home-, health- and tele-monitoring applications. The eHealth systems research unit is part of the Biomedical Engineering division of the Austrian Research Centres GmbH – ARC, developing and evaluating IT-solutions and services, for example to facilitate personalised therapy management of chronic diseases such as diabetes mellitus, heart failure, hypertension, obesity and others.
www.arcsmed.at

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www.ortner-group.at

HÄMOSAN Life Science Services GmbH is a private Research and Service Company with core competencies in bio-safety and total quality management systems.

Clean-room facilities are available for training and small scale production. The training programmes have a clear emphasis on hands-on experience. Correct behaviour and procedures in clean-rooms are explained in theory in the morning classes. In the afternoon, the ideas are put into practice. Thus, the goals of learning by carryout a method and creating awareness for contamination control are the basis of HÄMOSAN clean-room training.

Teams from hospitals will find a place where both learning and the training of the new contents can be done in a top quality, appealing environment.
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Life Science Austria (LISA) is a focal programme acting as a centre for people from all over the world who are interested in the life sciences in Austria. With its associates in the Austrian regions, ecoplus/Technopols Lower Austria, Human Technology Styria, the LISA Vienna Region, the Tyrolean Future Foundation and the Upper Austrian Technology & Marketing Company TMG including the Health Cluster, LISA is the first point of contact in Austria for anyone with questions about scientific collaboration, setting up an operation, or funding and sponsoring projects and businesses in this country.

Austria Wirtschaftsservice GesmbH (aws) is responsible for running the programme for the Austrian Federal Ministry of Economics and Labour. LISA forms the gateway to the Austrian life sciences scene – lively and creative, and with enormous potential for innovation.

LISA – Life Science Austria
Ungargasse 37, 1030 Vienna
E-mail: lisa@awsg.at
www.lifescienceaustria.at

LISA

LIFE SCIENCE AUSTRIA

Make a note in your 2009 diary: The Hospital Manager Symposium

Participation in the Hospital Manager Symposium, which is organized by EUROPEAN HOSPITAL in cooperation with the European Congress of Radiology and which is part of the congress, has increased continuously since its introduction six years ago. Last year about 250 attendees listened to the lectures and discussions.

What makes this event so successful is the combination of three critical areas (apart from medical knowledge) that make for a healthy radiology department: management, IT and finance. Once again, this event has invited leading experts in these fields to give talks and lead discussions with participating hospital and department managers.

MANAGEMENT

Stefan Furtmüller MA, Manager of Contrast Management-Consulting *'What makes a hospital successful?'*

The general conditions for hospital management are not easy (too many stakeholders and interest groups, different finance systems, etc.) Nonetheless, the existing conditions and structures still offer numerous opportunities to increase efficiency with regards to customised and high-quality patient care. Business tools and methods can help here. Some hospital groups make good use of these approaches (at least in some areas) and for most organisations there is still quite a lot of room for improvement.

Leonardo La Pietra, CEO of the European Institute of Oncology *'Accreditation and standards of excellence in Europe'*

Leonardo La Pietra will describe the individual management of the European Institute of Oncology and experience with Joint Commission International Accreditation.

In perspective, the MCC should be part of a more integrated patient file, aimed to accompany the patient in his or her journey through the healthcare system. Information technology (IT), with the realisation of an electronic patient's record (EPR), accessible online from different places, could provide a valuable aid in the management of medication continuity.

INFORMATION TECHNOLOGY

Dr Marco Marchetti, Medical Director of Unità di valutazione delle tecnologie

'The impact of IT on the healthcare system and organisation'

Dr Marchetti will explore and provide an overview of the impact of IT radiology innovation processes on healthcare systems and healthcare organisations, according to the principles of Health Technology Assessment (HTA). HTA is a multidisciplinary process that produces information on the impact of technology introduction to healthcare systems. This is a useful tool because the information produced aids policy-making decisions at macro-level (national, regional level) and meso-level (institutional level or healthcare organisational level). Information produced during the HTA process relates to different aspects: effectiveness, economic, organisational, social, ethical and legal impacts.

Dr Pierre Thepot, Director of the Arras Hospital

'Changing medical and organisational processes through IT'

The new Arras Hospital has incorporated far-reaching choices in terms of technology. The first results of these selections are visible today. The implementation of new 'admissions-pathway-billing' circuits and new cooperation initiatives is having an impact on information productivity, particularly in relation to the 'Programme for the Medicalisation of Information Systems' and DRGs financing. The results are positive. Since July 2007 we have been experimenting with 'paperless' consultations: the analysis and impact of this new way of working. At Arras, information moves – not nursing staff! Access to information in treatment organisation is facilitated by the use of tablet PCs and multimedia terminals.

Dr Hanna Pohjonen, Healthcare IT Consultant, RosaliecoOy

'Enablers for teleradiology'

In her speech, Hanna Pohjonen will discuss the advantages of e-marketplaces that offer a secure platform for the provision and consumption of imaging services by developing a new working environment for professionals and teams, a shared workspace for cross-border consultations and access to individual images and patient records.

ECR 2009
European Congress of Radiology
March 6-10, Vienna / Austria

FINANCING

Vasco Luis Jose de Mello, CEO of Quiron Hospital

'Investment strategies and financing solutions in healthcare projects'

Vasco Luis Jose de Mello will deal with the question: What new approaches are available for hospital managers and hospital groups to face general investment and its financing?

He will focus on two key issues – how to minimise investment needs and how to optimise financing solutions – with an actual perspective from a company with the biggest infrastructure plan in Spain in the last 5 years.

**The 6th Hospital Manager Symposium –
7 March 2009, Vienna, Austria
Preliminary Programme**

Session 1 – Management

Stefan Furtmüller MA, Manager of Contrast Management-Consulting

Dr Wilhelm Marhold, CEO of Wiener Krankenanstalten Verbund

'Changes in Viennese hospital structure'

Leonardo La Pietra, CEO of the European Institute of Oncology

'Accreditation and standards of excellence in Europe'

Session 2 – Management

Dr Marco Marchetti, Medical Director Unità di valutazione delle tecnologie

'The impact of IT on the healthcare system and organisation'

Dr Pierre Thepot, Director of Arras Hospital

'Changing medical and organisational processes through IT'

Dr Hanna Pohjonen, Consultant

'Enablers for teleradiology'

Session 3 – Financing

Vasco Luis Jose de Mello, CEO of Quiron Hospital

'Investment strategies and financing solutions in healthcare projects'

Do you know the right financing strategy for your hospital?

André Hoppen: When it comes to financing we distinguish between manufacturer-owned leasing, which means financing solutions available directly from the manufacturers whose products a hospital chooses; the independent leasing companies that mainly offer contracts with small business volumes, and bank-linked leasing as offered by VR-Leasing.

The particular feature of the VR-Leasing group is that, whilst it is a generalist company and offers the complete leasing spectrum, it works around specific business divisions, which means there are specific solutions for IT companies, for the automotive sector and the medical sector. VR Medico is a separate division within VR-Leasing. All our employees have many years of experience in areas such as medical technology, health economics, medicine and pharmaceuticals. With this staff structure we are well positioned and talk the same language as the customers. This is particularly important for advising large and individual customers, helping us to gain an understanding of their specific requirements and enabling us to offer customised financial solutions.

A further feature of VR-Medico is that our credit analysts are trained at the Academy of the German Hospital Association to ensure they can fully read and understand hospital balance sheets, because these differ significantly from those in private industry and they have very different parameters. When a decision is made on financing there has to be a clear understanding of how a hospital draws up the balance sheets, as well as why and how balances function, based on the DRGs. Or, let's take the example of the gGmbH in Germany: this type of company is not aimed at achieving profits – it has a social aspect – but it still enters into leasing contracts.

We don't only operate in Germany; VR-Leasing cooperates with a multitude of subsidiaries and partner companies and offers medical technology leasing over almost all of Europe. Each country has specific requirements as to how a leasing contract should be set up. One basic difference between Germany and

Since the beginning of the global economic crisis the question of whether and how much hospital managers should invest in updating medical technology has become more complicated. Fear of making the wrong decisions and insecurity around future budgets make it even more important to find trustworthy and competent financial solutions shaped to the specific needs of individual hospitals. VR Medico, the medical branch of VR-Leasing AG, offers such solutions. At the *Hospital Manager Symposium* (7 March 2009, 8:30 am – 1:30 pm), held during the European Congress of Radiology (ECR) in Vienna, **André Hoppen** (AH), Sales Manager for VR Medico, will discuss 'Financing Hospital Equipment' with the symposium participants. *European Hospital* (EH) met up with him at RSNA 2008 to learn about the sustainable financing on offer and what criteria influence lenders' decisions to hand out funds.



other European countries is that, in Germany, there is not normally a requirement to make a down-payment, something which is a requirement for a leasing contract in most other countries. Additionally, the balance sheets in the various countries are very different. In Eastern European countries, for instance, hospitals draw up balance sheets in an analogue way, based on the IFRS standard or the US-GAAP standard, that is, based on international balance sheet guidelines, which is actually quite rare in Germany.

In Eastern European countries we also distinguish between financial leasing and operating leasing, which, again, is the exception in Germany.

What is the difference between the two kinds of leasing and which is suitable for what?

With financial leasing the acquisition is fully amortised, that means there is no residual value. With operational leasing, the leasing company retains a residual value, the investment is not fully amortised and at the end of the lease term the leasing company has to dispose of the medical equipment on the free

market in a way that ensures they don't suffer any losses.

Operational leasing means that the leasing company has to dispose of the equipment at the end of the lease term. Within the EU, medical technology can only be sold (and sold on) via so-called medical products advisors. This is why the leasing company has to work with the manufacturers and brokers when it comes to selling on the equipment.

Operational leasing offers more flexibility but is more expensive. The lease duration is a maximum of four years, after that the equipment is returned or sold on. Operational leasing is the right product for customers who want to keep continuously abreast with technological progress and innovation, maybe because they are market leaders for a certain medical service in their area. These may be large service providers but also individual, smaller surgeries that cooperate with large service providers and which bridge a medical gap for the respective service provider, or which offer the best possible service based on the latest technological developments. By comparison, the lease duration for financial leasing is eight years

and obviously works out cheaper.

Our concept of responsibility towards the customer not only includes advising them to choose the right strategy but also to monitor whether they actually generate enough money in working with the leased equipment to cover the monthly outgoings of the lease. This involves assessing how many private payers, private patients, patients covered by medical insurers and referring doctors are passing through the hospital and what types of patients with what GOA figure (physician fee schedule figure) these are. A lease contract is not a matter of course but in each case is put to the acid test.

This can lead to surprising results. One example: A hospital with 80 beds, located near a conurbation, was under economic pressure and the question is whether it should be closed or whether there may be a new, viable concept. If yes, what could this concept look like? The hospital's advantage is its regional aspect and location, which many patients appreciate because relatives and friends have easy access and can visit more often. Through negotiations instigated by VR Medico the hospital made contact with a large provider in the nearest big town, which was interested in attracting more patients from further afield to certain departments. Both hospitals operate with different billing structures. The small hospital works with DRG-based compensation structures for appendix operations, for instance, something which the large hospital cannot afford to do because it has a different structure. In the end, the model agreed on ensured a minimum provision of basic services in the small hospital, whilst special interventions or intensive therapy were to be carried out by the large hospital. After such intensive therapy the patients were transferred to the small, regional hospital.

The conclusion: The large hospital gets some relief with the length of hospital stays, the regional hospital takes over aftercare and brings patients closer to their families – and the cooperation has positive effects for both hospitals in terms of DRG billing.

US ONCOLOGY EXPERTISE TO SPREAD GLOBALLY

According to the American Cancer Society's first *Global Cancer Facts & Figures* report there will be 27 million new cancer cases and 17.5 million cancer deaths globally in 2050, 'due to the growth and aging of the population' as well as lifestyles. Sadly, the lack of access to medical care is one reason for the gap in cancer survival between economically developed nations and developing countries, the report adds.

New cancer centres to be set up internationally by the University of Pittsburgh Medical Center (UPMC) in a partnership with GE Healthcare could help to alleviate pressures from healthcare providers within such areas. Their aim is to combine UPMC's strength in developing and operating oncology centres that offer advanced diagnosis and radiotherapy treatments close to patients' homes, and GE's expertise in the provision of the necessary medical equipment.

UPMC already operates one of the largest cancer programmes in the USA, serving 30,000 newly diagnosed patients annually in over 40 centres in western Pennsylvania, and also runs two cancer centres in Ireland.

GE Healthcare will conduct assessments to determine which markets are most appropriate for cancer centres. Key factors will include the availability of a suitable local partner, regulatory requirements and patient volumes. Once a market is selected, UPMC will negotiate definitive agreements and take responsibility, with the local partners, for the construction, ownership and operation of those centres.

Meike Lerner of *European Hospital*, asked Charles E Bogosta, Executive Vice President University of Pittsburgh Medical Centre (UPMC), President, International and Commercial Services Division, and Jim Torres, General Manager, Global Funding Operations, GE Healthcare, about the background and aims of the project.

'About a year ago, GE and UPMC came together to tackle a common problem: to improve the level of cancer care around the world,' Charles Bogosta explained. 'We immediately came up with a business structure. Our aim is to establish at least 25 cancer centres internationally within the next 10 years. In these, we'd like to provide the opportunity of high quality cancer care that we offer in the US and Ireland. UPMC would lead the management side and the development of clinical protocols and pathways.'

Described their collaboration as a 'win-win' situation, Jim Torres explained: a win for UPMC as the clinical operator and a win for the countries where the new centres will bridge the lack of services. 'UPMC will bring best quality clinical knowledge and GE the state-of-the-art medical diagnostic technologies. Together we can bring solutions for a level of quality of care that otherwise wouldn't be possible.'

The partnership is a continuation of a 20-year relationship between GE and UPMC, Charles Bogosta pointed out. 'In Western Pennsylvania, where we planned 14 new cancer centres, GE provided all the technologies they currently use. So it was natural to take this relationship overseas, as we did in Ireland. Now we've formalized that and are leveraging GE's market intelligence and international expertise. This is very complementary.'

90% of oncological care occurs in smaller communities, Charles

Bogosta pointed out. 'Our model is to settle the centres in these. Going in to several countries, we've found great interest in this specific concept – every country in the world could be a candidate for this. It has to be customized wherever we go. As yet, we just don't know whether we will place one or more centres in a country; discussions with the countries are very preliminary right now.'

Speaking of project financing, Charles Bogosta said this will mainly be handled by their local partners – i.e. hospital companies and govern-

The University of Pittsburgh Medical Center and GE Healthcare plan to establish over 25 local cancer centres in various countries within the coming decade

ments. 'With the current economic situation things are going a bit slower than in other times. But so far, discussions with our partners are very optimistic. Oncology is targeted as a very high priority in every country.'

Asked whether the centres will be centrally linked, he explained that, although they will be local, each will be able to make the most of its international background and share education and research. 'We already have many centralised processes that will bring efficiency to all these locations.'

Finally, Jim Torres added: 'This pro-

ject is going along with our strategy for globalization and becoming local in the global markets. GE Healthcare is already in over a hundred countries, so we have a strong understanding of local markets, know the key players, and can provide that intelligence to UPMC and find the right locations and partners. GE is a global player in providing healthcare solutions; we have a broad spectrum of products, so we provide the global footprint – the healthcare solutions – whilst UPMC brings the clinical expertise.'

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DIGITAL PENS QUICKLY COLLECT CARE DATA

Within a project named 'Healthcare Documentation & Digital Pen', Hamburg based IT firm Allpen is to supply digital pens to 300 employees of the healthcare association Diakonie Pflegeverbund Berlin

Based on Swedish firm *Anoto's Digital Pen and Paper (DP&P)* technology, each pen is fitted with a digital camera and comes with raster paper, which can be printed out either as a care form or deployment transcript. As the pen is used to write on the raster paper, letters and words are recognised and digitised, and then the data can be transferred from the pen, via a USB docking station to a PC. There, it can be opened as a PDF file in the Document Management System (DMS) for further processing, or be made instantly accessible to the Healthcare Fund Medicinal Service

(MDK) for review.

About 40 people employed in Niederschönhausen, Berlin, are using the pens, to be followed by a further deployment of pens to healthcare association's staff at Berlin Mitte and Berlin Weissensee.

Before using the technology, data was transferred by hand into the patient management system after each case.

Besides archiving and presenting the forms, the system has a range of additional functions that support user administration, assignment of pens to staff and the management and downstream processing of care data and rendered care services.

TIARA enhances therapists' workflow

By Mark Nicholls



A new IT system, designed to improve the efficiency and effectiveness of the therapy department at the Royal Orthopaedic Hospital (ROH) NHS Foundation Trust in Birmingham, is reported to have shown clear benefits for therapists, managers and patients.

Wireless technology enables the therapists to use laptops or tablet PCs during their rounds. Named TIARA, the new system gives clinicians rapid, easy access to full patient histories and allows details of assessments and interventions to be recorded onto the system.

As one of the busiest orthopaedic centres in Europe, the ROH Trust provides elective surgery to the population of Birmingham and provides a spinal service to the West Midlands. About 65,000 out-patients are seen annually, with 13,000 patients treated as in-patients or day cases.

In terms of therapy services the hospital offers in- and out-patient services, including physio and occupational therapy, rehabilitation and sports medicine and has a busy hydrotherapy service.

ROH Therapy Manager **Nikki Mason** explained that TIARA replaces three previous systems that

were incompatible. Since the system went live last April, implementation has been phased; initially it was used for appointments, registration and collection of statistics and auditing patient attendance. 'We now have full electronic patient records for inpatient physiotherapy, inpatient occupational therapy and outpatient physiotherapy,' she said. 'However,



we do not have the system for hydrotherapy because of problems with having laptops in a water environment; we are looking at ways to resolve that.'

Since its introduction, the new IT system for therapists has made significant improvements and seen hand-written notes phased out. It has also helped managers with statistical data, assisted in managing patient flow and seen physiotherapists spend less time on administration. 'We have a better idea of waiting times and can manage our waiting lists more effectively,' Nikki Mason added. 'From the physiotherapist's perspective there are some patients with more complex needs that cover several areas. Instead of having separate notes in those different areas, the notes are on the laptop and we can see them straight away.' The therapist can move between patients in wards or

consulting rooms, carrying no documents, only the laptop, and clinical records can be viewed by multiple users with appropriate access.

'The system can detail patient attendance, highlighting for example which patients are poor attendees, so we can address that situation; or identify those patients that are more dedicated to their treatment,' Nikki Mason pointed out. Data collection and storage is also more formatted and standardised. 'The system is a lot more auditable and helps us move towards improved evidence-based practice. Ultimately, the patient is receiving an audited, quality service and it is helping us reduce waiting times.'



Security – The laptop will not work away from the hospital; data is all encrypted and it is web-based so there is no data stored directly on the laptop.

Further potential – A next step is to take electronic referrals from GP surgeries and consultants within the Trust.

The hospital reception also has a touch-screen computer check-in system where patients can register, so that members of staff are prepared for their arrival at the relevant department.

Hospitals cannot survive without IT

Study examines the benefits and shortcomings of the use of IT in healthcare

A study carried out this year by the VHitG e.V. (a German association of IT solutions providers for healthcare) produced the first complete market analysis of systems installed in hospitals, along with an evaluation of the use of IT through the subjective appraisals of the users. The objective of the standardised online questionnaire, in which 480 people participated, was to determine the trends, focus and requirements of users.

Based on a differentiated evaluation of IT used in the hospital from the perspective of three important groups of decision makers (106 commercial, 167 medical and 206 IT leaders) the potentials, requirements and obstacles in IT use, from users' viewpoints, were examined. Additionally, the future requirements for IT leaders were investigated.

The study results show that users viewed the IT contribution as essentially positive. In fact, it is considered so valuable that the topic of IT is typically not just approached purely from a cost perspective. Moreover, there is agreement that hospitals cannot survive without IT. To the contrary, the IT and medical decision makers agree that, to realise new and profitable business models for their hospitals, IT is necessary. In this context they criticise the lack of networking facilities with the outside world and the insufficient provision of software training. The biggest potential for IT use is considered to be immediate data availability. Further opportunities are seen in particular in knowledge-based systems, the transparency of the invoicing and accounting structure and support for management decisions. As yet there is little evidence of IT use to optimise processes in clinical systems and in the implementation of new business processes.

Another, major insight from the study concerns the role of the head of IT, which is due to undergo major change.

The IT head of the future will soon contribute to an organisation's financial results; be involved in the hospital's strategy and will need to gain knowledge of clinical processes to optimise comprehensively the hospital processes.

From the association's point of view, among the essential conclusions in the published results is the high IT contribution to workflow support, set against the background of a low distribution of these workflow systems, which was clearly evident. This demonstrates an important potential to increase the IT contribution significantly. On the other hand, a lack of interfaces is seen as an obstacle. The association sees potential here not only in education for end users, but also in the support of integration and standardisation.

The investigation looked at VHitG member companies, whose products are used in 90% of German hospitals, and specifically at the number of IT solutions installed in 2007 in all 2,093 German hospitals.

Based on the differentiation of IT solutions installed in 45 segments, the study shows that most hospitals use solutions from different suppliers, and the HIS is not the only system they use. The study also investigates whether the software had been developed by the providers themselves, or whether they had merely installed third party products, or whether they were just the retailer. For quality assurance, the VHitG study was monitored by two independent organisations: Munich Technical University and Consultic Marketing & Industrieberatung GmbH.

The 'usability' obstacle raises several questions because this subject includes a broad range of technical and ergonomic aspects. Thus VHitG is considering a follow-up study in 2009, in which the focus on usability will increase.

Biometric fingerprints – The Barmherzige Brüder hospital group, Austria's biggest private hospital chain, has dispensed with passwords, in preference for biometric fingerprint access to its systems. In its previous system 'account groups' of users could access and amend patients' medical records: this was found to be outdated, insecure and unsafe, with managers unable to directly tell who had accessed any particular records and when.

The group's first hospital to go live was in Graz; since last April, 270 members of staff have used a biometric solution delivered by Siemens IT Solutions and Services.

The group is now introducing the system across nine hospitals and three nursing homes. Password log on will go when each access point to the hospital information system (HIS) will be equipped with a PC mouse with biometric sensor to identify a user by his or her fingerprint.

Michael Wiltschnigg, the group's IT chief, said the system was successfully tested for three months last year and is now being introduced to more of its hospitals. 'The staff can now access the system within 2-3 seconds, whereas when we had a password system it took up to 15 seconds. Our users log in to our health information systems up to 50 times a day,

Speeding up HIS access and tightening security

Aiming to streamline access to IT systems and ensure access security many hospitals are using smart cards while others are opting for a biometric fingerprint sign-on

so throughout the day that saves a lot of time. It's also much more secure than with the former password system.'

Barmherzige Brüder also points out that it is now easier to tell which user had accessed the system and which documents they had read or changed. However, to access the system users need to have clean fingers and not be wearing gloves.

By mid-2009, when implemented across all the group's centres in various locations (e.g. Vienna, Linz, Salzburg), it will be used by about 3,500 employees.

One smartcard and PIN – England's Norfolk and Norwich University Hospital aims to introduce a new, single sign-on frame-

work that will enable clinical users to log on to all software applications using one password. Initially it will implement Imprivata's Single Sign-On software across its busy A&E department. If successful, the system will be deployed Trust-wide.

The OneSign appliance-based authentication and access management solution – to be installed by Enline – will integrate with existing Connecting for Health (CfH) smart-card technology, allowing users to sign on to all applications using one smartcard and pin number. Presently, employees must remember multiple usernames and passwords.

With OneSign the Trust can monitor, capture and log password-related user events in a centralised audit log and administrators can monitor access records for every user, application or workstation in one central location.

Bill Fisher, the Trust's Head of IT, said that the system should deliver additional efficiency savings through a reduction in downtime caused by users who are locked out of their computers and have to call the IT helpdesk.

Report: Mark Nicholls

eFA project gains accolades in Connectathon

The first Connectathon of 'eFA', a hospital-driven German electronic patient record (EPR) project was considered a success by health IT providers and hospital representatives. During the Berlin event, Siemens, iSoft, and Ispro received certificates for implementing basic eFA functionalities in their connected care solutions, writes **Philipp Grätzel von Grätz**

Initiated by private hospital chains such as Asklepios and Rhön, and backed by the German Hospital Association (DKG), the eFA project is widely considered one of the most important IT standardisation projects in German healthcare. Under the eFA umbrella, the Berlin-based Fraunhofer ISST has been working since 2007 on technical specifications for an EPR with decentralised data storage to be deployed in regional and supra-regional connected care scenarios. In Germany, because this type of EPR is not a life-long record but records only a specific treatment, it is referred to an 'electronic case record' (elektronische Fallakte).

Pilot projects of eFA at four hospital chains and another eight individual hospitals have been running for more than a year. Following the Berlin Connectathon, eFA is bound to leave the pilot stage: 'This was an important step towards commercial products that are available for all hospitals as off the shelf solutions,' said ISST-project manager Dr Jörg Caumanns.

The Connectathon provided three scenarios to test the solutions live and in public. All three solutions that entered the race – iSoft's *Lorenzo*, Siemens' *Soarian Integrated Care*, and Ispro's *Jesaja.net* – were successful in the scenarios 'eFA client compatibility' and 'eFA services compatibility'. The former means that it is possible to access and edit data in electronic case records of competing providers via an eFA client. 'eFA services compatibility' means that it is also possible to use eFA-related services, for example a search function.

Only the Siemens product received a certificate for the third scenario 'eFA peer to peer compatibility', which means that the system can build up regional networks with the electronic case records of other providers. This is essential, because otherwise a doctor in private practice who wants to communicate electronically with different hospitals would have to use different portal solutions to access different case records.

All in all, hospital representatives were quite satisfied with what they saw in Berlin, and announced that they will implement the current eFA specification 1.2 as soon as possible. 'At Asklepios we will enter the national rollout at our hospitals beginning in April 2009,' confirmed Uwe Pöttgen, head of IT for this hospital chain.

Dirk Herzberger of Helios is already using *Jesaja.net*. 'We will finish the eFA rollout in our ten

SAP-based hospitals in 2008, and will add another twenty hospitals without SAP in 2009.' Rhön is running eFA pilots based on Soarian Integrated Care in Leipzig, Frankfurt/Oder and Hildesheim. Aachen University Hospital (UKA), which uses iSoft's *Lorenzo*, has already implemented two eFA projects with cooperating hospitals and, next year, will start a third with cardiologists in the Aachen region. 'We are also envisioning

cooperation with Maastricht hospital, based on eFA standards,' said Dr Silke Haferkamp of UKA. However, there is presently no time scale for this.

To make the eFA initiative sustainable, hospitals and hospital chains are now launching a non-profit organisation – the eFA Association (eFA-Verein). Membership fees will be used to update the eFA-specification and make it compatible with the

German national health IT infrastructure, including its smartcard components. 'Our ambitious goal is to create a nationwide standard in the end,' said Uwe Pöttgen, who also proudly reminded the guests that the hospitals have invested a six digit amount of money so far into the development of the eFA standard, and that this standard nonetheless remains freely accessible for anyone.

SuperPACS™ ARCHITECTURE information is provided for planning purposes. Commercial availability is pending submission to and clearance by FDA and other regulatory agencies. © Carestream Health, Inc. 2009.



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ECR 2009

The latest Carestream Health IT for radiology will go on show

Carestream Health plans to demonstrate its newest, low cost, digital imaging and IT solutions at ECR 2009 (European Congress of Radiology). The range includes: **RIS/PACS**

This new platform from Carestream will become available worldwide in spring 2009.

The Web-based RIS employs a Microsoft .NET architecture, which will offer tremendous flexibility and scalability in a thin-client solution, Carestream explains. 'This architecture will allow users to refine features to automate workflow and speed implementation. It also will deliver secure remote access for physicians; enable greater collaboration using IBM *Sametime* technology; and offer an optional portal that allows patient scheduling within parameters set by healthcare providers.'

The new PACS will help increase radiologist productivity with a unified virtual desktop that can facilitate faster reading of CT, MR and PET/CT exams through automatic registration, Carestream adds. 'It also will offer an innovative *power viewer* that builds a single virtual study with real-time volume matching of all relevant studies (new and prior) to automatically register and synchronise them in one click.'

The first SuperPACS Architecture

Carestream Health will showcase the very first SuperPACS Architecture. Designed to integrate multi-vendor, multi-site PACS into an efficient enterprise solution, this can be ordered also in spring 2009.

'This new architecture will allow healthcare providers to streamline workflow—using existing PACS resources, since it will enable the sharing of patient images and information, while also delivering a global work-list that balances examination reading among on-site and off-site radiologists,' Carestream reports. 'This architecture is designed to reduce expenses by maintaining use of existing PACS and storage devices and allowing for consolidation of resources. As part of its workflow grid, the new architecture can synchronise disparate PACS. Images and reports are automatically sent back to the original PACS or RIS for local storage and distribution.'

First Wireless, Cassette-Size DR Detector

The company has announced that it will also demonstrate the industry's first wireless, cassette-size DR detector that can be used with existing wall stand or table-based Buckys. 'The Carestream DRX-1 System is expected to be available during the first quarter of 2009. It incorporates a console and a wireless 35 x 43 cm (14 x 17 inch) cassette-size detector that provides a rapid, affordable conversion for users of radiographic film or computed radiography systems. It requires no modifications to existing analogue equipment, resulting in very low installation costs. The



DRX-1 system delivers high-quality preview images in fewer than five seconds, which significantly improves productivity, even for users of computed radiography (CR) systems.'

Carestream reports that imaging service providers that have seen advance previews of the new DR detector complimented its affordability and productivity. Radiologist Dr Peeter Ross MD, at East Tallinn Central Hospital of Estonia, commented: 'The easy transition and affordable price offered by the new DRX-1 system should lead to increased use of DR, which enables greater productivity because it is faster than CR or screen-film systems. It also can offer better image quality, with the possibility of reduced exposures and less radiation dose to patients.'



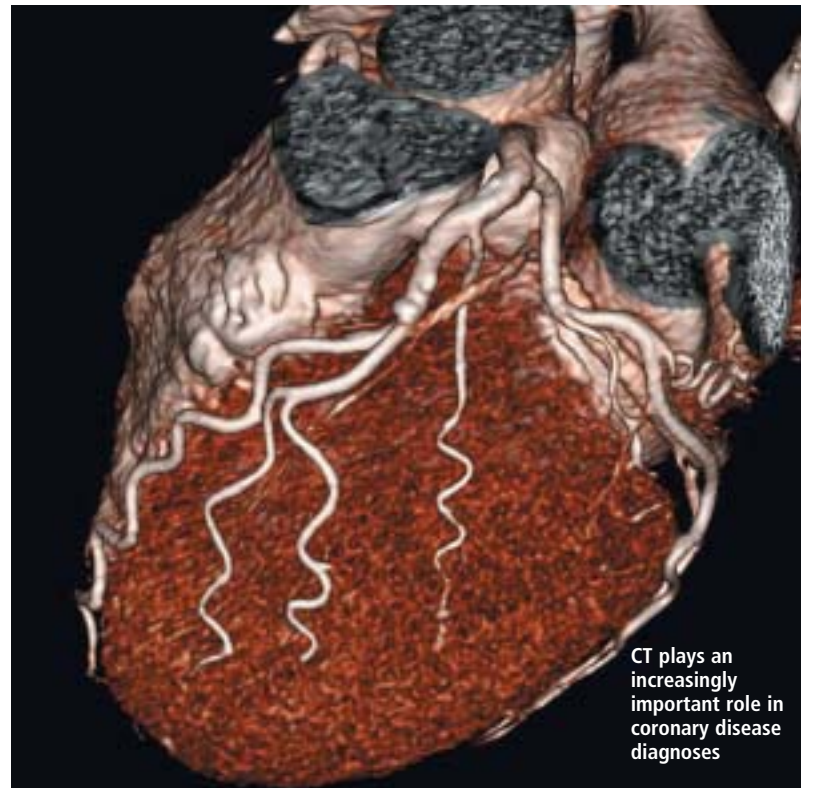
The multicentre international trial CorE-64 trial has demonstrated that CT is increasingly important in the non-invasive diagnosis of obstructive coronary artery disease.

For the first time, radiologists have tested the reliability of cardiac CT results compared to cardiac catheterisation in this multicentre international trial (carried out by the Charité University Clinic in Berlin and Johns Hopkins University, USA, among others).

using CT with the same precision as with the cardiac catheter, which means non-invasive CT examination that is free of complications is equally capable of identification as catheterisation,' Dr Dewey concluded.

'64-slice CT is currently the most promising procedure for non-invasive coronary angiography. However, in a direct, multi-centre comparison with conventional coronary angiography limitations are also evident. The sensitivity of 85% and the negative predictive value of 83% are lower than in previous single-centre studies,' he

Hot on the heels of cardiac catheterisation



CT plays an increasingly important role in coronary disease diagnoses

Coronary artery evaluation using 64-Row Multidetector Computed Tomography Angiography

The result: Non-invasive CT facilitates the safe detection of vasoconstriction; however, for a precise assessment of the severity of obstructions, the catheter was still superior to CT enhanced imaging. 'The result makes us feel confident. The study shows that CT is hot on the heels of angiography,' said lecturer **Dr Marc Dewey** (above), of the Institute of Radiology, Charité Mitte Campus, Berlin, who led the study in Germany. 'Catheterisation is not without its risk. Deposits removed from the vascular walls can lead to constrictions in other parts of the organ, or the vascular walls can actually tear,' he pointed out.

Unsurprisingly, about 75% of patients stated they would prefer fast and painless CT for future examinations. According to the radiologist only a third of catheterisations are actually combined with therapy, i.e. the vessels are only widened in about a third of cases. In all other cases, catheterisation is only used for clarification.

Seeking a low-impact diagnostic procedure

For some time, radiologists have been looking for a way to assess reliably the condition of coronary arteries whilst avoiding the complications implicated in doing this via angiography. CT has proved to be the procedure with the biggest potential to take over from catheterisation, as the international team carrying out the CorE-64 study discovered.

Some 400 patients with diagnosed or suspected coronary heart disease underwent a two-fold examination (approved by the Federal Office for Radiation Protection), employing catheterisation and CT. 'We were able to detect stenosis requiring treatment

explained. 'This means that, with large-scale use of 64-slice CT for coronary angiography, the realistic results for diagnostic precision are lower than in previous examinations (with about a 95% sensitivity) which were not multi-centre. Nevertheless, and this is clearly demonstrated by our first international, multi-centre study, the diagnostic value of CT is higher than with all other non-invasive procedures to detect coronary artery stenosis. Moreover, CT was on a par with conventional coronary angiography in the prediction of the necessity of coronary revascularisation.'

In terms of assessing for which risk score cardiac catheterisation and CT are appropriate Dr Dewey added: 'Non-invasive cardiac CT could be a sensible "filter" prior to cardiac catheterisation for patients with low to medium probability (20-60% pre-test probability) of coronary artery stenosis. For example, these are patients with asymptomatic complaints or existing, conflicting results of other examinations. Patients with typical, symptomatic problems should definitely still be examined via cardiac catheterisation and, if necessary, revascularisation. On the other hand, it has been shown that there is no improvement in clinical, long-term results in asymptomatic patients, which means that CT does not seem to be a sensible approach for these patients. As Rita F Redberg writes in her article about our study in the *New England Journal of Medicine*, there is a need for more randomised – and ideally publicly sponsored – studies to further analyse the benefits of low-impact, non-invasive CT prior to the large-scale use of cardiac CT. * The CorE-64 results were first published in the *New England Journal of Medicine* (2008; 359: 2324-36).

NEW Biograph mCT

Signalling the beginning of molecular CT

What makes the mCT different from other PET-CT systems?

Markus Lusser: The Biograph mCT combines our highest-performance CT platform with our latest PET scanner. This means the system combines two high quality modalities in one machine, whereas with conventional PET-CT systems the CT component has limitations for complicated CT examinations. To increase patient comfort, we have now integrated both components in a very small system, so that the scanner has a tunnel length of only one metre. This means that examinations with the Biograph mCT can be carried out in just five to six minutes, whereas conventional machines still take about half an hour. **Does this mean the system is not really a PET but a CT with integrated PET module?**

Yes, a powerful CT with high performance PET. With its adaptive dose shield, a scanning area of up to two metres and a maximum time resolution of up to 150 milliseconds – with 128 slices per rotation – the CT scanner ensures pin-sharp and clear images. This makes it suitable for routine diagnostics as well as complex examinations in cardiology and oncology.

These are different medical disciplines. The mCT constitutes the interface between radiology and nuclear medicine. Will these two disciplines be forced into increased cooperation due to this technical development?

At Medica 2008, Siemens introduced its latest generation PET-CT, the Biograph mCT. During a European Hospital interview, Markus Lusser (ML), worldwide Head of Distribution and Marketing for Molecular Imaging at Siemens, outlined the advantages of the new hybrid system, which aims to extend the spectrum of medical imaging to 'molecular computed tomography'

I wouldn't use the word forced, because PET-CT is already an established modality. It means that nuclear medicine specialists and radiologists jointly establish the diagnosis. A specialist in nuclear medicine typically cannot evaluate and diagnose the results of a CT examination, and a radiologist cannot evaluate PET results, so we are supporting closer cooperation with our mCT.

But this has a significant bias towards radiology. Some hospitals in Germany have nuclear medicine departments and professorships. To use the new mCT effectively, radiology and nuclear medicine will now have to work together in one department.

As the manufacturer, we don't think so much in terms of the structural categories but look at issues from a clinical point of view. Moving away from the situation in Germany, internationally there is a strong

Markus Lusser



trend towards integrated imaging – and we aren't interested in promoting one group to the detriment of another. Hybrid systems, such as molecular CT, need the expertise of both groups if the potential of 'molecular imaging' is to be fully exhausted. For example, this type of CT can actually be used for organ perfusion. However, that requires a radiologist's expertise in the necessary technological skills. If you then superimpose the result with that of a PET examination – and this is where nuclear medicine comes into play – you gain a third type of measurement, at no extra expense, which can be relevant for fast and precise diagnosis. But the crucial point is that about 95% of all PET-CET users do not use CT for advanced examination protocols, such as contrast-CT. **So they are only driving your luxury limousine in first gear?**

ML: Only in first gear, and to pop to the shops, so to speak. And this was why Siemens focused on how to motivate users to make full use of the potentials of a CT examination. The solution: an enhanced CT that can also be used to carry out CT angiography. The mCT can give a surgeon a complete image of the lungs, for example. This clearly shows where the bronchial tubes and tumours are. It can even show blood vessels – and all this in an integrated examination for which the Biograph Molecular CT only requires a fraction of the time that currently used machines take to do it.

LANDWIND

A Chinese company firmly determined to expand its global presence

Shenzhen Landwind Industry Co. Ltd. (Landwind) began operations as a distributor for Siemens and Philips ultrasound products in mainland China and later commenced production of its own black and white ultrasound equipment on an Original Design Manufacture (ODM) basis for HONDA in 2004.

Today, Landwind manufactures ultrasound diagnostic scanners and other medical imaging systems, as well as hospital information management systems.

The company's three ultrasound imaging systems – C Series, F Series and Veterinary – are far more advanced than the firm's initial product. Elegantly designed and with foldaway backlit keyboards, their features include a 10in high-resolution monitor or LCD monitor; dynamic focusing and aperture imaging; multi-frequency, high density probes; a full range of measurement and calculation software packages; display modes B, B/B, B+B, B/M, M; cine review, storage capacity, and much else.

This year, the company presented its ultrasound equipment at MEDICA in Germany and the RSNA in Chicago. Landwind's Vice President, **Wang Guozhong**, was present at both events. When in Dusseldorf, he met with *Daniela Zimmermann* (European Hospital) to talk about the firm's products and aims. 'Generally speaking, we just provide good products at affordable prices,' he explained. 'For ultrasound and X-ray technology we have our own R&D capabilities. The products have the same features as others on the market, because all the products almost do the same thing; but, compared with competitors' products, our performance is very good; the image quality and powerful clinical functions are very good and very powerful. And initially we will take the localisation strategy to expand our business in European countries.'

Landwind's colour Doppler ultrasound equipment – MIRROR 2 – is designed on all-digital architecture and delivers outstanding performance and smooth workflow to meet different needs of patients and clinicians. It integrates the latest image processing technology, such as Multi-beam Parallel imaging, Superior Aptitude Filter, and Magic Focus, and provides versatile clinical applications, from abdomen, OB/GYN and plays a part in ergonomic design to relieve doctors from fatigue.

'For X-ray, we produce the mobile DR, and CR, and the all-digital DR, and a hanging-bracket for the Dr These are also in the medium price range.' Wang Guozhong said.

Did the firm's presence at MEDICA prove valuable? 'It's the best trade show for medical equipment in the world,' he responded. 'This is the fourth time our company has been here, and we've done very, very well in Hall 10. It's a very good opportunity for us, and we want to enlarge our space next year, to be in the middle of the hall with our

competitors.'

Broached with the ticklish question of European and American reservations that Chinese firms may copy their products, Wang Guozhong counteracted that his company has only a 15-year history and that, '...for the R&D experi-



Wang Guozhong with Daniela Zimmermann

ence, and particularly for high-tech equipment, we want to do it ourselves. We learn from our competitors, but we need to have our own technologies, our own development. We learn from Philips or Siemens, but we don't do the *me-too* products. We pay much more attention to our own R&D centre; just over 10% of our gross margin goes into that. In China we employ almost 700 people and our annual turnover is almost €100,000,000.'

Landwind, playing a more and more important role in medical equipment provider internationally will be global and definitely expanding.

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Real-time Tissue Elastography

A bridge between mammography and biopsy

Radiologists are paying increasing attention to ultrasound real time tissue elastography (HI-RTE). Earlier this year, at their annual meeting, the Austrian, Swiss and German Ultrasound Societies (ÖGUM, SGUM, DEGUM), highlighted the effectiveness of the method in differentiating soft from stiff tissue, i.e. healthy areas from tumours, a key differentiation in breast cancer diagnosis. Meeting with **Ellison Bibby**, European Product Manager for Radiology Ultrasound with Hitachi Medical Systems, **Daniela Zimmermann**, of European Hospital, asked for an update on the use of sonoelastography in this area

The breast is the best-known example of how patients are taught to palpate for tumours. A tumour is stiff compared to the surrounding tissue, and that's exactly what real-time tissue elastography images,' Ellison Bibby explained. 'The stiffness relative to the surrounding tis-

sue. It is similar in the prostate gland: the digital rectal examination is used to palpate the prostate for hard lumps and, on the elastography image, we can see areas that are stiffer. Normal ultrasound gives us information about the anatomy and reflectivity of the tissues, but

HI-RTE is like a 'palpation image', that looks at new additional information – how the tissues react to stress, which is related to tissue elasticity'.

The tissues are gently compressed by the transducer in a repetitive manner to distort the tissue. 'The echo data from one image frame is com-

pared to the next to build up a pattern of tissue displacement. Where there are differences in tissue stiffness, the amount of displacement varies – normal soft tissues will show greater distortion than stiffer tissues'.

Asked about the field of work in which this technique can be used, Ellison Bibby explained that if, after mammography and an ultrasound examination, the results are still uncertain, elastography can be used to provide further differentiation. 'It can build a bridge between mammography screening programmes and additional MR-examinations or biopsies. Today, this is a very sensitive area and very few doctors would be convinced to dispense with the biopsy, even when the real-time tissue elastography results look perfectly benign. But, several published studies, with quite large numbers of patients have shown comparable results, which, in those patients that are of

low suspicion for cancer, elastography could be used to decide which strategy to follow: biopsy or follow-up imaging after a short interval. But, of course we need more studies before we reach the stage of replacing biopsy with sonoelastography'.

Today, the BI-RADS categories, based on imaging appearances, are used for screening, but there are problems in terms of reproducibility, especially for BI-RADS 3 (probably benign) and BI-RADS 4a (low suspicion of cancer). It has been reported that approximately 70% of patients with benign lesions undergo further investigation – either short term follow up, aspiration or biopsy. Our goal is to show convincingly in this group of patients, that when we have a benign result with sonoelastography we could effectively downgrade the BI-RADS score by 1, giving sonoelastography a definitive role in breast cancer diagnosis.'



Zdravookhraneniye 2008



EH@Zdravookhraneniye was snapped up by exhibitors and visitors

Moscow, December – With 20,000 visitors, Russia's most important medical trade fair and congress – Zdravookhraneniye – again demonstrated to the 1,000 exhibitors from 49

space, prompting the show's organiser to plan for additional space for 2009. 'With 100 companies on 4,000 square metres, Germany is the biggest international exhibitor at this show,' Dietmar Terviel, Project Manager at Messe Dusseldorf, explained. 'It's one of the most important means of contact with the Russian market, which continues to be very promising.'

One key exhibition area, which presented the full range of medical diagnostics equipment and therapies, also highlighted the latest ultrasound developments, attracting keen crowd interest.

countries the potential of this health-care market, despite the global economic crisis. The overall mood was positive and optimistic. Applications for stands in the German Pavilion, for example, again exceeded the available

The latest ultrasound technology drew crowds



10% of exhibiting companies were German

2008 was the second year of attendance for our European Hospital team, who distributed our special Russian language edition *EH@Zdravookhraneniye*, an issue that raised a really welcome reaction as well as confirmed interest among visitors and exhibitors alike.



CARDIOLOGY

Germany's 1st Interdisciplinary Congress on Interventional Cardiology

Cardiologists and cardiac surgeons aim to treat patients jointly *Anja Behringer reports*



The first German-language congress on the diverse medical disciplines involved in cardiac care has been held under the scientific leadership of **Professor Sigmund Silber** (Munich). During the two-day event, live broadcasts of state-of-the-art procedures and treatments, from 12 German, Austrian and Swiss hospitals, were viewed by over 500 participants, who also interactively discussed the interventions.

The focus was on which specialist should treat patients suffering from coronary heart disease, with which therapies; the right choice of imaging procedure (CT or MRI); new drug treatments, and problems with stents.

Cardiologist **Prof Thomas Meinertz** (Hamburg) and cardiac surgeon **Prof R P Körfer** (North Rhine-Westphalia), who works in Europe's biggest open-heart surgery centre, agreed that it is not only better for patients, but also economically, for different medical disciplines to choose jointly what treatment should be given and proceed with that treatment together. Much depends on the individ-

ual patient whether, for example, a heart bypass or stent should be the choice.

Results from the SYNTAX study, introduced at the ESC in Munich under the presidency of Prof Meinertz and **Prof Axel Haverich** (Hanover), President of the German Society for Thoracic and Cardiovascular Surgery,



were also discussed. Percutaneous coronary intervention (PCI) and heart bypass surgery showed almost the same mortality results (7.7% and 7.6% respectively) and the occurrence of heart attacks. However, there were differences in the subgroups.

The gold standard: Dual platelet aggregation inhibition

Prof F R Eberli (Zurich) emphasised that coagulation management in percutaneous coronary interventions is decisive. 'In borderline stenosis, the cheaper angiography makes no great difference compared with results achieved with CT, but the fractional flow reserve management is not used often enough.'

Prof Silber spoke on cardiac surgery advances and decreasing need for the heart-lung machine. He recommended

that stent implants and heart bypass surgery should preferably be carried out in centres where cardiologists and cardiac surgeons hold daily 'cardiac conferences' to decide on individually customised treatment for each patient. Unlike cancer screening programmes, which medical insurers cover, cardiac coronary disease CT diagnosis is still considered an 'individual health service' that should be paid for privately. By way of primary intervention, general practitioners (GPs) should recognise the indication and significance of the calcium score and inform patients about this guideline-based examination. As coronary heart disease is one of the most common causes of death, particularly in industrialised countries, the event is being supported by the most important German-speaking cardiac, cardiovascular and radiological societies, and is partnered by the American TCT Congress.

Lower risks with drug-eluting stents (DES)

In Germany, 299,000 patients have had a PCI, and 260,000 stents have been implanted (German Heart Report). In certain cases, drug-coated stents (DES) can avoid the need for a renewed intervention. Prof Silber explained that 22 DES types are now licensed, but only



seven approved by the German Cardiac Society. The disadvantage of drug-eluting stents is that the necessary concomitant medication makes their use too risky for certain patients, which is why the congress participants are particularly interested in the development of new medicinal treatments. Because, stent implantations are irreversible and as their use is increasingly common, they may later complicate any potentially necessary heart bypass operations, which explains the considerable research on bio-absorbable drug-eluting stents.



Surgical lights gain LED technology

Fig 1: The new LED models Chromophare E 778 and E 558



The popularity of LED lighting units is inevitably increasing because LED light is infrared-free and cool, creating good work conditions for surgeons, and minimising the danger of tissue dehydration. In addition, the nearly limitless service life of LEDs lowers maintenance costs and ensures safe, reliable work, the operating theatre equipment and surgical lighting specialist Berchtold explains.

This year, the firm introduced the E-Generation Chromophare surgical lights with gas discharge and halogen technology, and has added new LED models. Berchtold explains that the light ensures optimum differentiation of tissue types while

minimizing colour shadows due to a selected mixture of specially arranged cold and warm white LEDs. 'Each of the many light emitting diodes in our surgical lights is backed by a specially developed reflector system for the generation of an individual light field. This newly developed arrangement of light modules results in a homoge-

neously illuminated, shadow-free light field under all working conditions. And, our 'Spectronixx' colour optimization filter puts the finishing touches to a light that remains homogeneous at every type of colour temperature. Moreover, the infrared-free light ensures a cool light field even during surgical procedures that may last for several hours. Higher temperatures near the surgeon's head and shoulders are reduced to a minimum – as with all E-Series lights from Berchtold.'

In addition, if needed, the colour

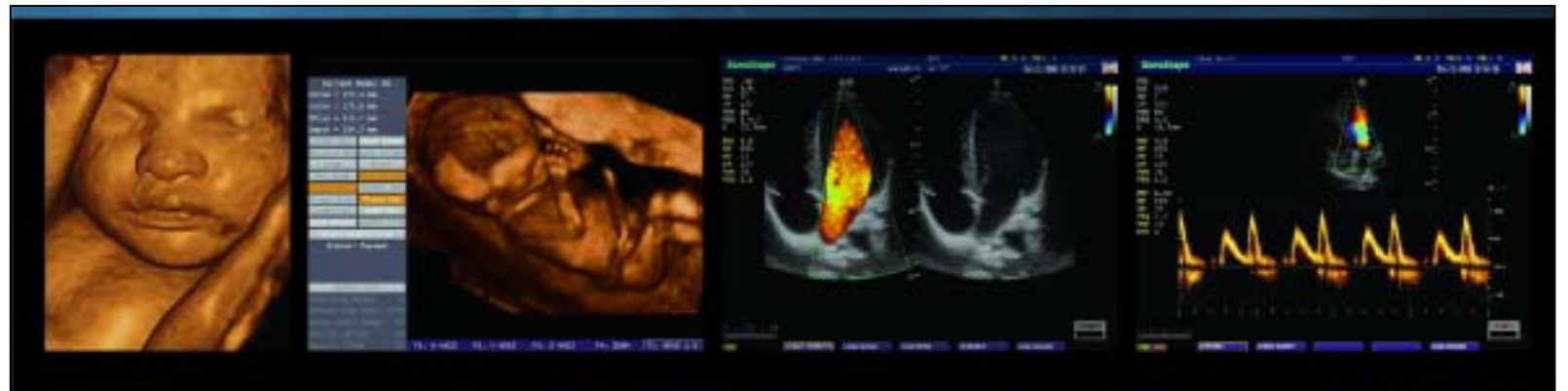
temperature can be adjusted freely over a range of 3,600 to 5,000 Kelvin. 'Berchtold's special Colour Select feature brings optimum visibility to colour contrasts. The flat, self-contained design of the surgical light ensures easy, hygienic cleaning with a minimum of turbulence to laminar air flow.'

A specially developed sensor system in the handgrips allows repositioning of the lighting unit without changing the light field adjustment. 'Adjustment of the light field is carried out purely electronically to eliminate mechan-

ical aberrations,' Berchtold points out. 'Operating theatre personnel have a choice of ergonomic, intuitive adjustment directly on the lighting unit itself or via a wall-mounted control panel. Easy-to-understand symbols eliminate complications in turning the light on and off, or adjusting parameters such as the light field, lighting intensity, and colour temperatures. The accompanying, downward-pointing GuideLite for orientation can also be managed with either of the control panels. The GuideLite offers c. 10% residual light and serves to ensure visibility in the surroundings during endoscopic procedures.'



Fig. 2 : Ergonomic, intuitive adjustment directly on the lighting unit itself with symbols for turning the light on and off or adjusting parameters like the light field, lighting intensity, and colour temperatures



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Slow frozen liver successfully transplanted

Israel – A slow frozen pig's liver has been thawed without damage and successfully transplanted into another pig, according to Israeli scientists (initial results published in Rejuvenation Research, followed by the journal New Scientist).

Working at the Agricultural Research Organisation in Bet-Dagan, the scientists used a much slower freezing system than usual. To reduce the formation of jagged damaging crystals in water inside the cells, they cooled the organ by just 0.3 degrees Celsius per minute. About an hour and a half later, the pig liver was fully frozen. It was then thawed immediately and transplanted into the other animal, next to its own liver. Two hours later, after the recipient was killed, the transplanted liver was checked and found to have regained some signs of blood flow and was producing a bile-like liquid, indicating that some of its functions were working again.

However, it had been working in tandem with the existing liver, and only working for a couple of hours before the examination as to its function. Thus the research could not ascertain whether it could recover all its functions to work independently and keep the animal alive.

If further experiments to test this are successful, the researchers hope that frozen organs could be banked for future transplants

The DGU trauma network

By **Professor Steffen Ruchholtz MD**, (below) Chairman of the Department of Trauma, Hand and Reconstructive Surgery at University Hospital Giessen and Marburg GmbH

German pre-clinical and clinical trauma care of severely injured people enjoys an excellent reputation nationally and internationally due to the country's intensive work in trauma surgery and related medical disciplines. Nevertheless, it should be pointed out that the current outcome of polytrauma care in Germany is extremely heterogeneous. Data collected by the Federal Statistics Bureau, released in 2002, indicate that the mortality rate among traffic accident victims varies greatly between the Federal States: e.g. 2.7% in Mecklenburg-Vorpommern, 1.1% in North Rhine-Westphalia and 0.5% in Berlin. Moreover, data in the trauma register maintained by the German Society for Trauma Surgery (Deutsche Gesellschaft für Unfallchirurgie – DGU) show significant differences for individual hospitals regarding the mortality rate following severe trauma. These quality differences can be attributed to two primary causes:

- The catchment areas of the individual hospitals differ markedly in the Federal States: 4634 km² in Mecklenburg-Vorpommern and 541 km² in North Rhine-Westphalia. Similar differences apply to the area covered per medical helicopter and the size of the regional road grid.
- The different care classifications, organisation, staff availability, infrastructure and material resources of the hospitals participating in polytrauma care vary significantly.

In view of these differences, in 2004 the DGU launched the Traumanetzwerk initiative, which aims to raise the quality of polytrauma care to a single, high level throughout Germany

Local trauma network structures between supraregional and

regional trauma centres and basic trauma surgery aim to ensure that every seriously injured patient is taken to the shock room of a suitable or even certified hospital within a 30-minute drive from the accident site.

The White Paper on trauma care for severely injured persons (Weissbuch der Schwerverletztenversorgung) published by the DGU in 2006, demands the following:

- Defined criteria for the admission of accident victims from the site to a trauma centre or facility offering basic trauma surgery.
- Implementation of harmonised staff, infrastructural and organisational preconditions (e.g. shock room).
- Standardised treatment paths and transfer criteria for the early phases of trauma care for severely injured patients, according to the evidence-based DGU guidelines (e.g. DGU guideline S3).
- Harmonisation of medical qualifications by joint training programmes (e.g. ATLS. www.atls.de).
- Participation in external and internal quality assurance programmes and collection of current care figures and workflow on the basis of the DGU trauma register (www.traumaregister.de).
- Implementation of telecommunication systems that enable participating hospitals to coordinate the further care path in or immediately after the acute treatment phase.

Currently, more than 500 hospitals, forming 56 regional trauma networks, are registered in the certification process (www.dgu-traumanetzwerk.de).



Endoscopic submucosal dissection (ESD)

The non-invasive resection of gastric tumours

High resolution endoscopy triggers new approaches to the detection and resection of early-stage carcinomas. Zoom, Narrow Band Imaging and HDTV allow significant magnification of the endoscopic image and increasingly detailed rendering of the mucous membrane. Consequently, pathologic changes can be detected earlier. Endoscopic submucosal dissection (ESD) provides experienced endoscopists with a new technique to resect early gastric cancer without damaging the organ affected. Thus, invasive surgery is no longer required to remove early-stage tumours of the oesophagus or the stomach.

'The decision about whether a malignant gastric tumour may be resected by ESD depends on the tumour's size and surface area,' explained **Dr Siegbert Faiss**, medical director of the gastroenterology department at Asklepios Klinik Barmbek, Germany. 'ESD is an option if the tumour of the oesophagus and the stomach affects only the lower mucosal layer or, in the case of a colon tumour, the lower submucosal layer.'

First, to mark the submucosa, a liquid is injected into it. Then insulation-tip diathermic knives – also known as IT-knives, hook-knives or flex-knives – are used to cut the mucosa generously around the neoplasm. Finally, the submucosal tissue under the neoplasm is dissected. Thus, an organ-sparing en bloc resection is performed. ESD ensures negative margins and local recurrence is reduced.

Though very promising, ESD has certain disadvantages: the procedure takes some time and bleeding as well as perforation risk are still quite high. This holds true particularly for inexperienced users, explains **Barbara Opalka**, product manager for endotherapy instruments at Olympus Medical Systems Germany, which produces ESD knives. 'There are certain preconditions for their use: intensive patient information, sufficient training and an experienced operator,' she adds.

In ESD workshops organised by Olympus to promote ESD, experienced endoscopists train surgeons to use the new instruments and ensure they can adequately handle complications if or when they occur.

The firm also supports the national ESD register, launched in October under the auspices of, among others, Dr Faiss's department at Asklepios Klinik Barmbek and in partnership with the German Society for Gastroenterology (DGVS). The register aims to document the application of the ESD procedure to obtain information on outcomes. Data is being recorded on indication, complications and the therapy course for each patient. Within days of the announcement of the register 30 of the 120 German hospitals where ESD is currently being offered, had signed up, the company reports.

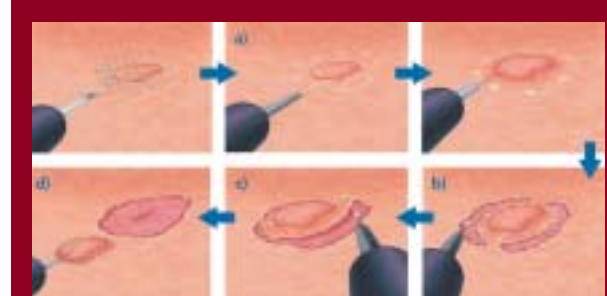


Fig. 1: ESD diagram: Marking the lesion; incision; submucosal dissection of lesion; removal of the en-bloc resected lesion

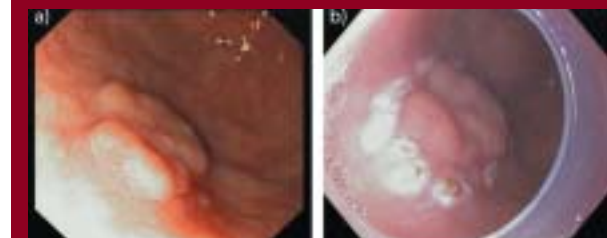


Fig. 2: ESD (en bloc R0 resection): Early stomach carcinoma; marking of lesion

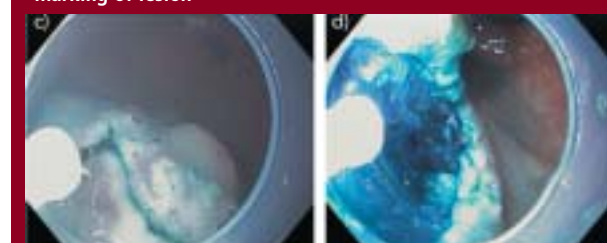


Fig. 3: Incision of marked lesion: Submucosal dissection (submucosa dyed blue)

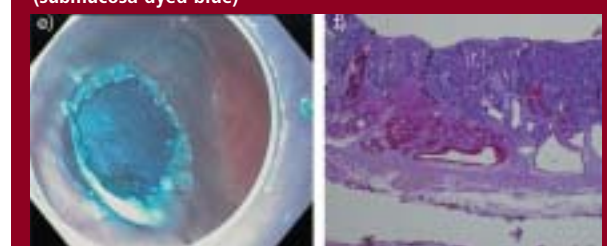


Fig. 4: Complete resection. Specimen of curatively resected early stomach carcinoma (T1m, G1, L0, V0)



Fig. 5: Olympus ESD instruments for ESD of early carcinoma in a gastrointestinal tract

Arthroscopic surgery

Does it provide additional benefit for the osteoarthritic knee? By Jane McDougall

Osteoarthritis of the knee is a degenerative disease that causes joint pain, stiffness and decreased function. Its frequency increases dramatically with ageing populations. Treatment is multidisciplinary; combinations of pharmacology, physiotherapy and/or surgery are used for most patients. Before the disease reaches the stage where a total replacement is the only course of action, keyhole surgery is often performed. Using arthroscopy, lavage of the joint removes fragments of cartilage and calcium deposits. Also surgical smoothing (debridement) of the articular surfaces and osteophytes is undertaken, aiming to reduce synovitis and eliminate any mechanical obstruction to joint mobility.

Although widely practiced there is in fact little or no scientific evidence for any benefit from this procedure in osteoarthritis of the knee. In fact the results from a large-scale, randomised, controlled trial published in 2002 showed no benefit of surgery (Moseley JB, O'Malley K, Petersen NJ, et al. A controlled trial of arthroscopic surgery for osteoarthritis of the knee. *N Engl J Med* 2002;347:81-8). The trial methodology was heavily criticised and arthroscopy continued to be routinely used.

This September new results from Ontario (Canada) were published (Kirkley A, Birmingham T B, Litchfield RB, et al. A randomized trial of arthroscopic surgery for osteoarthritis of the knee. *N Engl J Med* 2008;359:1097-1107). This single-centre, randomised, controlled trial of arthroscopic surgery was carried out in 188 patients with moderate-to-severe osteoarthritis of the knee. Patients were randomly assigned to surgical lavage and arthroscopic debridement, together with optimised physiotherapy and medication (which included analgesics and non-steroidal anti-inflammatory agents) or to physiotherapy and medication alone. Arthroscopic surgery was performed under general anaesthesia within six weeks of randomisation of the patient.

At two years follow-up, the primary outcome was the total Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) score (range, 0 to 2400; higher scores indicate more severe symptoms). While secondary out-

comes included the Short Form-36 (SF-36) Physical Component Summary score (range, 0 to 100; higher scores indicate better quality of life).

The patients were assessed by a nurse, blinded to treatment, 3, 6, 12, 18, and 24 months from the start of treatment. Interestingly, it was only at the first three-month visit that the results from surgery were significantly better than those in the medical group $p > 0.01$. At the end of the study no difference was found between the two treatment groups: WOMAC scores were 874 ± 624 in the arthroscopy group compared with 897 ± 583 in the medical group (NS $p = 0.93$). Different sub-group analyses also failed to find an advantage for surgical over medical treatment. Likewise surgery failed to show any improvement over medical treatment for quality of life and pain assessments (secondary end-points).

However, as in all trials this one has limitations, perhaps excluding those patients who have large meniscal ('bucket handle') tears, in whom arthroscopic surgery is considered an effective option, biased the results towards medical intervention.

Perhaps the answer is for rheumatologists to judge each case on its individual merits and surgery be proposed after careful consideration of the particular individual rather than as a routine practice for all.

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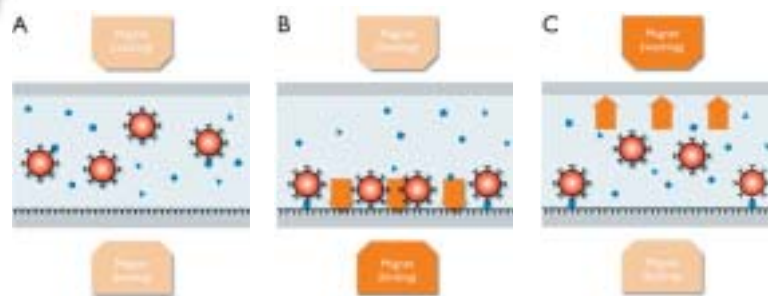
Changing the way we live

Marcel van Kasteel MBA, is VP of Philips and CEO of Handheld Immunoassays, a Philips Incubator venture in Eindhoven, the Netherlands, which recently announced that, by the end of next year, the first device to test for drug abuse will be marketed that will make on the spot testing simple and quick for use by the police. *Daniela Zimmermann* asked him about the development and what makes it different from testing kits that are already available



Easy-to-use hand held immunoassays

The Magnetech technology is based on a cartridge, with built-in analyser and software. A drop of blood (or saliva) is put into the cartridge, filtered, and then passes through different areas that hold tiny amounts of different reagents. 'It's basically a test strip,' Marcel van Kasteel explained. 'Next, the cartridge is to be placed into the analyser, where the real reaction takes place. I think the key message is the potential this technology offers – ease of use, so that non-trained people could run it; speed, so you could get results in a couple of minutes; this opens the possibility for multi-tests with the same cartridge, also important for certain viral diseases when you'd like a combination of certain assays.'




The incubator venture at which he works is one of several ventures set up by Philips to develop new and very different technologies in fields beyond its existing businesses, so that it can create new businesses.

The first partnership for Handheld Immunoassays is with the UK all-in-one drug testing firm Concateno. Under development is the first application of a new saliva-based drugs abuse product. 'A few years ago, Philips Research started a magnetic biosensor research project, and this led to our group being set up to focus on developing it for handheld immunoassay platforms. Think about glucose testing at point of care, where you have a finger-prick of blood and test for glucose; with our device, sensitivity goes up to 600 million times more than a glucose measurement. So, the possibility is that, with this technology, you could measure all kinds of different proteins – in home settings as well as in ambulances, at hospital admissions departments and in intensive care. It's lab testing outside the central lab.'

'This is not specifically Philips' line of business, so we launched Magnetech Technology to take Philips into the world of point-of-care (POC) diagnostics. We are not the first to do this, but we are convinced we have something different in POC testing devices, because with this technology you only need a finger-prick of blood. We are looking for a solution within two minutes, and one offering ease of use, with no mixing of reagents or adding reagents, so that an untrained person could do it. At the moment, a heart attack patient is brought to hospital and monitored, and a blood sample is sent to the central lab. A very well-organized laboratory can send results back in 30-60 minutes – but the standard is about 60 minutes – and the patient is still lying there. Suppose you have a technology that can give results in two minutes, in an ambulance or admissions department. You could decide on the right treatment even before the patient is admitted.'


The elderly with chronic diseases could also benefit from this type of technology, he pointed out. They would not need to visit a clinic for a blood test and results would be ready immediately, thus two visits would become unnecessary. 'In the future, a patient could use this technology at home; take a finger-prick of blood, send the information over the Web or via a television (TV). Of course, it all depends on their age. Philips' research shows that elderly people don't like computers too much; they prefer friends. So Philips has a lot of home solutions, such as TV systems through which data can be transferred to the doctor, who looks at it and sends a recommendation to the patient, for example: *You're okay, go on with your medication, or Come continued on page 16*

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Fetal Monitor and Ultrasonic Pocket Doppler have received FDA 510(K) Clearance.



EUROPEAN HOSPITAL Vol 17 Issue 6/08

15

The overall quality of laboratory operations has traditionally been evaluated using a combination of three variables: analytical quality, timeliness (turnaround time) and operational efficiency.

One hospital that has succeeded on all three measures simultaneously is St. Mary's Hospital Centre (SMHC), a 414 acute-care-bed, McGill-affiliated teaching hospital located in Montreal, Quebec, Canada.

In 1998, SMHC acquired a pre-analytical automation system from Beckman Coulter for its core laboratory. Over the next five years, as the hospital's sample volume continued to rise, the lab's pre-analytical system was gradually upgraded, finally to become, by the end of 2003, a Total Lab Automation (TLA) system, under the direction of Ralph Dadoun, PhD, MBA, Vice-President of Corporate and Support Services.

The results of this endeavour proved to be profound – and continue to deliver prominent benefits today. Not only did the laboratory witness improved cost efficiency and quality of services, it also achieved a lower risk of human errors. Benefits include:

Higher Quality Patient Care – SMHC's pre-analytical automation system improved the lab's TAT (from the lab's receipt of the specimen to the validation of the result) by more than 50%, (90 percent of results are delivered in under 30 minutes). More importantly, the automation system drastically reduced the variability of results, which improved reliability and physician satisfaction.

By reducing the number of manipulations by more than 75 percent, robotic automation drastically reduced the number of errors and enabled the lab to catch errors that were not previously identified.

Increased Productivity and Cost Efficiency
SMHC's overall productivity – the number of reportable results per hour worked – improved by 106% and was achieved during a 48% increase in volume and a 27% decrease in worked hours (16 FTEs).



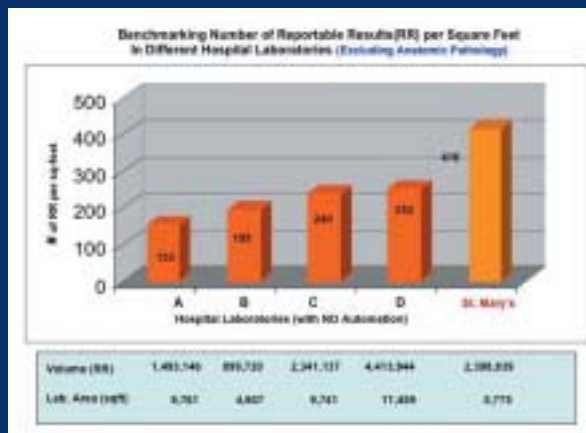
Evolution of volume, labour and productivity before and after automation

Fewer Manual Manipulations

Automation in the laboratory, as in any other field, drastically reduces the number of manual steps needed to obtain a test result, and therefore reduces labour. At SMHC, the number of manipulations per sample dropped from 12 to two. On a typical day this represents a reduction in thousands of manual steps. Furthermore, fewer manual manipulations equates to a lower risk of exposure to blood-borne pathogens, thus increasing staff safety.

Better Use of Lab Space

By implementing a core lab, coupled with automation, the lab reduced its lab space while doubling its volume of activity. Lab space reduction: from 7,720 sq. ft. to 5,775 sq. ft. Volume of reportable results (RR): up from 1,241,000 to 2,398,339. This brought the number of RR/sq. ft. from 161 to 416.

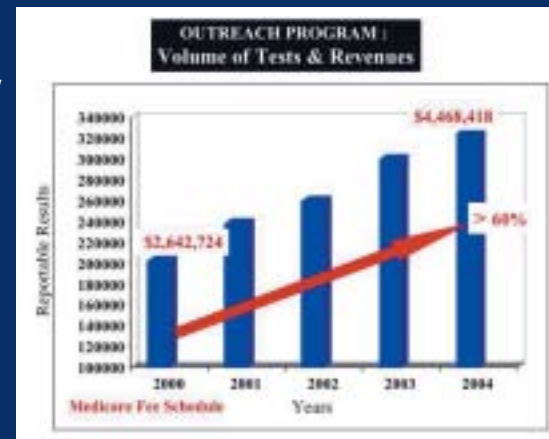


Implementing a core lab with an automation system enabled SMHC to reduce its space while doubling its volume

St Mary's Hospital Centre

'The Most Productive and Cost Efficient Core Laboratory in Quebec'

Increased Revenues and Profits – Automation coupled with the Laboratory Information System (LIS) enabled the SMHC lab to enjoy a 60 percent growth in its outreach testing program and a substantial increase in profits.



Evolution of volume, labour and productivity before and after automation

Quick Return on Investment

SMHC achieved a pay-back period within three years. The NPV and IRR were \$1.54M and 35% (respectively) over six years, with an estimated useful life of the automation system of more than 10 years.

Due to the stunning improvements evidenced at SMHC, the laboratory has received numerous awards, including one from the Canada's Provincial Ministry of Health and Social Services, which named SMHC the *Most Productive and Cost Efficient Core Laboratory in Quebec*. Today, the lab continues to be a positive reference for global laboratories seeking improvements through automation.

Source: Beckman Coulter

continued from page 15
to the hospital urgently. That's the vision for our POC solutions. Of course, many patients want to actually visit their doctors; it's a social thing.'

A lot has been progressed about home monitoring, particularly in the USA, he added. There are daily blood pressure and weight checks, and TV communication between doctor and patient, even on a daily basis. But with POC testing there can be a shorter period between communication and even more of it with a doctor. And, he pointed out, if case results are bad 'then, of course, the doctor can still contact a patient directly – but overall he is saving time.' Referring to the group research on the handling of certain chronic diseases, he added: 'With some, if it's so bad that you have to stay home, your social life is not there any more. But, imagine that you could be tested weekly and this could predict flare-ups of certain diseases and your medication could be adjusted, and you could start having a normal social life again. It's a big benefit for patients as well. That's a big benefit.'

Philips is currently manufacturing the devices – cartridge, analyser and software. The firm is also in discussion with various pharmaceutical companies for the assay development. In the future, he pointed out; they may be involved with diagnostics companies with novel biomarkers.

Saliva is the first platform. The first product – for use by the police at roadsides, to test for drug abuse, is expected to be launched by the end of 2009. 'There's a big push for implementation in the Netherlands, for example, but they're waiting for the right technologies. Already there's some technology, but the police have to put the reagents in, mix it, and it's too complicated. With our solution a police officer will be able to collect a little saliva with a swab, and do that through the window when the driver is still in the car. After he has put the sample in the analyser, in 60 seconds he will get the result. If it's positive, he can take the driver to another place to draw blood and do the next analysis. So, next to the current alcohol testing, this could be an ideal situation to start doing roadside testing for drug abuse. It's already happening in the UK and Australia, and a lot of countries, including Germany, Holland, Italy and France, would like to implement this kind of device.'

'We are also developing a blood solution to test for different proteins on the same technology, and we're looking for cooperation with a lot of pharma and in vitro diagnostics (IVD) companies to see which type of markers they see for this. We're interested in three or four major areas: oncology, cardiology, women's health and infectious diseases. Why? Because then we can combine it with the other Philips solutions, to integrate the total solutions. We can integrate all the information from in vivo and in vitro, and have the right solutions. Very briefly, that's what we're doing. Again, it's a new technology, in which I think we have a great advantage. We have our first partner, Concateno, for drugs of abuse, and are actively looking for partners in pharma as well as IVD companies. In my previous job I was a Vice-President of Europe, Middle East, and Africa at Beckman Coulter, so we are focusing a lot on the IVD companies.'

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The Eppendorf Young Investigator Award 2008

The 14th Eppendorf Young Investigator Award 2008, worth €15,000, was presented at MEDICA in November.

The winner, **Dr Simon Boulton** of the DNA Damage Response Laboratory, London Research Institute (UK), received the award for his work describing a novel protein that impacts human genome stability and cancer. By combining his knowledge of *Caenorhabditis elegans* (a nematode) and yeast DNA repair systems, he devised a screening strategy that led to the discovery of a novel helicase in *C. elegans*, which has many of the properties of the yeast helicase. He then identified the human counterpart (RTEL-1) and could demonstrate that this protein functions as an anti-recom-

binase. Dr Boulton managed to identify this anti-recombinase activity, which is important for maintaining genome stability in animals. In RTEL-1 deficient mice, activity deregulation of homologous recombination is the probable cause of the loss of genome integrity. Conversely, over-expression of RTEL-1 also causes cancer through promiscuous disassembly of the recombination intermediates involved in repair and leading to mutations that cause cancerous growth. A prospective therapeutic drug is already being tested clinically.

During his acceptance speech at a gala dinner attended by scientists and those from related industries, Dr Boulton mentioned his PhD supervisor Professor Stephen Jackson, from the

Wellcome/CRC Institute, Cambridge (UK), who received the first Eppendorf Young Investigator's Award in 1995. Other speakers were **Dr Michael Schroeder** of Eppendorf, **Dr Nick Campbell** of Nature publishing group, **Professor Kai Simons**, Director of the Max-Planck-Institute of Molecular Cell Biology and Genetics in Dresden, and **Professor Hermann Gaub** from Munich.

Launched in 1995 to coincide with Eppendorf's 50th anniversary, the prize honours outstanding molecular biology-based, life sciences research work in Europe, sponsoring young European scientists (up to 35 years old). To raise the award's profile further, a partnership with the publishing group Nature



From left: Günter Bechtler, Kai Simons, award winner Simon Boulton, Dieter Häussinger, Reinhard Jahn, Michael Schroeder

was forged. The group publicises the winner's work via a blog and podcasts to an ever growing internet community of young research scientists representing the future of biomedical research.

Eppendorf AG has strong links with this research field and its founders want the award to reflect their commitment to advancing research in

healthcare. An independent scientific committee selects the annual winners, each receiving a personal gift of €15,000.

Award details:

www.eppendorf.com/award

2009 award applications:

<http://www.nature.com/nature/awards/eppendorf>



Advances in autoimmune disease diagnostics

European revenues could reach \$722 million in 2015

The European market for autoimmune disease diagnostics has demonstrated sustained growth due to advances in detection technology and automation, according to a new analysis from Frost & Sullivan (F&S) (<http://www.drugdiscovery.frost.com>). 'Active consolidation is occurring in the market, promoting technology and product integration. However, the lack of clarity with regard to reimbursement policies for autoimmune diagnostic tests persists, posing a challenge to market expansion,' F&S reports. 'The market earned revenues of \$513.5 million in 2008 and estimates this to reach \$722.0 million in 2015.'

F&S research analyst Suraj Ramanathan adds: 'The development of novel biomarker panels has accelerated the diagnosis of many autoimmune complications. Exhaustive R&D by many universities and research organisations has yielded promising results in the use of multiple biomarkers for autoimmune disease diagnosis.'

Patient screening with multiple biomarkers associated with several autoimmune diseases has been seen to improve diagnostic accuracy, bringing advantages to physicians. Among the public, however, there is a general lack of awareness about autoimmune diseases, which presents a challenge to this market's growth, F&S explains. 'Such low levels of awareness may derive from the rarity of many autoimmune complications among the general population,' says Suraj Ramanathan. 'Many patients in Europe, unable to find a proper treatment for their condition, are consequently switching to traditional methods, such as oriental medicine. In conjunction with medical research organisations and hospitals, manufacturers should establish awareness programmes and interactive workshops for the public,' he advises. 'These could highlight the prevalence of autoimmune diseases, while encouraging physicians to interact with the public on the symptoms, aetiology and progression of autoimmune diseases.'

To receive a virtual brochure on this market in Europe, e-mail Patrick Cairns, giving your full name and title, company name, phone number, company e-mail address, website, city, state and country (pcairns_pr@frost.com).

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Wipes meet international regulations

Pal International, which has manufactured a wide range of hygiene products and protective clothing for over three decades and currently supplies products to over 70 countries, has launched a new range of healthcare wipes that are compliant with the Medical Devices Directive (93/42/EEC), international quality standard ISO13485:2003 and carry the CE mark.

The wipes provide disinfection of external non-porous surfaces of medical equipment and devices prior to sterilisation in healthcare environments such as hospitals, dental surgeries and care homes. 'Effective against 99.9% of bacteria, as well as viruses and fungi, micro-organisms such as Clostridium difficile, MRSA, and the H1N1 Influenza virus are destroyed, making Pal disinfectant wipes ideal in preventing cross-contamination and limiting hospital acquired infections,' the firm reports. 'Pal also offer a 70% alcohol and Chlorhexidine disinfectant wipes as part of the healthcare wipes range, all with proven efficacy

At MEDICA 2008, Maquet Critical Care introduced two new MCare Services components, *MCare Portal* and *MCare Remote Services*, to enhance the current Maquet MCare worldwide services and provide more flexibility.

As a customised platform for hospitals, MCare Portal provides access to installed base information, the latest news, training material, extensive product information, and an interface to e-learning, providing a high standard of training and development for medical staff, Maquet pointed out. 'It offers access to all documentation needed throughout the lifecycle of the product such as user and service documentation, training schedules and recorded symposia as well as the installed base informa-

NEW

MCare Portal and MCare Remote Services streamline service, uptime and education



tion. Furthermore, MCare Portal provides an interface to e-learning, available 24/7, which ensures competence building. It also provides an interface to MCare Remote Services.'

MCare Remote Services offers quick response time and maximised uptime through a direct link to Maquet's technicians, enabling them to start troubleshooting immediately. MCare Remote Services works through the existing network's security tools. SERVO-i and SERVO-s ventilators are using a direct path to communicate with

MCare Remote Services. No prior IT configuration is needed.

Using this solution, the firm's experts can analyse logs from the unit and more quickly solve a problem remotely. 'Maquet Critical Care is excited to be able to offer a solution that is environmentally friendly by cutting the need for travel,' Dan Rydberg, Managing Director of Maquet Critical Care pointed out. 'Not only does MCare Remote Services provide environmental benefits but it also increases the uptime for units in the hospitals, leaving medical staff to focus on its patients.'

Details: www.maquet.com

against numerous bacteria, viruses and micro-organisms. Available in a variety of packaging, the single use wipes deliver a correct dose of pre-mixed disinfectant solution to the surface and require no rinsing.'

The firm's team of technicians and microbiologists develop standard and bespoke products in its in-house laboratories. Pal's range is then independently tested by approved organisations, such as Blu Scientific (Glasgow Caledonian University), City Hospital Birmingham and Campden & Chorleywood Food Research Association.

Details: www.palinternational.com

Want to open a care facility?

Germany – Operators and funding bodies of care facilities, politicians and representatives from nursing care insurance companies and their advisory body the Medical Service of the Central Organisation for Medical Insurers (MDS), as well as investors, gathered in November for the two-day Euroforum Conference. With a focus on the future of care facilities, it became clear that current structures are no longer line up with patients' demands, and that new concepts – particularly structural – are needed.

Determining trends in demand

Anyone wishing to develop or take over a care facility should initially check the market to avoid bad investment:

- What is the demand level of future residents? What is the local demographic structure?
- Is this market already saturated?
- What, depending on the population structure, should be offered for future residents to accept the facility?
- Is access to public transport and nearby shops good enough for their needs?
- What do future residents demand from a care facility, so that they find it an acceptable residence? The (often enforced) move to a retirement home/care facility is a significant step in people's lives; it often happens too quickly, even if anticipated; it entails a reduction in previous living space, as well as loss of autonomy.

What services are required?

Categories expected by future residents:

- Assisted Living, allowing a seamless, individually customised transition to the next categories...
- In-patient geriatric care
- Care for mentally and physically disabled residents
- Long-term care
- Hospice care if required

They must also be able to afford these.

What does 'trends in demand' mean?

To avoid over capacities, a future care facility must orient itself around the respective birth rates from about 70 years ago, i.e. they must consider the lowered birth rates after the economic crisis of 1929 and during World War II. Additionally, after WWII, due to the late return of war prisoners, the birth rate only began to rise again in about 1956.

Moreover, due to improved care structures in out-patient services, people who need care can remain in

their own homes for longer. The average time spent in care facilities has dropped from 280 days to 180 days. Hospice spaces are in greater demand. The future, calculated needs up to 2030 is expected to be around 200,000 beds, which equates with 2,000 new facilities if one looks at a usage/life expectancy of buildings of about 25 years.

What should be done?

Care facilities with a future should orientate around the concrete needs of current or future target groups. They should offer all service categories. However, they should still be manageable and their size should not deter future residents. Rural areas in particular have many small facilities with about 30-50 beds, which may be pleasant for residents but not economically viable. One possibility may be 'satellite models', i.e. having a central office that deals with administration for all facilities belonging to the organisation in a 50km radius. The facilities are relatively small (50-100 beds) and can – through franchising, for example – be let out to different operators. Administration, apart from purely administrative tasks, could also include management of catering, bed and laundry. Personnel costs would be borne by the funding body.

The residents have apartments with a small kitchen and a washing machine, to retain their autonomy as far as and long as possible. When needing nursing and out-patient care, the cooperation of partners of the funding body is involved. Nowadays, carers are so well trained that they make it possible for those living alone and needing terminal care to remain in their own homes, helped by the social services, relatives or voluntary carers, although these obviously are not used to replace the professional carers.

Coping with temporary over or under capacity

To meet demand, smaller facilities can quickly be converted into, for example, hospices. They do not need to be closed. Existing structures could also be utilised for completely new target groups; this is something that will result from a demand analysis.

Summary – Internationally, the care market is subject to constant changes, including socio-economic. If their facilities are to have a future, operators, funding authorities and investors must recognise a change at an early stage, and react to it adequately.

Assistive devices for illness and care

How do the products reach the patients? By Heidi Heinhold

Questions arose at MEDICA 2008 about which assistive/care devices reach patients, what is their quality and who pays for them.

Legal definitions

• Assistive devices are actual medical services, such as prostheses, bandages, walking frames, suction apparatus, mattresses etc., i.e. all services and items that counteract the physical or mental functional deficits of patients, ensuring ongoing treatment success or the prevention of disability. These devices listed in the assistive devices index and must be prescribed by a doctor. The costs are either fully or partially borne by medical insurers.

• Care devices are tangible means or technical aids that ease care, relieve the medical conditions of those who need care and help to facilitate an independent lifestyle. The costs are borne by nursing care insurers up to a certain limit. Care devices are listed in the care devices index.

How products reach patients

a) A patient visits the doctor, who diagnoses the illness and need for an assistive or care device. He issues a special prescription.

b) The patient contacts his/her medical insurer which names its 'preferred suppliers', which have contracted to supply devices with favourable costs for the insurer.

c) From this list, a patient chooses the closest supplier to where s/he lives (in some cases, up to 50 km distance is acceptable, according to insurers). The patient receives an estimate which must then be authorised by the insurer, and it will then be prepared to cover the costs, less the amount the patient legally must pay.

Who covers the costs?

Insurers – Statutory insurance based on the SGB (Social Security Code) V, statutory nursing care insurance (SGB XI), statutory accident insurance (SGB VII); private insurance

Statutory medical insurance and nursing care insurance are statutory insurances for all workers and employees with a certain, top level of earnings, as well as pensioners, recipients of social security and the unemployed. Employers and employees usually share the contributions 50:50, the self-employed pay for both shares. The cost of this insurance for pensioners, social security recipients and the unemployed is covered by the respective statutory pension insurers and authorities.

From a certain level of income upwards it is possible to take out private insurance. This also applies for the self-employed and civil servants. With private insurance, the insured person pays for services up front and, depending on the contract, is either reimbursed the full costs or a partial amount.

The patient – Because insurers only cover costs up to a certain limit, the patient must bear a certain share of costs determined by law. If he wants a certain product from a specific supplier he must also bear any additional costs this may involve. This contribution requirement also applies to care devices.

Congress: The German Society for Wound Healing and Wound Care (e.V.)

25-27 June 2009
Kassel, Germany

Congress main topics

- Prevention of vascular disease and lymphoedema
- Importance of differential diagnostics for compression therapy
- Patient education and self-care abilities for people receiving compression and lymphatic drainage therapy (venous, lymphatic, traumatic)
- Particular aspects of podological treatment for vascular disease and/or lymphoedema
- Particular aspects of physiotherapy for vascular disease and/or lymphoedema
- Evidence/consensus and benefit evaluation of compression and lymphatic drainage therapy
- The programme, including terms and conditions of participation, is at www.wunde-wissen.de
- Abstracts based on these topics: guidelines and quality standards, fasciation lymphology, compression and wound healing, must be submitted before or by **15 January** at www.wunde-wissen.de

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NUTRITION AND HEALTH

XXL Babies: Foetal macrosomia is on the increase

Precise weight monitoring is essential

Increasingly in the industrialised nations every tenth newborn suffers from foetal macrosomia. In Germany, for example, between 8-10% of newborns weigh up to 4,000g. A similar development has been observed in other countries. In early 2008, a newborn baby boy in Russia weighed 6.1kg, with a body length of 63cm.

The main reasons for these bigger babies are overweight Type II diabetic mothers or mothers who develop diabetes during pregnancy, especially if they are older. The foetus receives increased amounts of blood sugar via the mother and reacts to this with an increased production of insulin, which is a growth hormone. However, as the placenta is not permeable for insulin the hormone cannot exit from the foetus and converts the blood sugar into a fat deposit. This abnormal weight gain can then cause birth problems: a natural birth is often not possible and Caesarean section the only option.

Although many of these neonates are perfectly healthy, foetal macrosomia can still lead to later health problems. Despite its size, the development of the child's individual organs can be 'immature'. Thus an exact determination of birth weight is vital, to ascertain whether or not a newborn belongs to the risk group.

The seca range of baby scales delivers precise results. With a capacity of 20kg and a large weighing tray, these scales are not pushed to their limits even when it comes to weighing extra large (XXL) babies.

Macrosomia babies also should remain under medical supervision after birth, because they have a higher risk of developing diabetes Type II. Moreover, they often develop into overweight children and adults.

PATIENT CARE

Meeting the needs of religious faiths and different cultures

Increasing migrations of people of various ethnic backgrounds and faiths means their numbers among hospital patients is also rising. In the last issue of *European Hospital* (vol. 17, 5/08) we highlighted efforts to accommodate the religious needs of patients in various EU countries. Clearly, these important and often confusing issues are also affecting hospitals in many others. We continue with reports from correspondents and contributors on how their countries approach and tackle this trend to enhance medical care



THE CZECH REPUBLIC

Our correspondent **Rostislav Kuklik** (above) reports that the physician-to-patient relationship is always very specific when it comes to different cultures or ethnics. 'Worldwide, local doctors who care for patients from other than a major cultural background must be prepared to handle difficult situations, and solve truly unexpected issues. That's also true for Czech physicians, who may be confronted with patients coming basically from two different groups: visitors from abroad or local minorities, such as gypsies, the latter representing most of the potential patients from different cultural backgrounds, because 300,000 of them live in this country. No exact data exists on this, because there is huge difference between the number of people actively endorsing their gypsy origin and the number who claim gypsy as their primary language (mother tongue). Estimates of their real count vary between 200,000 and half a million individuals.

In terms of foreigners, physicians don't usually face many problems during their care, because they all come here on purpose – for business, tourism, or as patients seeking medical procedures that are cheaper than in their own countries, or for similar reasons – and it is highly likely that they come from a good social environment, at least middle class. In any case, all doctors need to solve their healthcare problems, deal with sometimes demanding communication, and satisfy these patients, is a good command of English, empathy, and the usual professional attitude towards a patient. When it comes to local gypsy patients, communication may become very tricky in the blink of an eye. In this regard, their behaviour patterns are very similar to other Indo-European nations, which include their very strong family relations and loud emotional expressions and gestures. However, any physician with average psychological skills and much patience can relatively easily handle large families (around 10 members coming to visit is normal). A real problem emerges when a gypsy patient is hospitalised and must pay for the treatment. This is a very sensitive issue, because many are either long-term unemployed (lifetime unemployment is not an exception in this ethnic group) or currently without

an income. According to United Nations research in 2003, about 70% of gypsies in the CEE region live solely on state unemployment benefits and child allowances. In truth, gypsy patients praise physicians as people with almost extraordinary powers, but saving money comes first, so lengthy talks about how much to pay accompanied by a little shouting is quite usual.

It must therefore be remembered that the gypsy patient requires specific professional attitude with regard to the specificity of their thinking and social behaviour:

- Health and related problems are very sensitive topics – the entire family becomes involved, and the patient draws a lot of family attention onto himself.
- They are very reserved in terms of gaining their trust – a physician must present considerable strength to prove to them that he is trustworthy.
- Reasonable judgment must be used whenever it comes to clinical signs of the disease – the gypsy patient hardly ever straightforwardly says what his or her real problems are, tending to either under or over estimate their symptoms.
- Due a different psychology, physician needs to be careful in terms of differently expressed disease subjective symptoms (pain, etc.).

All in all, simple communication patterns, considerable empathy, awareness of various social specifics, and heedful, tactful behaviour are more than recommended for anyone who deals with gypsy patients. However, many sensitive questions remain and one surpasses all others: Is it really sensible that physicians are forced by so-called socially obnoxious circumstances to learn how to behave in front of similar patients? Wouldn't it be far better if patients coming from minority populations learn how to change their behaviour, especially when seeking medical help from real professionals with an academic education?



AUSTRIA

Anna Köck, Dipl. Rel-Päd (FH), Catholic Hospital Pastor at Graz University Hospital, Head of the Centre for Graz Hospital Staff and Head of the *Christians and Muslims in the Hospital* symposium, discusses the legal position of Islam in Austria and examines the question of cooperation or conflict between Christians and

Muslims in the hospital.

A young Islamic woman in a surgical ward pulls a blanket up to her nose and watches a nurse approaching to take her blood pressure. The patient understands hardly any German and her environs feel alien. Being an in-patient, and surgery, tend to make any one feel helpless and powerless. For this patient, the addition of an anti-Islamic remark had unnecessarily poisoned the atmosphere. Although the staff try to build her trust, it proves difficult.

She has just given birth. Her large family arrives. After the changeover to the night shift, the staff is puzzled by noises and smells from the common room. The family has spread out food and begun to cook.

These are just two examples of difficulties that can arise.

Austrian law and Islam

Islam in Austria has the same rights and duties as the Christian churches, going back to the Law on Islam, passed in 1912 by Emperor Franz Joseph. For these rights to be followed, the existence of a legal person as a counterpart to the state was required. Since 1979, this has been the Islamic community, which means that Muslims in this country have a legal status unique in Europe. Islam has the freedom of speech, gatherings and press. There is no impediment to practicing Islam. There is Islamic religious education in state schools based on a state-devised curriculum as well as the respective teacher training. Muslim females can wear headscarves at Austrian universities. The complexity of problems surrounding Islamic schools in Germany is unheard of in Austria. In return, the Law on Islam commits Muslims to recognise the Austrian constitution, and the Islamic community abides by this. A Muslim woman who insisted that the law on religious freedom meant she could wear a yashmak (veil) in court was forbidden by law to do so. The Islamic religious community stated that Islam does not call for the wearing of a yashmak and that a headscarf suffices for a woman to ensure adherence to religious duties.

Legal situations can arise that are not compatible with everyone's perception of Islam. Individual Muslims must accept this because, in return, they are granted religious freedom, but vice versa they do not have the right to impose their views on others.

How Muslims perceive Europeans/Christians

Many Muslims are migrants from traditional, Islamic countries where religion is an important part of everyday public life. Religion is something visible, not just an inward matter. In Austria they join a society where religion is more of a private matter, a personal choice, respected but not playing an essential part in everyday public life and not so publicly displayed.

Europe – and therefore Austria – is



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- When comparing religions it is important to compare like for like, i.e. theory with theory, practice with practice. Too often, we tend to compare 'good' theories of our own religion with a failed practice of another – a mistake common in Christianity as well as Islam.
- The Second Vatican Council discusses Islam with respect and encourages dialogue. Catholic Teaching demands inter-religious dialogue with Islam.
- Where Muslims are involved, we are too quick to attribute conflicts with others to religion, though may have had problems with that person whether Muslim or not. In reality, an identity is always multilayered; it consists not only of religious but also social and cultural aspects.

Graz University Hospital

An Islamic prayer room was opened many years ago in Graz University Hospital. Common rooms were designed to ensure patients could meet visitors without undue disturbance to other patients. However, the biggest problem in daily hospital life is language – not to do with Islam but with migration, further complicated when different cultural and religious views converge.

Communication is critical in medical care. In the obstetrics department, for example, women from 83 nations, speaking 37 different languages, are treated.

Initiatives of the Islamic organisations

The intercultural Women's Association Dschanuub runs the 'Rahma' project. Organised by migrants and Muslims, members of Rahma want migrants to feel self-confident in public and able to look after their own interests. The service includes providing someone who speaks in a patient's mother tongue, as well as German, to accompany women for medical appointments or hospital visits – a service that also eases work for the staff. They not only translate, but keep in touch during an in-patient's stay, and mediate with staff when communication problems arise. If required, they also can provide Quran recitation, help with terminal care or the ritual washing of the corpse.

Another project run by this organisation was called 'Marhama'. Sponsored by the EU, it resulted in the development of the 'Female Muslims in our Hospitals' booklet (download at http://www.dschanuub.at/homepage_marhama/links.htm).

During a study day, the hospital staff was very interested in telephone numbers, to contact people who can mediate in difficult situations with female Muslim patients. It takes a long time and calls for resilience and commitment to spread this knowledge across all wards in such highly complex institutions. The committed Muslims tend to interpret these difficulties as prejudice against their religion. This is definitely not the case. Other, external organisations, and even departments within the hospital, have problems with this.

Complex Islam

As in Christianity, there are many different views and interpretations of religiously motivated actions amongst Muslims. Whilst some Muslim men will shake women's hands in greeting, others would never do this. Whilst some accept they will be treated by medics of the opposite sex, others cannot conceive of it and would rather go without necessary treatment – despite the Islam commands that followers look after their health and seek treatment.

Religiously motivated behaviour is often strongly characterised by culturally dependent interpretations of Islam in different countries of origin. This results in lifestyle differences not specific to Islam.

Visiting hours – progress or regression?

Even after intensive discussion many questions remain unanswered. What appears to be easy and logical in theory is not quite so in practice. Some Austrian hospitals have reverted to the re-introduction and enforcement of strict visiting hours. Not so in Graz. Some consider strict visiting hours as a quality criterion; others view this as a regression to the 1950s.

Recognising steps

I am aware of the enormous dedication and readiness of the staff to meet specific needs not only of Islamic but all patients. At the same time, there is repeated disappointment because these efforts are apparently (or actually, which I'm not in a position to judge for sure) neither appreciated nor recognised by Muslim patients, and this leaves people wondering 'What else do we have to do to please them? They should be meeting us halfway.' The big, unresolved issues of migrants' integration are therefore reflected in the hospital.

Developing common rules

Not all demands and requests justified with reasons of religion are actually based on religion. Rude behaviour should not be tolerated, independent of the individual and his or her religion. Considerate behaviour is expected of everybody, particularly in hospital.

I can sense a certain amount of hesitancy regarding boundary setting, because no one wants to be accused of racism – historically understandable, but actually nothing to do with this issue. Of course, this does not answer the question of where unacceptable behaviour starts. I am convinced that this requires a discussion with the objective to develop common rules, which would be a relief for everyone.

Muslim needs are the needs of everyone

Making provisions for the particular needs of Muslims should be seen in the broader context of more focus on the patient, which applies to all patients. Non-Muslims also have certain preferences or intolerances when it comes to food, they have different inhibitions, some would also prefer examination by a person of the same sex, etc. In this respect, all patients could ultimately benefit from the fact that hospitals are becoming more open to trans-cultural issues.

Ulrike Drexler-Zack, the Public Relations Officer for the Catholic Hospital Pastor at Graz University Hospital, reports on practical steps developed to meet the challenges.

Sprechen Sie Deutsch?' or 'Do you speak...?

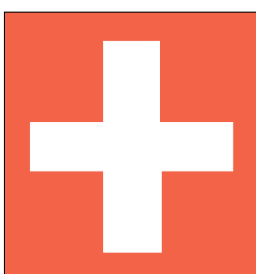
The proportion of foreign-language patients in the Department for Gynaecology and Obstetrics at the University Hospital has increased continuously since 2005. Data for 2007 show that almost a fifth of out-patients and nearly 25% of in-patients did not speak German. In an extreme case, 22 of a ward's 26 patients spoke a foreign language.

According to **Rita Kober**, of the nursing directorate, initially interpreters were supplied with the support of the hospital management. Some

planning difficulties arose because some patients did not attend appointments whilst others had long waiting times for unscheduled appointments. Nowadays patients are asked to bring someone to help with translation if necessary.

KOMA (communication materials), a pilot project set up with the help of the departments for organisational development and quality management and helped by Islamic religious community, developed and published the most urgent communication materials – including house rules – in eight languages. Apart from files and folders the project developed word-sentence-lists and pictograms (for the illiterate). It transpired that, although these materials are helpful, in most cases they cannot entirely replace an interpreter.

Apart from language barriers most potential for conflict arises from cultural differences (as described in EH issue 4, and below by Dr Weissen). However, there are one or two additional points: prayers are carried out not only by patients but also their visitors, which can cause of problems, as can rivalries between different groups in the community. These situations are sometimes perceived by the indigenous patients with incomprehension and viewed as a burden.



SWITZERLAND

From Switzerland, **Dr André Weissen** (left) reports that there are no consistent hospital guidelines regarding patients' faiths. 'There are neither any directives nor binding rules as to how a hospital is

to treat Muslim patients, for example. Nevertheless, everybody everywhere is trying their utmost to accommodate their specific needs. Nurses are receiving training as to what type of problems may occur and what the possible solutions should be. A lot of reference is being made to a small publication on this topic. Published in 2003, this was not meant to be a handbook or set of guidelines, but was actually the result of a project by five trainee nurses at the nursing school at the St Clara Hospital in Basle. However, it is now considered to be almost a benchmark on this subject. The publication can be found (German only) at: http://www.pflegeschule-clara.ch/projektarbeiten/PSC_Mu_imSpital.pdf.

As reported in our previous articles on this subject, Dr Weissen points out significant considerations. 'A Muslim views illness not as punishment but as a test, created, as everything else, by God. There is a cure for each illness, but God alone is the healing power. A Muslim is required by his faith to raise the power and patience to be healed as quickly as possible. Relatives are required to support the patient in this test as best and intensively as possible.'

'Mixing genders? Within the Muslim faith, dealing with unknown members of a different sex is usually limited to the strictly necessary. Muslims have a much more pronounced sense of shame than Western Europeans. This is the issue causing the most conflicts

within the hospital, which is why some principles should be adhered to as far as possible. The easiest thing would be for men only to be treated by men and women to be treated by women – meaning doctors as well as nurses. Certainly, exceptions are not viewed as sins, so examinations by doctors or nurses of the opposite sex are possible. However, it should be avoided whenever possible.

'If this is unavoidable, it is very important to ensure that the patient to be examined is not alone in a room with the doctor or nurse who will examine them. Particularly in the case of female patients it makes sense to ensure that a third person, of the female sex, is present during an examination, because it is a difficult issue for a female Muslim whose clothes represent mental and physical protection. Even with a female chaperone present, they find it difficult to remove their clothes in the presence of unknown males.'

'Diet? The Muslim faith forbids the consumption of foods considered to be unclean. This particularly includes alcohol and pork. A solution would be to offer kosher meat prepared according to Jewish guidelines. Muslims can consume dairy produce, eggs, fish, vegetables and fruit. Another option: a vegetarian diet, as long as this does not contravene a diet prescribed by the doctor. Another possibility is for relatives to supply food from outside the hospital.'

'Hospital visits: Muslim patients tend to receive many visitors. This is based on the religious duty of Muslims to look after someone who is ill, but is also simply something that is done. Relatives and friends visit, often with the children, and often bring food. Visits are particularly important if a patient is dying; according to Islamic rules, someone who is dying should never be alone. The dying person forgives those who may have done something to him in earlier times. Therefore, it is important to ensure that relatives are able to offer the patient this spiritual, terminal care in a separate room.'



GERMANY

A university course in Migrant Medicine

Dr Ahmet Akinci

Migrant medicine as a course for Migrant medical students? This is a unique concept in a country where it is currently only being offered at the Justus Liebig University in Giessen. Since 2004 trainee medical doctors have been able to spend a term learning about dealing with migrants and facing new types of problems with future patients. How does one deal, for instance, with a patient who doesn't speak a word of German?

Almost 10% of Germany's population is now of foreign origin, with Turks, Kurds and Arabs making up the largest group, followed by migrants from former Yugoslavia. For medical students spending time on hospital wards for the first time this means every tenth patient they face is different.

Giessen University Hospital has been tending migrants in their own languages for almost 20 years. The department responsible for treatment of out-patient migrants has access to an interpreter service offering 40 different languages.

'Because of our migrants' clinic we obviously also have many more foreign patients on the wards than other hospitals,' explained **Dr Ahmet Akinci**, consultant at the Medical Clinic II at Hanau City Hospital. 'We realised that out students have always been interested in finding out something about the specific diseases or psychological problems among this group of patients and also in better understanding their culture-specific behaviours, which is why we thought of offering the course *Migrant Medicine – Interdisciplinary Aspects of Medical Care for Patients with a Background of Migration*. Dr Akinci is a member of the *Migrant Medicine* working party at Giessen University and has no complaints about a lack of interest in his subject: 'So far, the seminars have always been full. However, we try to limit the groups to between 20 and 25 participants to create a relaxed atmosphere. Every term I take two or three patients to the lecture; of these, at least one doesn't speak a word of German. When I ask my students to find out what the problem is with this foreign language speaking patient they eventually understand this intercultural problem.'

The objective of the course is for the students to develop a certain intuition in dealing with foreign patients and to gain an overview of certain migrant-specific disease patterns. 'When a trainee doctor doesn't know that every third Arab over the age of 50 suffers from diabetes then, of course, he is surprised that every diabetes test from patients originating from this region is positive. These facts are commonly known, but are often not taught to students by university professors. Again and again, even I encounter cases at the migrant treatment department that I've never seen before – be it an unknown type of worm in the intestine of an Indian patient, which he has harboured for years, or a Turkish family of nine, all of whom want to be simultaneously tested for Hepatitis B in my cubicle. Of course I also discuss these types of cases with my students.'

'At the beginning of term I initially discuss the basic question: What does migration actually mean? What are the reasons for it? What is the current situation in Germany, i.e. which are the countries where most migrants originate and where do many of them tend to live?' In the next stage, the students – who, he points out, also come from very mixed ethnic backgrounds – are familiarised with ways of thinking and cultural differences among patients with a background of migration. 'Once a term we hold a joint film evening where we show productions that relate to migrant-specific problems. In the course, comprised of ten double-periods, we also have many guest lecturers from different fields who examine the topic from different angles. At the end, we ask the students to write a report about their personal encounters with migrants. Many visit areas that have a particularly high ratio of migrants for this purpose. Above all we want to teach them that cultural diversity can be an obstacle – but not one which cannot be overcome.'