EUROPEAN HOSPITAL

THE EUROPEAN FORUM FOR THOSE IN THE BUSINESS OF MAKING HEALTHCARE WORK

14-15 IT & Telemed
Reports from ITeG 2006. *Plus*: Countries adopt speech recognition systems

20 Wound management & hygiene
NEW - The Wound Infection Institute. *Plus* hygiene innovations

18 Radiology
Improving diagnoses: the 64-slice combined PET/VCT scanner

NEW

AUTOMATIC WASHING AND THERMAL DISINFECTION MACHINE BY SMEG-ITALY (EN15883)

E-mail: instruments@smeg.it – www.smeg-instruments.com

VOL 15 ISSUE 3/06 JUNE/JULY 2006

contents

News 1-5
Management 6
IT & Telemed 7-13
Speech processing 14-15
Oncology 16
Lab & Pharma 17
Radiology 18
Textiles 18
Wound management 19-20
Hygiene 21-23
Events 23

'Watch out for IVF identity fraud'

Ian Mason reports from the Czech Republic

Researchers to warn EU clinics of serious medico-legal implications

Hospitals and fertility clinics across Europe are to be warned that safeguards must be implemented to prevent impostors gaining access to IVF treatment. The move follows research showing that identity fraud is being used increasingly to gain access to IVF by people who would otherwise be denied it.

According to **Dr Luca Sabatini**, from the Centre for Reproductive Medicine at St. Bartholomew's Hospital, London, one in three clinics in the United Kingdom probably has experienced attempts to gain treatment fraudulently.

He told the conference of the *European Society of Human Reproduction and Embryology* (ESHRE) in Prague, Czech Republic, that a survey of 70 licensed fertility units, including both publicly funded and private clinics, showed that 37% had experienced or suspected cases of patient identity fraud. Overall, more than half felt that they did not have sufficient safeguards.

Dr. Irena Belohorská is a Member of the European Parliament, Brussels, Belgium. She is a Non-Attached Member and sits on the Environment, Public Health and Food Safety Committee

Identity fraud among patients has important medico-legal ramifications, Dr Sabatini explained: Our overwhelming feeling is that there are insufficient measures to protect the unit, the patient's legal rights, and most importantly the future welfare of the unborn child. Fraudulent behaviour may be fuelled by financial pressures, as the cost of treatment is high and public resources are limited. A patient may use a false identity in an attempt to have access to public

continued on page 2

3-month doctors strike partly over

Berlin, Germany – The three-month university hospital doctors' strike was nearing its end at the time of EH going to press. Dr Frank Ulrich Montgomery, Director of the medical union Marburger Bund (MB) and, for the Employers' Association of German States (TdL), the Minister of Finance for Lower Saxony, Hartmut Möllring, of the CDU (Christian Democratic Union), announced their agreement on 16 June.

The agreement equates to a compromise, which according to the Marburger Bund will increase in salaries by between 16-20%. The level of income for junior doctors is set to rise by around €5-600, corresponding to an increase of up to 18%. In addition, doctors are due to receive additional pay of 25% for working on public holidays and for being on-call.

These increases applied from 1 July. However, the unions did not manage to negotiate the extra pay of €100 a month for junior doctors, and the equalisation East and West German salaries for doctors.

The agreement applies to university hospitals – negotiations regarding an agreement for municipal hospitals continue.

DANUBE

A WORLD MARKET LEADER

Danube is a market leader in the laundry industry and is widely recognized as a major innovator and manufacturer of laundry equipment including BARRIER DESIGN WASHER EXTRACTORS specially designed for hospital laundries and for clean rooms.

Whenever a contamination free clean room environment is required (pharmaceutical, medical, micro-electronic, cosmetic, nuclear and food industries) DANUBE has a solution.

Our machines are built to avoid the flow of airborne particles and micro-organisms, all components and raw materials are with smooth finish, mechanical and thermal resistance, not prone to little cracks, air and water tight.

They resist corrosion and are not retaining particles and micro-organisms.

Medical
Barrier Washer-Extractors

DANUBE

BP 19 - F 41600 LAMOTTE BEUVRON France
Tél. : 33 (0) 2 54 88 05 76 • Fax : 33 (0) 2 54 96 89 04
WEB : www.danube-international.com

Liberal drugs policy works

Switzerland - Providing heroin addicts methadone or buprenorphine as a treatment for their addiction has led to a decline in the number of new heroin users in Zurich, according to a paper by Carlos Nordt and Rudolf Stohler from the Psychiatric University Hospital, Zurich, published in *The Lancet*.

The country implemented various policies to try to reduce harm to dependent heroin users, including needle-exchange services, low-threshold methadone programmes, and heroin-assisted treatments. However, some critics believe those policies could lead to a growing number of new drug users and lengthen the period of heroin addiction.

However, following analysis of data from over 7,250 patients in Zurich who had received substitution treatments with methadone or buprenorphine over a 13-year period from 1991, the researchers estimated trends in the number of new heroin users and found that the incidence of heroin use had dropped from 850 new users in 1990 to 150 in 2002.

Conversely, the researchers noted that, in the UK, Italy, and Australia, heroin use has continued to rise, and the cessation rate has been low - therefore the overall number of heroin dependents, whether in treatment or not, only declined by 4% per year.

Because the Swiss supported the policy on opiate dependence, the image of heroin use changed from being a rebellious act to being viewed as an illness that needs therapy, Dr Nordt suggested. Finally, the perception of heroin is that it is a 'loser's drug', so its attractiveness has faded for young people. 'Nevertheless,' he concluded, 'whether the drug policy had a positive effect on the number of new heroin users or not, our data could not confirm an increase of heroin incidence as expected by the critics of the liberal Swiss drug policy.'

STENTING: DYNAMIC GROWTH CONTINUES

Paris, France - The explosive growth in demand for drug eluting stents has shaped a market worth more than six billion euros annually. According to figures published at *EuroPCR*, the annual European Paris Course of Revascularisation, some 2.5 million percutaneous coronary interventions (PCIs) will be performed globally this year - and 75% of these procedures will employ drug eluting stents (DES) - remarkable statistics for a medical technology that is under five years old.

At the meeting, Boston Scientific Corporation announced that it had received indication extensions to the European CE mark for its Taxus Liberté paclitaxel-eluting coronary stent system for use in some of the most challenging coronary procedures, including re-stenotic lesions and total occlusions in patients with coronary artery disease. These three new indications account for more than 20% of all coronary interventions.

Boston Scientific also announced funding for a new EU medical training facility - The Institute for Therapy Advancement - that will open in Brussels, Belgium, in early 2007. The company has several new pipeline offerings including the platinum alloy *Taxus Barracuda* stent, which has narrower struts for greater conformability, and the *AST Petal* stent platform for use in bifurcated vessels. The latter is designed to expand into the side branch, permitting blood to flow into both branches of the bifurcation and providing support at the branch. *Report: Ian Mason*

continued from page 1

funding from which he or she would otherwise be precluded. Or there may be more personal reasons, such as a change of partner during treatment.'

If identity fraud is practised, litigation between the IVF provider and the deceived partner who discovers the different genetic origins of the child could result, he added.

Dr Sabatini's team intends to send the results of their research to clinics across Europe. In a year's time, they will carry out a further survey to assess whether changes in practice have occurred.

Professor Paul Devroey, Chairman of the European Society of Human Reproduction and Embryology commented: 'To protect clinics, patients and children against IVF identity fraud, ESHRE recommends that photographic identity and the hospital treatment card should be produced by couples at every treatment visit. Verifying birth date is crucial in establishing identity.'

Ironically the move comes at a time when Europe is being urged to make greater use of assisted reproductive technology (ART) to boost flagging population numbers.

According to a European Commission report, a fertility rate of 2.1 children per woman is necessary to renew the population - however the current fertility rate in Europe is only 1.5 children per woman - and in some countries even lower.

Dr Irena Belohorska, a former gynaecologist and now a Slovak politician and Member of the European Parliament, believes that more use could be made of ART to boost fertility rates. 'We are witnessing more and more gynaecological problems in women of younger age. Early ovarian ageing, gynaecological cancers and infertility are now also very common - more and more young women being unable to conceive naturally. For many couples,' she added, 'the costs for infertility treatment are prohibitive resulting in inequitable access to treatments.' Dr Belohorska is urging the EU Commission to improve access to ART services.

Over 3,000,000,000 babies have been born worldwide since the first assisted reproductive technology (ART) baby was born 28 years ago

1,000,000,000 ART cycles each year, conducted around the world, result in around 200,000 births

Nearly 56% of all reported ART cycles are initiated in Europe, placing it top of the league for ART

Almost 50% of all the reported ART cycles in the world were in just four countries: USA (112,000), Germany (85,000), France (64,000) and the UK (37,000)

The percentage of ART births in a country is highest in Denmark and the Netherlands (more than 4%) and lowest in Latin America (less than 0.1%)

Exposanita 2006

Denise Fries, our representative in Italy, manning the *European Hospital* booth

Bologna, Italy - With 670 exhibitors - 595 domestic and 78 international companies from 18 countries as well as 344 represented companies from 36 countries - and close to 28,000 visitors, the medical event Exposanita was, once again, a huge success.

With Dusseldorf-based Medica, and Paris-based Hopital Expo-InterMedica leading European medical venues, Exposanita has become Europe's third biggest medical trade fair. Over four days state-of-the-art medical technology was presented on about 31,000 square metres of exhibition space. The event, however, is more than a mere trade-oriented product showcase as the impressive programme with about 120 workshops, seminars and conferences proved.

The hall on Medical Innovation Technology (MIT), where nanotechnology, innovative materials, biotechnology and the newest developments in diagnostics were presented, was a particular attraction. There was also high interest in diagnostics, therapy and nursing on the one hand and handicaps, orthopaedics and rehabilitation on the other. As in 2005, visitors gained a comprehensive overview of technologies, equipment and services offered by the Italian healthcare industry.

The European Hospital team, including our representative in Italy, Denise Fries, gleaned information on state-of-the-art technology, including the Italian products and services. In addition, countless visitors collected our most recent issue of European Hospital.

The 1st International Congress of Respiratory Biology (ICRB)

13 - 16 AUGUST

During this landmark congress, over 1,000 researchers, from all over the world, will gather in Bad Honnef, set in the beautiful Rhine Valley, near Bonn, Germany, to discuss respiration in everything from micro-organisms to plants and animals. This very broad approach aims to stake out the interdisciplinary limits and goals of this discipline.

'Spread the word and be part of this International Congress of Respiratory Biology,' says Professor Steven F Perry, organiser of the unique event. 'Bring it together in Bonn!'

"You are invited to be part of a forum to bring respiratory biological research together, to discuss and build. Ours is a growing and vital discipline. The future of Respiratory Biology lies in developing an integrative approach and fostering an environment where researchers can talk, listen and develop integrative projects on all aspects of respiration. Rather than focusing on specific organisational level, we aim to stimulate new research initiatives with a broad interdisciplinary approach.

A reaffirmation of the goals of *Respiratory Biology* as a clear and distinct discipline will bring our research aims together, and allow not only the traditional horizontal networking but also vertical networking, breaking artificial barriers between genetics, cell biology, zoology, botany, medicine and many other disciplines. A glance at the proposed list of topics will convince you that this meeting is like no other that you have attended. Juxtaposed in the same session are talks on intermittent breathing in insects and vertebrates or strategies for dealing with hypoxia in organisms from different kingdoms. Gas transport in plants is compared with that in animals.

The mainstay of the ICRB is a series of symposia: those emphasising integrative, multidisciplinary approaches will be granted preference. In addition, posters and open sessions with short Powerpoint presentations will take place. Posters will remain in place throughout the entire meeting. When the symposium topics and speakers have been selected, to minimise overlap of interests in parallel sessions registered participants will be asked which they would prefer to attend.

This conference is intended to provide the launching pad for future meetings and to ensure that Respiratory Biology remains at the forefront of worldwide research.

We also have ensured you will have plenty of opportunity to visit the local area and perhaps sample some of the world renowned Rhine Valley Riesling.

So join with us and make the ICRB the first in a long series to come!"
Details: www.respirbiol.org

EUROPEAN HOSPITAL Reader Survey

YOU may qualify for a FREE subscription to EUROPEAN HOSPITAL, the bi-monthly journal serving hospitals throughout the EU.

* If selected, you will be sent a copy of EUROPEAN HOSPITAL every two months.

To participate, simply fill in this coupon and fax to: +49 211 73 57 530
No fax? No problem. Please post your coupon to:
European Hospital Publisher, Höherweg 287, 40231 Düsseldorf-Germany

Please inform me about the Hospital Administrator Forum at the ECR 2007. ☐

ENTRY COUPON

FAX TO: EUROPEAN HOSPITAL, +49-211-7357-530
DO YOU WISH TO RECEIVE OR CONTINUE TO RECEIVE EUROPEAN HOSPITAL ☐ YES ☐ NO

Signature **Date**

Reader Number
Name
Job title
Hospital/Clinic
Address
Town/City Country
Phone number Fax

Now, tell us more about your work, so that we can plan future publications with your needs in mind. Please put a cross ☒ in the relevant boxes.

1. SPECIFY THE TYPE OF INSTITUTION IN WHICH YOU WORK

☐ General hospital ☐ Outpatient clinic ☐ University hospital
Specialised hospital/type
Other institution (eg medical school)

2.YOUR JOB

☐ Director of administration ☐ Chief medical director ☐ Technical director
Chief of medical department/type
Medical practitioner/type
Other/department

3. HOW MANY BEDS DOES YOUR HOSPITAL PROVIDE

☐ Up to 150 ☐ 151-500 ☐ 501-1000 ☐ more than 1000
☐ None, (not a hospital/clinic)

4 . WHAT SUBJECTS INTEREST YOU IN YOUR WORK?

☐ Surgical innovations/surgical equipment
☐ Clinical research/treatments/equipment
☐ Ambulance and rescue equipment
☐ Physiotherapy updates/equipment
☐ Nursing: new aids/techniques
☐ Hospital furnishings: beds, lights, etc.
☐ Hygiene & sterilisation
☐ Linens & laundry
☐ Information technology & digital communications
☐ Personnel/hospital administration/management
☐ Material Management
☐ EU political updates
☐ Radiology, imaging/high tech advances
☐ Intensive Care Units/ management/equipment
☐ Pharmaceutical news
☐ Speech therapy/aids
☐ Laboratory equipment, refrigeration, etc.
☐ Hospital clothing and protective wear
☐ Nutrition and kitchen supplies
☐ Waste management
☐ Hospital planning/logistics
☐ Hospital Purchasing
☐ Medical conferences/seminars

Other information requirements - please list

ESPECIALLY FOR DOCTORS:
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?

In which department do you work?
Are you head of the department? ☐ Yes ☐ No
Are you in charge of your department's budget? ☐ Yes ☐ No

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, Höherweg 287, 40231 Düsseldorf, Germany, and for the mailing out of future issues.

EH 3/06

THE NETHERLANDS AND BELGIUM

16 YEARS OF MEDICAL STUDY, BUT NO JOBS

By EH Dutch columnist **Michiel Bloemendaal**

Healthcare authorities have advised university hospitals to slowdown surgical training, because, after years of study, newly qualified Dutch surgeons can find no hospital employment. Surgeons who have already trained are now considered sufficient to meet demand in the coming years. Paediatricians face the same problems.

In the 80s – the last time this phenomenon occurred – hospitals had to reduce vacancies for medical specialists.

Belgian doctors and nurses 'escape' to Holland

Around 1,500 nurses and doctors from Flanders have sought jobs in the Netherlands in the past five years, according to official Dutch Ministry of Health figures supported by information from hospitals near the Dutch-Belgian border. The reason is unclear, but is under examination.

Labour Inspectorate investigates hospitals

Staff working conditions - specifically when handling cancer medications and anaesthetic gases - are soon to be investigated by the Dutch Labour Inspectorate.

The inspectors will also check whether employees are effectively protected against physical overload, aggression and violence from patients and visitors, which has increased - affecting four in five doctors in some way.

Exposures to cytostatica and anaesthetic gases can have serious consequences (as published in *European Hospital*, anaesthetic gases can seriously affect pregnant women and their babies). Although cytostatica are used to treat cancer, if not handled correctly they could conversely cause cancer to staff. A 2003 survey of 30 Dutch hospitals showed these risks were not systematically managed: in about 50% of cases something went wrong.

Commercial care

Although Dutch hospitals are currently not permitted to make a profit, from 2012 they might start paying dividends to stakeholders, and Amsterdam's Slotervaart Hospital will be the first to do so.

It is bizarre that this hospital, which, financially, has been in very bad weather for years, is to be the first Dutch hospital to be taken over by a commercial firm. Founded as a municipal hospital 30 years ago, Slotervaart has been in financial difficulties since 1997. The health insurer that covered treatments provided by the hospital claimed that it treated too many patients, was too expensive, and the locality provided too many other hospitals.

Slotervaart's medical specialists, rather than the hospital Board, took the initiative to commence talks with the insurer. The specialists said their goal in making the hospital a commercial enterprise is not self-motivated – i.e. aimed at salary increases – but to create a better hospital in which more patients can be treated and cured. They believe more tasks could be performed. Presently, for example, due to budget restrictions, this hospital has no Intensive Care Unit and provides no first aid.

Luxurious setting for hip ops

Although orthopaedic specialists throughout the Netherlands perform hip and knee operations, for patients, the lure of a seven-day stay in a chateau, in the country's south.

This is the first time a Dutch health insurer has offered such accommodation. Up to February this year this kind of service was not possible, because hospitals offered hip and knee care in several classes, but this is no longer the case. However, many patients still prefer to have more luxurious care.

The hotel and insurance company chose hip and knee operations because they can be planned. Prior to surgery, the patient will check in at the chateau. Following surgery at the hospital, he/she will be an in-patient for 48 hours, then be returned to the hotel for aftercare. However, the insurer will not pay all the hotel costs. In some cases a substantial amount must be covered by patients, which will depend on the level of services they select.

Because demands for such care looks high, negotiations with other hospitals and hotels are underway.

Life Is a Mystery.
eHealth Shouldn't Be.

Look to Kodak for clear, effective answers–to deliver local, regional or national eHealth solutions. We collaborate with the world's leading technology and service providers to deliver integrated solutions specific to our customer's requirements. No mystery about it.

RIS | PACS | Storage Solutions | CR | DR | Consulting & Network Services

www.kodak.com/go/health

Kodak

Kodak is a trademark of Eastman Kodak Company. ©Eastman Kodak Company, 2006

DIABETES-NANNI

Germany - About 25,000 German children are diabetic, and numbers are increasing rapidly.

Specialists in childhood diabetes gathered at a meeting held by the Dianino Foundation during the *41st Annual Meeting of German Diabetes Society* (DDG), to discuss 'Diabetes-Nanni', a programme in which female diabetes advisers receive additional psychology training to care for diabetes-affected families in their homes.

The free programme - originated in 2005 by the Dianino Foundation supported by medical devices manufacturer Becton Dickinson (BD) - has already helped many families, living in North-Rhine Westphalia, to develop new ways to live with and cope with the disease. (BD has also been involved in projects for children with cancer, e.g. the 'Wood Pirates' programme, run in co-operation with the German Foundation for Children with Cancer to provide free leisure camp holidays for affected children).

What qualifies a 'Diabetes-Nanni'? A nurse or nutritionist who has attended a course or has received advanced vocational training to become a diabetes consultant or assistant. However, the main qualification is comprehensive practical knowledge and experience in dealing with child diabetics and parents. So, a mother who has raised a diabetic child would not need advanced vocational training. Each candidate is prepared for her new task in a seminar given by the Foundation Dianino.

Then the Diabetes-Nanni works closely with the child's treatment team to develop an action plan. The nanny continuously consults with the child's medical team. Apart from observing the child's medical care, the nanny helps with everyday problems of the whole family, and contacts, for example, the nursery school, after-school care club, school or parents' employers.

Professor Tschoepe, Director of the Diabetes Centre at Ruhr University Clinical Centre, Bad Oeynhausen, said that this kind of support '... often will have an extremely positive effect on further medical treatment and development of children with diabetes.'
www.dianino.de

Air pollution
NO2 is a killer

Whilst the harmful impact of nitrogen dioxide (NO2) on various medical conditions was already known, only now is there evidence that NO2 in air pollution is a killer. According to the APHEA-2 study the chief culprits are emissions from diesel engines, which are increasingly popular in Europe.

In the 1990s, the *Air Pollution and Health - A European Approach* (APHEA) study demonstrated air pollution's harmful impact on human health using data from some 15 major European cities. The European Commission (EC) and World Health Organisation considered these results when amending their air quality recommendations.

To enlarge the database and provide more information the second study - APHEA 2 - involving several European laboratories and 34 large cities from Scandinavia to Israel, set out to identify what specific effects could be attributed to each of the main pollutants, focusing on sooty fumes, suspended particulate matter of under 10 microns diameter (PM10), sulphur dioxide (SO2), ozone (O3) and NO2.

The *European Respiratory Journal* (ERJ) has published the results for NO2, a study conducted by Klea Katsouyanni, Evangelia Samoli and team at the Department of Hygiene and Epidemiology, University of Athens, Greece. Their research raises serious concerns.

The team used the largest existing European database of c. 60 million people, with pollution measurements for at least three consecutive years. Mortality and hospital admissions were compared with measurements for various atmospheric pollutants taken by the ambient air monitoring stations in each of the APHEA-2 cities.

The comparison produced some alarming results. 'They show that short-term mortality rates (i.e. in the days directly after exposure to the pollutant) are very clearly linked to daily variations in the level of NO2, essentially an urban pollutant mainly produced by diesel engines and heating systems. A rise in atmospheric NO2 levels of ten microgrammes per cubic metre (10µg/m3) was found to increase short-term mortality by 0.30%. The statistical link retained its significance even when various confounding factors, such as the effect of other pollutants, or a flu epidemic, were taken into account. The correlation with NO2 concentrations is clearer still if we focus specifically on deaths from cardiovascular and respiratory causes in the days directly following exposure. Indeed, a rise of 10µg/m3 in NO2 levels increases deaths from cardiovascular and respiratory conditions by 0.40% and 0.38% respectively.'

The impact also varies according to length of exposure. Comparison of levels measured over six days (date of death and preceding five days) with those measured over two days (date of death and previous day) shows that 22% more cardiovascular deaths and 45% more respiratory deaths were connected with the six-day exposure. 'This most likely reflects different physiopathological effects', the authors point out. 'NO2's cardiovascular effects are generally associated with mortality in the short-term (sudden deaths without hospitalisation), while its respiratory effects tend to involve disease that will cause death at a later date,' Klea Katsouyanni adds.

The east-west variation

In north-western and southern Europe the impact of NO2 pollution is greater than in cities in their central and eastern European counterparts. The researchers suggest a reason: 'In the 1990s, atmospheric pollution in southern and western European cities was caused mainly by road traffic, while Eastern Europe had fewer cars at the time.' Older people, they also add, are more vulnerable to the short-term effects of air pollution, probably due to existing respiratory conditions or other diseases. Eastern Europe's lower life expectancy in the past might therefore account for the lower NO2 pollution impact.

Diesel

The study also shows that the effects of NO2 and PM10 can interact. NO2 seems to have a stronger impact when combined with high levels of suspended particulate matter. Both pollutants are mainly emitted by diesel engines.

Because diesel vehicles emit 40% more particulate matter, Klea Katsouyanni believes the monitoring of diesel fuel quality and diesel vehicle maintenance should be improved, and the use of these vehicles should be reduced. Diesel-powered vehicles are on the rise throughout Europe, she points out.

However, the APHEA-2 data show that urban NO2 levels do not yet exceed the EU limits - which are now being reviewed on the basis of new data from further studies. No doubt, say the authors, APHEA-2 will be considered when setting future standards.

Low nurse levels cause deaths

Geneva - Inadequate staffing is reaching crisis levels in all regions, according to the International Council of Nurses (ICN). Among studies reviewed, one showed that an increased workload from four to six surgical patients resulted in a 14% increase in the chance of a patient in that nurse's care dying within 30 days of admission.

ICN President Hiroko Minami said: 'Safe staffing leads to lower incidences of medication errors, post-intervention urinary tract infections, upper gastrointestinal bleeding, falls, pneumonia and shock. The global nursing shortage experienced today clearly threatens reaching the Millennium Development Goals.' High patient-to-nurse ratios also put nurses at higher risk of emotional exhaustion, stress, job dissatisfaction and burnout, she added. Continuous overtime, or work without adequate backup, also can lead to greater absenteeism and poorer health.

The ICN said a policy is needed to focus on comprehensive health personnel planning and an adequate nurse-to-patient staffing ratio. An ICN advisory on this complex subject is available at: www.icn.ch

Dealers are not reponsible for faulty CE marked products

In a recent preliminary ruling the European Court of Justice decided that dealers are not required to ensure that an industrial product bearing a CE (European conformity) mark meets European health and safety requirements. The aim of the CE mark, according to the Court, is to harmonise conformity rules and thus promote free movement of products. Holding dealers liable for defective products would impede that objective. However, if products are imported into a European Member State from a non-EU country the importer is considered a 'manufacturer' and thus must assume certain manufacturer liabilities.

This ECJ ruling constitutes an important support for dealers who are not 'authorised representatives' according to the Medical Devices Directive (93/42/EEC). The ruling does not affect the manufacturers of medical devices.
(Ref: C-40/04. Preliminary ruling. 8 September 2005)

21st Bi-ennial Congress of the European Association of Hospital Managers

31 August - 2 September 2006

Dublin, Ireland - The European Association of Hospital Managers (EAHM) will hold it's 21st Bi-ennial Congress in the city from 31 August to 2 September.

Hosted by the Health Management Institute of Ireland, international speakers will focus on healthcare management in Europe, emphasising the pivotal role of the healthcare manager planning and delivering healthcare services.

EDUCATION

Brunel University offers unique Public Health Doctorate

UK - Brunel University is to provide a new three-year course offering a Doctorate in Public Health. The doctorate course, which will commence in October this year, is unique because it is cross-disciplinary, involving internationally recognised academics in medical anthropology, biostatistics, health economics, epidemiology, environmental sciences, health promotion, health services research, social epidemiology, health and social policy, health and human rights, psychology, rehabilitation, and health sociology, are to be involved.

Students will receive a practical as well as theoretical education, preparing them for leadership in public health, rather than academia. The course was developed following consultation with the Royal Society of Health; UNICEF; the Tropical Disease Research Programme (WHO), and Primary Care Trusts across the UK, and is aimed at those already working in non-governmental organisations, local government, or the National Health Service (NHS), who would like to supplement their practical knowledge with an academic qualification.

One of the course designers, Professor Pascale Allotey, explained: 'We spoke to a number of organisations involved in public health to gain input on what kind of skills they look for, so that we can ensure the students will have a high chance of securing either jobs in public health, or promotions if they have prior experience. We were also keen to build relationships with organisations to try to provide students with as many options for work placements as possible, both in the UK and abroad. We're not competing with those courses that have a strong bio-medical focus or train academics: Public Health at Brunel is grounded in the social sciences and the aim of our course is to train tomorrow's public health leaders.'

There is a desperate need for professional doctorates in public health, Professor Richard Parish, chief executive for the Royal Society of Health pointed out: 'Public health is rising up the political agenda as more policy-makers and planners realise that so much of today's ill health, in the UK and overseas, is avoidable. We need people with high levels of knowledge and skills, whether it is to help minimise tomorrow's avian flu pandemic or the growing obesity problem. Put simply, public health is extremely expensive when it is carried out ineffectively and inefficiently, but can deliver phenomenal social and economic benefits when carried out correctly. This initiative has the full support of the Royal Society of Health.'

Correction: MDS

In the article 'MDS assures greater care' (EH2/2006 - page 3), MDS was translated from the German version as 'The medical technical aids register'. The correct translation is: The Health Insurance Medical Advisory Service.
For MDS details go to: www.mds-ev.org

Siemens to acquire Bayer's Diagnostics Division

Expansion aims at high-growth molecular diagnostics market

Siemens has signed an agreement with Bayer to acquire the chemical and pharmaceutical company's Diagnostics Division. The acquisition will enable

Siemens Medical Solutions (Med) reports that the acquisition will enable the firm to expand its position in the high-growth molecular diagnostics market. At the end of April, Siemens announced the planned acquisition of Diagnostic Products Corporation (DPC) in the USA, a leading company in immunodiagnostics. The purchase price for Bayer Diagnostics - which had sales of €1.4 billion and a double-digit EBITDA margin in fiscal 2005 - is roughly €4.2 billion.

'Acquisition of Bayer Diagnostics is part of our targeted strategy to create the healthcare industry's first integrated diagnostics company by combining the entire imaging diagnostics, laboratory diagnostics and clinical IT value chain under one roof,' Dr Klaus Kleinfeld, Siemens President and CEO explained.

The company adds that the Bayer division acquisition will enable the Siemens Group to '...tap the rapidly growing market for molecular diagnostics based on gene analysis (nucleid acid testing). Bayer Diagnostics is also a world market-leader in clinical chemistry with a leading position in near-patient testing, laboratory automation and haematology (blood cell diagnostics).'

Swedish firm to aid UK's cancer treatment delivery

As part of its national cancer program, the United Kingdom's National Health Service (NHS) is currently investing in increased capacity for radiation treatment of cancer. These investments, sponsored by the Department of Health, are providing funding, which is applied for by the NHS hospitals and released in so-called 'waves'. Recently, the awarded tenders in the 9th wave were announced.

Among these, the Swedish firm Elekta, which specialises in advanced radiation therapy, comprehensive cancer management and non-invasive treatment of brain disorders, has been appointed to deliver six advanced digital linear accelerators for radiation therapy to five UK hospitals: Guy's Hospital in London, New Cross Hospital in Wolverhampton, Queen Elizabeth Hospital in Birmingham, Poole General Hospital and Southampton General.

In total, the orders are valued at over £6 million.

The hospitals will install Elekta Synergy, fully equipped with precision IMRT, real-time portal imaging and the most clinically advanced 3D X-ray volume imaging for Image Guided Radiation Therapy (IGRT).

In addition to choosing Elekta's clinical solutions, three of the hospitals will install image-guided treatment management systems from IMPAC Medical Systems, an Elekta company. These will connect treatment planning systems, imaging systems and the radiation therapy delivery equipment - regardless of manufacturer.

Smiths Medical wins US$3.4 million contract

USA - The 898-bed Massachusetts General Hospital (MGH) in Boston - Harvard Medical School's biggest teaching hospital - has awarded a $3.4 million contract for 1,365 syringe pumps to Smiths Medical

The Medfusion 3500 syringe pumps, with PharmGuard Medication Safety Software, is the most recent innovation in Smiths Medical's infusion technology. 'This is a leading-edge infusion system that incorporates specific configuration profiles, a drug library composed of more than 4,000 entries, over 100 dosing units and safety dose limits on all infusion parameters to help reduce medication errors that may otherwise occur,' Smiths reports. 'The smart pump's rapid occlusion detection technology with FlowSentry offers a comprehensive array of pressure-related safety features. Its graphic display of pressure trend allows for earlier clinical intervention.

The Medfusion 3500 syringe pump imports and exports data and protocols and may be adapted and customised to interface with bedside environment. Its PharmGuard safety reports provide valuable information required for improved processes and medication delivery practices in the critical care environment.'

Ellen Kinnealy RN, at MGH Biomedical Engineering, said that the use of smart pumps, which contain vital information

about specific medications, has enabled the hospital to make significant advances in the capability and safety of intravenous drug infusion systems. 'This technology is an important way to prevent errors and enhance clinical care. In fact, it could help raise the standard of medical care throughout the country.'

Bringing Toyota production to the healthcare industry

By Karen Dente, our correspondent in the USA

In a widely publicised, groundbreaking report titled 'To Err is Human', issued in 1999 by the Institute of Medicine in the United States, the magnitude of unwanted deaths resulting from medical errors inside the hospital was uncovered. Since then this has achieved much media attention. According to the report, many of the mistakes would be preventable with electronic health records that would lead to more legibility of the doctors' scrawls, allowing pharmacists to dispense the correct medicine. Moreover, electronic medical systems would permit a streamlining of the patients' past and current medical and drug histories and lead to a more cohesive picture for the treating physician and perhaps reduce any errors ensuing from faulty or missing information. The Bush administration also seems to have embraced the idea and necessity of electronic medical records, although no legislation is in place to drive any swift and radical change.

Besides instituting widespread electronic medical records, the cure to the healthcare industry's ailing efficiency may be found by looking at the example of a Japanese car manufacturer: Toyota. The car maker's much admired 'Toyota Production System' seems to offer a solution if applied to healthcare, according to Professor Steven Spear, of Harvard Business School, who also works for the Institute of Healthcare Improvement in Cambridge, Massachusetts, also home to Harvard Business School. In a review in *Harvard Business Review*, September 2005, titled 'Fixing Health Care from the Inside, Today' he argues that the healthcare industry could not only save thousands of lives, but 'billions of dollars' if it were to emulate some of the factory-floor techniques developed by the Japanese manufacturer.

Some pilot sites in the healthcare industry have been implemented with a "learning unit" created at Deaconess-Glover Hospital in Needham, where case studies have been obtained. Additional sites are at Presbyterian and South Side Hospitals of the University of Pittsburgh Medical Center, Pennsylvania. Both the US government's Centers for Disease Control and the private Robert Wood Johnson Foundation are providing support in this effort.

Why study Toyota? Steven Spear thinks that, by applying the same capabilities in operations design and improvement that drive the famous Toyota Productions System, patient care delivered by doctors, technicians and nurses could radically increase the efficiency of patient care, while lowering costs markedly, with no necessary capital investment. By applying what has been demonstrated by the lean production processes of the Japanese carmaker it shouldn't be necessary to wait for sweping changes through legislation and market forces to occur inside the hospital system to assure improved patient care. These changes could be implemented in the course of a normal workday by clarifying what patient is to get which procedure, who is responsible for what aspect of the job, and exactly how each step is to be carried out.

Hospitals can be unburdened by many of the problems that lead to much waste and so many deaths by preventable errors. In the case series so far, the widely copied Toyota Production System has been shown to be effective in hospitals where the same capabilities in operations design and improvement are being used as in the making of a Toyota car. Basically, the changes involve getting rid of ambiguities in the output, responsibilities, connections and methods of work processes, and help save patient lives and dollars, according to Steven Spear.

So what are we waiting for?

IN RESPONSE By Eirian Lewis and Dr Mike Perides

In this timely article Karen Dente highlights the consequences of failing to see the design and provision of health and social care as essentially a system. It has long been understood that adverse incidents within health and social care are rarely to be laid at the feet of individuals alone.

Many of those involved in health and social care have considered their work fundamentally different from that of other industries - for far too long. Whilst this may be true in the detail of what they do, there are clear similarities across industries, be they focused on service or production. However, health and social care professionals have argued that dealing with human beings who are in distress, be it physical, psychological or social, is complex and difficult, and lessons from other industries are not helpful.

This, in our view - and supported by Karen Dente's article - is to miss the point. One would not argue that to work in medicine is both complex and demanding, as is social care. However, as with the American realisation cited in her article, the conclusion of all the enquiries into adverse incidents in health and social care has focused on poor or inadequate systems.

The Toyota example demonstrates the simple premise that at one end of a system there is a need, which requires input, and at the other end there are outputs leading to outcomes. The key to success lies in being crystal clear about the need and the value and function of the steps in between need and outcome. Toyota is precise about its need - reliable, cost effective production of desirable motorcars - and their outcome: consistent high levels of sales and increased market share. Their use of Lean Principles ensures that they focused on each step of the production process to ensure that what they do wholly contributes to their desired outcome and that no step is redundant.

As raised in the article, there are many examples of where Lean Principles have been used in health and social care. Our experience has reinforced the value of applying Lean Principles and systemic thinking in these areas. One example relates to the integration of services for disabled children. Before applying Lean Principles to this service, children and their families were assessed separately by health, education, and social care. This often led to expensive, wasteful duplication, frustration on the part of parents and children and excessive waits for service. By seeing the process of assessment as a system and tracking each of the steps in the assessment process it was possible to identify where the 'non value' adding activity lay and eradicate it. It allowed each of the professional services to co-ordinate their input and make use of existing information, thus speeding up the process, enabling more assessments to be undertaken whilst at the same time reducing costs. This enabled the children to receive their assessed service quicker and reduced levels of anxiety and frustration on the part of parents.

The challenges in healthcare are not uniquely different. Service and process complexity can be managed. It does make sense and implementing sustainable change can be achieved much quicker and easier than you think.

ABOUT THE AUTHORS

Management consultant Eirian Lewis and Business Director Dr Mike Perides lead the independent UK-based firm Teal Consulting Ltd, which is registered by the British Quality Foundation as a provider of Quality Consultancy and Training Services.

The consultants work with local authorities, central government, the health sector, and private sector to develop, improve performance and support management development. To this end, they utilise a range of methods and have a network of partners and associates throughout the UK who provide specialist knowledge and business expertise.

Eirian Lewis is also a Senior Assessor and EFQM Master Practitioner with the Wales Quality Centre and is an assessor for the Wales Quality Award.

Mike Perides, has a doctorate in organisational culture, an honours degree in psychology and a Master of Arts degree in sociology. He has particular experience in health and social care. He is also an EFQM-licensed assessor, chair of the EFQM European Health Sector Group and, for many years, has been involved in promoting the EFQM Excellence Model within the public sector.

Teamwork and the future of intensive care medicine

By **Jean-Louis Vincent**, Head of the Department of Intensive Care, Erasme Hospital, Free University of Brussels, Belgium

The recent 26th International Symposium of Intensive Care and Emergency Medicine - the largest annual meeting of its kind - attracted around 5,000 participants, who travelled to Brussels from over 80 countries.

In my introductory talk I drew attention to two areas that I believe to be of key importance in intensive care medicine today. First, the 'protocol' issue: Protocols, defined as the outline or plan for a treatment programme, have received some hard sell in recent years, in many fields of medicine, and intensive care medicine is no exception. Well-designed protocols can certainly simplify patient management and care, but do they improve it? One of the major problems with protocols in the ICU environment is that there is still so much we do not know and therefore protocols are often drawn up from guidelines and recommendations that themselves are based on relatively little high grade evidence. Randomised controlled trials are notoriously difficult to conduct and interpret in the ICU population, so much of our evidence for or against interventions must be based on alternative study design, case series, or expert opinion (Vincent JL. Evidence-based medicine in the ICU: important advances and limitations. *Chest* 2004; 126: 592-600). In addition, once a protocol is established, does it mean that is the end of the story for that disease process, or for that group of patients? The fact that a protocol has been developed should not discourage us from conducting further research in that field. Protocols must not be considered as permanent; the protocol user must still be encouraged to rationalise the care they are giving, and protocols must be adapted as new evidence becomes available. Another problem with protocols is that many ICU patients do not fit neatly into one diagnostic category, but have many processes present at the same time, and it may be difficult to determine which protocol, if any, should be applied.

While I believe treatment protocols can be useful in certain circumstances, I believe checklists have a much wider application and are much more valuable to ensure that each patient receives the necessary care, without the limitations of the stricter protocol approach. We recently developed the FastHug (Feeding, Analgesia/Sedation, Thrombosis prophylaxis, head of the bed elevated, ulcer prophylaxis, glucose levels) mnemonic Vincent JL. Give your patient a fast hug (at least) once a day (*Crit Care Med* 2005; 33: 1225-9), a 'mental' checklist of the essential aspects of care for all critically ill patients).

This leads nicely to my second key point, and that is the importance of good ICU teamwork. There is no doubt that an ICU managed by a trained intensivist improves patient outcomes. But the intensivist can achieve little without the support of the full ICU team, which includes nurses, physiotherapists, pharmacists, laboratory and equipment technicians, amongst others. Various members of the team will see patients at different times during the day and in different circumstances. Each team member can apply the FastHug every time they see a patient to ensure that the basic essentials of care are being achieved. For example, a nurse may realise that a patient is not receiving thrombo-embolism prophylaxis and can then propose that it be prescribed, or a physiotherapist may suspect a patient is overly sedated and suggest sedative doses be adjusted. This system thus encourages active participation of all staff members in patient treatment. Around then, the ICU becomes a time when *all* the ICU team members can join together at the bedside and contribute to a patient's ongoing care. Indeed bedside rounds improve staff communication and may result in better outcomes (Pronovost PJ, Jenckes MW, Dorman T, Garrett E, Breslow MJ, Rosenfeld BA, Lipsett PA, Bass E. Organisational characteristics of intensive care units related to outcomes of abdominal aortic surgery. *J A M A* 1999; 281: 1310-7). Only when we work together, with the patient at the centre of our preoccupations, can we expect to achieve the best outcomes for our patients.

250 booths and many more products

The ITeG Forum presented IT trends and visions

ITeG 2006

Dr Wolrad Rube: 'This year, for the first time the ITeG Forum and Warm-up-Sessions were designed by an ITeG programme advisory board.'

Frankfurt/Germany - This year's *International Forum for Healthcare IT (ITeG 2006)*, held in May/June, has put this event firmly on the healthcare industry calendar. Organised by the Association of Providers of IT Solutions for Healthcare (Verband der Hersteller von IT-Lösungen für das Gesundheitswesen – VHitG), and Mesago Messe Frankfurt, exhibitors at the forum increased by 25% over 2005 (250 this year)' the exhibition space increased by 44%, and visitors rose from 3,215 to 3,678. 'We not only wanted to expand the product showcase but, more importantly, the ITeG professional sessions,' Dr Wolrad Rube, chairman of the VHitG, explained. Consequently, an Advisory Board representing diverse user organisations was appointed, which turned the event in to a forum for medical controllers, IT directors in the clinical, nursing and care sector, and surgery-based physicians.

Along with presentations and discussions, new this year were the ITeG Warm-up Sessions, held every morning before the trade show opening, to provide a compact overview of new solutions, developments and products. The fact that the ITeG and hospital information systems (HIS) meeting took place simultaneously considerably

ITeG 2006 had more visitors and rented considerably more exhibition space

increased the number of qualified visitors, Dr Rube added.

Parallel with the ITeG, the 11th meeting of the HIS working party of the German Society for Medical Computer Science, Biometrics and Epidemiology (GMDS) and the Association of Medical Computer Scientists (BVMI) took place, in the usual format of presentations, workshops, etc, and providing case studies, concrete current information and problem-solving discourse. New reimbursement schemes with expanded documentation requirements, close co-operation between hospital and doctors surgeries, and the move among hospitals towards becoming integrated health service providers, are just a few current trends in the German healthcare landscape.

The introduction of patients' electronic health cards is a daunting task for the HIS, underlining its strategic importance. At the event, an electronic physician's letter, developed by the VHitG initiative *Cross-sectoral communication*, was demonstrated for the first time, live and several times daily, to show its transfer between IT systems in a doctor's office to a HIS, on a shared network, crossing traditional sector boundaries, speeding workflow and online communication (See Siemens/DOCexpert feature on page 8).

The VHitG annual award - This was presented to the Knappschafts-krankenhaus Bottrop for its IT concept for digital clinical pathways that always encompass a standard and a deviation. With systematic standardisation and optimisation, Bottrop hospital management has achieved a 2-day reduction in the average length of stay.

Radiology - In Germany, it has been estimated that only 20% of hospitals with dedicated radiology departments have an integrated RIS/PACS - a poor contrast with other EU countries. At this year's German Congress of Radiology - held just one week before the IteG - visitors' interest in this issue was somewhat disappointing.

ITeG 2007 - This will take place in Berlin (17-19 April) at the same time as the eHealth Europe Congress 2007 and the national Telemed.

Despite growth in all areas, if it wants to leave its niche and appeal to a wider audience, ITeG will have to position itself more distinctly between the German Congress of Radiology and Medica, which is, and will remain, a top venue for IT solutions for healthcare.

In addition, as far as RIS/PACS solutions are concerned, Germany's radiology congress provides the added value of showcasing all state-of-the-art modalities. In this country, investments in RIS/PACS enjoy a higher priority than the modernisation of administrative systems, because these are the pillars of future-oriented and image-based communications structures across all departments.

Report: Guido Gebhardt

We have innovative technology...

So what?

A truly innovative solution is one you don't think about. It just works. Perfectly. In exactly the way you need. It's why we devised breakthrough technology like DX-S, a superior quality, yet completely mobile CR solution perfect for the diverse needs of radiology today. As you face new challenges, you require new solutions. And the most innovative solution is the one that requires no innovation from you.

AGFA Agfa HealthCare

To see innovative technologies that work the way you work, visit Agfa at www.agfa.com/healthcare

Siemens and DOCexpert form a new collaboration

Jens Naumann

For a number of years, both the Communications and Medical Solutions Groups of Siemens AG and the Bamberg-based firm DOCexpert Computer GmbH have been actively involved in creating IT-based end-to-end solutions for medical practices, medical care centres, clinics and integrated care networks. Recently, they agreed to work together to develop joint concepts for the upcoming rollout of the German electronic health card. The two companies will offer an all inclusive package to ensure a secure link of the DOCexpert medical practice software to the telematics infrastructure. In addition, Soarian Integrated Care, the electronic patient file developed by Siemens Medical Solutions, will be integrated in the DOCexpert Group's health professional systems and solutions for medical care centres. This will enable convenient exchange of information on treatment, not only between medical practices, but also across sectors between doctors' offices, clinics and facilities providing follow-up treatment.

The first subject of the partnership will be an all-inclusive package for the 13,000 DOCexpert users to enable a secure link to the telematics infrastructure. This primarily comprises the 'HiPath SIcurity Connector' developed by Siemens Communications; integration of the medical practice software from DOCexpert, and card readers. The Connector forms the secure interface between the existing medical information systems and the planned telematics services, such as the e-prescription.

This project combines the experience of Siemens AG in secure communications solutions with DOCexpert's knowledge of the practical needs of doctors' offices. **Jens Naumann**, Managing Director of DOCexpert Computer GmbH, stressed: 'Networking medical practices will succeed only if all the telematics components are tuned precisely to each other and have been tested.'

Their second cooperation will be to equip medical care centres, medical practices and cross-sector integrated care networks with IT. Within this, the electronic patient file Soarian Integrated Care will be integrated in the DOCexpert health professional systems, so that users in clinics and doctors' offices can share information on cross-facility treatment.

In a European Hospital interview, Jens Naumann discussed the implications of this intersectoral collaboration, and he began by discussing the two entirely distinct IT areas: hospitals that follow their own rules and regulations, and doctors' offices.

'Both still communicate with quite outmoded means - paper, telephone and fax. Sure, there are islands of electronic communication, but there is no structure, and above all electronic communication is not secure. Unfortunately, the IT worlds of hospitals and of medical practices are incompatible,' he pointed out. 'They are different worlds and even use different languages. In the medical practice sector, when we talk about a diagnosis we are talking about the ICD-10 definition. In a hospital the term diagnosis can mean something different. For us non-hospital based doctors there are certain additions to the category *diagnosis* which don't exist for hospital physicians for example *exclusion* or *status after*. When I transfer a diagnosis to a hospital, *status after* can turn into *exclusion* - but the exclusion of let's say breast cancer is something quite different than status after breast cancer.

That means up to now the two sectors have never communicated with each other in a structured fashion - because they didn't have to. The new legal situation in Germany, namely integrated care and the opening of hospitals for specialised services in the out-patient sector, or the fact that hospitals are bound to the referring physician, means that this language problem must be solved. Hospitals are forced to watch their balance sheets and therefore try to cooperate closer with the physician in the medical practice. So, suddenly it became clear that a communication tool is needed. Therefore an attempt was made to get the providers of hospital information systems (HIS) and those who provide systems for doctor's offices to work together on one integrated system. In the beginning we had to admit that all we could do was send a pdf file. There was no structure, no automatic allocation of patients and no method to use the documents intelligently.

A high-resolution pdf file is too large, and you can't really work with it. Due to the already mentioned opening, and the increasingly commercial orientation of hospitals, customers demand a technological solution from IT providers. The HIS providers now offer portals that can be accessed by physicians in medical practices. That's a beginning. However, in reality this system cannot be implemented in most doctor's offices because the physician cannot transfer data from the portal into his system and vice versa. Therefore

DOCexpert

As one of Germany's leading suppliers of medical practice software, the DOCexpert Group has about 270 employees and provides software to over 16,500 physicians in more than 13,000 medical practices. DOCexpert is a member of the German Association of Vendors of IT Solutions for Healthcare (VHitG) and the SME Initiative Medical Practice IT

Developing the electronic health

A RADICALLY CHANGING

In a European Hospital interview, **Jürgen Reyinger**, General Manager, GE Healthcare Integrated IT Solutions, discussed the consolidation of the IT market and a boom in HIS and PACS sales throughout Europe

The mood at the International Forum for Healthcare IT (IteG 2006), held in Frankfurt, Germany, this May/June, indicated that this market is gaining momentum. We asked Jürgen Reyinger whether he shares that impression.

JR: The HIS and PACS business is booming Europe-wide - at least as far as GE is concerned. France is lagging behind a bit, but otherwise there is noticeable movement all over. The development is incredible. Even Eastern Europe has seen major changes over the last three years, above all because they have to catch up in medical technology - but they have gained a lot of ground, particularly countries such as Poland, the Czech Republic, Hungary, even Russia. We receive interesting requests for RIS and especially PACS solutions, because the RIS business is mostly picked up by local and regional companies. These countries have interesting markets, even those in which we are already active. They are not yet comparable to Western Europe, but the signs are promising.

When talking about Western Europe we must differentiate between England and the Continent. England launched a National Health Service programme the *National Programme for IT* (NPfIT), which means over the next three or four years the entire British hospital landscape will become fully digitised. With this initiative, England will certainly move to the European forefront. It is quite remarkable that Tony Blair would invest more than six billion euros to push the digitisation of the healthcare system. This will carry many benefits for patients. Multiple admissions and examinations will be avoided, and the information pathways will become shorter and quicker.

RIS and PACS are obviously lucrative businesses, but what about the integration with HIS, as provided by, for example, Agfa with their Enterprise Solution, or Philips with iSite - an integration that seems to be increasingly demanded by hospitals?

JR: I don't quite see that customers demand such solutions. There was a phase, in the last two years, but currently we see more demand for best-of-breed solutions - PACS, RIS and solutions for clinical departments, such as critical care, anaesthesiology, cardiology or surgery. The hospitals return to best-of-breed, they no longer necessarily want a one-stop-shopping solution - because such a solution means that a hospital is completely dependent on one supplier with all the concomitant disadvantages, for example expensive upgrades, service and maintenance - not initially but in the course of years. Moreover, one single provider often means loss of service quality, because there is no competition that motivates the delivery of good or better service. A system change with such large projects is extremely expensive. These are all disadvantages for a hospital and its IT department. Therefore, we see a paradigm shift: the IT specialists increasingly turn to best-of-breed solutions. It is only with such an approach that clinically relevant solutions can be implemented that really optimise workflow, allow for paperless and filmless procedures and, above all, contribute to reducing the number of medical errors.

We meet more and more smart IT people who - when purchasing or upgrading their enterprise solution - negotiate prices for the future integration of best-of-breed solutions by third party suppliers. This happens because it has become obvious that providers of enterprise solutions regularly demand ridiculously high prices for interfaces, to push their own, often mediocre, department solutions, although there are internationally established standards such as IHE, DICOM or HL7.

Does GE offer a HIS?

JR: Due to the acquisition of IDX Systems last January, GE can now offer one of the worldwide leading HIS. Currently, this solution is available only in the USA, Great Britain, the Near-East and English-speaking countries in Asia, because it is an English-language solution.

Of course! The whole of administration - different European legalities, different names of pharmaceuticals, and so on, have to be taken into account. That's a real Sisyphean task.

JR: Right. It is very difficult to adapt HIS worldwide to the different market conditions. To a great extent, the different reimbursement systems are determined by national healthcare policies and regulations, for example the DRG in Germany. Each country has a different system for the billing and reimbursement of medical services. In clinical departments, that's not an issue. This has the advantage that we can offer our clinical solutions worldwide. Our healthcare IT solutions generate overall sales figures of about US$1.3 billion. This means we are among the top IT players.

What does the current consolidation of the IT market mean for GE?

JR: The consolidation primarily affects small companies that aren't viable, and their customers. That means hospitals and private radiology clinics will have a problem if they continue to buy from those companies. With the

we designed a structured so-called physician's letter, which can move from A to B and back.

Available since May this year, it was developed by the members of VHitG based on international standards - the buzz words being CDA, Clinical Document Architecture 2.0, HL7 Version 3 and SCIPHOX-XML, which are technical structures used worldwide. It is quite a new experience for us that all providers of hospital software and of software for medical practices, who are usually in a tough competitive situation, got together to cooperate - and, they've forked out money:

card

15 corporate members of the initiative provided €15,000 each and each VHitG member another €2,000 per annum. Everybody was prepared to finance the development of a standard that was the basis for the structured physician's letter.

How can the VHitG physician's letter be integrated into other systems?

Integration of the document, and further processing in each hospital system, are the next, rather complicated steps. Initially, we will focus on the classic hospital discharge data, as this is the biggest problem: the patient leaves the hospital and three weeks later his local physician receives the physician's letter from the hospital. We want to facilitate this by transferring the data electronically. The physician will receive all pertinent data regarding medication, diagnosis or discharge status immediately and can save them in his system and integrate them in his patient file.

How does this fit into your collaboration with Siemens? How did the Siemens competitors react?

The question is misleading. Implementation of the VHitG physician's letter into DOCexpert - our software for physicians' offices - or into the Siemens or any other software is easy. The communication is entirely independent of the target system. A physician using DOCexpert can send his physician's letter to any HIS, whose manufacturer was part of the initiative - and all major players were involved. We created an open standard which is a step change for the market, also for the HIS market. Now the interfaces are open, the implementation guidance for the VHitG letter can be downloaded and the solution can be easily implemented. This will lead to more transparency in the market and the providers of software for medical offices and of HID software no longer have to programme the various different interfaces.

Did you integrate Integrating Healthcare Enterprises (IHE)?

We used the experiences with the IHE compatibility tests, the mixture of Connectivity and Marathon. And, prior to ITeG, we performed a two-day connectathon.

Did it work?

Perfectly.

IT LANDSCAPE

acquisition of Curagita System-integration, effective in June, GE can now provide radiology clinics with customised solutions that offer interesting value for money - and for customers this means they safeguard their investment by teaming up with a strong and competent industry partner. Moreover, analysis of the last two years in the healthcare market proves that GE has profited from the market consolidation and is stronger than ever – the case in point: diagnostic imaging and clinical devices – and this will also hold true for Healthcare IT.

This concerns your own consolidation, but what about consolidation in general, in other companies?

JR: GE will profit from the general healthcare IT consolidation and is positioned for further growth.

Will you benefit from the AGFA-GWI consolidation?

JR: Not directly. But many of our competitors are facing problems with post-merger integration or other problems, which prompts many hospitals to opt for our PACS rather than for one from our competitors. In the meantime, it is well known in all European markets that we not only offer a very good product, but also that we implement projects quickly and successfully. Where's the advantage for a customer to save €100,000 on a purchase price if, during implementation, additional costs of several €100,000 are incurred?

GE is primarily a manufacturer of large equipment. Where are the synergies between IT and large equipment?

JR: We offer a diverse portfolio ranging from large equipment to diagnostic imaging, bioscience, genome analysis and clinical services, be it ECG or anaesthesia equipment. In all these areas there are immense synergies with GE Healthcare IT. We witness an ever-growing demand for clinical solutions. One-stop shopping for applications is no longer up-to-date. After having implemented such an integrated solution a cardiologist might have the same system as the radiologist, and all the others, but what he doesn't have is a solution tailored to his individual needs and needs that enables him to perform his clinical tasks efficiently.

We benefit hugely from our clinical knowledge in medical technology. Take for example 3-D post-processing of images, which is becoming increasingly important. That means we need clinically relevant tools to post-process these images.

IT today faces very different challenges: How do we handle the immense data volumes produced by modern medical technology? Software used with modalities or with special 3-D workstations is entirely identical to that used on PACS workstations. And that's not only the case in radiology. It is also the case in the devices sector, in anaesthesia or intensive care. Our development teams co-operate very closely.

INTERNATIONALISING IT SYSTEMS

AGFA CLIMBS OVER LANGUAGE AND HEALTHCARE PRACTICE BARRIERS

In recent years, Agfa HealthCare has dramatically expanded its IT portfolio in line with its strategy to be an international leader in healthcare IT. At the recent ITeG exhibition in Frankfurt, the company's ambitions were clearly visible: Agfa very much focused on ORBIS, its leading Hospital Information System.

Daniela Zimmermann interviewed **Eric Maurincomme**, Vice President Business Development, Healthcare Business Group, Agfa, about the firm's continuing strategy

EM: 'Strategically, Agfa decided to play a leading role in the convergence of IT solutions for healthcare providers. That meant expanding our core strengths in analogue and digital solutions for radiologists (from film to PACS), to other departments, such as cardiology, orthopaedics, women's care, but also at the level of the enterprise. Keeping this in mind, we acquired in the past two years companies like GWI in Germany, Heartlab in the USA, Symphonie on Line in France, and Med2Rad in Italy. All these companies had very strong solutions for their market and the knowledge of how to deploy it effectively. The integration process has essentially 2 goals. The first one is to leverage beyond Radiology our global presence and leadership in Radiology Information Systems (RIS) and PACS. The second goal is to expand the acquired knowledge beyond its current geographical borders, i.e. we have ambitions beyond the German speaking market for our HIS/CIS business, and beyond the USA for our CardioVascular Information Systems.

During integration, we are bringing complementary skills of global deployment and core IT knowledge together, while for HIS and CIS, keeping a dedicated focus to the German speaking market, where we have established a name, brand and product line over the past decade. Likewise, in the USA, in cardiology, where we have a leading position.

How do you implement this approach in practice?

ORBIS is at the centre of our international expansion. We are doing two things in parallel. First, we need to set up the basic 'platformisation' for internationalisation, in order to enter different markets simultaneously. Not only the language, but also some basic processes are very different from country to country; for example, the pharmacy information system, i.e. the way medication is delivered and managed, requires different workflow in Germany and France. Recognising these different requirements led us to the second point.

Second, we are setting local R&D centres that can develop and integrate local requirements in the ORBIS platform. Taking the previous example, we already had an ORBIS pharmacy for Germany, and over the past 12 months, we have been developing and implementing the very different French ORBIS pharmacy modules. These developments took place in Bordeaux, which is our main ORBIS France development centre.

In the HCIT industry, you cannot rush the integration of the R&D roadmaps. Every customer has unique needs, every segment of the market is different, and every country has its own specificities. This is the reason why we have expanded ORBIS R&D centres outside Germany and Austria, in Belgium, France, and Italy.

Where are you today in your deployment efforts?

Since its introduction in France at the end of 2005, nearly 15 French university and community hospitals of various sizes, both public and private, have ordered ORBIS. The most recent is the Centre Hospitalier Universitaire of Toulouse, counting some 10,000 users. The first implementation in a French hospital is scheduled to go live this summer. In Luxemburg, the first hospital went live in June. At the same time, we are beginning the implementation of ORBIS in pilot sites in Belgium.

If you look at the 'origin' of the ORBIS platform in these hospitals, most of the developments come from Germany and Austria, but some of the key modules come from Gent and Bordeaux. It truly is a blend of all competences.

We will keep expanding beyond these initial European countries with our ORBIS platform. Again, we are present in over 40 countries with our Radiology IT offerings. And we spend the necessary time in analysing each market, systematically, before deciding how we should enter with our EPR platform

How does ORBIS relate to the electronic patient record (EPR) and the electronic health record (EHR)?

I would like to make a clear distinction between EPR and EHR. The EPR is generally linked to a hospital visit, and the EPR stores all the history and data that occurred between the admission and discharge of a patient. ORBIS is the foundation for an Electronic Patient Record (EPR). It consolidates the data related to every stage of treatment in hospital. Today, if a patient leaves an ORBIS hospital and returns six months later, the whole EPR is there, and the right information is available for the right user.'

On the other hand, you have the EHR, where you only want to store selected samples of the EPR. Why? Well, the EHR accompanies every citizen, and storing all information of every health episode in your life is just impossible. For example, after a heart attack, where all cardiology images are available within the hospital EPR, you only want to store the pre and post intervention images and related data in the EHR, so that you can appropriately monitor the patient. Usually, it is up to the local and regional authorities to establish the framework and policies related to the EHR.

Furthermore, there are geographical differences in the EHR deployment. One is the e-health smart card, which holds key medical information; the other is networked information databases, to which you gain access through the use of an electronic key, a e-health card being one example, but also potentially an electronic passport, or a fingerprint. The future might be a combination of these two trends: one to provide quick and vital information wherever the patient is, the other to allow extremely efficient management of the patient. The advantages to patients and to the quality of care are considerable and all efforts to achieve this as soon as possible are well spent.

Agfa HealthCare provides the technology that enables this patient-centric healthcare management, in a safe and secure manner. Again, the concept of 'right information to the right person at the right time' is of prime importance for healthcare providers, because they can't afford to drown under irrelevant information. Information management, its distribution and availability, is what will allow clinicians, nurses, and any caregiver to improve efficiency and quality of care, while reducing medical errors.

SCAR is now SIIM

Cynthia Keen reports from the USA

SCAR/SIIM leaders, who discussed the name change during a press conference. From left: Bradley J Erickson MD PhD, programme committee chair; Ben Shneiderman PhD, keynote speaker; Curtis P Langlotz MD PhD, incoming SIIM chair; Richard L Morin PhD, outgoing chair, and J Anthony Seibert PhD, chair of the Imaging Informatics Certification Committee

The Society for Computer Applications in Radiology (SCAR) has undergone a name change. SCAR is now the *Society for Imaging Informatics in Medicine* (SIIM).

Established in 1980 to promote the use of computers to develop new diagnostic imaging technologies, SCAR was the first radiology society to publicise research and applications for PACS, and has been the professional organisation most associated with the digital transformation of radiology departments in North America.

The Society's books and peer-review publication, the Journal of Digital Imaging, and its Expert Hotline archives at www.scarnet.org provide a wealth of scientific and pragmatic information about PACS and related digital technologies.

The name change emphasises the Society's expanded focus on encompassing other clinical specialties beyond radiology - supporting research in imaging informatics, including all imaging sciences, and the expansion of medical imaging throughout healthcare.

At this year's annual meeting SCAR/SIIM formally initiated an international Imaging Informatics Professional Certification Programme, designed to define the standards for PACS administrators. The first examination is scheduled for September 2007.

Delivering the keynote address, titled 'Leonardo's Laptop: Next Generation Users Interface for Medical Informatics', Ben Shneiderman PhD, Founding Director of the Human-Computer Interaction Laboratory and Professor of Computer Science of the University of Maryland (Baltimore), demonstrated his models for managing and displaying a vast amount of data.

In the R&D symposium, Katherine Andriole PhD, of Brigham & Women's Hospital (Boston, MA), discussed current medical imaging informatics research opportunities. Both presentations referenced the Transforming the Radiological Interpretation Process(TRIP) initiative, a multidisciplinary research effort initiated by SCAR in 2002 to address the problem of image and information overload generated by high volume diagnostic modalities like CT and MRI. (For podcasts go to: www.scarnet.org/presentations.html).

Workstation design - David Weiss MD, of Geisinger Health System (Danville, PA) and Steven Horii MD, of the University of Pennsylvania Health System (Philadelphia, PA), discussed future workstation requirements.

Dr. Horii described current design limitations of display, correlation, and performing image processing of 2D-3D-4D radiology, cardiology, orthopaedic and other types of diagnostic images and requirements for improved workflow through fluid integration.

Dr Weiss predicted that entirely new digital viewing techniques are needed to provide efficient review of the large data sets generated by the latest CT and MRI equipment. The ideal, he said, would be to show a virtual image that could be 'peeled away' to display the underlying anatomy.

Network analysis - Sergio Camorlinga PhD, of St Boniface Hospital Research Centre (Winnipeg, Manitoba, Canada) described the use of a distributed network of modality simulators to produce graphs that display how networks respond to different levels of traffic. The graphs can verify if transfer times for image data are within the tolerance parameters for a hospital, and identify the best performance for PACS under different sets of load levels.

New workflow worklist engine - The University of Texas M. D. Anderson Cancer Centre (Houston) created a new kind of worklist engine modelled on the concept of stock market displays of current market conditions, which, Kevin McEnery MD explained, provides greater flexibility and efficiency.

Archive storage - The challenge of the management of large databases of patients will continue because storage requirements steadily increase. Today, image accessibility is age-based. Richard Morin PhD, of Mayo Clinic-Jacksonville (Florida) and current chairman of SIIM, recommends that older images be stored on-line, based on the likelihood of future review rather than their age. Paediatric, cardiac, mammographic and radiation oncology images should be more rapidly accessible than daily chest X-rays verifying tube placement, which have no value after a patient is discharged, and could be immediately moved in highly compressed format to a long-term archive.

SCAR06 drew an international attendance of 1,275 registrants and 150 exhibiting companies. In June 2007 the meeting will be held in Providence, Rhode Island. Proposal abstracts will be accepted until 11/09/06. Global submissions are strongly encouraged.

Progressing towards the EPR

By **Luisa Cattanea**, IT Director at ASL Nº 11 Empoli

Today, the Local Healthcare Company ASL Nº 11, of Empoli, Florence, is a highly advanced public utility, able to face the challenges of technological innovations and to perform long-term objectives with leadership and competence.

Prior to 2002, the company focused on IT development of operative units in conformity with the 'best of breed' strategy, and it was developing projects guided by functional operators with a limited input from central information systems.

Our users were very satisfied with the final results of departmental projects, but they did not take into account the Electronic Patient Record (EPR) objective and the patient-centric logic.

In this context, which could be defined as 'IT alphabetisation', the IT resources mainly played a technological role: they designated the infrastructural support to project coordinators, without being involved in engineering processes and in managing the changes.

Therefore, departmental products established the basic structure of our IT strategy and they are still today in the upgrading or evolutive maintenance phases.

Between 2003 and 2006, under the direct sponsorship of a General Manager, the Hospital Information System (HIS) project developed; it began with the administration management of patients' hospital admissions and discharges, then expanded to activities in hospital divisions, surgeries, operating theatres and the emergency department; it was strictly integrated with the above mentioned departmental systems.

Luisa Cattanea

The best specialised product was evaluated, particularly focusing on integrator competence. The strategy was for a medium to long-term partnership with a contractor.

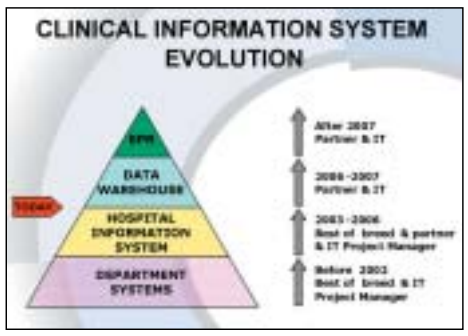
We chose the company Italtbs, a European partner known for its clinical engineering division, with a business unit dedicated to the Hospital Information System Patidok, which is mostly widespread in Austria and Germany.

From the beginning the project integrated different functional areas, with the patient strongly in mind, along with models of sharing administrative and clinical data.

In the first two years the project encountered many of difficulties:

- Computerising a 'paper and pen' process, which caused slow operations and needed computer skills (not always suitable)
- The lack of an IT project manager, to coordinate activities between users and consultants
- The lack of key users, to take strategic decisions on changing processes
- The poor knowledge Italtbs had in the context of an Italian hospital, sometimes less 'standardised' in terms of Austrian and German realities: they are guided by strict rules, which we do not have, so we needed - sometimes heavily - to model the software to allow the different processes doctors were used to
- Finally, to win over the resistance to changes, which required a conversion in the doctor's role and job (I could say the lack of the strategic role of a changeover manager)

Beginning in 2005, with the appointment of an IT project manager and the designation of hospital administrative managers as key users, the project went through the critical phase, obtaining a high level of satisfaction in all management roles.



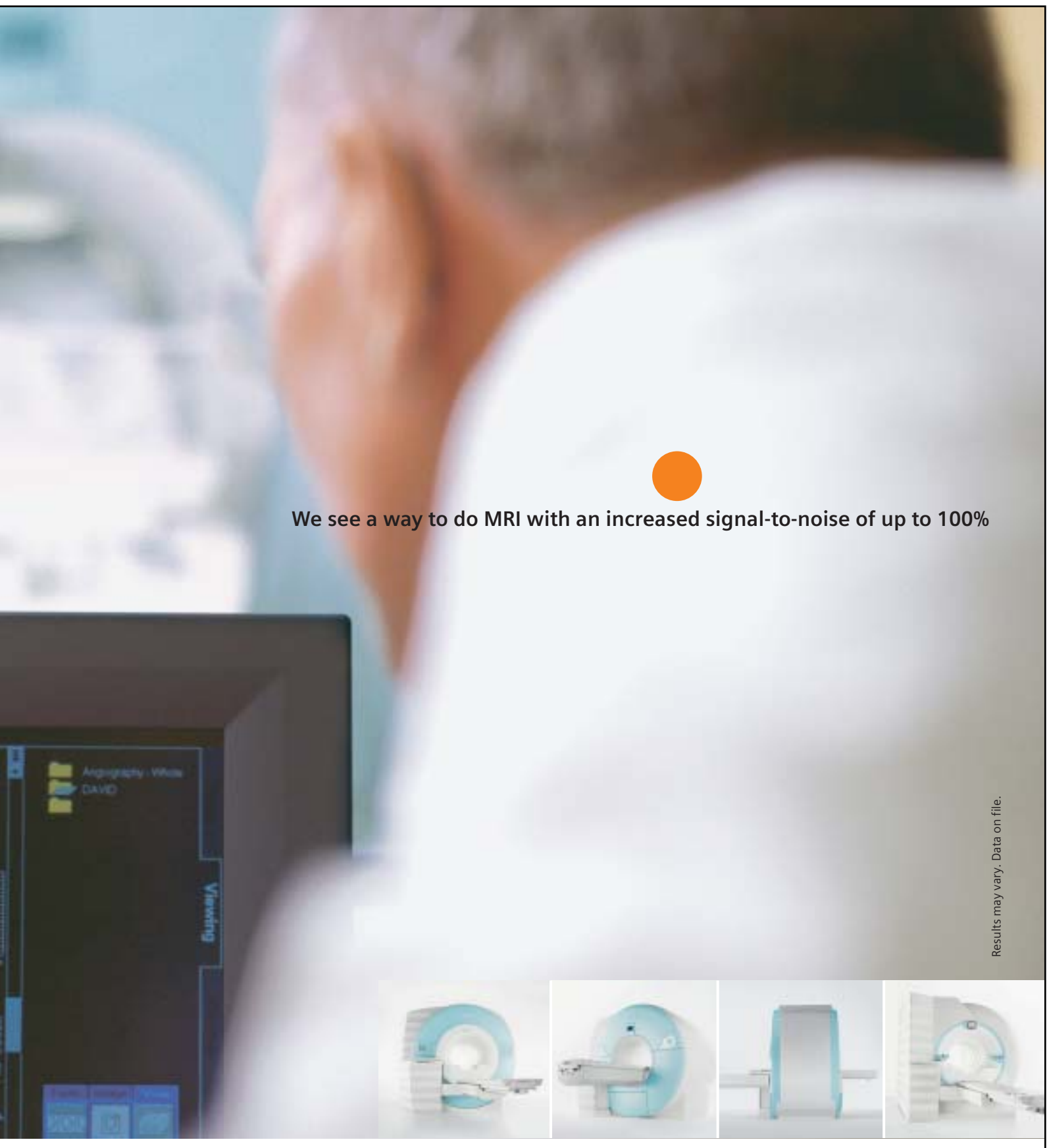
From the beginning of this year, the IT Direction has faced the third phase of a shared development programme, building a central datawarehouse (DWH) to support Top Management strategic and decisional processes, by giving value to the large amount of data generated by new information systems.

A heavy investment of all the human resources involved is planned for the next two years; a key factor to success is the identification of a partner with technological knowledge, extended experience and innovative skills.

Therefore the selection of a Business Intelligence tool and a strong partner to support IT operators is at the end, and the DWH project is beginning: as a matter of fact, for the first time, the IT Division will be an actor, in addition to being a director. This project will encourage internal competence and skills, focusing on the changes brought to our company by the DWH spreading.

Following the same logic of IT partnership with external suppliers, after 2007, ASL 11 will be able to build a real electronic patient record (EPR) project.

In the area surrounding Empoli - a town near Florence that has 100,000 inhabitants - the Local Health Company, ASL Nº 11, coordinates all general healthcare activities (non-specialist). Serving around 250,000 patients, the company has four hospitals, about 50 small health departments and around 2,000 employees. Responsibilities also include the co-ordination of the area's general practitioners (GP)- 200 doctors who are reimbursed under an agreement with the public health system, depending on the number of patients in their care.



Privately-owned radiology group speeds diagnoses

Radiologist and radiodiagnostician, Cyrille H Benoit MD, the recently appointed Director of the Bellevue Zurich Radiology Institute

In 1994, radiologist *Dr Kim Laver* acquired the Schwyz Radiology Institute. In recent years, radiology centres in Cham, Schaffhausen (MRS Magnetresonanz Schaffhausen AG) and Bellevue Zurich were also acquired. In July, this year, the Lindberg Winterthur Radiology Institute also became a member of the group. We asked radiologist **Cyrille H Benoit MD**, Director of the Bellevue Zurich Radiology Institute, about the group's choice of radiology equipment – particularly its PACS – and the rules of reimbursement in the Swiss healthcare system.

Bellevue was a small radiological practice that offered mammography, ultrasound and conventional x-ray, Dr Benoit explained. 'Dr Laver took over, moved to new premises and refurbished, modernized and expanded everything, with two objectives: to optimise patient care – and economic benefit.'

Does the group cater for private patients exclusively?

'In Switzerland things don't work the same way as in Germany. We don't make a difference in the out-patient sector, but receive the same amount from Swiss health insurers no matter where the patient is insured.'

So the typical private patient doesn't exist?

'Correct. There are certain services that are not covered by health insurers; consequently the patient has to pay when he uses them.'

How do you ensure the economic success of your institute?

'Through the quality of our work and speed of examinations - a patient does not have to wait over four weeks for our results. Most examinations can be performed in a day, which is currently a crucial issue in this market: How fast can I deliver my services?'

You opted for a KODAK CARESTREAM PACS. Was this to speed up your workflow?

'That was indeed an important reason – to work more efficiently and faster. In addition, we save money because we no longer have to print films. The next step in our agenda will be to forward images to the physician, to further accelerate the entire process. Currently, the referring physician can chose which image format he prefers: paper or CD. Normally we send the CD by mail and hand over the paper images to the patient.

PACS has one major advantage: In Switzerland we are required to archive the examinations on a secure data carrier. Neither paper nor CD are considered secure because we cannot guarantee that they survive ten years. That means we either need PACS or X-ray film. However, when I have a paper print to give to the patient, I also have to archive the x-rays.

Most of our referring physicians are older colleagues who went through their training before PC and internet, so they still want films and if that's what they want, they'll get it.'

Why did you choose this particular PACS?

'Because the entire package – price, service, innovation potential – suited our needs perfectly. And I'm very satisfied. For me simple handling is crucial. I have to be able to access the information quickly, for example, call up well-designed lists to see immediately when and where previous examinations were performed, what still needs to be done and what's already there. I want to move through each step of the process swiftly and want the data to be clearly presented. Certainly it is also important for me to be able to view CT and MRI images on the PACS monitor and not have to switch to the workstations of the individual modalities. All this saves a lot of time!

'We are certainly planning to implement the PACS in our other institutes. Currently, the individual institutes work quite independently of each other. Synergies are realised by the range of services we can offer. If, for example, a CT is needed over a weekend, it can be performed in Schwyz and evaluated in Zurich. Or we obtain a second opinion from a colleague whom we know he is specialised in the subject matter. This means there is a certain degree of cooperation.

'However, in Switzerland private institutes are primarily local providers and the referring physicians want to personally know the radiologists they work with. They need personal contact, to be able to call and know the person on the other end of the line. Therefore, it is particularly important that we make efficient use of the synergies within our group.'

Walking through your institute we noticed that products from almost all manufacturers are used. Why didn't you opt for a PACS from one of those equipment manufacturers?

'Because the KODAK CARESTREAM PACS is the most innovative solution and, with a diverse equipment park, such as ours, it is easier to integrate a system from an independent solutions provider. Some of the manufacturers of large equipment said about their PACS: 'It works with our products, but we don't know whether it will work with the products from other manufacturers'. That was an important issue – a PACS should be completely compatible with all products on the market.

Elaborate, evolving network to link radiology and cardiology

At Basle University Hospital, Switzerland, a unique networking project for the hospital's cardiology department is under development. During an EH interview, Professor Stefan Osswald MD described this complex system and its future potential

Basically, we tried to set up a clinical database into which we could feed not only simple text formats, such as letters or examination results, but also alphanumerical data as numbers or categories. One example: A patient's blood pressure is too high – this result is not fed into the system as 'high blood pressure' but is measured as a number which, in turn is translated by the system into a report. Angina pectoris is another example: We have classified four characteristics, then described Angina pectoris itself with grades I, II, III and IV. Then we had to determine what four components best describe a classical Angina pectoris. If, for example, only three of the four characteristics are positive, then this is an atypical form of Angina pectoris. Working with the system requires that everyone knows what we mean by terms such as Dyspnoe IV, or Angina pectoris II. We force the doctors to use the systematics that we have lodged in the database.

Only at the end of the data recording do we allow prose, i.e. a subjective, written diagnosis. A typical example that you would find in every anamnesis, such as 'the slight suspicion of atypical, mild chest pain', does not help us with our analysis, which is why this type of information is being reduced to the absolute minimum. This allows us to collate around 80-90% of all data analysed in a systematic way and to store it in a database. We have around 45 modules - for example, cardiac examination, clinical examination, or the module stress electrocardiogram, left heart catheterisation or pacemaker implantations. All workstations are connected to this system, i.e. when a pacemaker is implanted, the details of the pacemaker, such as serial number and model, are fed into the system, then I add my medical data. When an examination is finished I can generate a report, which is transcribed into a text document.

This is sent to the patient's general practitioner (GP) – all GPs are also connected to the database. Via our interface with our hospital server, we can copy patients' master files and scanned documents generated by GP surgeries, and these are cleaned up in an intermediate step, to guarantee data are stored correctly. Unfortunately we have found that master files – until now only used for administrative purposes (e.g. invoice issuing) contain quite a few errors; for example, duplicates where a patient named Müller is spelt with an *ü* in one place and with ue in another. When you try to link medical results with this file you run into problems. That's how we realised that master files must put a lot of effort into cleaning up master files, to ensure we do not generate false medical diagnoses. That process is now standard. Everyone who deals with a patient, for example ensures that the address matches.

All alphanumerical information is stored on our server. ECGs are stored on separate servers and each time somebody does an ECG using one of the machines connected to the network, the system creates a log that says we carried out an ECG on, say, Mr Müller. When we next go into the system, we can generate a PDF file of that format. Unfortunately, this is not yet possible with angiography images, nor with MRI, because we are waiting for our PACS system. We expect this will store a log with an MRI image in our system, so then we will have access to those images via a link.

So we are building a motorway between cardiology and radiology, which flows both ways and additionally frees up space on our server. We are already connected to a RIS system. When a left or right cardiac catheterisation is carried out, the X-ray machine copies all the data from our system and we no longer have to retype the data from one machine into another. We have a few different interfaces of this kind and therefore access to a large number of different systems and servers. We basically have a fully electronic anamnesis. Hand-written admission letters are put through a mass scanner then electronically stored, so that effectively we have complete electronic patient files.

Scientifically the database helps because we have fast access to all our patients, but you always have to carry out a separate data collection for each scientific study. You can, for example, copy left or right cardiac catheterisation data we already have, but, when prospective, each study protocol is written in such a specific way that data must be collated separately. The same goes for statistics. If I want to do a prospective examination study tomorrow I must plan it as such, because each database is only as good as its user, who regularly cleans up the data and inputs them completely - and, if someone does not complete all the fields, you are left with an empty line here, an empty line there.

We have no secretarial staff to write reports, of which we generate around 700 - 800 daily. So, everyone, even our head of department enters his own data and report. We must compromise between how much we'd like and what we can leave up to the individual doctor, so that in the end we are left with a useable data file. Another form of quality control is to look at our users, i.e. to find out who never completes files. Or we cross-correlate data by grading Angina pectoris I to IV, then look at the respective catheterisation results. If we then separate this result according to the different examiners, and assume that the head of department and senior consultant have more experience than a student, then there must be a correlation.

Should the database show something different, we'd assume it probably doesn't understand a fact correctly. However, if you realise that the hit rate averages around 95%, then you must speak to those who differ, because they probably haven't understood the system. But if you realise that even the most experienced examiners keep achieving bad hits then you can assume that the category itself is the problem.

Of course there is a certain amount of effort if you want to evaluate data statistically. Because we have predefined many categories, it takes five minutes to write a report. It may sound complex, but the advantage is that everything is available electronically and there is no need for unnecessary telephone calls, as our periphery is also connected to all our data. The Internal Medicine Department takes the reports directly from our server, so they don't have to ask our secretary or head of department for information.

GPs receive reports by mail. Doctors connected to our network have online access and also can register patients electronically. As soon as the registration is electronically processed and an appointment allocated, an e-mail is sent to the GP. Following an examination, both the appointment and result is available within the network, to which the GP has access. This does not completely replace dialogue with GPs, but now we can concentrate on a factual dialogue instead of administrative issues.

As yet, we have no electronic lodgement of resources, so the system does not recognise that, say, patients A and B cannot have an ECG on the same day. So this is still done manually. We have a precisely measured number of slots; when these have been used then we have to switch, because the system wouldn't accept our request, which is the way it was planned. The problem is that in this way we cannot realise our volume. As soon as the resources become scarce and you tell the system to block any further requests after eight catheterisations, you then cannot treat the two emergency cases. And if you have another three cases in the dermatology department, and another must be referred to the surgical ward, you should still be able to plan this in the system. That's why a coordinator does it all manually. We are always working to improve planning, because almost 50% of cases are emergencies. If we automatically limit our resources we hinder ourselves.

The system we have developed is ideal for us. Its power lies in its 100% open platform, connected in all directions, which gives a great overview of what happens with patients. If, on the surgical ward, I'm called to see a patient whom I've never met, I can use the database to gain an initial overview, to establish a qualitative, preliminary assessment - a great help when assessing a patient in person.

However, the power of the system only comes into its own if all data and information is entered. If they are not, because, for example, the surgical ward uses a different ECG system, then this power is diminished because some of the patient's data is missing, so we cannot form a complete opinion. In other words, the system is only good when we ensure that it can communicate with other systems and is aligned with these.

Tracking drugs and assets

Germany – Jena University Hospital, based in Thuringia State, provides 1,375 beds and has over 4,000 employees, making it the largest employer in the region. At over 200 years old, it is also one of the oldest hospitals, yet is classed as one of the most up-to-date institutes in Europe.

Among the hospital's latest and forward-looking developments is the implementation of a new healthcare solution produced by the French company SAP AG. The firm reports that this system leverages SAP software and radio frequency identification (RFID) technology. 'By applying RFID hardware infrastructure provided by Intel Solution Services – including port scanners, communication and radio devices and RFID tags – the hospital will extend its deployment of SAP NetWeaver, using the platform's auto-ID infrastructure to identify, track and match medication accurately and in real-time, from the hospital's pharmacy until they are administered to patients,' SAP explains.

'International studies reveal that approximately every 20th patient suffers an adverse drug effect, and about 55% of these cases could have been avoided,' explained Dr Michael Hartmann, director of the pharmacy at the hospital and a member of the Council of Europe Committee of Experts on pharmaceutical issues. 'We selected SAP technology to expand our existing SAP NetWeaver environment and to enable the innovative use of RFID.' Using the resulting system, the hospital aims to reduce the risk of any dispensing errors. The passive RFID tags enable medication to be tracked in real-time from the hospital's pharmacy to intensive care and individual patients. Medication will be matched digitally to the individual patient by checking the reference codes on an RFID bracelet worn by the patient. Using handheld scanners, nurses can read those codes, link them to the patient data in the hospital's IT system and gain instant access to the patient's detailed information, displayed on a screen. In addition to improving treatment quality, the hospital expects that the RFID infrastructure will help to optimise logistics processes and enable demand-driven supply management, thus reducing the amount of capital locked up in the university pharmacy's inventory. The new infrastructure will enable digital identification and immediate tracing of drugs down to the level of individual unit doses and also alert pharmacy staff as to the expiration dates of medication.

iSOFT Switzerland joins NEXUS AG

Nexus AG, which develops and markets healthcare IT-solutions, supporting an integrated approach for the exchange of data between general practitioners, hospitals and rehabilitation clinics, has acquired 100% of the shares of iSOFT Switzerland GmbH, which produces administrative IT-solutions (the HOSPIS brand) for Swiss healthcare. With sales of around eight million CHF, and 75 customers, the company has been one of the major software solution providers in this healthcare segment.

The company will be registered as Nexus/Schweiz AG. It will continue marketing iSOFT products in Switzerland.

Pictured from left: Dr Ingo Behrendt, Head of the Nexus AG Board, David Gregory of iSOFT Group plc and Albert Besewski of iSOFT Switzerland GmbH

Data management in cardiology

Imagine Mr Miller has a sore throat and goes to see his family physician. The physician performs all the usual basic exams. The results indicate that referral to a cardiologist is necessary. The cardiologist performs the same basic exams which the family physician did plus a stress test. The results show that in-patient treatment in a hospital is required. In the hospital the patient for the third time goes through all the basic exams, through another stress test and a scintigraphy and a coronary angiography.

With CardioNet by SCHILLER SEMA the number of unnecessary multiple exams can be greatly reduced as family physician, specialist and hospital can exchange data and communicate with each other. The family doctor as the first one in the chain can already consult the cardiologist online. The same holds true for the specialist who does only one exam per category. The IT system also enables fast and precise triage.

When the patient is discharged from the hospital, the specialist as well as the family physician have all relevant diagnostic and exam data. The results of the exams which were performed during the hospital stay such as rest- and stress-ECG are archived on the ECG equipment of both the family doctor and the cardiologist and can be easily accessed and used for serial comparison or when a second opinion is required.

SCHILLER provides such IT solution in cooperation with their partners.

Project:
CardioNet – the multiple network solution of the Kantonsspital Basle, Provided by SEMA – Data Management Solution by Schiller AG, Baar/Switzerland

Project partner:
Schiller AG, Baar/Switzerland, Kantonsspital, Basle/Switzerland, Legon Informatik GmbH, Gränichen/Switzerland

Project information:
Schiller AG, Altgasse 68, 6341 Baar
phone: +41 41 766 42 42, sales@schiller.ch

SECURITY

The all-in-one alarm and

Pager could prevent incidents from becoming emergencies

The Personal Security Pager (PS-Pager), made by Bosch Security Systems, is an innovative mobile that houses two products: a personal alarm device and speech pager. Compact, lightweight, robust, comfortable and discreet to wear, the device is also as easy to handle as the messages are to read.

The pager was designed for lone workers and those employed in high-risk environments, such as healthcare institutions and detention centre, where they might suddenly face unexpected or threatening situations. Using the PS-Pager, colleagues can be instantly alerted, as well as told the location where the alarm was activated.

It is also useful for various everyday tasks, for example to provide secure, versatile instant messaging for individuals and large groups.

The pager has an internal antenna; reversible top display (ideal for hands-free reading in a pocket); an automatic scroll function; and easily recognisable icons. Alphanumeric paging calls are displayed on the 12-character top display and graphical front display, which presents three lines of 12 characters and gives a visual (plus audible) indication of low battery and/or an out-of-range area. The last 10 messages received are held in a memory stack and can be recalled when needed.

Each of the two manual alarms - emergency and assistance - is adjustable for loud or silent alerting of the emergency team. A built-in vibrator provides more discreet alerting when audible alerts are not desirable or are inadequate (e.g. noisy environments, night shifts or deaf-alert).

Radio frequency based location

Philips Speech Processing recently introduced two new dictation devices to ease medical information recording.

The *Digital Telephone Desktop 9850* can be accessed and operated using any touchtone telephone, mobile phones, PDA or car phone. The device answers calls automatically and physicians can record dictations wherever they are by making a simple telephone call. The user ID grants them individual access rights, while the telephone keypad gives full control of the unit. Dictations are stored on a memory card and can be uploaded automatically on a PC or server, ensuring central and secure file storage.

In combination with the digital dictation software SpeechExec, the Telephone Desktop offers numerous workflow options and routes voice files to specific locations such as a LAN, FTP server or an e-mail address for remote transcription.

The new Philips *SpeechMike*, with barcode scanner, further adds to workflow comfort in

INTEGRATING SPEECH RECOGNITION WITH A RIS

A report turnaround time decrease of 50% leads doctors to plan for 100% usage of the dictation system

The Helsinki University Central Hospital, in Finland, piloted speech recognition at Toolo Hospital's radiology department to evaluate its effects on report generation. The Technology Manager, **Tomi Kauppinen PhD**, presented the pilot's first results at the 2005 European Radiology Congress (ECR). These indicated a 50% decrease in report turnaround time. At the 2006 congress, he followed up on the study, explaining how the pilot hospital plans to increase the number of reports processed through speech recognition from 70% to almost 100%. Interview: *Armin Scheuer* of HealthTech Wire.

Courtesy of Helsinki University Central Hospital

'We are a trauma centre, so emergency reports are needed fast, or instantly, Tomi Kauppinen explained. 'We used to dictate on cassettes, or handwrite reports. But, in modern healthcare this process is not acceptable, as it is error-prone and time consuming for radiologists. Although several European and US studies have suggested that radiologists who dictate, edit and validate their reports themselves work less time-efficiently, our experience has proved the contrary. In the beginning, eliminating deferred transcription slowed radiologists down, but after their training, reporting turn-around decreased, which for us was a major motivation to introduce speech recognition (SR).

Tomi Kauppinen PhD

Several steps in the process, such as secretarial queries, manual typing, or phone calls from those awaiting reports, have been eliminated, so overall workflow and productivity have improved, rather than declined. Achieving a 50% decrease in report turn-around was easier than we thought. Corrections are also minimal, because we trained the system and are constantly updating recognition vocabularies and adding unknown words - a key feature in making front-end speech recognition successful. A dedicated administrative person manages these updates and adaptations.

When introducing speech recognition, what other aspects need consideration?

Ideally, SR should become a natural part of the RIS, so I would roll out the RIS and SR jointly, so that users need to adapt to only one new system. I'd also recommend demanding that RIS providers deliver a SR-based solution. Then, when you integrate the RIS with PACS, you get a truly homogeneous infrastructure that binds all radiology applications in one integrated solution.

You aim for 100% processing of radiology reports using speech recognition?

As a teaching hospital we will always create some reports traditionally, for training purposes. Currently, 70% of our reports are created with SR; we could raise this to almost 100%. Optimising integration with the RIS and RIS user interface is one aspect; another is the availability of SR at every workstation - ideally you should be able to use it from every RIS workstation, which is why I recommend rolling out RIS and SR jointly. The third step is to optimise RIS/PACS integration, because an integrated SR system depends on seamless communication between both leading applications. This means that radiologists could choose a patient from a list in the RIS, and the PACS automatically delivers corresponding images. It's a quality and security step, ensuring images and reports correspond with the correct patient. It is also the basis for starting to use the SR application in the RIS. In fact, it further adds to time-saving in the overall reporting workflow.

How did you convince your radiologists to switch from cassettes to speech recognition?

User acceptance is a critical point and we underestimated it. People fear change and good, clear information in advance eliminates negative expectations. The integrated application is very user-friendly - however, investing time to explain it to users, supporting them with training their voice profiles, and showing them how straightforward the system is, will lead to fast user acceptance.

On average, training took 1-2 hours per user. Given the importance of PACS/RIS/SR to the department, a senior radiologist on the core team trains new users himself. We also implemented a help desk to give immediate support to users with problems, but it can't really complain about much work. In fact, we had only a few technical difficulties with the SR system.

At the ECR you mentioned that reporting quality improved.

Yes. First, because radiologists know their complex vocabulary, so immediately check whether a word was recognised correctly. A transcriber might make spelling errors, but radiologists no longer have to spell out difficult terms for them. Secondly, radiologists now dictate in a more structured and organised format, because they see their report directly on screen. This also adds to a final report's clarity and quality.

So why don't all radiology departments use SR?

Many RIS vendors don't offer an integrated solution, which is why I recommend that my colleagues avoid SR-isolated implementations on individual workstations; the experience will be disappointing. Instead, they should pressure their RIS providers to integrate SR in their system and help them to implement a structured reporting workflow that takes into account all involved applications - PACS, RIS and speech recognition.

The new generation of PC dictation.

The new generation of the Philips SpeechMike sets new standards in functionality, simplicity and quality. Smaller and lighter, with an optical trackball and the convenient "one-thumb operation", the new Philips SpeechMike makes digital dictation child's play. Experience the new integrated barcode scanner and many other advantages at:

www.dictation.philips.com/dictation
dictation.systems@philips.com

PHILIPS
sense and simplicity

speech pager

detection is a standard feature of the pager. This is very reliable, the maker points out, because the RF signal passes through walls and clothing to immediately inform the emergency response team of the incident's location.

PS-Pager is fully compatible with existing Bosch Paging and Personal Security Systems, which can interface with, for example, telephone switches, building management, nurse call and fire detection systems.

Details: www.boschsecurity.com

France and Spain gain the first region-wide speech recognition systems

Speech recognition in healthcare has evolved from a departmental installation to a hospital-wide system. In an effort to optimise efficiency and patient service, Spain's Castilla-La Mancha region and the Paris Hospital network AP-HP have become the first in Europe to introduce speech recognition to thousands of physicians and transcribers on a regional level.

Castilla-La Mancha's regional healthcare service (SESCAM) will implement speech recognition in all its radiology departments. This introduction is within the framework of project 'Ykonos', an initiative supported by the European Union, which aims to develop and introduce a digital image-based diagnosis system. The third phase of the Ykonos project draws upon 8.5 million euros and includes the installation of equipment for the digitisation, storage and display of radiology images, as well as a series of support services.

According to Ambrosio Rodriguez, IT director at SESCAM, Ykonos will enable physicians to share and access medical patient information without delay, ensuring faster and more efficient quality of care. By capturing this information through a speech recognition system, physicians have a powerful tool that improves clinical documentation, as it facilitates the immediate and complete availability of a patient's documents.

The Paris hospital network Assistance Publique - Hôpitaux de Paris (AP-HP) will also implement speech recognition integrated with the digital dictation workflow solution DictaPlus 5. Gérard Canadas, managing director of DictaPlus France, said that, when the installation period ends in 2010, Paris will have the world's most advanced document creation system in healthcare and also the world's largest deployment of hospital-wide in-house speech recognition, involving over 12,000 physicians, 4,000 medical secretaries, and 39 hospitals.

AP-HP aims to achieve a significant drop in report turnaround time, as experienced by the Hôpital Européen Georges-Pompidou, which is also part of the network. Using speech recognition in its radiology department, the hospital has reduced the turnaround time for medical reports from four days to a few hours.

Robert Thornton, commercial director at Philips Speech Recognition explained: 'Modern speech-recognition technology provides industrial-grade features, specifically designed to facilitate large-scale implementations in the healthcare sector.' He sees the current region-wide implementations as clear proof of the healthcare sector's commitment to increased efficiency and accuracy of medical documentation for better quality of care and improved patient service.

Philips recently announced the new version of SpeechMagic - which a Frost and Sullivan market analysis reported as the most widely-used speech recognition technology in European healthcare.

SpeechMagic 6.1 is expected to boost speech recognition accuracy and its scalability has been raised to up to 15,000 users per cluster. The software architecture enables fully centralised administration and management, facilitating integration with medical IT systems such as electronic patients records (EMR) and hospital information systems (HIS).

To enhance the transcription workflow, SpeechMagic calculates the amount of correction a recognised text will require and intelligently routes the document to the most suitable transcriber. The new version is believed to further accelerate the spread of speech recognition-based medical reporting, because it reflects the needs of physicians and hospital administrators for higher efficiency, security and flexibility in medical document creation. It will be launched for integratin to the Philips partners end of 2006 and is expected to be first implemented in 2007.

NEW

hospitals. It assigns medical reports to the corresponding patient with 100% accuracy, Philips Speech Processing reports. 'Previously, doctors had to carefully dictate the patient number, name, sex, age, etc. This data can now be read in automatically. The new device reads barcodes from up to 30cm

Dictation device can be accessed via mobile phones and another scans barcodes

and has an adjustable scan angle, allowing it to be conveniently set to two different positions. The ergonomic design assures comfort even during longer dictation sessions. The barcode scanner is activated through a trigger at the back of the device. It seamlessly integrates with workflow systems such as hospital information systems, thus ensuring efficient dictation, high documentation accuracy and optimum data security.
www.philips.com/dictation

SpeechMagic™
Industrial grade speech recognition

Supporting 23 languages, integrated by more than 200 healthcare IT companies and deployed in over 8,000 installations in 45 nations, SpeechMagic has established itself as the standard in healthcare speech recognition. Whether deployed in a departmental, hospital-wide or regional setting, SpeechMagic provides highest flexibility and reliability to increase the efficiency of healthcare documentation.

Learn more about the market and technology leader* in European healthcare speech recognition.

Visit **www.philips.com/speechrecognition**.

*Frost&Sullivan, European Healthcare Speech Recognition Study, 2005

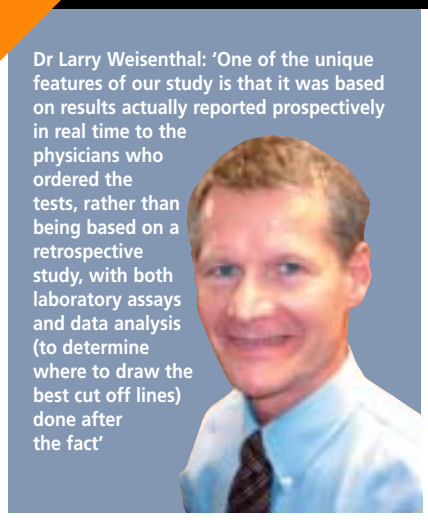
PHILIPS
sense and simplicity

NEW

TEST IDENTIFIES PATIENTS WHO BENEFIT FROM TARGETED CANCER DRUGS

USA - A new laboratory test - *EGFRx*, developed by the Weisenthal Cancer Group* - has accurately identified patients who would benefit from treatment with the molecularly-targeted anti-cancer therapies gefitinib (Iressa, AstraZeneca) and erlotinib (Tarceva, Genentech), according to clinical data published at the annual meeting of the *American Society of Clinical Oncology* (ASCO).

Medical oncologist, Larry Weisenthal MD PhD, Associate Clinical Professor of Medicine (Haematology/Oncology), at the University of California Irvine, and the developer of the new assay, believes that the test, which he already provides routinely for a number of physicians in the USA, holds the key to solving some of the problems confronting a healthcare system seeking ways to best allocate available resources while accomplishing the critical task of matching individual patients with the treatments most likely to benefit them. 'We feel that our approach may be used as a gold standard to more readily identify molecular profiling tests which are reflective of clinical drug effects,' he added. 'We test for drug effects using what we call *whole cell profiling*.' The method involves removing live tumour cells from a cancer patient and exposing these, in the laboratory, to the new drugs. 'A variety of metabolic and apoptotic measurements are then used to determine whether a specific drug was successful at killing that patient's cancer cells. This cell profiling method differs from other tests in that it assesses the activity of a drug upon the combined effect of all cellular processes, using several metabolic and morphologic endpoints. Other tests, e.g. those that identify DNA or RNA sequences, or the expression of individual proteins, often examine only one component of a much larger, interactive process.'



Dr Larry Weisenthal: 'One of the unique features of our study is that it was based on results actually reported prospectively in real time to the physicians who ordered the tests, rather than being based on a retrospective study, with both laboratory assays and data analysis (to determine where to draw the best cut off lines) done after the fact'

Dr Weisenthal added that this might explain why EGFRx whole cell profiling is currently the only test to demonstrate a statistically significant association between prospectively reported test results and patient survival.

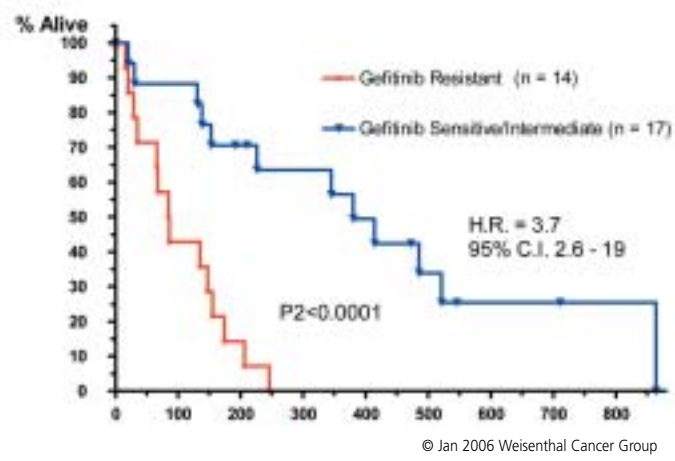
Using whole cell profiling, Dr Weisenthal's group correlated test results - obtained by his lab and reported to physicians prior to patient treatment - with significantly longer or shorter overall patient survival, depending upon whether the drug was found to be effective or ineffective at killing the patient's tumour cells in the lab. Patients prospectively identified by the team as favourable candidates averaged 485 days of life after treatment with the targeted therapy drugs. Conversely, patients identified unfavourably for the drugs averaged 75 days survival after receiving them. This compares with 76 days average survival among patients identified as unfavourable candidates and who did not receive a targeted therapy drug. Survival among patients identified by Dr Weisenthal as unfavourable candidates was therefore similar regardless of whether or not they received the targeted drugs.

Comparing the whole cell profiling approach with other types of tests Dr Weisenthal said: 'Over the past few years, researchers have put enormous efforts into genetic profiling as a way of predicting patient response to targeted therapies. However, no gene-based test as been described that can discriminate differing levels of anti-tumour activity occurring among different targeted therapy drugs. Nor can an available gene-based test identify situations in which it is advantageous to combine a targeted drug with other types of cancer drugs. So far, only whole profiling has demonstrated this critical ability. The reason this is critical is because there is a growing array of targeted drugs to choose from. Also, most patients today are treated not with a targeted therapy drug alone but rather with a combination of chemotherapy drugs. Therefore, the existing DNA and RNA tests do not reflect the way cancer medicine actually is practiced today.'

Several new, targeted drugs have been introduced in the last few years and dozens more are on the horizon, he pointed out. 'These 'smart' drugs focus their effects on specific, identifiable processes occurring within cancer cells. The new drugs are highly promising in that they sometimes provide benefit to patients who have failed traditional therapies. However, they do not work for everyone, they often have unwanted side effects, and they are all extremely expensive: some cost patients and insurance carriers $5,000 to $7,000 or more per month of treatment. Patients, physicians, insurance carriers, and the FDA are all calling for the discovery of predictive tests that allow for rational and cost-effective use of these drugs.'

** Weisenthal Cancer Group is a clinical cancer testing laboratory and research facility based in Huntington Beach, California. Details: www.weisenthal.org*

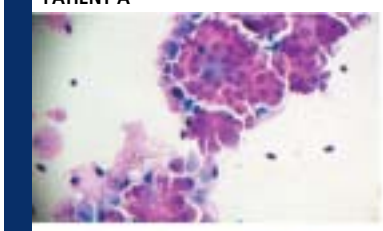
Representative survival curves



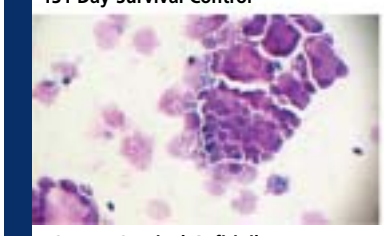
© Jan 2006 Weisenthal Cancer Group

Previously-treated NSCLC, Survival as Function of Cell Death Assay Results (as reported prospectively)

PATIENT A

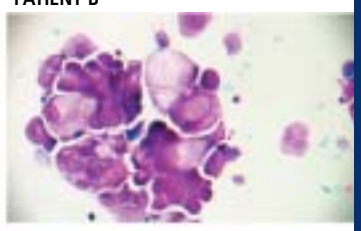


131 Day Survival Control



131 Day Survival Gefitinib

PATIENT B



530 Day Survival Control

530 Day Survival Gefitinib

The micrographs show tumour cells from two patients: A and B, both with adenocarcinoma of the lung. Top: the appearance of the tumour cells in the control cultures (without gefitinib), and below: the appearance of the tumour cells in the cultures exposed to gefitinib. In patient A, there was little difference between control and gefitinib-treated cultures. He lived 131 days, which was shorter than the median of 155 days for all the patients in the study. In patient B, there was a marked difference between control and gefitinib-treated cultures, with gefitinib exposure leading to the death of most of the tumour cells. This patient lived 530 days - longer than the median of 155 days for all patients.

Breast cancer

Preventing recurrence: 13 larger doses of radiotherapy offer as good a protection as the international standard 25 smaller doses

Giving breast cancer patients fewer but larger doses of radiotherapy may be as safe and as effective at reducing the risk of cancer returning, according to Cancer Research UK trial results published in *Lancet Oncology* on 30 May.

Led by Professor John Yarnold, of The Institute of Cancer Research and The Royal Marsden NHS Foundation Trust, a team of researchers at The Royal Marsden NHS Foundation Trust, the Gloucestershire Oncology Centre, The Institute of Cancer Research and the University of Wisconsin, tested an experimental schedule of 13 larger doses that appears to offer the same protection against cancer returning in the same breast as the international standard of 25 smaller doses, without any increase in side effects.

The study's preliminary findings could lead to simpler more effective radiotherapy treatment as well as a reduction in hospital visits for patients, lessening anxiety. Ultimately, health service cost-saving would also result.

Generally, patients receive radiotherapy treatment once daily, from Monday to Friday, for five weeks. The 10-year trial followed 1,410 women who had a lumpectomy after treatment for early breast cancer followed by different radiotherapy treatments. The women were randomly divided into three groups to rule out any bias. One group received the standard treatment of 25 doses in five weeks; the other two groups were given 13 doses in two slightly larger amounts over the same period. The researchers then monitored the three groups and showed that a regimen of 13 doses can apparently offer an outcome at least as good as the standard treatment.

'We think it should be possible to give fewer but higher daily doses of radiotherapy to the breast to prevent cancer from returning without harming the patient's healthy tissues,' said Prof. Yarnold. 'However, we will have to wait for the results of our further trials that have followed this study before we can confirm that the strategy is more effective than the standard treatment in the long term'

Bone marrow cells given gene therapy 'shield'

Radiotherapy affects bone marrow cells, lowering production of white blood cells. New research, published in The Journal of Gene Medicine, suggests that pre-treatment with a gene therapy 'shield' could defend healthy bone marrow cells.

Using an *in vitro* technique, a specifically engineered, non-harmful virus was designed to infect only bone marrow cells. The virus was further modified to carry a human gene that carries information on how to make the protein superoxide dismutase 2 (SOD2) - one of the body's defence mechanisms that clears up harmful radicals, such as those caused by radiation damage. Bone marrow cells modified by the virus produce higher levels of SOD2 than usual.

The protein appeared to provide the cells with added protection against radiation, reducing the side effects of the treatment and allowing stronger doses to be used. 'There is still a great deal of work to be done before we can start trying it in patients,' said researcher Dr Thomas Southgate. 'But the prospects are potentially very exciting.'

The team, based at the Paterson Institute for Cancer Research at the University of Manchester, hopes that eventually the discovery will yield pre-treatment protection.

PHARMACEUTICALS

Intergroup Exemestane Study (IES) results

Currently, five years of treatment with tamoxifen is considered the 'gold-standard' treatment for postmenopausal women with breast cancer. This drug blocks oestrogen, which can help fuel the growth of tumours in some cases.

Now, Instead of tamoxifen, many women are now given (orally) aromatase inhibitors following breast surgery. Aromatase inhibitors inhibit the enzyme aromatase, thus blocking oestrogen production.

According to the Intergroup Exemestane Study (IES) results, presented at the annual meeting of the American Society of Clinical Oncology in June, the drug aromasin, generically known as exemestane, and other aromatase inhibitors, cut the risk of death among some postmenopausal women with hormone-sensitive primary breast cancer by 17% compared with the standard tamoxifen treatment.

The UK-led five-year study involved over 4,700 post-menopausal women with early-stage hormone-sensitive breast cancer, who were disease-free after taking tamoxifen for two to three years. Around 50% in the group remained on tamoxifen, whilst the rest were given Aromasin (2,372 women). Their progress was then tracked for about two-and-a-half years after treatment ended.

The researchers reported that the women who switched to Aromasin had a 17% lower risk of dying from the disease than those who continued on tamoxifen. Deaths: 210 in the Aromasin group; 251 in the tamoxifen group. In addition, the rate of tumours appearing in the opposite breast reduced by 44%.

CLINICAL IMMUNOLOGY

Dr Manole Cojocaru, senior researcher and President of Romania's 2nd National Symposium *Inflammation 2006* describes discussions on the understanding of inflammatory diseases

The fundamental role of inflammation in almost all disease processes has been increasingly recognised over several years. An inflammatory response is the body's attempt to restore and maintain homeostasis after injury; it is integral to body defence. Inflammation is essentially beneficial. However, excessive or prolonged inflammation can be harmful. Researchers and physicians have been redefining heart disease, Alzheimer's and even diabetes and obesity as inflammatory disorders.

Recent research indicates that the immune system and inflammatory reactions are governed and regulated by powerful neuronal mediators derived from the central and peripheral nervous system.

Knowledge of the immune system has expanded dramatically in the last decades, not least due to enormous developments in molecular biology and biotechnology. However, the impact of immunology on clinical medicine is still not balanced by progress in our understanding of the immune system and the potential of immuno-intervention. Nonetheless, *clinical immunology* has evolved recently into a discipline that contributes to medicine, not only by bringing insight into the pathogenesis of many diseases, but also by offering huge possibilities for diagnosis and treatment of those diseases.

Immunology has invaded almost every field of medicine as a clinically relevant discipline. As immunology develops so rapidly, the clinical immunologist should be the bridge between immunology and clinical medicine, and translate those developments into daily clinical practice.

Following the successful first National Symposium *Inflammation 2004*, organised by the Romanian Society of Laboratory Medicine, the 2nd symposium was held in Poiana Brasov, Brasov County, under the auspices of the Romanian Academy of Medical Sciences.

About 130 European and North American experts - working in medical biochemistry, molecular biology, genetics, immunology, pharmacology, thrombosis and haemostasis, molecular medicine and other related branches - discussed the relationship between inflammation and inflammatory diseases and provide up-to-date developments in research, diagnoses and therapies; new technologies and standards in laboratory medicine; the role of evidence-based laboratory medicine; the quality of analytic testing and requirements for competent laboratories for testing. Over 50 scientific papers were presented. In addition, a workshop was held on the quantitative analysis of serum free immunoglobulin light chains by automated immunoassay, demonstrating the most recent advances.

Discussions also covered problems in pathophysiology of inflammation, inflammation/infection, inflammatory diseases as risk or trigger factors for human ischaemic stroke, markers of oxidative stress and redox modification in chronic inflammation in end-stage renal disease, evaluation of endothelial dysfunction in humans, the brain's inflammatory response following cerebral ischaemia, cell volume regulation in relation to ischaemia and cell proliferation, the effect of NO synthase and lipoxygenase blockade on oxidative stress and experimental shock, etc.

Conclusion: Investigations during the past five decades and advances in molecular biology, biochemistry, and genetics have contributed to the formation of modern concepts of immunobiology in inflammation.

A CD covering the 2nd Symposium will be available shortly.

EU regulation aims to improve research on medicines for children

The use of unlicensed and off-label medicines for children is widespread, yet over 50% of all pharmaceutical products have no scientific data for young people. With its *Regulation on Medicinal Products for Paediatric Use* the EU aims to promote the development of more medicines specifically for children.

To treat children effectively, and avoid unwanted side effects or under-dosing, precise data on the mechanism of action, efficacy or suitability are needed. Whereas vaccines and cough medicines for children are well researched, this is not the case for many asthma and epilepsy products, which were only tested for possible side effects in adults. Their active ingredients and formulas are also exclusively matched to adult bodies, and doctors are not given dosage recommendations for children or information on possible side effects or interaction with other medicines.

The development of medicines suitable for children is very expensive, as the under 15 years old group represents only 15% of the population. Moreover, trials involving children are complex and carry high risk. For example, unlike in the USA, in Germany very few parents allow their children to participate in studies.

The *EU Regulation* aims to improve the situation. Hildegard Debertin, Secretary General of Germany's Stiftung Kindergesundheit said that, while the EU provides direction and removes barriers, the decision to develop medicines rests solely with pharmaceutical companies. The regulation under discussion will require them to develop more medicines suitable for children and increase tests of existing medicines regarding their effects on children. The proposal for a Regulation on Medicinal Products for Paediatric Use is ready to proceed to the 2nd reading in the European Parliament and should become law by 2007.

Details and further information: www.kindergesundheit.de http://www.emea.eu.int/htms/human/peg/pegfaq.htm#

smiths

Smiths Medical offers market-leading solutions in two major areas: **Critical Care and Medication Delivery & Patient Monitoring.**

These two areas cover everything from **airway management, pain management, needle protection, arterial blood sampling, temperature management, critical care monitoring, hospital and ambulatory infusion, vascular access, in-vitro fertilisation, surgical drainage and insulin infusion.**

Our commitment to you is to consistently deliver on quality, value for money, safety and product performance.



www.smiths-medical.com

Smiths Medical International Ltd
Hythe Kent England CT21 6JL
Tel: +44(0)1303 260551
Fax: +44(0)1303 266761
Smiths Medical- a subsidiary of Smiths Group plc

Portex, Medex, Deltec, Pneupac, Graseby, Bivona, Wallace, BCI, Level 1, DHD Healthcare are the registered trademarks of Smiths Group plc or one of its subsidiary companies. ©2005 Smiths Medical. All rights reserved.

The global brands of Smiths Medical

Portex • Medex
Deltec • Pneupac
Graseby • Bivona
Wallace • BCI
Level1 • DHD

NEW

1st 64-slice combined PET-VCT scanners go to work

GREATER DIAGNOSTIC ACCURACY PREDICTED FOR CARDIOLOGY, ONCOLOGY AND NEUROLOGY

During the annual meeting of the *Society of Nuclear Medicine*, in California this June, GE Healthcare announced the first installations of its new *Discovery VCT* - described as ' the world's first true 64-slice combination positron emission tomography and volume computed tomography (PET/CT) system'. This combines the Discovery Dimension platform, the high-speed and high-resolution provided by GE's volumetric CT, with the high sensitivity motion imaging capabilities of its Discovery PET system - a combination of technologies that should enable physicians to more accurately diagnose and identify heart disease and cancer and neurological disorders etc.

Along with an installation in the USA, GE installed Discovery VCT in the molecular imaging research institution *Turku PET Centre*, in Finland, where **Professor Juhani Knuuti**, the centre's director, said: 'PET and VCT imaging allows linking the anatomical findings of coronary arteries with the information of myocardial perfusion, function and metabolism. That may improve the accuracy of the assessment of myocardial viability. However, the greatest potential of Discovery VCT lies in future applications of molecular imaging, matched with precise anatomical detail in imaging the coronary arteries we will be pursuing, using the tools provided in Discovery Dimension motion PET imaging capabilities.'

Daniela Zimmermann, of *European Hospital*, spoke with Professor Knuuti about the scanner and its predicted potential for cancer and cardiac diagnoses.

'Our previous PET-CT (Discovery STE) produced some very nice oncology applications - of course, the major indication of a PET-CT. Now, with a fast multi-slice PET-CT we can expand usage to cardiac applications, particularly for coronary diseases,' Professor Knuuti explained.

As I understand it, PET scans nuclides moving through the body - a procedure that takes time, whether combined with a 16-slice or 64-slice CT. Does the number of CT slices really matter?

Juhani Knuuti

'Yes. With a 64-slice CT we can perform a high quality coronary angiography in about five heartbeats - that's roughly six seconds. With the fast multi-slice PET-CT complete cardiac perfusion studies are fused with a high quality CTA in one single examination that lasts under 30 minutes. Moreover, the system presents us with the possibility of working on future applications, such as imaging vulnerable plaques and stem cells.

A 16-slice CT needs more than half an hour?

'The difference is that, with a 64-slice CT, you get the entire patient cardiac angiography in five heartbeats when the heart is in a stable phase, resulting in an unsurpassed image quality. With a 16-slice CT (or 32-slice CT) it takes longer and might require more patient preparation, and the success rate is lower.'

Then the 64-slice CT volume is fused with the PET data?

'Yes. For perfusion studies you typically start with the CTA. For normal cases - i.e. no stenosis in the coronary angiogram - thanks to the high negative values, you can conclude that the patient has no coronary disease and stop here. But, very often when you study patients with more likelihood of cardiac disease you will get positive findings, such as calcified plaques, which are difficult to interpret. These findings required, before the Discovery VCT, another cardiac investigation. Now we can immediately perform cardiac PET studies and link the artery disorder with the lack of perfusion. In one single examination we can provide a complete assessment of cardiac functionality.'

Commonly PET-CT is used in oncology, to locate tumours. Has the new scanner has changed that usage?

'The staging of cancer is still the main use, because you can find metastasis that will influence treatment decisions. Since the development of advanced cardiac applications, on both the PET and CT sides, interest in using the PET-CT in cardiology becomes more obvious.'

Does this mean diagnoses are more accurate?

'Clearly, the Discovery VCT give us more confidence in our diagnoses. Cardiac application in PET-CT will become increasingly important with the development of new PET agents that will help in characterising coronary plaques, for example. In the Turku PET Centre, we are testing a couple of new tracers to image inflamed plaques, which are likely to rupture (the so-called vulnerable plaques).Without this new, hybrid system we could not reach that target.'

RESEARCH & DEVELOPMENT

Intelligent textiles

By Anja Behringer

Shirts coated with vitamin E; textile implants... these are among the prospects for the latest textile technologies, along with fabric integrated with sensors, or computers, to respectively measure pressure on a diabetic foot, or the functioning of a patient's cardiovascular system.

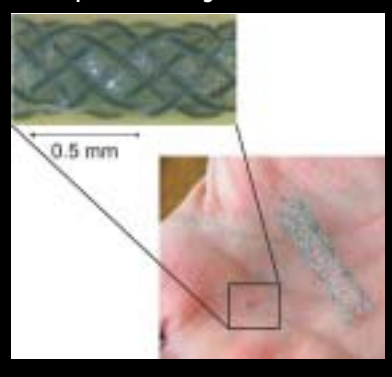
At a recent forum run by '*Innovative Bavaria*', in Nuremberg, the economic potential of this business sector was obvious. The worldwide market for medical technology is worth €184 billion; the turnover in Germany alone is €13.6 billion, and €0.6 billion of this is for medical textiles, all of which explains the number of projects currently promoted in that field.

Current trends lie in developing 'functionalised' surfaces, using new materials and coating technologies as well as integrating active ingredients. Work is also progressing to develop extremely light, highly breathable, elastic, water-repellent as well as absorbent textiles, as barriers against infectious agents and solid particles without releasing any themselves.

Apart from sensor technology, research is also being carried out on the use of radio frequency identification technology (RFID) integrated into textiles. This technology supports hospital logistics, for instance the location of equipment, or even people.

At the forum, the Institute for Textile Technology (ITA) at the (Rhineland-Westphalian Technical University (RWTH) Aachen introduced a 'shape memory' principle, using polymers to create surgical thread for use in minimally invasive surgery; these could tie themselves together unaided, and also be used as drug delivery systems. Also described were shape memory alloys, whose characteristics adapt to their surroundings by changing temperature, through mechanical tension, electromagnetic radiation or changes of the pH-value, such as hand-woven stents or woven blood filters.

Ethicon, a subsidiary of Johnson & Johnson, is researching the development of mesh for human use. In 2005, the firm won the 'Best Innovator 2005' award, organised by the management consultancy A T Kearney and business journal *Wirtschafts-Woche*. The criteria critical to the development of surgical mesh are: biocompatibility; safety in terms of tissue compatibility; effective functionality; patient comfort; mechanical stability and sterilisation. Following the advent of textile mesh implants for abdominal wall ruptures the relapse rate significantly lowered. Modern, lightweight, large-pored mesh, made of partially absorbable composite materials, result in far greater comfort for patients because the implants no longer harden.



Textile implants

Textiles play an increasingly important role in implants, along with nano-silver as a coating agent, because even very small doses it is effective and active against a broad spectrum of micro-organisms. So far, hardly any cases of resistance have been seen. Near Stuttgart, the Institute Textile Technology and Process Engineering is researching textile stents that release silver over long periods; partly absorbable mesh to repair hernias, and hernia mesh coated with titanium, all of which evoke fewer infections.

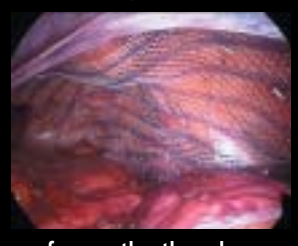
For regenerative treatments, fibres and textiles are set to replace current metal parts. Knee cartilage, for instance, will be regenerated using cells, biomaterials or cytokines.

Researchers are also engineering tissue to replace other kinds of tissues and organs. Keyword: biohybrid liver. Until new tissue grows in the liver, the organ is temporarily supported by fibres. Keyword: absorbable materials. Damaged nerves are gathered into an absorbable tube until healed.

Multifunctional textiles and comfort

3-D textiles offer pressure-relief due to their pressure elastic and aeriferous intermediate layer. Breathable and heat regulating, these are particularly suitable as medical textiles, e.g. to prevent decubitus or as dressings during intensive care.

A fine, complex, elastic tissue, consisting of coated threads with sensor characteristics, promises manifold applications. There is no need for woven-in sensors to measure pressure on 3-D changeable surfaces - the thread accomplished this. An example for application would be to treat diabetic foot syndrome (DFS) - many amputations could be avoided through optimum shoe fitting. There will also be applications for textile reporting systems for intensive care and rehabilitation.



Speaking for the Philips' Aachen research laboratory, which taking an IT and communication technology approach, Harald Reiter introduced *MyHeart*, currently Europe's biggest cardiovascular disease (CV) project, budgeted for €35 million and spanning 45 months. 20% of all Europeans suffer a chronic form of cardiovascular disease, causing 45% of all deaths. 33 partners in hospitals in Spain, Italy, Portugal, the US and Germany, along with universities and firms working in this sector, have united to develop different sensor-coated fabrics that could monitor body functions in daily life, immediately processing measurements without the need to transmit data. Although, within different modifications of the system, there would be phone or computer contact with a care network.

MyHeart is supported by the EC, DG Information Society & Media and ICT for Health Unit.

German Congress of Radiology 2006

Berlin became the venue for the German Congress of Radiology this May, for the second time. 118 exhibitors showcased products on 4,900 square metres, and the event attracted 7,000 radiologists, and 970 medical-technological radiology assistants (MTRA) to convene simultaneously, leading some to suggest the city will be the future home of the Congress.


2006 Congress President Dr Reinhard Loose

In his opening speech, Dr Manfred Lütz typically combined spirit, sarcasm and pensiveness to expose the current widespread 'health mania' as a 'pseudo-religion with totalitarian aspects'. He also wittily decried health policies and politicians' inability to tackle urgent challenges.

The Scientific Programme's new offerings and formats focused on radiology and visceral surgery, radiology in intensive medicine, thorax radiology, therapy monitoring, new digital imaging and radiation protection. "The entire range of diagnostic and interventional radiology is being covered. It is the task of the congress president to organise these programme sessions, as well as the complementary events that ensure the congress is a unique and memorable event,' said 2006 Congress President Dr Reinhard Loose.

1,000 professionals attended seminars on visceral surgery, which featured excellent surgical and radiological contributions, as well as Professor Don Resnick's X-ray presentation on knee injuries.

Speaking of the future of radiology, Professor Maximilian Reiser, President of the German Roentgen Society, said that, driven by the progress in equipment and computer technology, radiological procedures are on the move and will play an ever increasing role in healthcare. The development of the first two-tube CT scanner marks another quantum leap in computed tomography, he pointed out. New MRI systems allow whole-body scans with high field strength. Quick and precise diagnoses are critical above all in emergency medicine. Treatment of accident victims can be accelerated considerably with multi-detector CTs. 'Up to now we had to base our diagnoses on the results of several imaging modalities. Today we can diagnose a patient in a single examination,' he added.

Whole-body images in MRI, CT and hybrid systems such as PET/CT already significantly contribute to therapy planning for systemic illnesses. In the future, these procedures could well be used to screen for selected diseases such as diabetes. In therapy control they are already well established. For example, a complete tumour staging can be performed with a single examination. MRI provides excellent resolution while PET/CT offers better contrasts due to specific changes in the metabolism. He continued: 'In the future, radiologist will team up with oncologists and nuclear radiologists to discuss possible therapy monitoring strategies.' Recently the presidents of the RSNA 2005 (Radiological Society of North America) and the ECR 2006 (European Congress of Radiology) demanded closer interdisciplinary co-operation.

For years, radiologists and cardiologists have discussed the gold standard of cardiac diagnostics. 'State-of-the-art CT equipment is a valuable alternative to cardiac catheters in the diagnosis of heart defects,' said Dr Christoph Becker of Grosshardern Hospital, University of Munich.' A CT is not only less stressful for patients, it is also much cheaper.' However, the cardiac catheter is by no means obsolete: to treat stenoses in coronary vessels this is still the procedure of choice. However, about 50% of all catheter exams are performed exclusively for diagnosis. CT is obviously the 'softer' method. Today, even though a cardiac catheter is a relatively safe intervention, it still presents considerable physical and psychological stress for a patient.

The 2007 German Congress of Radiology will take place from 16-19 May - again in Berlin - under the new Congress President Prof. Ulrich Mödder MD, of Dusseldorf.

Report: Guido Gebhardt

CERTIFIED WOUND MANAGEMENT

Registered nurse, **Gerhard Kammerlander DGKP**, founder and owner of the Academy for Wound Management Certification Kammerlander WFI, discusses a course that culminates in the copyrighted qualification 'Certified Wound Manager', as well as its European recognition and value

Gerhard Kammerlander

"The certification offered by the academy and the Healthcare Academy of Styria/Academy of the Austrian Care Association* is based on paragraphs 63 and 64 of the Austrian Healthcare Act, under which healthcare professionals are required to expand the knowledge they acquired during training at least every five years, through seminars that cover a minimum of 40 hours (para. 63 Abs. (1) S. 2. GuKG). According to para. 64 GuKG healthcare professionals are entitled to participate in continuing education for at least four weeks (160 hours analogous to the continuing education requirement). The seminars must conclude with an examination and after passing this, the student can document this specialisation by adding the designation in parenthesis to his/her professional title (para.12 GuKG).

The specialisation 'Certified Wound Management' (ZWM) - a title registered with the European Trademarks Office (OAMI) in Alicante - is recognised by the Austrian GuKG, which is also valid in Switzerland. Members of any healthcare profession to which wound management is relevant - including physicians - can acquire the *exclusive* title *Weitergebildet nach ZWM* by passing the examination only offered by The Academy of Wound Management Kammerlander-WFI . This procedure is entirely justified because the course - which was basically established in 1995 and has been ISO 9001:2000-certified for three years - sets high standards for both participants and teachers. The number of hours devoted to theory and practical training far exceeds the legal requirements.

In the future, the structure will be designed according to the curriculum and guidelines of the German Society for Wound Treatment (DGfW) based in Giessen, Germany. Additionally, this specialisation will soon lead to a BA degree at the Thames Valley University, London.

The certificate falls under the Council Directive of 27/6/1977 concerning the mutual recognition of diplomas, certificates and other evidence of the formal qualifications of nurses responsible for general care, including measures to facilitate the effective exercise of the right of establishment and freedom to provide services (77/452/EEC) and an amendment to the EU-Switzerland Agreement on the Free Movement of Persons. Whether the certification is recognised as a national diploma depends on the question of whether the individual country has introduced a specialisation in wound management. This issue could be discussed by the initiators of the 9. *European Pressure Advisory Panel* (EPUAP) from 31/8/2006 to 2/9/2006, in Berlin - and be formulated as an international demand at the 10th Annual Meeting.

** Akademie für Zertifiziertes Wundmanagement Kammerlander WFI*

*** Akademie für Gesundheits- und Krankenpflege des Landes Steiermark und Akademie des Österreichischen Gesundheits- und Krankenpflegeverbandes*

Course details: www.wfi.ch

What's one way to dramatically impact Perioperative Care?

Reduce anesthetic agent costs by up to

48%*

with Dräger Medical's Target Controlled Anesthesia (TCA). Think of what that can mean to patient recovery times... and your bottom line. This is just one aspect of our integrated CareArea™ Solutions for Perioperative Care... and the entire care process.

To discover how all of our innovative solutions can impact your care process, visit www.draeger-medical.com.

Dräger medical
A Dräger and Siemens Company

*Prof. M. Struys, Gent, Poster Presentation, BJA 94 (3); 306 – 317 (2005)
TCA is not yet available commercially in the US.

Emergency Care · Perioperative Care · Critical Care · Perinatal Care · Home Care

Because you care

NEW

Sponsored by Smith & Nephew (S&N) and founded by an international group of clinicians, scientists and other professionals working in wound management, The Wound Infection Institute is dedicated to improving infection control through best practice, education, training and research. *Denise Hennig* of *European Hospital* reports on the institute's recent meeting in Hungary

The Wound Infection Institute

For two days, 150 physicians, scientists and care professionals from 23 countries met in workshops to discuss a wide range of wound management topics. Groups were divided under the titles Research, Evidence, Diagnostic, Education, and Systems, to assess the current state of affairs in wound management in 14 European and nine non-European countries.

They will work to answer many questions, including: What advantages does this diversity offer? How can we work together in the future? What exactly is an infection? What symptoms indicate an infection? What therapies are available and which is the most promising? When should silver-containing wound dressings be used? When avoided? (See box). Where is there room for improvement in education? How can we improve pathogen and resistance tests?

Smith & Nephew made this meeting possible and will provide the infrastructure for further co-operation of the participants, including a WII web page and the organisation of next year's conference - all this without stressing its involvement as the WII should retain its independence. Now it's the participants' turn to move the development of the institute forward.

Participants at the WII meeting, held this June in Budapest

Lively debates illustrated that an intensive exchange of information and a consensus among the different healthcare professions is of utmost importance in view of the fact that a diagnosis can mean different things to different people, which leads to confusion. For example: for a physician a diagnosis is the description of a clinical status - including the causes - that requires therapy. The nurse looks at the same situation and assesses the nursing and care requirements, which may be considered quite independently from addressing the causes of the clinical condition. Consequently, the foremost demand is that all parties concerned speak the same language, notwithstanding the fact that each party has a different focus. The participants endorsed this unanimously. The individual groups developed action plans and the future will prove their success. The Research group will work on a quick test to determine bacteria - comparable to a pregnancy test with regard to simplicity and speed, although obviously the chemical and biological situation is entirely different. There is no reason to re-invent the wheel, rather synergies between the different healthcare professions have to be identified and use made of these.
Further information:
wii@smith-nephew.com

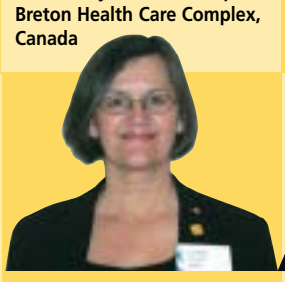
BOARD MEMBERS OF THE WOUND INFECTION INSTITUTE

Professor Keith Harding (Chair), Head of the Wound Healing Research Unit and Professor of Rehabilitation Medicine (Wound Healing) at Cardiff University, Wales

Dr Marc Despatis, Director of the Wound Care Clinic and Accredited Vascular Laboratory (ICAVL) at Cape Breton Health Care Complex, Canada

Theresa Hurd, clinical nurse specialist, advanced practice nurse and nursing educator

Dr David Keast, Adjunct Professor of Family Medicine, University of Western Ontario, Canada



Heather Orsted, clinical specialist for skin and wound management, consulting locally for Calgary health region, nationally for Canada, and internationally

Professor Gregory Schultz, Professor of Obstetrics and Gynaecology and Director of the Institute for Wound Research, University of Florida, USA

Acticoat

ACTICOAT with SILCRYST - Nanocrystals are a unique range of antimicrobial barrier dressings, used in wound care to help prevent infection, a recognised barrier to healing in full & partial thickness wounds.

Acticoat dressings rapidly kill a broad spectrum of bacteria in as little as 30 minutes (in-vitro) and are effective for at least three days. The Acticoat Range of dressings therefore help to protect a wound site from bacterial contamination to assist faster healing.

The latest addition to this offering is Acticoat Moisture Control, an absorbent antimicrobial dressing that provides antimicrobial protection synonymous with Acticoat & Silcryst nanocrystalline+ silver, in a highly absorbent, easy to use format, the firm reports. 'The product consists of a silver coated wound contact layer, highly absorbent foam and waterproof top film, which can be left in place for up to seven days for cost effective wound management.'

Resistance to silver-containing wound dressings

Is a sharp weapon being blunted?

By Heidi Heinhold

Bacteria can develop a resistance to silver and thus render some antibiotics ineffective, according to the German journal *Ärztliche Praxis* (21.12.05). It remains unclear how this mechanism works.

Silver-resistance has been noticed in Pseudomonas aeruginosa, an opportunistic pathogen that thrives in a moist environment. It is aerob, meaning it requires oxygen to live. This ubiquitous nosocomial bacterium can spoil food and is present in tap water, sinks, dish washers, pharmaceuticals and disinfectants. It primarily colonises burns and wounds of patients who are immunosuppressed, and suffer from AIDS or cancer. In patients with a weakened immune system it can cause urinary tract infections, enterocolitis and meningitis.
P. aeruginosa developed not only resistance to several antibiotics but also to silver if the dose is too low. Consequently, a wound caused by Pseudomonas aerigunosa must be treated with a dressing known to be effective against this pathogen. The recommendation of the German Robert Koch Institute to judiciously use wound dressings containing silver has to be seen in the context of this ability to develop resistance. It should be noted that the resistance is phenotypical and thus cannot be passed on to the next generation of bacteria in a strain.

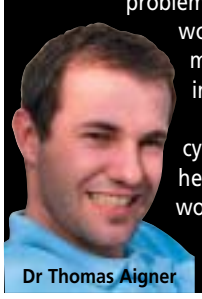
P. aeruginosa can colonise surfaces in a biofilm form that protects the cells from antibiotics, disinfectants or silver. The pathogen is so dangerous because of this combined resistance to disinfectants, antibiotics and silver in silver-containing wound dressings. It can practically survive anywhere, and cause pneumonia, sepsis and endocarditis in compromised patients. The extremely versatile bacterium - which has been underestimated in recent years - proves that adherence to the strictest hygiene standards is the only effective weapon in the fight against nosocomial infections, for patients and staff. Even if in the future a vaccine is developed against Pseudomonas aeruginosa (tests are currently being undertaken) such protection can only be temporary and is treacherous since no doubt this intelligent pathogen sooner or later will develop an answer. After all, bacteria have been around for about 2.5-3 billion years - for them we human beings are nothing but a passing phenomenon.
Conclusion - Any treatment of bacterial infections must either kill the bacteria or inhibit their proliferation. If a wound dressing is not known to have bactericidal properties a local therapy inhibiting bacterial growth is usually sufficient - if all advantages and disadvantages have properly been considered and if the type of bacteria and resistances were clearly established. However, the most efficient measure to combat bacterial infections is, and will be, top hygiene.

Secondary healing wounds

Clinical success with autologous thrombocyte gel transfer*

An application report by assistant plastic surgeon Thomas Aigner, and F Weyer, of the Department of Plastic, Aesthetic and Reconstructive Surgery, at St. Polten Hospital, Austria

Seemingly harmless wounds that nonetheless do not heal are a common problem in any hospital. Such wounds can turn into major problems requiring years of treatment.



Dr Thomas Aigner

Autologous thrombocyte gel has helped to heal some chronic wounds. In a new procedure, presented below, the thrombocyte gel is applied directly to the stagnating chronic wound. This leads to a concentrated release of thrombocyte growth factors (see box), which is supposed to accelerate wound healing. We analysed this procedure for clinical suitability and preliminary results, in 30 patients suffering poorly healing, split-thickness skin graft donor sites or split-thickness skin grafts.

- platelet-derived growth factor (PDGF)
- transforming growth factor beta 2 (TGF β2)
- insulin-like growth factor (IGF)
- epidermal growth factor (EGF)
- epithelial cell growth factor (ECGF)
- and many known and unknown factors.

Wound before treatment with autologous gel

The same wound following treatment

The most important growth factors released by activated thrombocytes
All cases involved secondary healing of split-thickness skin graft donor sites, or defects of split-thickness skin grafts, which had been present for over a year and had not shown any healing progress. Despite intensive conservative therapy, optimised diet and precise neurological and internistic examination the wounds had not closed.
Procedure - 50 ml blood samples were drawn from each patient. Using an Autologous Platelet Separator thrombocyte gel (PRP) - plasma rich in thrombocytes (412000/µl - 2114000/µl) - was generated. The thrombocytes were activated with glass fibre coated with calcium chloride which triggered the release of growth factors. Then they were applied to the wound, which had been cleansed with NaCl 0.9%. For 24 hours the wound was covered with foil. The subsequent treatment was identical to the one prior to the thrombocyte application.

Results - Within, at most, four weeks each patient's wound showed clear granulation and epithelisation. After three months, in 60% of patients the wounds had entirely closed. After application of the autologous thrombocyte gel healing and epithelisation visibly accelerated and exudations, as well as pain, were noticeably reduced. There were no complications that could have been attributed to the autologous substance.

Summary - There is currently no literature that assesses this new procedure. Therefore, it needs evaluation in clinical studies and indications should be defined. In view of the very positive results, and simple handling of thrombocyte gel, this is now established procedure in our hospital and we are about to test it in other areas.

** Based on a presentation at the Wound Management Meeting of the Academy for Wound Management Certification - Kammerlander WFI from 3-6 May 2006 in Lengenfeld, Otztal, Austria.*

ANTIMICROBIAL CURTAINS

Value confirmed

Even hospital curtains could attract and harbour germs. In a recent study (*Practical testing of antibacterially effective curtains and net curtains*) **Dr Klaus-Dieter Zastrow** (right), director of the Institute for Hygiene and Environmental Medicine at Spandau Hospital, Berlin, compared the bacterial load in drapilux bioaktiv curtains containing antimicrobial properties, with the bacterial load in ordinary polyester curtains.

Four four-bed wards were fitted with curtains made of both materials; patients, nurses and lab staff did not know which had antimicrobial properties. Over a six-week period 288 samples from both types of curtain were gathered during normal care procedures on the wards, and the bacterial load was tested, focusing on bacteria that cause nosocomial infections. Drapilux bioaktiv showed a significant reduction of bacterial load - particularly with the highly problematic bacteria that cause nosocomial infections. Indeed, certain types of pathogens, e.g. Klebsiella pneumoniae, had been entirely eliminated.

Test results
Reduction in the number of colony forming units (CFU) or germs causing nosocomial infections (NI) by drapilux bioaktiv

	Polyester CFU/NI	drapilux bioaktiv CFU/NI	Difference %
Staphylococcus aureus	157	41	-74.0
Streptococcus (suspicion)	65	1	- 98.4
Klebsiella (suspicion)	15	0	-100.0
Aspergillus spp.	2	1	-50.0

Silver ions, fixed on to the specially developed Trevira-CS fabric, ensure long-term antibacterial effects; they reduce bacteria on the textile surface efficiently and reliably, the manufacturer explained, adding that the antimicrobial properties are not lost when the textile is washed, and skin contact causes neither skin irritation nor allergies. 'For decorative textiles not to become the source of infections it is recommended that fabrics offering antimicrobial properties are used to reduce the number of germs, particularly those that cause nosocomial infections. This is crucial, because there are no standards regarding the number of times hospital curtains should be washed,' Dr Zastrow pointed out.

The study additionally suggested another practical advantage of antimicrobial curtains: a reduced bacterial load could reduce the washing frequency of the fabrics, providing substantial cost benefits.

Further details: Maniga Esmailpour - esmailpour@drapilux.com

BACTERIA DIE ON STAINLESS STEEL

To establish which materials allow pathogens to survived best, micro-organisms such as bacteria living in wet and dry environments, pathogenic fungi and the bacterium Escherichia coli, have been studied during comparative tests undertaken at the Hygiene Institute of the University of Leipzig.

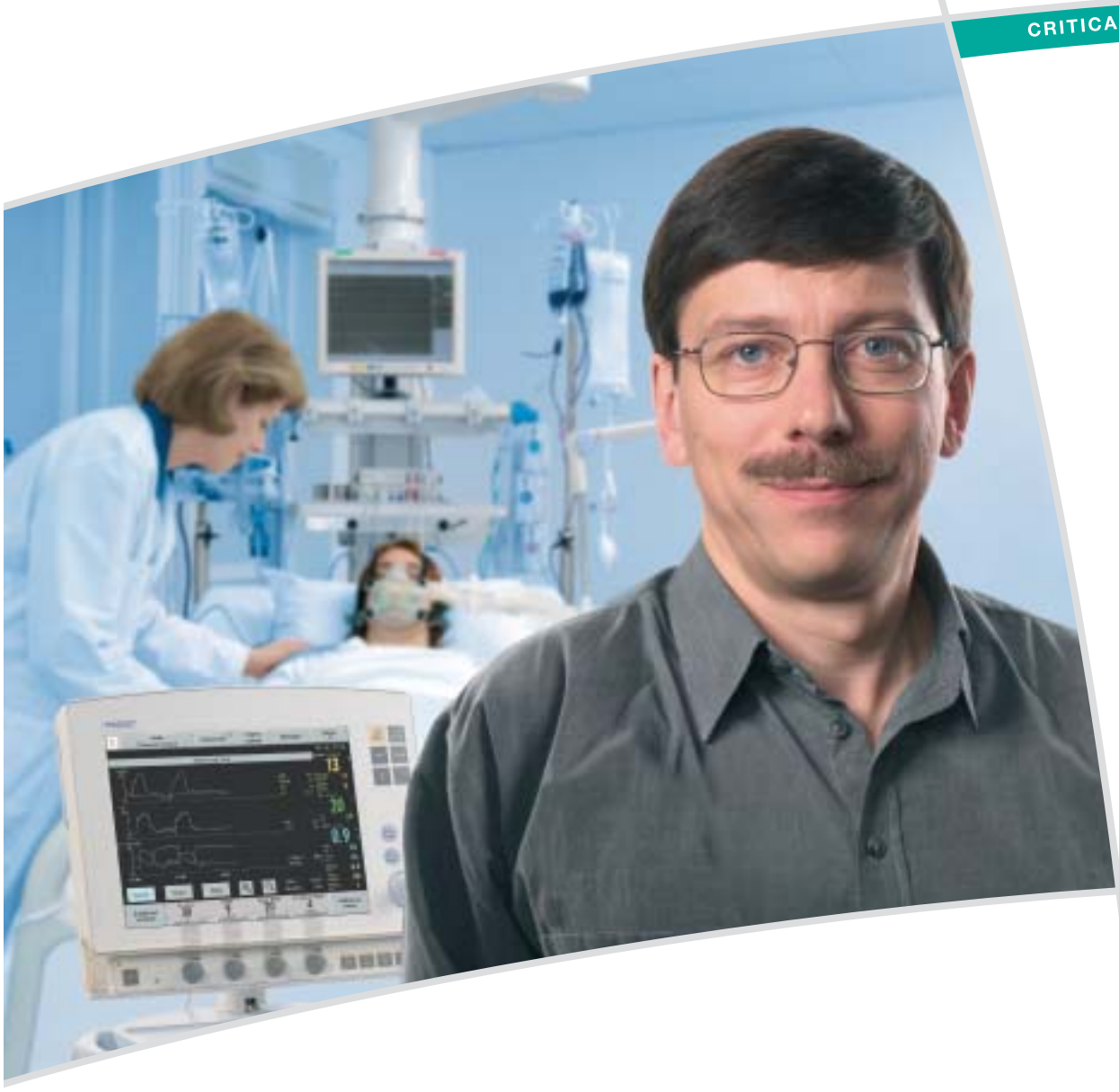
Led by Professor Wolfgang Wildführ and Dr Annerose Seidel, the researchers discovered that the survival rate of the bacteria under investigation was twice as high on plastics as on stainless steel or glass. The 99.21% mortality rate of E-coli bacteria- after 120 minutes on stainless steel - was particularly high compared with the other materials.

Markus Braun, Chairman of the German Healthcare Group, and a senior manager at Meiko responsible for hospital hygiene products (the 'Top-Line' range of bed-pan cleaners), said he is evidently convinced that stainless steel should be more widely used in all areas where large numbers of people are cared for, where inevitably human excreta must be removed. 'Stainless steel has further advantages,' he added. 'It is easy to clean and easy to recycle when its useful life is over.'
Details: www.meiko.de

MAQUET

WHO'S SETTING THE STANDARD
IN PATIENT INTERACTIVE VENTILATION?
NATURALLY MAQUET WITH SERVO-i

CRITICAL CARE



"The human body is a remarkable machine, but sometimes nature needs a helping hand. At MAQUET we see SERVO-i as a natural extension of the lungs. I have been working with the SERVO ventilator for more than 20 years. During that time the needs of the patient have always driven development.

The breakthroughs we have made have pushed the boundaries of mechanical ventilation, from lung-protective strategies such as alveolar recruitment to spontaneous breathing. We aim to wean patients at the first opportunity because it is in their best interests. I expect SERVO-i to offer the greatest sensitivity and fastest response time to patients' ventilatory needs. My colleagues and I are constantly striving to improve the synchrony between ventilator and patient."

Anders Vass, System Architect/ Technical Project Manager

MAQUET – The Gold Standard.

Maquet Critical Care AB
171 95 Solna, Sweden
Phone: +46 (0) 8 730 73 00
www.maquet.com

MEMBER OF THE GETINGE GROUP

EUROPEAN HOSPITAL

EUROPEAN HOSPITAL Publisher,
Höherweg 287, 40231 Düsseldorf
Germany
Phone: +49 (0)211 7357 532
Fax: +49 (0)211 7357 530
e-mail: info@european-hospital.com

www.european-hospital.com

Editor-in-Chief Brenda Marsh
Art Director Mary Pargeter
Executive Directors Daniela Zimmermann, Reiner Hoffmann
Editorial Coordination Denise Hennig
Founded by Heinz-Jürgen Witzke

Correspondents
Austria: Christian Pruszinsky. ***Czech Republic***: Rostislav Kuklik. ***Germany***: Anja Behringer, Annette Bus, Guido Gebhardt, Heidi Heinold, Max Heymann, Holger Zorn. ***Great Britain***: Brenda Marsh, Peter Howieson. ***Italy***: Danilo Camisasca. ***The Netherlands, Belgium***: Michiel Bloemendaal. ***Poland***: Pjotr Szoblik. ***Spain***: Eduardo de la Sota. ***USA***: Karen M Dente, Cynthia E Keen, Ivan Oransky, Craig Webb.

UK editorial address
55 Wey Meadows,Weybridge, Surrey KT13 8XY

Subscriptions
Janka Hoppe, European Hospital,
Höherweg 287, 40231 Düsseldorf, Germany

Subscription rate
6 issues: 42 Euro, single copy: 7 Euro. *Send order and cheque to*: European Hospital Subscription Dept

Finishing media technique jöhri, Weilerswist, Germany
Printed by Frotscher Druck, Darmstadt, Germany
Publication frequency bi-monthly
European Hospital ISSN 0942-9085

Advertising:
Ted Asoshina, Japan, +81 3 3263 5065
Ben Chen, Taiwan, +88 6 2 8712 2385
Denise Hennig, Germany, +49 211 7357 532
Juri Laskin, Russia, +70 95 2711 006
Simon Kramer, BeNeLux, GB, Scandinavia, France +31 180 6172 26
C.K. Kwok, Hong Kong, +85 2 2890 5510
C.H. Park, South Korea, +82 2 3644 182
Hanna Politis, USA, Canada +1 301 8696 610

Germany
Head Office Düsseldorf
European Hospital, Höherweg 287,
40231 Düsseldorf, Germany
Tel: +49 211 7357 531, Fax: +49 211 7357 530
e-mail: dz@european-hospital.com

GB, Scandinavia, BeNeLux, France
Simon Kramer, Willem Alexander Plantsoen 25,
2991 NA Barendrecht
Tel: +31 180 6172 26, Fax +31 180 6200 20
e-mail: sk@european-hospital.com

Hong Kong, China
Eastern Source Int. Media Centre, C K Kwok,
25/F Great Smart Tower, 230 Wanchai Road,
Wanchai, Hong Kong
Tel: +85 2 2890 5510, Fax: + 85 2 2895 1443

Japan
Echo Japan Corporation, Tetsuzo Asoshina,
Grande Maison Room 303
2-2 Kudan Kita, 1 Chome Chiyoda-Ku
Tokyo 102, Japan
Tel: + 81 3 3263 5065, Fax: +81 3 3224 2064
e-mail: ta@european-hospital.com

South Korea
Far East Marketing Inc,
Room 103-1011, Brown Stone,
1330, Baekseok-dong, Ilsan-ku,
Goyang-si, Gyunggi-do, Korea 410-360
Tel: +82 2 730 1234, Fax: +82 2 732 8899
e-mail: ch@european-hospital.com

USA & Canada
Media International, Hanna Politis, 8508 Plum
Creek Drive, Gaitherburg, MD 20882, USA
Tel: +1 301 8696 610, Fax: +1 301 8696 611
email: hp@european-hospital.com

Taiwan
Jurassic Communications Corp., Ben Chen,
10th Floor-4, No 235, Chang Chuen Road,
Taipei 10479, Taiwan R.O.C.,
Tel: +886 2 8712 2385, Fax: +886 2 8712 2618
e-mail: bc@european-hospital.com

Cleaning up the confusion over hand hygiene

According to Federal Office statistics around 30,000 Germans die annually due to nosocomial infections. Among an estimated sixteen million in-patients, 3.5% suffer nosocomial infections annually.

During an event initiated by Metsä Tissue GmbH, this March, Dr Ernst Tabori, of the Hygiene Advice Centre, Freiburg University Hospital, Dr Ulrich Stössel, medical sociologist at Freiburg University, Reinfried Sure, of the Hospital Technology Professional Organisation, Martin Scherrer, of the Institute of Hygiene and Environment, Freiburg University, and Sebastian Paulus, Vice-President of the Hospital Technology Organisation and Institute of Safety at Work, met at the Heart Centre, Bad Krozingen, agreed that not all hospital acquired infections (HAI) - including post-operative wound infections, pulmonary breathing difficulties, urinary tract infections from catheters - are 100% avoidable. However, illnesses and side effects that could cause infection risks could be avoided if standards of hygiene are maintained. Working on an interdisciplinary basis, doctors, hygienists, health Inspectors, technicians and social workers debated the problem in depth.

A hidden camera had revealed that a third of medical personnel did not wash their hands with soap and water after using the toilet, underlining the suspicion that all hospital infections are caused in this way. Participants at the event agreed that all medical personnel, as potential germ carriers, should be more careful, and that during the training of doctors and nurses, there should be greater hygiene observance. In addition, others who work with and around patients, e.g. cleaners, technicians etc. also should be trained in minimum hygiene requirements, e.g. regular hand washing, because they all come into contact with items touched by patients. And, so should visitors - particularly those from rural areas, who could also transmit germs.

It was emphasised that, because all hygiene experts do not agree on hygiene standards, there can be uncertainty among other occupational groups, which makes high cleanliness standards difficult to sustain. Greater responsibility among hospital personnel could bring about cheap, practical improvement in hygiene, rather than the more expensive technical solutions used, the group concluded. 'What was technically possible has long been exhausted,' Metsä Tissue added. 'Now the time has come to have a serious rethink about preventive measures.

Paper handkerchief technology

The Europe-wide research by Westminster University, England and T.Ü.V. Rhineland, Germany, has proved the advantages of hand wiping with paper rather than with textiles or warm air. It was demonstrated that after washing bacteria on hands increase. However, after drying with absorbent material (paper tissue) bacteria on hands was seen to decrease by up to 24%. 'We can further improve on these results with our new handkerchief range *Katrin One Stop*,' researchers at Finland's manufacturer Metsä Tissue report, adding that, due to an innovative embossed pattern, the new handkerchiefs are softer, stronger, more absorbent, but still more cost-effective. 'They absorb up to 20% more bacteria and dry hands up to 100% faster than conventional paper products. Any germs and bacteria remaining after washing are, according to the research results, drastically reduced. In an age of risk infection worldwide, this is decisive news.'

Metsä Tissue adds that it always provides a range of '...suitable dispensers to guarantee user-friendly and maintenance-free usage. In addition, the user should be able to choose a unit that suits and accentuates the surroundings. So, environmental hygiene and economy are not reduced. *One-Stop* paper handkerchief dispensers are touch-free; dispense a folded, single sheet and are easy to clean. The *Katrin Ultimatic* collection and a metal version are available in matt stainless steel or high quality white.'

The Metsä paper handkerchief quality has been dermatologically tested and was also successful in an independent hypo-allergy test, the firm adds. 'Therefore the products are also suitable for people with sensitive skin - a prerequisite for all users, because only acceptance will keep hands clean, even in a healthcare environment.
Details: www.metsatissue.com

TOUCH-LESS SENSOR DISPENSER

The Japanese firm Saraya, which for 50 years has successfully manufactured hygiene products and programmes for healthcare, facility management and the food industry, has launched a touch-less hand disinfection unit in Europe. According to Mr ter Woort, General Manager, Saraya Europe, the company has already sold over 100,000 of these units in Asia & the USA.

The battery-powered *Sensor Dispenser UD-1000*, which can be installed to stand or hang anywhere, has infrared sensors that recognise hands then release an adjustably exact volume of disinfectant spray that hits nails and cuticles - areas where most bacteria could be.

The alcohol-based *Saraya Hand & Skin Disinfectant*, which, the firm reports, minimises transient flora and transmission of pathogens, is suitable for 'reliable hand hygiene and surgical disinfection'.

Along with the skin and hand disinfectant, the firm's automatic and manual dispensers for liquid and foam soap, plus its antibacterial gel and hand lotion, are already available in Europe, and it plans to introduce a surface disinfectant and scrub (for extremely dirty hands) shortly.
Details: www.saraya-europe.com and www.saraya.com

THERMOFOCUS
THE NO-CONTACT THERMOMETER

'Thermofocus* is the first non-contact clinical thermometer in the world and the only one working at an accurate and determinate distance,' Tecnimed srl, its manufacturer, reports. 'Body temperature is measured in less than one second by pointing Thermofocus at the centre of the forehead. The right distance between the skin and thermometer is easily determined thanks to a patented aiming system emitting two light beams that are absolutely safe. It can also read the temperature of other body areas, such as open wounds, or internal organs during a surgical procedure, or could be used to assess the temperature of an area of skin and compare it with the surrounding area to find anomalies due to inflammation or blood circulation problems. 'The device provides an instantaneous digital body temperature reading without touching the patient, so Thermofocus needs neither expensive hygienic covers, nor cleaning or disinfection,' Tecnimed adds. 'For families and hospitals, this is the most hygienic, comfortable device to take a temperature. There is absolutely no possibility of diseases transmission. It has been widely used in airports and hospital against SARS.'

The thermometer can not only measure the temperature, for example, of a sleeping baby, without disturbance, but also be used to check the temperature of its feeding bottles, food, bath water, and any objects between 1.0-55°C, e.g. wine, a windowpane etc.

Time-saving - Since the device saves time, the firm has estimated a potential financial saving from its use in a hospital from €2-4,000 per annum.
Details: www.thermofocus.com
** International patents pending*
Made in Italy by Tecnimed srl

MORE DISTRIBUTORS WANTED

Danube meets low to very large laundry requirements

The 15 kg medical pass thru washer, the *Medical 15,* can play a key role in preventing nosocomial infections because the dual opposed doors are separated by a sanitised partition, avoiding cross contamination. Danube reports: 'With the Medical 15, the clinic and nursing home will have high tech quality at a very competitive price, because the cost of a Medical 15 is very close to the price of a basic front load washer extractor.'

France - Danube, one of the world's biggest manufacturers of both flatwork dryer ironers, barrier washers, and tumble dryers, as well as front-loading washer extractors for the OPL market, has distributors in over 52 countries. The firm is now seeking to reinforce its international position in the laundry sector by signing agreements with even more distributors. 'Those prepared to be proactive will be able to offer quality, innovation and competitive prices to OPL markets,' the company emphasises, adding that it will fully invest to support distributors so they can use their local knowledge and contacts to the fullest to proactively market and promote these branded products as well as provide back-up for customers. 'Pricing throughout is extremely competitive,' the company adds.

Distributor's service staff will be fully trained by a team of Danube's own engineers (the Company is a registered training centre in France). These engineers can also help with the commissioning of equipment where needed, e.g. big installations. Although the company's full range of laundry equipment includes front loading washers from 6 to 55 kg, side loading washers (including gas heated washers) from 27 to 67 kg, tumble dryers from 6 to 65 kg and barrier washers from 15 to 67 kg. Finishing equipment includes dryer ironers with widths from 1.4 m to 3.2 m with cylinder diameters of 200 mm, 320 mm and 500 mm, and optional feeders, folders, cross folders and stackers. 'The focus for distributors will be on washers and dryers - where the volume demand lies,' Danube adds.

State-of-the-art communication

Videolink conferences can be held with suppliers and sub-contractors, which also helps with face-to-face advice for service engineers.

The website www.danube-international.com provides distributors with technical help in all areas, including spares, safety aspects and other data, and provides maintenance instructions, technical drawings, electrical diagrams, interactive 3-D drawings and more.

Design and sizing of laundries is another web service.

Certifications

The company has ISO 9001/2000 quality control approval. Products also carry the required country approvals, such as CE, CSA and ETL for the USA, etc.

Contact: Danube International
Phone: +33 2 54 88 05 76
Fax +33 2 54 96 89 04
Email: info@danube-international.com

ADVERTISERS INDEX EH

Company	*Product*	*Page*
Agfa	IT solutions (imaging)	7
Danube	Laundry equipment	1
Dräger	ICU equipment	19
Dicta Plus	Dictation machines	14
Kodak	IT solutions (imaging)	3
Maquet	ICU equipment	21
Medison	Diagnostic imaging solutions	5
Medica	Trade Fair/Congress	24
Meiko	Hygiene equipment	23
Philips	Dictation Systems	14
Philips	Speech Systems	15
Schiller	IT solutions	13
Siemens medical	Imaging solutions	10,11
Smiths Medical	Medical equipment	17
Smeg	Hygiene equipment	1

GLOBAL EVENTS

2006

JULY

4 Budapest, Hungary
19th Meeting of the European Association for Cancer Research
www.wisepress.co.uk

1-5 Paris, France
12th International Symposium on Viral Hepatitis and Liver Disease.
www.isvhld2006.com/

2-7 Beijing, China
The 15th World Congress of Pharmacology (IUPHAR)
www.iuphar2006.org

2-6 Helsinki, Finland
7th European Congress on Epileptology
www.epilepsyhelsinki2006.org

3-6 Gateshead, United Kingdom
Association of Coloproctology of Great Britain and Ireland
www.acpgbi.org.uk

4-6 Manchester, UK
British Association of Dermatologists 86th Annual Meeting (BAD)
www.bad.org.uk/healthcare/annual_meeting

5-8 Lausanne, Switzerland
11th Annual Congress of the European College of Sport Science (ECSS) www.ecss.de

8-12 Vienna, Austria
FENS Forum 2006: 5th Forum of European Neuroscience.
http://fens2006.neurosciences.asso.fr

8-12 Washington DC, USA
The International Union Against Cancer (UICC) World Cancer Congress
www.2006conferences.org/u-index.php

15-18 Glasgow, Scotland
European Renal Association meeting
www.eraedta2006.org/

AUGUST

2-4 Edinburgh, Scotland
International Society for Bipolar Disorders (From Pathophysiology to Treatment in the 21st Century)
www.kenes.com/isbd

24-28 Alberta, Canada
16th Biennial Meeting of the International Society for Developmental Neuroscience
http://developmental-neuroscience.org/meetings.html

28-1 Sept. Tokyo, Japan
2006 International Congress of Psychotherapy in Japan and The 3rd International Conference of the Asian Federation for Psychotherapy.
www.the-convention.co.jp/06icptj/

31-2 Sept. Singapore
International Healthcare Facilities Exhibition and Conference
www.ihfec.com

31-2 Sept. Dublin, Republic of Ireland.
21st Congress of the European Association of Hospital Managers
Venue: Trinity College. Organiser: Irish Health Services Management Institute (EAHM). Details: www.eahm2006.ie

SEPTEMBER

1 Berlin, Germany
8th Congress of the European Society of Contact Dermatitis
http://orgs.dermis.net/content/e01escd/e07meetings/e85/index_ger.html

2-6 Barcelona, Spain
World Congress of Cardiology 2006
Joint meeting of the European Society of Cardiology (ESC) Congress 2006 and the World Heart Federation's (WHF) XVth World Congress of Cardiology.

1-3 Istanbul, Turkey
MEDIST 2006 5th International Medical Products, Laboratory & Hospital Equipment Exhibition Details: www.cnr-medist.com

1-3 Great Britain
5th Annual UK Conference on the Reduction of Drug Related Harm.
www.ukhra.org/conf.html

2-6 Munich, Germany
Annual Congress of the European Respiratory Society

2-6 Barcelona, Spain
World Congress of Cardiology plus ESC Annual Congress
www.escexhibition.org/Barcelona2006/default.aspx

2-5 Glasgow, Scotland
10th Congress of the European Federation of Neurological Societies (EFNS) www.kenes.com/efns2006

2-7 Cape Town, S. Africa
International Society of Blood Transfusion http://isbt-web.org/capetown

3-8 Sydney, Australia
10th International Congress on Obesity www.ico2006.com

6-9 Paris, France
16th European Congress of Immunology (ECI) www.colloquium.fr

6-9 Cambridge, United Kingdom
International Society for Paediatric and Adolescent Diabetes Scientific Meeting
www.ispad.org/events.html

7-9 Cairo, Egypt
International Association for the Study of Liver/African Association Biennual Meeting www.iasonline.com

7-9 Breslau, Poland
XIX International Workshop on Helicobacter and related bacteria in chronic digestive inflammation
www.helicobacter.org

MEDICA®

38th World Forum for Medicine

International Trade Fair with Congress

www.medica.de

Düsseldorf, 15.–18. Nov. 2006

Messe Düsseldorf GmbH
Postfach 10 10 06
40001 Düsseldorf
Germany
Tel. +49 (0) 2 11/45 60-0 1
Fax +49 (0) 2 11/45 60-6 68
www.messe-duesseldorf.de

Messe Düsseldorf®