

# EUROPEAN HOSPITAL

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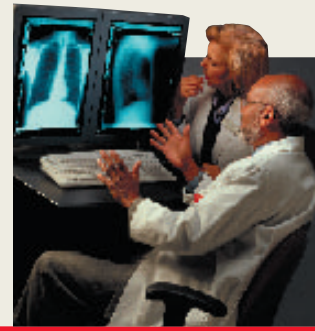
**16-17**  
**Urology**  
Remote control surgery, imaging and a new kidney test



**10-11**  
**Hygiene**  
Surveillance, prophylaxis, Legionnaire's test kit etc



**13-15**  
**Intensive care**  
Medical air, e-monitoring and the international symposium



**5-9**  
**Radiology**  
The 3-D embryonic heart, plus imaging - the future

VOL 12 ISSUE 1/03

FEBRUARY/MARCH 2003

## Medics against war!



GENEVA - Five groups representing healthcare professionals are urging governments to find non-violent and democratic means to resolve conflicts and bring about peace. They include the **World Medical Association (WMA)**, a global federation of national medical associations, representing

millions of physicians worldwide; the **International Council of Nurses**, a federation of 124 national nurses' associations representing millions of nurses; the **International Confederation of Midwives**, comprised of 83 national midwifery associations from 70 countries; **The World Confederation for Physical Therapy**, comprised of national physio associations from 83 countries, representing 250,000+ physiotherapists, and the **FDI World Dental Federation**, with over 150 national dental associations and 700,000 dentists.

In a press release, the groups point out that the health consequences of even 'conventional' war are borne overwhelmingly by civilians, with particularly catastrophic effects on women and children's physical and mental health. Death and debilitating injury are coupled with threatened access to safe water, sanitation and food, undermining the health of a population and creating circumstances favourable to epidemic diseases. Details: [www.icn.ch](http://www.icn.ch)

# Will you become a global radiologist?

For some years, while Europeans have slept, electronic banking and other systems have been serviced online and overnight by technicians working in different time zones, such as India. The concept is good, for it keeps the wheels of industry turning and shares revenues with other, perhaps poorer countries. Obviously, as telemedicine develops, this is having, and will have, an ever-increasing effect on how we deliver healthcare.

For now, everyone is fascinated by the implications and complications of cross-border healthcare, in which patients move to other EU countries for treatments, with payments reimbursed by their own. But how about patients staying put, and their medical files doing the travelling, not only in the EU, but to far-off places such as Australia, Israel and the Far East for diagnoses?

This has already occurred with tele-radiology. In the US, where there is a shortage of radiologists, hospitals have been transmitting compressed images to Australia and India, for initial diagnoses. Again the concept is good, in that staff shortages and night emergencies can be better covered, and workflow speeded up. Readings accomplished overnight can be presented at morning ward rounds. Ultimately the system

could shorten the length of stay for in-patients.

Although online radiology firms mushroomed, not all have been successful, but now, a new concept, from the Massachusetts General Hospital, Boston, may set the standard for this type of outsourcing. The plan is aimed at advancing patient care as well as the hospital's role in teaching and research - i.e. to also advance aspects of radiology and patient care in India. Initially the teleradiology centre - based in Bangalore and set up with the help of Wipro GE Medical Systems, with PACS from Agfa HealthCare, and with the close involvement of an Indian university - is to have US-trained staff who will relocate to Bangalore. Following this, Indian radiologists will be employed and receive advanced US training.

The PACS system will enable access to a full patient case history. When the centre is fully operational, the Boston hospital may then offer services to other healthcare services. For European this could be of considerable value in terms of overnight readings - and with quality set by the 'mother' hospital.

All well and good, except for criticism from some radiologists that the plan will affect employ-

*continued on page 2*

Email your opinions!  
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We want to hear from European radiologists about the implications of cross-nations teleradiology

## IN BRIEF

### War casualties

UK - In preparation for war, six National Health Service (NHS) military hospitals and over 30 NHS hospitals are said to be on alert to receive injured personnel flown back from field hospitals. 6,000 casualties are predicted in the first four days of battle.

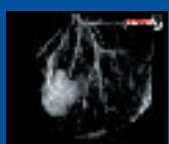
### Civilian deaths

About 35 people are killed every hour as a direct result of war (source: WHO) In the 20th century, about 191 million people died directly or indirectly due to armed conflict. Most were civilians.

### TV soap hits labs

UK - 14,000 additional cervical smear tests were performed in Manchester and the nation's CancerBACUP helpline also received 300 extra weekly calls, after a TV soap actress played a cancer victim who died. In letters to the British Medical Journal, researchers suggested greater responsibility in the media.

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# New H5N1 virus puts WHO on alert

CHINA - Fear of another 'killer' flu epidemic arose this month when Hong Kong's Department of Health confirmed that a man, who died in hospital there, had a new viral strain of influenza A(H5N1) - which is avian in origin. The victim's 9-year-old son also tested positive for the same viral strain, but has since recovered, as has his mother. The family had visited the Fujian Province (China) in January, where another family member, aged 8, died this month.

The spectre of the pandemics of 1957 and 1968 again rose. In those periods two million people died of a particularly virulent influenza.

Laboratory tests have shown that the genes of the A(H5N1) virus are purely avian (i.e. without any human gene content). Dr Yeoh Eng-kiong, Secretary for Health, Welfare and Food, urged the public to keep calm, and stressed that the Government has stepped up its surveillance system and



COVER PHOTOS: MARY PARGETER

will enhance liaison with Mainland authorities on ways to reduce the risk of the outbreak of infectious diseases. Dr Yeoh added that although the trade has been co-operative, a multi-pronged strategy,

comprising heightened farm bio-security, stringent hygienic practices and an effective surveillance system, should minimise risk, he said.

Some poultry have been destroyed and various rules have been set to cover hygiene and poultry sales. Dr Yeoh added that officials are studying the feasibility of vaccinating imported live poultry to reduce the bird-flu risk. But he also predicted that, in the absence of human genes in the virus, the risk of human-to-human transmission will be low, but Dr Yeoh expects more sporadic cases of avian flu, as the virus is endemic to the area. However, the Department of Health in Hong Kong has reported no unusual increase in influenza activity during the past few weeks.

Further laboratory tests, including gene sequencing, are being conducted, and epidemiological investigations are continuing to find the source of this infection. The World Health Organisation is in close contact with the health authorities in Beijing and Hong Kong. The WHO Global Influenza Surveillance Network has been alerted and additional reagents for laboratory diagnosis are being made available to National Influenza Centres and other Members of the Global Influenza Surveillance Network.

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Medical practitioner/type

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### 3. HOW MANY BEDS DOES YOUR HOSPITAL PROVIDE

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### 4. WHAT SUBJECTS INTEREST YOU IN YOUR WORK?

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| <input type="checkbox"/> Ambulance and rescue equipment                  | <input type="checkbox"/> Pharmaceutical news                       |
| <input type="checkbox"/> Physiotherapy updates/equipment                 | <input type="checkbox"/> Speech therapy/aids                       |
| <input type="checkbox"/> Nursing: new aids/techniques                    | <input type="checkbox"/> Laboratory equipment, refrigeration, etc. |
| <input type="checkbox"/> Hospital furnishings: beds, lights, etc.        | <input type="checkbox"/> Hospital clothing and protective wear     |
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| <input type="checkbox"/> EU political updates                            |  |

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.

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In which department do you work?

Are you head of the department? Yes  No

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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 of the Beta publication European Hospital. Candidates will also be automatically entered for a draw to win the prize featured on this page.

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## NEWS

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**ZOLL**  
It's about time.

continued from page 1

ment, pay levels and have issues to resolve regarding remuneration, insurance cover, the acceptability of qualifications, confidentiality, and legal positions in cross-nation medical services.

In Europe teleradiology has also advanced. For example, in Sweden and Norway there is also a shortage of radiologists. In 2001, Sectra, the international IT and medical technology firm, formed PaxLink AB. Images and patient data are transmitted for diagnosis by qualified radiologists at the Orebro Medical Centre Hospital, a service that now covers both countries when there are staff shortages or by contract.

Recently, Sectra (which has also developed the digital MicroDose Mammography system) also agreed to provide RIS and PACS for Capio Diagnostik, a private Swedish healthcare provider. Capio, with clinics carrying out up to 130,000 radiological examinations annually, will pay Sectra for each examination. Capio Diagnostik is part of the Capio Group, offering medical services in Sweden, Norway, Denmark, Finland, UK, France, Switzerland and Poland.

In time, Sectra's services will probably be offered to countries outside Scandinavia.

# Funding healthcare

## New options and choices for patients

USA - In the era of soaring health costs and the inability of health maintenance organisations to effectively control those costs without tightening restrictions on the consumer end, Americans are now facing new options in which they gain more flexibility to determine the type of care they receive. So-called Consumer Directed Health Plans are now an option with which employees are increasingly presented.

How they work: Employers set aside a fixed amount of money annually, which employees can put into a healthcare account. Although the employer owns the accounts this money can be used

by the employee to cover health-care costs that may arise. While conventional health plans place tight restrictions by limiting the providers that can be seen, these new health plans allow for a greater choice. Alternative medicine, not usually covered by traditional insurance policies, can be reimbursed using the accounts.

Another benefit of Consumer Directed Health Plans is that the money set aside by the employee can roll over into the next year. Additionally, the money not taxed, since it is taken out before Social Security Tax.

A disadvantage of the Consumer Directed Health Plan is that a

change in job will not permit the employee to transfer the funds.

This is not the case with another system, the Medical Savings Accounts. These are similar accounts, set up by the Federal Government. They also ask the employee to take responsibility for his own healthcare by setting aside amounts into an account owned by the employee. However, in contrast to the Consumer Directed Health Plan, these can move with the person, and will not be wasted should a change in company occur. Although they look attractive, there is a hook: the employee needs to provide proof of coverage through a catastrophic health insurance, be self-employed, or belong to a small company. These tight restrictions by the Federal Government make it very difficult for most consumers to actually qualify.

FSA's, Flexible Spending Accounts, are yet another option in which employee can set aside part of their pay, but again, the accounts do not move.

While it is too early to say there is a trend in the US, '... there is a great deal of interest in greater choice,' says Larry Akey, spokesman of the HIAA, a health-care organisation that manages these accounts. 'There is a sense in the industry that this will be the future, and a recognition that the managed care efforts of the 1990's - where employers ask HMOs to tightly control costs, who then answer by restriction of choice - are becoming increasingly unfavourable,' he adds.

US consumers no longer want to participate in tightly regulated plans. They want to become increasingly involved in the financial decision-making process concerning their healthcare. Perhaps the future in the US will see a return to the partial indemnity plans prevalent during the 1970's.

Karen Dente: EH US correspondent

# Meanwhile ... who can heal sick healthcare?

## Writer offers \$10,000 prize to find a cure

Over 40 million US citizens lack health insurance; in Washington State this is true for about 11% of residents, for whom treatment may be denied, because some doctors consider Medicaid reimbursements too low. Those are only two of the many dire problems afflicting US healthcare provision.

'We don't have a health care system. We have a business-to-business enterprise,' says Kathleen O'Connor MA, Seattle-based healthcare consultant, analyst and well-known local columnist. 'Our "system" is a mess and in an irreparable crisis. Something must be done, so we are putting our money where our mouth is. Healthcare is too often held hostage to armed camps and special interests. So we are sponsoring an independent contest to see if we can get different results by engaging the public.'

On offer is a \$10,000 prize for the best proposal to improve her country's healthcare services. This she hopes will provide a transfusion of ideas and prompt discussion that may lead to reform. The top three entries will be announced at The O'Connor Report 'Build an American Health System' Summit (October 2003) and will be presented to the Washington State Congressional Delegation.

Details: [www.oconnorhealthanalyst.com/contest.html](http://www.oconnorhealthanalyst.com/contest.html)



# WHAT DO CROSS BORDER patients think?



## Swiss controversy over assisted suicide

Swiss law does not prohibit assisting suicide as long as the motive is altruistic. Also, it does not give physicians a special status in assisting suicide, which means that whether assisted voluntary death should ever be allowed has been discussed without exclusive reference to physicians. Physicians have separately debated their role at the end of life.

The few existing data do suggest public support for assisted suicide. In a 1999 survey of the Swiss public, four fifths agreed that '...a person suffering from an incurable disease and who is in intolerable physical and psychological suffering has the right to ask for death and to obtain help for this purpose.'

Legislation to allow euthanasia was favoured by 71%.

However, resources for palliative care in Switzerland are not yet available to all terminally ill patients. This remains a strong argument against decriminalising euthanasia.

Despite acceptance of assisted suicide, support for palliative care is growing, as end of life issues are kept in the public eye, say the authors of a study in the British Medical Journal (Assisted suicide and euthanasia in Switzerland: allowing a role for non-physicians. BMJ Volume 326, pp 271-3). They conclude that further research on public attitudes and practices at the end of life is important, in this unique situation. Details: [www.bma.org.uk](http://www.bma.org.uk)

In the distant future European hospitals, focusing on core competencies, may serve patients from all over the Union. For now, however, this is very much a pipe dream. There can be no quick ride to cross border healthcare. To become a reality, health standards must first be streamlined Europe-wide, the service 'shopping basket' must be defined and national providers of health services need to co-ordinate efforts.

For now, as Michael Huebel, European Commission, DG Health and Consumer Protection, says, 'The individual Member States can neither quantify patient migration nor can they project

Director of the Estonian Health Insurance Fund. Estonia, with only 1.5 million inhabitants, cannot create a state-of-the-art healthcare system. Therefore Estonians go to Finland for treatment not provided in their own country. Conversely, the Fins like to use Estonian spas and dental care.

### Language (and tea quality) affect patients' choices.

Report by *Christian Pruszinsky*

costs.' However, experts believe we will not see major patient migration.

The patient mobility project IZOM in the Maas-Rhine region (1,800 participants) has shown that the ability to communicate in one's mother tongue is a major factor in the choice of a doctor. Flemish-speaking Belgians tend to opt for Dutch doctors, German-speaking Belgians go to Germany, Dutch patients also prefer German medical care when the waiting lists in their own country are too long.

Tim Baxter of the British Department of Health reports that its pilot project to cut inordinately long waiting lists by providing medical care in France or Germany was used by only 190 patients in six months - compared with a total of six million treatments in its own healthcare system. Those 190 patients did provide an insight that could be more than statistically relevant: British patients pointed out that continental hospitals failed to supply a 'good cup of tea'.

During last year's European Health Forum Gastein, its president, Guenther Leiner, pointed out that during the last 20 years over 3,000 Bavarian patients were treated for heart conditions in Salzburg's Landeskrankenhaus. Indeed, with its huge level of tourism, Austria has lengthy experience with cross-border patients - and related problems. 'When an Italian tourist breaks his leg and receives treatment in Austria, the health insurance company here has to wait up to four years for reimbursement of costs,' said Gabi Burgstaller, Deputy Governor responsible for Health Affairs in the Salzburg area.

Two countries on the north-eastern edge of Europe might well be on the cutting edge of European cross border care. The Estonian Central Sickness Fund has first-hand experience with patient migration, said Maris Jesse, MD,



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**GERMANY**

Unlike most European countries, Germany has a surplus of doctors, nurses and other qualified healthcare professionals. According to recent statistics from the German Doctors Association, an estimated 6,500 doctors are currently unemployed, with the problem escalating in the northern parts of the country.

However, the trend is beginning to turn and unemployment figures have dropped in the last couple of years.

The situation is most difficult for newly qualified doctors and unemployment figures are particularly high for young doctors. The average age for hospital doctors in Germany is 40.17.

The average age of hospital doctors has increased since 1993. Salaries also vary greatly between newly qualified doctors and specialists, and as a result many young doctors look abroad for employment where working conditions are different.

In the Scandinavian countries, for example, a newly qualified doctor earns more than colleagues in Germany, but experienced physicians and specialists earn considerably more in Germany.

There are currently 375,000 medical doctors registered in Germany, of which 298,000 are of working age. Despite the high unemployment figures, Germany has a large proportion of foreign doctors working in the health services.

A total of 15,000 doctors have overseas qualifications, of which 4,000 are from other EU countries and others from the remaining European countries and the rest of the world. A large proportion is from Asia.

There are currently 3,600 Asian doctors working in Germany. A number of successful recruitment fairs, hosted by Danish, Norwegian and Swedish health authorities and employment services, have attracted a large number of German doctors and other healthcare professionals. Generous salary packages draw young doctors who could face longer working hours or unemployment if they stay in Germany after completing medical school. Work conditions in Scandinavia are more regulated.

**NORWAY**

Norway has a long tradition of recruiting labour from abroad. Since World War II the private as well as the public sector has been dependent on immigrant labour.

The growth of the industrial sector has seen an increase in immigrant professionals in a range of sectors, from building and industry to the healthcare sector.

Norway has one of the most efficient healthcare services in Europe. But as in most other EU countries, there is a shortage of qualified healthcare professionals.

In the mid-90s there was an acute shortage of doctors. As a result, an extensive recruitment project was initiated in 1996. The recruitment

10 million per year for recruitment of healthcare professionals.

In 1998, around 100 doctors were recruited from abroad, of which the majority came from Germany. Since 1999, around 200 doctors per year have been recruited from abroad. Because of the common labour market in the Nordic countries there are a significant number of Swedish and Danish healthcare professionals.

Large proportions of the Nordic population move between the countries, primarily between Denmark, Norway and Sweden as they share similar languages and culture. The majority of doctors from outside the Nordic countries are from Germany.

**SWEDEN**

According to estimates from the Swedish Employment Service, AMS, an extra 500,000 qualified healthcare workers will be needed in the health services within the next ten years.

On average, 23,000 new recruits will be required per year for the next 15 years, which means that every third undergraduate will have to choose a health profession to meet the demand.

The shortage of hospital staff, coupled with a lack of medical school places at Swedish universities, means that an increasing number of doctors and nurses are expected to be recruited abroad. The Federation of County Councils (LF) estimates that there is a need to recruit between 300 and 350

ist doctors were recruited, the AMS together with representatives from the county councils are planning further recruitment fairs in Italy and Spain.

About 90 German specialist doctors have joined the Swedish health services as a result of the recruitment activities.

The Health Services in Vastra Gotaland have recruited 25 general practitioners from Spain. Three recruitment fairs took place in Rome in October 2002.

The county councils have also approached Poland and the Czech Republic to recruit doctors, but the process is much more complicated due to restrictions on non-EU citizens working in Sweden.

The government is currently working on a special provision for applicants with specialist qualifications to make it easier for hospitals to recruit from non-EU countries.

Between 2000 and 2002, 362 doctors and 90 nurses from Poland, Hungary, Estonia and the Czech Republic were awarded temporary work permits in Sweden.

**FINLAND**

Finland has one of the highest numbers of doctors in Europe - on average one doctor per 269 population. Currently the country has 19,300 doctors, of which 17,200 are of working age. Only about 100 doctors were unemployed in 2001.

Finland has a long tradition of recruiting doctors and healthcare professionals from abroad - mostly from Sweden and Norway. To receive a licence to practice medicine there, a doctor from outside the EU (or European Economic Space (EES)) has to undergo practical training and pass a three-part examination, including questions on administration, legislation and clinical medicine, and a practical section testing ability to cope with normal clinical situations. There are also separate language tests.

Licences are granted in stages. The initial licence is valid only for hospital work. It can subsequently be extended to cover health centre work, and then work in other institutions and in private practice.

Licences are always granted for specific periods of time. If a holder of an extended licence is granted Finnish citizenship, the National Authority for Medico-Legal Affairs can authorise him or her to practise medicine independently as a licenced physician.

Doctors from within the EU and the EES can obtain a licence to practice medicine in Finland on the basis of directives concerning mobility of doctors and mutual recognition of diplomas.

The National Authority for Medico-Legal Affairs assesses and approves the education of healthcare professionals and recognises their degrees. Physicians and dentists need sickness insurance numbers. These can be obtained from the Social Insurance Institution after granting of a licence.

Licensing of doctors from within the EU/EES area does not involve any language proficiency requirements, but employers, e.g. the municipalities, may require a certificate relating to language skills.

Treating patients is difficult without knowledge of Finnish. All workers coming to Finland from abroad must obtain residence permits if their employment lasts longer than three months.

The permit is granted by the police department at the place of residence. Citizens of EU member states do not need work permits. Foreign doctors can apply for membership in the Finnish Medical Association if they have a licence to practice medicine in Finland and a senior colleague recommends membership.

*\* Sara Assarsson is a freelance writer. This feature appears by courtesy of HospitalHealthcare.com. All rights reserved.*

An overview of Sweden, Denmark, Norway, Finland and Germany, by Sara Assarsson\*

# International STAFF RECRUITMENT

project involved co-operation between employment services and central and regional health authorities.

In 1997, the Norwegian employment services approached their counterparts in Germany, France and Austria. Negotiations led to several recruitment agreements between the countries. These include information about the labour market, recruitment facilities and intensive language courses, including a three-month course in Norwegian, provided for French, German and Austrian doctors and nurses in their home countries.

The average cost of a language course for 10 participants amounts to Nkr 450,000, excluding administrative costs. In total, the Norwegian health authorities have invested Nkr

Immigrant professionals from outside the EU are only granted temporary work permits - similar to the work permits awarded musicians, artists, au pairs and seasonal workers in the agricultural sector.

However, because of the shortage of healthcare staff, health professionals are exempt from these regulations.

Norway's employment services estimate a continuous need for international recruitment of healthcare professionals. The healthcare services are increasingly dependent on foreign doctors and nurses and the need is estimated to increase even further.

The demographic development implies there will be a shortage of labour in all sectors, both private and public.

overseas doctors per year.

In a move to meet the acute shortage, county councils have turned abroad to recruit nurses and specialist doctors from Denmark, Austria, Germany, Spain and Italy.

Sweden has a long-standing relationship with the Nordic countries for free movement of labour. The majority of doctors, nurses and other healthcare staff with foreign qualifications are from Denmark, Norway, Finland and Iceland.


Doctors with foreign qualifications - primarily from Germany and the Scandinavian countries - constitute about a third of all qualified doctors in Sweden.

Following a number of successful recruitment activities in Germany, from November 2000 to June 2002, during which more than 500 special-

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# ECR sees 21% increase in abstracts

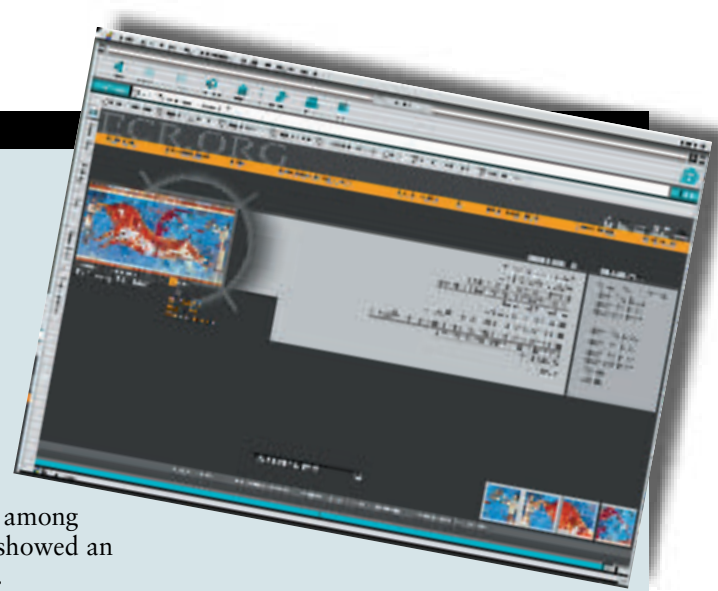
3,413 abstracts have been submitted via the Online Abstract Submission System for ECR 2003 (Vienna, 7-12 March). The increase of 597 represents 21.2% more than those received for ECR 2002. The organisers say the 50.5% increase in the number of posters submitted demonstrates acceptability of a newly introduced Electronic Poster Online System (EPOS), and that radiologists are keen to join the first all-electronic poster exhibition ever staged at a radiological event.

With 527 submitted abstracts, Italy ranks first and surpassed last year's leading country Germany (485 abstracts). Greece is again third, but with a significantly higher number of abstracts (+89%). Spain (+93.4%), Turkey (+92.8%) and Yugoslavia (+142.1%), all among the top 10 countries, also showed an enormous rise in abstracts.

Most submissions relate to Abdominal and Gastrointestinal Radiology (567), followed by Interventional Radiology (364) and Musculoskeletal Radiology (345).

If viewed by type of abstract, most scientific exhibits were submitted on Abdominal and Gastrointestinal Radiology (333, +34%), Musculoskeletal Radiology (201, +54%) and Genitourinary Radiology (173, +74.7%). The topic Physics in Radiology recorded the most pronounced increase in scientific exhibits (+120%).

In the scientific papers, Abdominal and Gastrointestinal Radiology was again the most popular topic, with 234 papers submitted. Interventional Radiology saw a remarkable 61% increase in submission figures.



## Acceptance

Of 3,413 abstracts reviewed by the team of reviewers consisting of all ECR 2003 Subcommittee Chairpersons and Members, the Programme Planning Committee accepted 2,073 for presentation during ECR 2003, creating a rejection rate of 39.3%.

For the first time in ECR's history, the number of accepted scientific exhibits (1,064 or 51.3%) surpassed the number of abstracts accepted for oral presentation (1,009 or 48.3%), which again confirms the great success and wide acceptance of the ECR Electronic Poster Online System.

## Morphologic and functional imaging

By Professor Hans Ringertz, Director of the Karolinska Institute's radiology faculty, and Deputy Chairman of the Nobel Assembly

As a spin-off from the European list of specialities in medicine, the Swedish Governmental Office of Health and Welfare has started an evaluation aimed at reducing the number of specialities. The real reason for this evaluation has been the high costs caused by too many doctors being on duty in hospitals. A reduced number of specialities would allow doctors to cover more than one speciality. The evaluation has suggested that radiology should be part of what literally translated can be called 'Imaging and functional medicine' or more freely translated 'Morphologic and functional imaging'. The term 'medicine' covers both diagnostic and interventional imaging.

A common period of 2.5 years of training is suggested for all radiologists, nuclear medicine doctors and doctors in clinical physiology. After this common period of training, each of these groups of doctors should continue separate studies for another 2.5 years. Today the proportion of doctors working in these three specialities is 20:2:3; thus the resulting double specialists will hopefully mostly cover the work that radiologists do today. It is specifically pointed out that this scheme is needed to comply with the rules on the free movement of doctors within the EU. These rules apply only to doctors of a recognised speciality.

The suggested changes in name and content have two very different general implications for radiology. On the one hand there is a short-term professional and clinical implication, which might be dealt with by the Union of European Medical Specialists (UEMS) Radiology sections at the European level. The changes in this respect might be both politically bad and good. On the other hand there is the long-term academic evolution of our science and the future of medical imaging.

This implication can be illustrated by the schematic representation of possible new pathways to the development of new clinical imaging methods, modified after Li: Acad Radiol 2002;999. I am convinced that more physiology, nuclear medicine and functional thinking, as part of a new curriculum for clinical medical imagers (or what they should be called), would simplify a development where co-operation with all the illustrated scientific groups is essential, not

only for participation in research but also for feedback from clinical work close to patients.

Without the research and adaptation needed, there is a considerable risk that other specialities will fill the vacuum in the course of existing or new turf battles with our profession. The question is rather how quickly we, as imagers, can adapt our work to the upcoming aspects of molecular medicine. In this respect, I am afraid that Europe might be less prepared than

our American colleagues, for example, with their new Molecular Imaging Laboratory at NIH and their National Institute of Biomedical Imaging and Bioengineering.

As far as professional aspects are concerned, there are already two different curricula for radiology training in Europe. Diagnostic radiology belongs to the 17 specialities that exist in all 15 EU countries, while radiology including diagnostic radiology and radiotherapy still





exists in nine countries. Nuclear medicine is a speciality in 13 countries while clinical physiology seems to be a local speciality.

The end result of the development toward a more integrated functional and morphological curriculum in radiology training has to be evaluated. This cannot only be done by the upcoming European Diploma of Radiology, but also assessed through the European Training Assessment Programme. Representing a small country in the periphery of Europe, I find it encouraging that the UEMS Radiology section is active in developing such tools in defence of the quality of our speciality.

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## New at the ECR

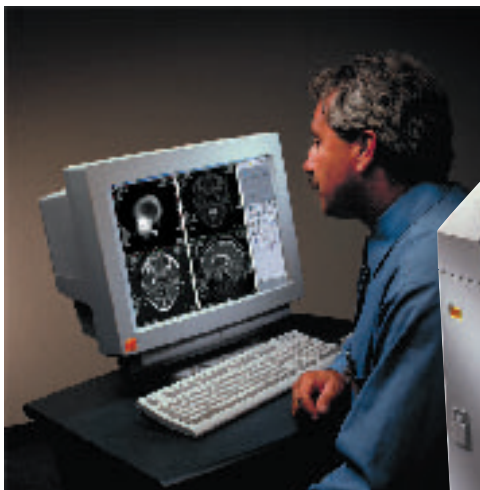
full leg and spine digital images of up to 43x129 cm, viewable in softcopy or as radiographic film. The form points out that this system significantly reduces the most frequent causes of exam retakes - poor stitching, incorrect alignment or images that are not in the right order.

- DryView 8900 Laser Imager, producing 180 films per hour at 650 dpi laser resolution, in five film sizes, using three film drawers.
- X-Sight Screen, for use with radiographic film to improve image quality, produces images about 20% sharper than those from the

Left: Kodak diagnostic workstation  
Below left: Kodak web distribution  
Below: Kodak CR 850

Kodak will launch a range of products at the European Congress of Radiology this March, including:

- The DirectView PACS System 5 architecture, currently under development. This will expedite efficient storage, diagnostic reading and review of radiology reports and imaging studies, the firm reports, adding that the system can be scaled for use in a small hospital, one or more imaging centres, or a large healthcare facility.
- DirectView Web Distribution System, distributing images and radiology reports to referring physicians via the internet, includes the new database to use with PACS System 5 architecture. The Web system enables clinical review by physicians on dual-monitor, high-resolution workstations; provides both lossless and lossy (wavelet) compression, and supports both Macintosh and PC platforms using an Internet Explorer or Netscape browser.
- DirectView DR 5100 System, an enhanced version of the Kodak DR 5000 system, designed for chest and other upright examinations for ambulatory and non-ambulatory



patients, has a new integrated touch-screen operator console, new generator, bucky and tube stand and Kodak DirectView PTS software.

- DirectView CR 850 System, a single-cassette system, offers 100 cassettes throughput per hour, plus 'exceptional image quality' the firm says, adding that with a footprint of just 63 x 73 cm, it also needs little space.
- DirectView CR Long-Length Imaging System. This digital imaging system, with wall-mounted vertical cassette holder, produces



previous X-Sight film and screen system, the firm reports: 'The screen's smaller phosphor particles facilitate modulation transfer function (MTF) improvements at high x-ray absorption and reduce image noise, while its zero crossover film technology minimises light scatter.'

# 3-D embryo

Not much bigger than a thumbnail, the heart under observation contracts three times per second, pumping a few drops of blood through an 18-week-old embryo. Although 15 cm of skin, fat and muscle tissue shield the organ, on the computer screen the tiny heart can be seen pulsating as a 3-D image. Tapping on the mouse, Dr Ulrike Herberg, child cardiologist at the University of Bonn, turns the image in various directions and points to the clearly defined cardiac valves, opening and closing. 'Conventional equipment gives us 2-D images, which are cross-sections - cutting through the ventricles, for example,' she explains. What the ventricles look like spatially, whether they are smaller than normal or perhaps are defective in the way they contract, must be decided by

doctors by mentally assembling those cross-sections into a 3-D model.

'For that, even with an immobile organ, an excellent sense of space and plenty of experience are required, which is even more necessary with the heart - regularly contracting then filling up with blood again.' Although leading ultrasound specialists may diagnose, whether an unborn child is suffering from a heart defect, with a rate of about 80% accuracy, less experienced medical personnel may achieve only a 25% rate.

In conjunction with the University of Bonn's Clinic for Obstetrics and Pre-natal Diagnostics and experts from the software firm MedCom Ltd, Dr Herberg is currently developing a system to carry out that mental



Tricuspid (TV) and mitral valves (MV) from the same set of data. Unlike 2-D-images, it is possible to show a frontal view of the valves with a 3-D data set, or even to show the interventricular septum (here, top of ventricle and top of atrium were cut from the set of data above, in echocardiographic four-chamber view and the set of data was then rotated 90 degrees)

## DETECTIVE WORK

S Rossi, L Rosa and V Ravetta (UO of Hepatology) and F Calliada, P. Quaretti and A Azzaretti (Department of Radiology), Policlinico S. Matteo IRCCS, Pavia, Italy, discover a liver carcinoid mimicking an echinococcal cyst

When a 58-years-old woman was admitted to our Institute with a former diagnosis of liver echinococcal cyst, she had already received as a causal treatment albendazole (Zentel, Glaxo) 1c daily. The original diagnosis was based mainly on an ultrasound (US) examination which sharply described an iso-hypoechoic mass with an hyperechoic outer rim whose thickness was about 2-3 mm, while the overall size of the mass was 7.0 x 6.0 cm. The segmental location was in the VIII liver segment.

A spiral CT scan showed an hypodense mass with outer enhancing rim in the early arterial phase and a non-enhancing mass in the portal and late phases. The MR showed an hyperintense mass in the T1-weighted images and an hypointense mass with outer thin enhancing rim in the T2-weighted gadolinium-enhanced images. Despite the imaging results, the liver, kidney and the most of routine biochemistry was remarkably normal. Additional studies, such as full endoscopy of upper and lower gastrointestinal tract, did not add any useful information to the patient's medical record. Finally, a serology test for echinococcal infection was negative.

Due to the lack of evidence about the nature of the mass, we decided to perform a new US and contrast-enhanced (CE) US, using Aloka

Prosound SSD 5500 ePHD (Aloka, Tokyo) with a dedicated technology for microbubbles detection, a low mechanical index (MI<0.04), second harmony filtering and phase detection (ePHD, extended pure Harmonic Detection). The CEUS was performed by microbubbles of a totally innocuous sulphur hexafluoride gas (SonoVue, Bracco, Milan). The US confirmed an iso-hypoechoic mass with an hyperechoic peripheral rim (Fig.1), while the US color Doppler did not detect any signal of flow inside or around the mass because of some artifacts from the heart beat. CEUS showed an enhancing rim at the arterial phase (Fig.2), which became isoechoic at the portal and late phases (Fig.3), while the inner core of the mass did not enhance at all. During CEUS we performed spectral analysis which showed an arterial pattern on the signal detected in the peripheral rim of the mass (Fig.4).

As a final step, the inner core of the mass was aspirated, under US guidance, using Ecojet 21G while the outer rim was also biopsied with Biomol 21G (both Hospital Service, Milan). The first sample collected a bloody fluid, while the second gave a sample of solid tissue, which later on demonstrated, in pathology studies, a pattern of carcinoid (immunohistochemistry positive for chromogranine A, Ab Ki67= 2 to 5%).

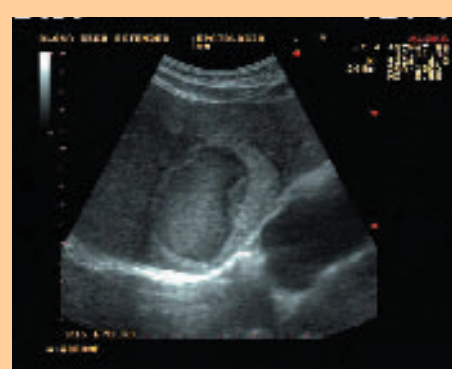


Fig.1 Iso-hypoechoic mass with a peripheral hyperechoic rim, 7.0 x 6.0 cm in diameter, in the VIII segment of the liver



Fig.2 CEUS showed an enhancing rim at the arterial phase



Fig.3 Enhancing rim detected at the arterial phase of CEUS become isoechoic at the portal phase

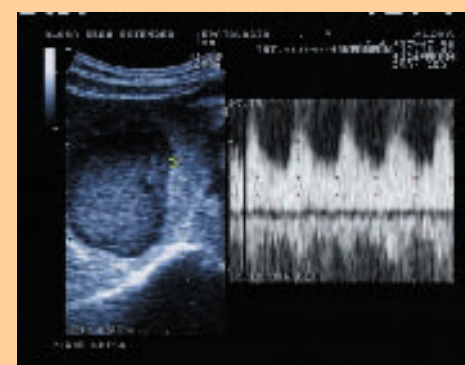


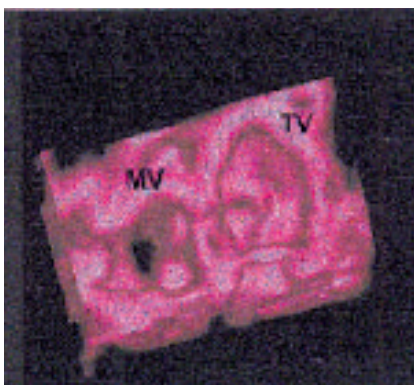
Fig.4 During CEUS, spectral analysis detected an arterial pattern at the site of the signal flow, visible in the peripheral rim

# cardiac function

'assembling' of data.

In this, a conventional ultrasound probe placed on the mother's abdomen is swivelled in a certain way to image the complete heart of the unborn baby within 20 seconds, and provide a 1,000-image record. At the same time a baton (sensor) records the foetal heartbeat, feeding data to the computer to match an image to part of a beat. If, for example, a baby's heart contracts and expands 60 times during the examination, the machine will record 60 cross-sections, all taken from different areas of the heart, during the swivelling movement at the time of maximum contraction.

The imaging software then assembles a composite 3-D image from the 2-D ultra-sound images. When the probe is swivelled for a maximum of 20 seconds the software receives 3-D pictures from different phases of the heartbeat - from complete contraction to complete relaxation. Thus the entire movement of the myocardium can



be followed on the screen. 'We can even see exactly how the cardiac valves open - information not available from conventional cross sections,' says Dr Herberg.

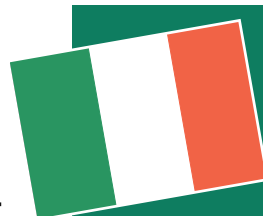
The ability to see 3-D images from various directions also enables treatment planning - and what Dr Herberg finds 'particularly attractive, is the possibility that some cardiac diseases may be treatable or prevented before birth if detected early enough.'

The software enables the volume of the heart to be calculated far more precisely than before - often an early indicator that there is a problem with development of cardiac muscle. Twins, for example, may develop a joint cardiovascular system via the placenta. 'One twin keeps pumping blood into its sibling's bloodstream, whereby that twin's heart becomes overloaded. It becomes excessively large and serious heart defects are possible consequences.' Detected early, this malformation can be prevented by lasering and sealing the joined blood vessels.

There are still minor problems to resolve, such as reduction of image quality during heartbeat measurements by the baton, and improving the technique to evenly swivel the probe; then the system will face clinical trials.

Contact e-mail:  
ulrikeherberg@hotmail.com

**Eight out of 1,000 babies are born with a heart defect. Prenatal detection and specialist care heighten chances of survival and can lower undesirable after-effects. Cardiologists at Bonn University are currently developing a method to improve and simplify diagnosis of embryonic heart defects by watching cardiac activity in 3-D**



## Italian president for EuroPACS

Professor Davide Caramella, associate professor of radiology at the University of Pisa, Italy, has been elected president of the European Association for the Promotion of Information on Picture Archiving and Communication Systems (EuroPACS). The Society, with about 50 members, mainly from institutions involved in the design, installation and assessment of PACS, aims to promote research and encourage discussion about technological evolution and experiences in clinical implementation and evaluation of PACS in Europe and internationally.

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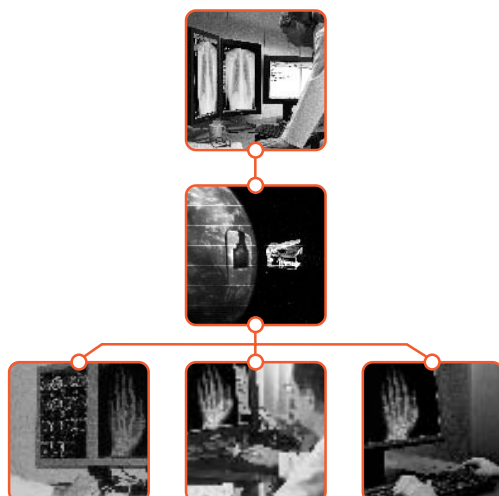
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**DZ:** Your business card reads Medical Solutions, Global Solutions, what does this mean and how does it relate to the first, fully digitised cardiology project in the US?

**LM:** I was previously head of the Global Solutions project. When the Siemens Medical Board decided to turn the project into a new business section - Global Solutions - I became head of this division. To ensure that we can deliver outstanding quality and to enable greater expansion, our initial focus has been on cardiology and the 'digital hospital'. We are not trying to attempt everything at the same time, worldwide. For now we are concentrating on Germany and the US.

**DZ:** ...to advance Cardiology and EPR?

**LM:** Not EPR, but the digital hospital. This entails far more than EPR - which is only a small component. Another, very important component is workflow advice. How does a cardiologist work, how can we improve processes in the health service, such as in a heart centre or hospital. This brings us to Dr Bulitta's role. Among our team of advisers, he is responsible for the health service.

One of our pilot projects in cardiology is the Heart Centre of Indiana, which opened in December 2002. This is the world's first, fully digitised heart centre - and, from the outset, we developed all processes, workflow and equipment that are used at the centre.

**CB:** In principle, the hospital works without paper. However, for legal reasons, there still has to be paper documentation. However, all of the imaging procedures, the EPR, RIS, administrative, medical and

logistic information that accumulate in the process are electronically produced and made accessible in this way. Of course, there are certain documents, such as patient consent forms, which must be signed and kept as hard copies. However, everything, administrative and demographic data starting from a patient's admission, to the final discharge report is fully digitised.

**DZ:** Who can access this system?

**LM:** Only those authorised to treat patients, for example the general practitioner, cardiologists, etc.

**CB:** The IT hardware infrastructure is available

**LM:** No! And it is very architecturally pleasing. The design supports the workflow. Patients never have to wait on trolleys in corridors, nor are they transported long distances through the centre. We co-operate with cardiologists, nurses and the architect for the design. A patient is allocated a room for the duration of his stay - irrespective of his state of health. This means that every single room can instantly be turned into a cardiac critical care unit, if necessary. Monitors, data, information and examinations can be made available at very short notice in the same way that they would be

# The world's first, fully-digitised Heart Centre

everywhere, whether on a ward or the heart catheter laboratory. The way individual users access the system depends on their roles within a patient's treatment process.

**DZ:** So is the main challenge to create communication between the laboratory, administration, RIS and so on.?

**LM:** That's the technical component, but the most important thing is that once you are in the Heart Centre, you don't feel like a patient, but more like a resident in a luxury hotel. This is unique. Patient satisfaction is very important here. The centre even has a hotel-like reception. It doesn't seem like a hospital at all.

**DZ:** It doesn't 'smell' like a hospital either?



available on an intensive care ward.

**DZ:** This sounds expensive!

**LM:** Everything is to hand very quickly, so treatment can commence without delay. The doctor has all the necessary

*Louise F. Morgan, Senior Vice President of Global Solutions and Dr Clemens Bulitta, Senior Management Consultant, Siemens AG, describe the company's impressive role in progressing digitisation of healthcare delivery, in a brand new and luxurious US heart centre. Interview by Daniela Zimmermann, of European Hospital*

Above: Louise F Morgan  
Right: Dr Clemens Bulitta

examination via computer. This was a diagnosis examination, usually carried out by a radiologist. With the mobile unit, the examination was carried out on site - digitally - and the images were relayed to the radiology department via the internal network. The radiologist, in another part of the building, immediately carried out an on-screen diagnosis, without leaving his department, and sent it back in seconds.

**DZ:** That procedure works if all doctors involved feel they are part of a team, and are agreed that output is the most important aspect and they serve a common purpose. That's not always the case for all doctors...

**CB:** Yes, it is difficult. This is why we think that, apart from our classic, product-based business, we need to offer additional services that improve processes, and process management advice for hospitals etc. We have to offer the customer a complete solution, not just a perfect technical solution - customers being those delivering a medical service, such as a cardiologist with his own practice, a heart centre, or hospital. We enable them to have the right technology as well as support, by defining and improving processes.

**DZ:** So, to progress, you need to participate actively in hospital management...  
**CB:** Yes, we must explain the importance of such measures to all those involved in the process. We take on the roles of presenters. This is a big challenge, but I believe it is easier to find solutions for internal problems with external support.

**DZ:** Discussion about networks, planning and equipment is not an entirely new concept...  
**LM:** The focus on the entire treatment phase is new. And not every doctor or every hospital appreciates this approach. However, there are doctors who do want and understand it. They are examples to others and proof that it can work. They are our references for those who doubt the concept. We can show them the clinic - the cardiologists, the radiologists and show how successfully they work together, how much they enjoy their jobs, how proud they are of what they have achieved together - the quality of the treatment and how many cases they have treated with success.

information available to make the right decision about the right therapy. This enhances both patient satisfaction and quality of treatment. Taking this into consideration, the investment is not really that expensive, and a lot of it is recouped through improved workflow processes. If quality is high and patients are happy, this attracts more patients and increases the turnover of the clinic. It's an investment in a growing business area.

**DZ:** Intensive care beds are among the most costly items in a hospital, which is why patients are often transferred from ICUs very quickly...

**CB:** The entire heart centre only has 60 beds. In many cases, once patients have received basic medical care, they can be transferred to an associated hotel, but they continue to receive outpatient treatment from the cardiologist. This is also common practice in other areas of the American health service. Patients who continue inpatient treatment for a length of time in Europe, would have been moved to a hotel and treated as an outpatient in the US much sooner. The Heart Centre tries to keep inpatient numbers down, so as to treat as many patients as possible and thus increase revenues.

**LM:** I would like to return to the subject of process optimisation. When the centre opened and the first patients were admitted, I met one of the Heart Centre Board members, standing at a patient's bed. He had requested a mobile

## COMPANY PROFILE

**DELFT DIAGNOSTIC IMAGING will present a new, digital thorax scanner at this year's ECR exhibition (booth 321 Expo). European Hospital interviewed the firm's Managing Director, Guido Geerts, about this new product plus the structure and scope of his company in today's highly competitive healthcare market**

DELFT DIAGNOSTIC IMAGING (DDI), is a subsidiary of Delft Instruments NV, which has medical and industrial divisions. Within the medical division, DDI concentrates on radiology, whilst Nucletron, its sister company, focuses on radiotherapy. DDI is comprised of three groups: Rogan Delft (software - PACS systems); Delft Imaging Systems - formerly Oldelft (hardware - producer of the new ThoraScan) and Oldelft Benelux (system integration, which covers servicing). 'They have a lot of experience,' he points out, 'We understand the kind of problems that occur when you install soft- or hardware. So we can offer a better service.'

Guido Geerts refers to ThoraScan as a 'Rolls Royce' in its field - offering a very low dose and very, very high image quality. 'Oldelft has 50-years of experience in the production of thorax equipment, and ThoraScan is the latest technology, having a direct radiology (DR) system. This can be bought with our Mini-PACS-System, dedicated to one modality, but connectable to others - you can increase and expand the Mini-PACS into a larger PACS system.'

The use of IT in healthcare is increasing rapidly, he points out. 'We are in the middle of this growing and interesting market. We foresee a massive market for PACS, which includes tele-radiology to link with general practitioners (GPs). There is also a huge need for very



high quality digital thorax equipment - ThoraScan is digital - so in both the hard- and software markets we have products that are very interesting now and for the future.

Considerable consolidation has occurred in the radiology market, with Philips and GE buying many suppliers, which, he says, has presented Delft with many possibilities: 'There aren't many suppliers anymore, so it's not easy for distributors to survive. For those people it is very good to know that there is this new division. I think a lot of distributors need a high-tech new supplier, and we are an interesting source. So the market will grow for us. We are active in Europe (and still seeking more distribution partners there), as well as in the USA and Far East.'

It is the general hype; everybody is talking about digitising hospitals, so they need the hard- and software. In the short term we are focusing on PACS and dedicated thorax equipment, but we are also looking at good modalities to add to our range of products.





In a pre-ECR interview, Thomas H Helbich MD, Associate Professor of Radiology, Department of Radiology, University of Vienna (AKH), discussed trends in imaging and IT and their future effects



# THE FUTURE IN focus

**EH:** *Isn't there a danger that radiology, with ever-increasing investment in IT, will come under fire eventually?*

**TH:** I cannot comment on the highly political issue of healthcare cost cutting. However, But from a medical point of view I must look at the cost-benefit analysis. This clearly shows that modern imaging procedures present enormous cost cutting potential. Look at vascular

diagnostics: modern, non-invasive multi-slice technology (MR-angiography) enables me to diagnose the vascular structure of a patient suffering from peripheral arterial occlusive disease (PAVK) within 10 minutes. With conventional methods, the same patient would spend a day in hospital and be examined with the help of a catheter inserted through the groin.

With knee injuries, I can avoid

arthroscopies, and there are enormous savings potentials with modern imaging in tumour diagnosis. On top of everything, modern imaging procedures obviously achieve better, more precise diagnosis, which in turn facilitates more focused treatment - and that means shorter hospital stays. It is very obvious to me that evidence-based medicine is cost effective.

**EH:** *Will PC capabilities and storage capacities increasingly dominate a radiologist's work in the future?*

**TH:** I think that's a wrong conclusion. Of course the trend is towards telemedicine, molecular imaging, digital radiography, CAD and PET - all developments supported by continually improving computer capabilities. However, the radiologist of the future won't necessarily have to be a computer freak and software specialist. A decade's worth of experience with PACS has shown quite impressively that coping with huge amounts of data can be achieved in a very user-friendly way, and that radiologists can quickly develop a new and improved grasp of imaging and diagnostics.

That's not only limited to developments in hospitals but also applies to radiologists with their own practices who are increasingly using digital imaging for conventional bone and lung X-rays. Most radiology surgeries are now changing and upgrading their equipment.

**EH:** *Will film X-rays become relics quite soon?*

**TH:** In the long run - and photographic companies have adapted to this trend - Agfa, for instance, have equipped large hospitals with PACS.

**EH:** *What about documentation requirements?*

**TH:** With teleradiography, used in certain hospital areas, a hard copy of the digital image is filed for documentation. But even so, the general trend is towards web-based documentation, for which the radiologist only needs CD-ROM compatible software on a PC.

There is a concept that one day a radiologist will be at home, but on call, and he may instruct his radiographer to carry out an examination, to then make his diagnosis after receiving it electronically. This may seem far fetched, but I believe it will become common practice much sooner than we think.

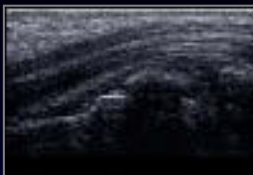
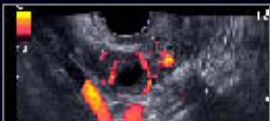
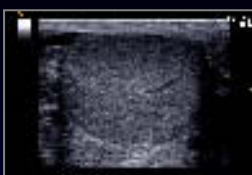
In California they already have mobile mammography screening units, that are driven from town to town and which relay images to an examination centre in San Francisco via satellite. In Europe, there are similar screening projects in Norway, Sweden, Finland, Holland, France, England, Spain and Italy.

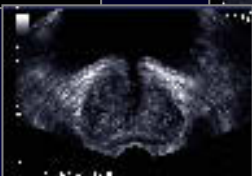

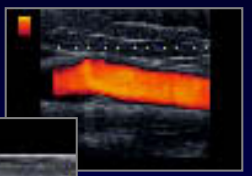
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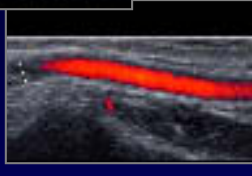
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# SURVEILLANCE IMPROVES MANAGEMENT

Surveillance of nosocomial infections has proved a valuable tool for internal quality management, said Dirk Zollmann and Sebastian W Lemmen, of the Department of Infection Control, University Hospital Aachen (UHA), describing a hospital infections surveillance system called KISS, developed at their hospital since 1998.

KISS - provides references for device-associated nosocomial infections and surgical site infections. The KISS criteria are similar to the USA's National Nosocomial Infection Surveillance System (NNIS) for benchmarking. (From January 2001, according the country's new prevention Act, hospitals must perform targeted surveillance for nosocomial infections).

At the 1,500-bed tertiary referral centre - covering all clinical disciplines and with nine specialised intensive care units - a physician trained in infection control supervises a nurse trained to carry out surveillance according to the KISS criteria. Nosocomial infections are categorised according to the definitions of the Centres for Disease Control and Prevention (CDC).

According to the team's report, in intensive care units, surveillance is performed for the three most important nosocomial infections (bloodstream and urinary tract infections and pneumonia), which are associated with invasive devices as the main exogenous risk factors (central venous catheter, mechanical ventilation, urinary tract catheter). Patient days and device days are recorded daily by ward staff. Nosocomial infections are identified by prospective chart review twice a week, combined with participation in the infectious disease consulting service ward rounds once weekly. Device utilisation ratios are calculated per 100 patients, device-associated incidence densities per 1,000 days at risk (use of central venous catheter, mechanical ventilation and urinary tract catheter, respectively). For time requirements, a quarterly rotating intensive care unit surveillance system has been established.

Surgery - Surveillance is performed in selected surgical procedures, established as indicators for surgical quality management, such

as hip replacement or a coronary bypass. A record, for every patient undergoing the selected procedure, includes baseline information and occurrence of specific risk factors such as wound class, duration of surgery and the American Society of Anaesthesiology (ASA) score. Up to discharge patients are monitored - by chart review and ward rounds twice weekly - for the occurrence of surgical site infections. Using a composite index for predicting risk of surgical site

infections after surgery, surgical site infection rates can be stratified according to the risk factors, the team points out.

'Interpretive feedback of the surveillance data is given in written and oral presentations to ward staff and the department head. Thus, the unit-specific nosocomial infection situation can be made clear for ward staff. As a result, in our hospital, quality management activities, such as establishment of evidence-based infection control

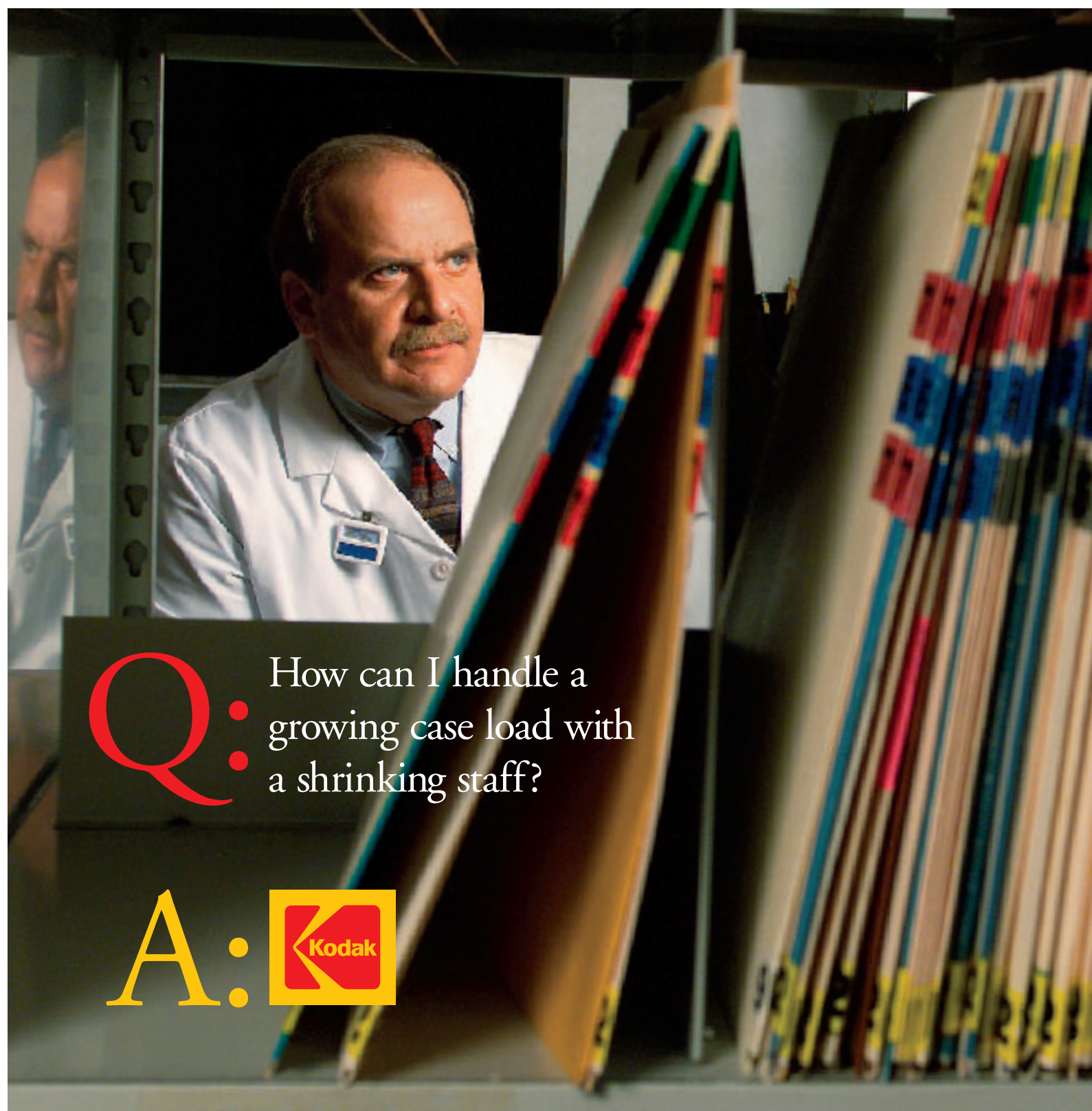
guidelines and quality circles, have been initiated. Surveillance data are used for further risk factor analysis and optimisation of empirical antibiotic therapy. In addition, several specific infection control problems could be detected during the surveillance process, which led to specific intervention strategies.'

Surveillance activities need careful planning, in terms of personnel and time resources, they pointed out. 'Essential surveillance compo-



Dr Sebastian Lemmen

nents are distribution of responsibility, knowledge of classification, analysis and interpretation of surveillance data as well as the implementation of interventional management techniques due to the results of the surveillance process.'



**Q:** How can I handle a growing case load with a shrinking staff?

**A:** 

The RKI Guidelines specify that personnel working in Central Sterilisation Services (CSS) must have completed a training course that includes the guidelines drawn up by Hamburg's Senate, and the Intensive Workshops 1-3, developed by the DGSV.

#### DGSV objectives

The DGSV has about 500 members, who are recycling specialists in hospitals. In coming years, the society will update the curricula for Intensive Workshops 1 & 2. The society is also developing public relations guidelines with hospitals, to gain support from management to put CSS quality into effect. Details: [www.dgsv-ev.de](http://www.dgsv-ev.de) or: [www.rki.de](http://www.rki.de)

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**HEALTH IMAGING**  
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In the US about 450,000 people a year die from sudden cardiac arrest, making this one of the most common causes of death in the Western world. In Germany the figure is about 100,000. Generally, it is thought that in 80-90% of cases, patients had tachycardiac dysrhythmias (ventricular tachycardia or ventricular fibrillation) prior to sudden death, whereas bradycardiac arrhythmias are not as significant.

One of the central objectives of modern cardiology is the prevention of cardiovascular diseases, the identification of patients who are in danger because of life-threatening cardiac dysrhythmias, but also the development of therapeutic procedures that can treat acute, life-threatening dysrhythmias safely and successfully and save patients' lives. Whilst the treatment of malignant dysrhythmias by emergency medics and electro shock therapy (defibrillation) has been a treatment used for dangerous arrhythmias for many years, 'early defibrillation' with semi-automated defibrillators by trained first aid teams is often viewed as an experiment and not a well thought-out therapy concept. However, first results from studies carried out in Europe and the US show that early defibrillation not only makes sense but can also be used safely and reliably.

**Survival chances**

Patients who develop ventricular tachycardia or ventricular fibrillation have a life-threatening illness and may die. Worldwide examinations have clearly shown that the prognosis for those with cardiac arrest due to ventricular tachycardia or ventricular fibrillation is bad, and that only 5-8% of these patients will survive the event. Only quick, targeted action will

ensure their survival. Indecisiveness, hesitation, helplessness or 'therapeutic passivity' will invariably lead to the patient's death. The 'survival chain', made up of four part components (emergency call, basic first aid, defibrillation, further treatment) is of vital importance.

**Emergency call**

Calling for professional help is an important part of the survival chain. It is a prerequisite for the early arrival of an ambulance that facilitates further treatment. It also gives medical professionals at the end of the phone line a chance to

Professor Hans-Joachim Trappe MD, of Medical Clinic II (specialising in cardiology and angiology), Ruhr University Bochum presents

# THE CASE FOR early defibrillation



advise the caller on any first aid measures he/she may be able to give.

**Basic aid**

For a patient to survive, the time period between cardiac arrest and the onset of cardio-pulmonary reanimation must be as short as possible. We know that the human cerebral function can only be restored within 8-10 minutes of the arrest. So the time period from the occurrence of cardiac arrest to the initial reanimation attempts are a critical component. Artificial respiration and cardiac massage are essential basic measures, which should be initiated on the unconscious patient as soon as possible.

According to recommendations from the Liaison Committee on Resuscitation [ILCOR] and the American Heart Association [AHA], cardiac massage should be carried out with a frequency of 100/min, with the ratio from heart massage to respiration of 15:2.

**Defibrillation**

Ventricular fibrillation is the most common dysrhythmia, which can cause sudden cardiac arrest, leading to the patient's certain death without defibrillation. Defibrillation, an 'electric' shock procedure, is carried out with a defibrillator via two electrodes,

public semi-automatic defibrillators without any training. Although there are some promising results from studies of this use of the equipment, it is better to comprehensively train as many first responders as possible.

**Worldwide experiences**

The concept of early defibrillation has been known in the US for many years, and first responders are integral to the survival chain in many regions. In October 2002, the *New England Journal of Medicine* published two important studies indicating the success of early defibrillation by security staff

attached to the patient's chest and giving a DC impulse of 8-12 ms. This impulse leads to the fibrillating cardiac muscle cells (now mechanically arrested and not pumping blood) restarting and resuming electric and haemodynamic activity.

**Who should defibrillate?**

There are two kinds of early defibrillation - one carried out by trained first aid teams (first responders), the other carried out by members of the public with access to a defibrillator (public access defibrillation). First responders are trained helpers such as security staff, policemen, firemen etc. trained in measures of cardio-pulmonary reanimation and in handling a semi-automatic defibrillator (ref.: German Medical Council, 2001; 98:1211] 4th May 2001). In places where large crowds gather, such as theatres, stations, sports centres, airports, department stores etc, staff should be trained as first responders.

Public access defibrillation is based on another concept - people in the vicinity of automated external defibrillators (AEDs) use these

in casinos and airports.

In various casinos in Nevada, AEDs were used on 105 patients who initially suffered ventricular fibrillation. 56 of these (53%) survived and discharged from hospital. The survival rate was 74% for those patients who had been given their first defibrillation within three minutes of the onset of symptoms and 49% for patients where AED shocks were commenced more than three minutes later.

In a further US study, AEDs were used on 200 patients who had documented loss of consciousness on a plane (191 patients) or within an airport terminal (9 patients). With 14 patients, the AED revealed ventricular fibrillation, which was successfully treated in 13 patients; in the other one no treatment was given as the patient was in the very final stage of a terminal cancer. In all patients who did not appear to suffer from ventricular fibrillation, the equipment was not recommended and not used.

This study impressively proved that the use of AEDs by trained first responders is not only effective

but also safe, when making a decision as to whether a patient is suffering from ventricular fibrillation or another, non-treatable arrhythmia, and to ensure that shocks are not given when there is no life-threatening arrhythmia.

A recent study in Chicago carried out over a 2-year period reported that of 21 people who suffered cardiac arrest, 18 had prior ventricular fibrillation (*New England Journal of Medicine* 2002; 347:1242-1247). Out of four patients who were not in the vicinity of an AED when cardiac arrest occurred and who received no shock treatment, none survived. Three other patients suf-

fered further ventricular fibrillation and did not recover although AEDs were used within 5 minutes. 11 patients with ventricular fibrillation were successfully defibrillated; 56% of these patients with ventricular fibrillation followed by successful AED defibrillation were still alive a year after the event and had no neurological damage.

**The Early Defibrillation in Germany project**

The introduction of early defibrillation in Germany, compared with the US, has been late and relatively slow. Apart from a few institutions with semi-automatic defibrillators, such as the Stadium Gelsenkirchen or Munich's underground stations, a model project, one of the largest in Europe, was introduced to the German public on 13 December 2002. In a co-operation between the German Cardiac Society, the German Heart Foundation and the Fraport AG Frankfurt, Terminal 1 of the Rhein-Main Airport in Frankfurt/Main is to be equipped with 20 AEDs. Around 2000 first responders (500 airport workers and 1500 members of the federal border guard) are to be trained and available. This scientifically monitored project will eventually be extended to all parts of Frankfurt Airport.

**Conclusions and outlook**

The concept of early defibrillation to prevent sudden cardiac death is without doubt one of the most important projects in modern cardiology. The fascination of this therapy is that a rather complicated measure is being simplified so that initially first responders can use it - then, later, so can an untrained public. First results and experiences have not only confirmed the value of this concept but also actually far exceeded expectations. We can hope that experiences initially gained in the US will meet with the same enthusiasm in Germany, as has been seen in other European countries. However, the introduction of early defibrillation and its spread in this country requires the co-operation of everyone involved, as the concept can only be comprehensively introduced if everyone agrees this is an important strategy to prevent many unnecessary, sudden cardiac deaths.

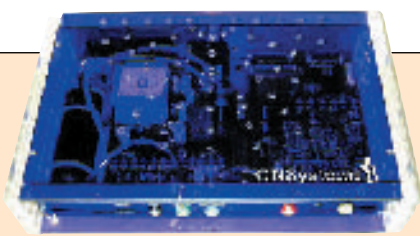
## CE mark for defibrillator implant

BRUSSELS - The first European human implant of the Vitality AVT - a cardioverter defibrillator (ICD) - was carried out at the University Hospital Dusseldorf, soon after the Guidant Corporation obtained the European CE Mark for the device this January. The firm reports that, at 30cc, the Vitality AVT is the smallest dual-chamber full-featured ICD in the world. 'It combines leading, automatic ventricular and atrial therapies with three-channel energy-efficient FullView EGM capability that is important in customising treatment for ICD patients.'

Footnote: In February, Nicky Spaulding became president of Guidant Europe, Middle East, Africa and Canada - a post based in the US firm's Belgian offices

## The multi-purpose monitor

Award-winning Austrian innovation checks out NASA astronauts



A pioneering innovation, awarded the Austrian Innovation Prize in January, promises previously inconceivable opportunities for diagnosis and monitoring, particularly in internal medicine, cardiology and neurology, says the maker, CNSystems, based in Graz. The firm reports that its Task Force monitor is the world's first diagnosis and monitoring system to determine all relevant heart circulation values for each individual heartbeat, using a non-invasive procedure that plots them in real time.

The first two monitors were supplied to NASA, where they were used to investigate astronauts' cardiac circulation during parabolic flights (weightless simulation). The monitor was also selected for future use on the International Space Station (ISS) crew.

The system measures, inter alia, the heart's stroke volume (amount of blood pumped from the heart at each heartbeat), the peripheral vascular resistance as an indication of dilations or strictures of blood vessels, the duration of a heartbeat, or

heart rate, to the millisecond, as well as blood pressure and its course during a cardiac period.

The non-operative measurement procedure not only provides details of the heart circulation system but also evaluates important information about how the brain controls the system - otherwise possible only at great expense and with considerable patient stress (using a pulmonary artery catheter).

The combination of four measuring/measurement methods

- continuous blood pressure measurement (beat-to-beat)
- impedance cardiography
- high-resolution 2-channel ECG
- oscillometric blood pressure measurement

also provides the opportunity to record the functions of the autonomic nervous system indirectly via the heart circulation measurement. Using methods applied in the chaos theory, it is possible to sift out rhythms from apparently chaotic changes in heart rate, blood pressure and stroke

volume from one heartbeat to another, which provides valuable information about brain functions, the firm pointed out.

Other areas of application include internal medicine, neurology and cardiology - to replace catheters, non-surgically adjust pacemakers, explain sudden and unaccountable unconsciousness, offer real time monitoring in the ICU or dialysis units. The monitor is also used to investigate drugs that affect circulation, the firm says, adding that in addition to medical benefits, surgical costs treatment time, data handling and purchasing can be reduced.

The European reference list includes numerous university and specialist clinics in Germany (e.g. The Charity, Berlin; Heart and Diabetes Centre, Bad Oeynhausen), and others in Belgium, France, Italy, Portugal, Spain, Britain and Austria. Following FDA licensing, the firm believes US opportunities will be good, as reimbursements are granted for patient-friendly non-invasive heart circulation measurements.

Helmut Beuster, Head of Sales Support, Draeger ANSY Ltd, and Michael Clarkson, of Domnick Hunter Ltd, discuss uncertainties, misunderstandings - and the intricacies of the on-going debate

# medical AIR



for all (German) hospitals with adsorption dryers, filters and catalytic converters for converting carbon monoxide, will cost into the double-digit millions. Operating costs are also increasing for compressed air plants because part of the medical air produced is used to regenerate the necessary adsorption dryers, and additional hopkalite filters must be replaced regularly.

### Medical air from the pharmacy

On publication of this law, the

industry felt challenged to develop special processing equipment that would reliably meet medical air requirements. However, although the time limit for the transition approached and expired last year, hospitals hesitated about investment - and many still do. This may be due to the fact that responsibility was rearranged - since medical air is now considered a pharmaceutical - production of medical air is now the responsibility of pharmacies supplying hospitals. Thus phar-

macies have been confronted with an entirely new and different responsibility.

Since mid-2002 discussions on this subject have focused on objective technical arguments but also bordered on the philosophical, thus several articles in medical engineering journals, included one advocating 'just don't rush matters!', and some authors advising hospitals not to put the new requirements into actual practice. This interpretation of the law may surprise some - the Pharmaceutical Products Act is in force, so ignoring valid law is explicitly recommended!

*continued on page 14*

Medical air came under the Pharmaceutical Products Act since April 2000, with a transition period until August 2002. For hospitals, this meant that the quality requirements upon air for artificial respiration rose sharply and that they should already have invested in the production and processing of compressed air. However, because some professional representations advised waiting and seeing for the present, a feeling of uncertainty prevails. Additionally, the sense of the new quality requirements, partly characterised by technical misunderstandings, is being debated.

The state of affairs is clear - until January 2000, the first version of the standard DIN EN 737-3 (enforced from November 1998) regulated requirements on medical air, used both in artificial respiration and to drive medical equipment. Included among this standard's most important requirements was an atmospheric dew point of approximately -25°C. This is about equivalent to a dew point under pressure of + 5°C, which was achieved using commercially available refrigeration dryers - and which hospitals almost always used, until then. However, a draft of a supplement to the European Pharmacopoeia, published in 1998, classified 'air for medical applications' as a pharmaceutical, which placed far higher requirements upon it. The amount of water vapour had to be 60 ppm maximum, equivalent to an atmospheric dew point of approximately - 47°C. In addition, the draft demanded that the residual oil content be 0.1 mg/m<sup>3</sup>, maximum. The bill also cited maximum levels permitted for carbon dioxide, carbon monoxide, nitrogen oxides and sulphur dioxide in air used for artificial respiration but did not make any specifications on the separation of particulate matter.

The transition period ended at the beginning of August 2001.

As a result, the legal situation was unclear from the beginning. There were two different standards for one and the same medium. So, in the second edition (January 2000) of the harmonised European standard DIN EN 737-3, passages concerning medical air quality were deleted. This unclear legal situation did not end until a notification, in April 2000, for the 2000 Addendum to the European Pharmacopoeia. The 2000 Addendum became valid in August 2000. A transition period was granted up to August, the following year.

The consequence for hospitals was thus clear: They must invest, because in the majority of cases these requirements cannot be achieved by using present systems for production and processing. Experts estimate that upgrading compressed air systems



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# medical AIR

continued from page 13

## Debate: What is air?

This approach might represent a wish and the hope that the Pharmaceutical Products Act will later be amended. Key question: Is the air used to provide patients with artificial respiration actually a pharmaceutical? Representatives of the ADKA (Federal Association of German Hospital Pharmacists) believe that compressed air for medical purposes should not be

ly harms patients. Literature on this cites as a requirement for long-term artificial respiration an air temperature of 22° to 37°C and water vapour content of 15,800 to 43,900 ppm - a far higher figure! Consequence: air for artificial respiration must always be humidified!

All users know these general parameters. The respirators necessary are therefore all equipped with humidifying systems to meet those requirements. The amount of water vapour in compressed air, according to the outdated specifications of the standard, was 630 ppm, the Pharmacopoeia requires 67 ppm. Medical air therefore must be humidified by 563 ppm more, which is entirely negligible for applications on patients, for whom the amount of water vapour required between 15,800 and 43,900 ppm.



considered a pharmaceutical, but a foodstuff. And the DKG (German Hospital Association) believes the EN 737-3 requirements have proved their value or, at least, no negative consequences are known about air quality specified by this. The DKG has turned to the BMG (Federal Ministry of Health) to obtain an exemption, so that medical air would not be covered by the European Pharmacopoeia. However, a decision has yet to be made on this. Those studying Hospital Equipment Management at the Giessen-Friedberg Higher Technical College have written to the BMG requesting that Minister Ulla Schmidt amend and/or supplement the Medical Air 2000 monograph regarding water vapour content.

Due to the many debates, four petitions on revising the monograph (three German, one Swiss) were submitted to the 9G - the relevant commission of experts. At its Strasbourg conference (September 2002) in-depth discussions did not result in any amendment.

Requirements that over do it and might even be harmful?

The 'wait-and-see' advocates also raise material objections to the improved quality requirements. A particularly important argument is that an atmospheric dew point of -46°C (equivalent to 67 ppm of water vapour in one cubic meter of air) not only overdoes it but actual-

## The technical debate - frequent false arguments

The dryer compressed air the fewer harmful substances it can bind. That is one of the purposes of processing for compressed air, and it is not a contradiction to re-humidify compressed air purified in this way, to provide artificial respiration - providing no new, harmful substances (e.g. bacteria) are added. However, there is another reason for the requirement for residual humidity in compressed air: to reliably withhold poisonous amounts of carbon monoxide the air must flow through a chemical catalytic converter, turning carbon monoxide into carbon dioxide. Filters or dryers cannot do this. However, this converter is only effective long-term if air flows through it with a dew point of -40°C or less. Loading it with humidity substantially reduces its service life. In standard systems for producing compressed air, only adsorption dryers can guarantee a dew point of -40°C.

## Artificial respiration requires clean air

What does this technical data mean in the debate? To the experts involved it is certainly not a matter of providing patients with the driest air possible. The required dew point under pressure is due to a technical necessity to preserve the service life of carbon monoxide cat-

# Electronic monitoring drops deaths 25%

USA - Life monitoring equipment and software called eICU, produced by Visicu Inc, has reduced intensive care mortality rates at Sentara Norfolk General Hospital, Virginia, by 25% and shortened the average length of stay for patients by 17% - according to an independent study, by Cap Gemini, Ernst & Young (CGEY). 'Mortality rates plunged when our around the clock reaction time became a matter of seconds,' Rod Hochman MD, Senior Vice President and Chief Medical Officer for Sentara Healthcare said.

Intensive care patients at the hospital are now continuously monitored and managed by intensivists who work online from a remote eICU location when primary care physicians are not at the patient's bedside. Through a network of cameras, monitors and two-way communication links, doctors and critical care nurses at the eICU command centre make virtual rounds of patients. Intensivists can monitor the condition of patients, check vital signs and communicate with hospital staff, patients or family members.

The eICU enables command centre computers to quickly establish a 'base line readout' of each patient, so even slight changes in vital signs are detected and treated. Dramatic changes in vital signs trigger automatic alerts to intensivists or the nurses who prompt an immediate

response from on-site hospital staff. This is said to have saved the life of more than one patient per week in two separate ICUs.

The report said per patient costs dropped \$2,150, based on reduced patient expenses and increased ICU capacity, and the system has generated c. \$3 million in savings above annual programme costs.

'What is most exciting is that we are only scratching the surface of possibilities for remote, technology-enabled care,' said Brian Rosenfeld MD, Chief Medical Officer of Visicu Inc, who, with another intensivist from Johns Hopkins, co-founded the Baltimore-based firm in 1998. Details: www.visicu.com.



alytic converters, thus saving on operating costs. It is also due to a fundamental belief that the amount of harmful substances in air should be limited, when used for artificial respiration. Without a doubt, harmful substances in air stress an organism. From the technical viewpoint, however, condensation should definitely be avoided in the tubing systems for medical gases. When operating surgical tools driven by compressed air (e.g. air motors) no condensation must form inside the drive turbine either - water condensation could destroy the turbines and/or water could drip out of the surgical tool and into a patient's body.

## Bottom line: Clean respiratory air benefits patients

The law demands that hospitals comply with pharmacopoeia spec-

ifications. Many hospitals far exceed the time limit granted for transition (August 2001). Reliable compliance with air quality characteristics is only achieved, particularly for the carbon monoxide limit, by a combination of an adsorption dryer combined with a catalytic converter (hopkalite filter).

## Recommendation

Due to legal requirements, compressed-air control units should be upgraded immediately with adsorption dryers. Hospital technical directors should contact their pharmacy suppliers and reach a written agreement on the process 'Pharmaceutical Production - Air for Medical Purposes'.

An organisation chart should be drawn up to show instances of accountability concerning gases for

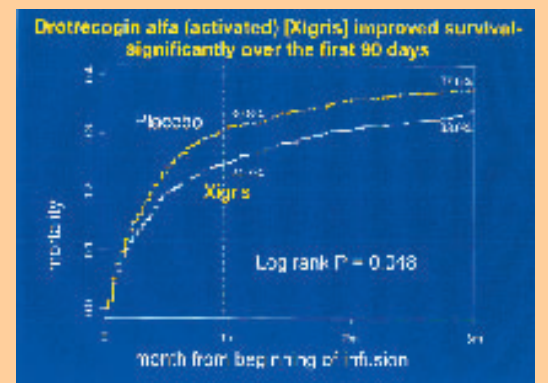
medical purposes. This also applies to supply systems for oxygen, nitrous oxide and carbon dioxide. In addition, work instructions should be prepared for inspection and production of these pharmaceuticals. Maintenance contracts should be concluded for the maintenance of compressed air systems. Maintenance should be documented, for submission in case of any inspection by the responsible pharmaceutical monitoring and inspection offices.

Hospitals should not only implement these measures for legal reasons, but because air polluted by harmful substances is a stress on patients' whole organisms. Clean respiratory air, free of harmful substances, is thus an important aspect that contributes to the quality of medical care provided and thus also effect quicker patient recovery.

# Sepsis therapy ups survival rates

Long term data on the use of Xigris [drotrecogin alfa (activated)], the only adjuvant therapy licensed for the treatment of adult patients with severe sepsis and multiple organ failure in addition to standard therapy, have confirmed increased chances of patient survival. Results from the placebo-controlled Prowess Study, presented by Professor Rolf Rossaint, at the German Interdisciplinary Congress for Intensive Care and Emergency Medicine 2002, showed that the patients, monitored over a period of up to 2.5 years, also had increased long-term survival rates. Using the therapy, the death risk for patients with severe sepsis was lowered by about 20%. However, it remained to be seen how chances of survival developed after the initial 28-day monitoring period.

In the multi-centre observation study, surviving patients who had taken part in the Prowess Study were being continuously monitored. Between September 2001 and April 2002, in the double-blind study, 1,221 patients were monitored. This corresponded with an observation period of 15-45 months following the patients' initial inclusion in the study. Patients who had been treated with drotrecogin alfa (activated) not only survived the acute phase of severe sepsis more often (p=0.005) but also the first 90 days in the hospital following the onset of the illness (p=0.048). 'After the 90-day period, mortality is determined by other factors, such as age and general health, which are not directly connected with severe sepsis as such,' the professor pointed out. Even if the entire observation period of 2.5 years is taken into consideration, chances of survival



remain increased for those patients receiving drotrecogin alfa (activated) during the acute phase of the illness.

Because of the increased rate of survival, more of these patients could be sent directly home following their hospital stay, with no additional treatment necessary.

Professor Rossaint concluded that treatment for sepsis revolves around five factors: source control/administration of antibiotics, early, target-orientated circulation management, artificial respiration, endocrinal and metabolic management as well as administration of recombinant human activated protein C, drotrecogin alfa (activated)

GUIDELINES - Private lecturer Ernst Kuse, of Hanover, introduced guidelines developed by the ICU at Hanover's Medical University. Source: Symposium 'rhAPC: Experiences in clinical use'. Details: haas@haas-health.de

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**BELGIUM** -  
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Free University of Brussels, points out that over 4,500 participants come from all global points to attend this annual symposium. These include intensive care physicians, anaesthetists, cardiologists and pneumonia and emergency care specialists. 'Indeed,' he adds, 'since its birth some 23 years ago, this has grown to become the leading meeting in its field, providing a forum for all involved in these disciplines to present, discuss and debate the most recent results and discoveries.'

'Our faculty for 2003 includes almost 200 physicians, many internationally recognized, but we also like to encourage input from likely future leaders.'

**Sepsis** - This year's reports on advances will include: new interventions and management strategies shown to improve outcome in cases of severe sepsis or septic shock, including drotrecogin alfa (activated), moderate doses of corticosteroids, early resuscitation, and tight control of blood glucose levels. Other agents still in early phases of clinical testing will also be discussed, as will new definitions and grading systems for sepsis proposed last year, which include the PIRO system.

**Microcirculation** - 'Recently, better monitoring of the microcirculation has become possible, via minimally invasive optical methods (orthogonal polarisation spectral imaging), using a simple probe under the tongue. Although the mouth may not typically be an at risk body region during acute illness, it is easily accessible - the microvasculature is available immediately below the mucosa. Microcirculatory alterations seen there may be present throughout the body. Recent studies suggest that exploring microcirculation with this technique could help to guide therapy in the critically ill.'

**Extracorporeal techniques** - Results of new studies will be presented on extracorporeal techniques, used to support the failing kidney as well as the liver. In severe infections, these techniques may also remove mediators.

**Blood transfusions** - A large European study (the ABC), which involved 3,534 patients from 15 Western European countries, recently reported that 37% of patients received a blood transfusion during their ICU stays. However, blood transfusions remain controversial. Possible alternatives, such as erythropoietin, will be discussed.

**Ethics** - are also on the agenda. The majority of deaths in the ICU are preceded by a medical decision to withhold and/or withdraw life support systems. These decisions, although remaining a medical responsibility, should be shared by several individuals within the ICU team and optimally involve discussions with the nursing team, and with the patient wherever possible, Professor Vincent points out.

## LEARN TO BEAT PNEUMONIA

In a study published in the official journal of the Society of Critical Care Medicine (Nov. 2002), members of the Barnes-Jewish Hospital Infection Control Team report that they followed all patients admitted to the ICUs from October 1999 to September 2001, surveying for the occurrence of ventilator-associated pneumonia (V-AP). 191 cases occurred in 15,094 ventilator days (12.6 per 1000 ventilator days) in the 12 months before the education programme. After the programme, the rate of V-AP decreased to 81 episodes in 14,171 ventilator days, a decline of

57.6%. In addition to reducing pneumonia, the program also resulted in cost savings estimated as between \$425,606 and \$4.05 million.

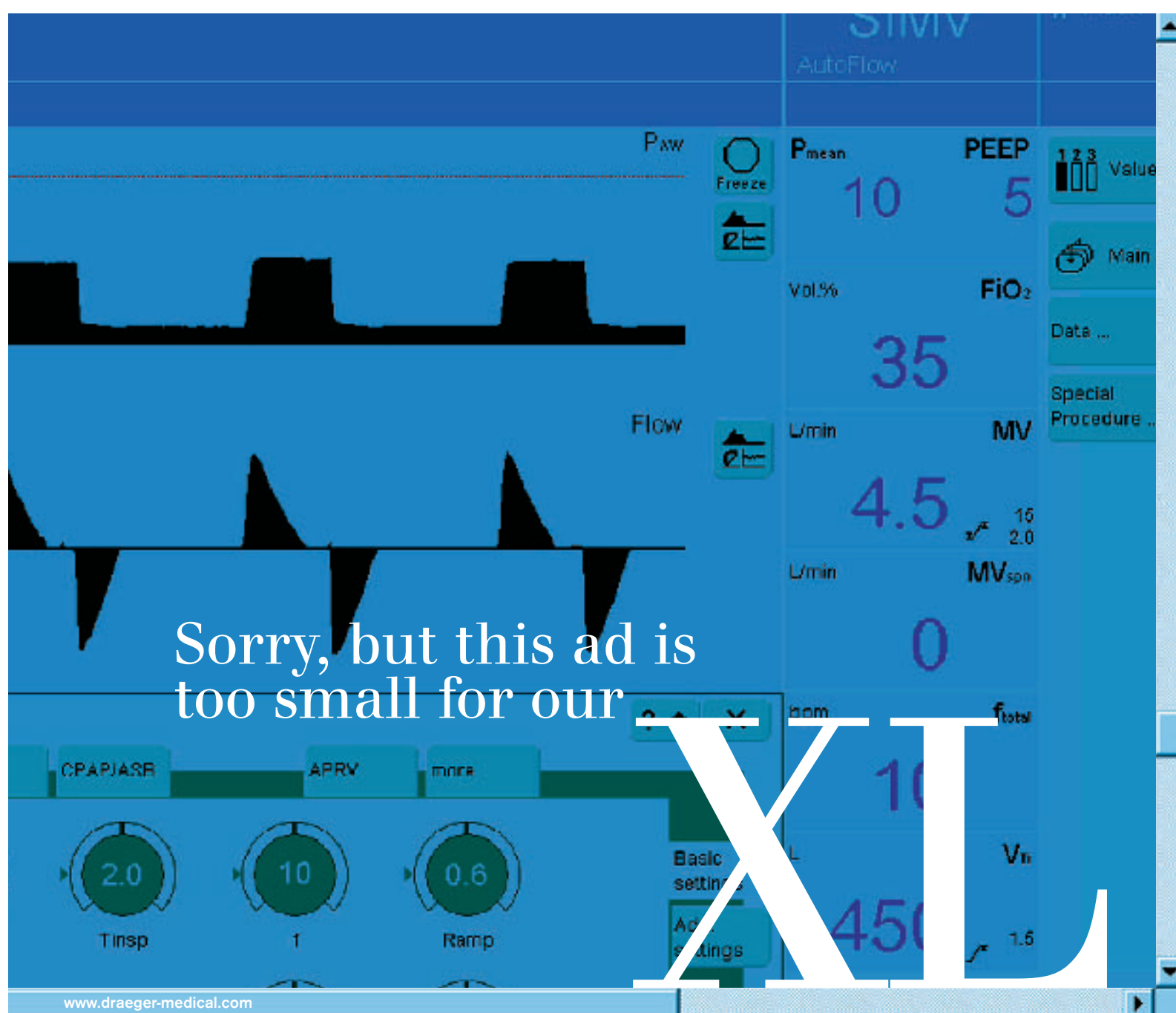
The programme, directed at respiratory care practitioners who care for mechanically ventilated patients and ICU nurses, and developed by a multidisciplinary task force, consisted of a ten-page study module on risk factors and practice modifications involved in V-AP, training at staff meetings, and formal lectures. Fact sheets and posters were also posted throughout the ICUs and the

Cases of ventilator-associated pneumonia can decrease dramatically

department of respiratory care services.

Many studies suggest strategies for the prevention of V-AP but many of these interventions are not widely implemented in ICUs. The most common reason for not following recommendations was disagreement with the interpretation of clinical trials, lack of resources, and costs associated with implementation of specific interventions.

\**Critical Care Medicine* is a peer-reviewed, scientific publication



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Memorial Sloan-Kettering Cancer Centre prides itself as the world's oldest and largest institution devoted to prevention, patient care, research and education in oncology. It is presently one of only two places in the world that offer MR spectroscopic imaging of the prostate gland - the University of California, San Francisco (UCSF) being the other. General Electric is now devising the

**Dr Hricak witnessed the evolution of radiology from simple x-rays to ultrasound and MRI**

software as a clinical package for general use.

Dr Hedvik Hricak, Chairman of the centre's Department of Radiology, is a Croatian immigrant who became a radiologist in the 1970's. Soon after Dr Hricak came to the Centre in 1999 from the UCSF, where the first clinical magnetic resonance unit was developed in the US, magnetic resonance spectroscopic imaging of the prostate gland was offered at MSKCC. The clinical trial, which started in January 2000, has enrolled 980 patients to date, most with previously diagnosed cancer of the prostate gland.

The majority of prostate gland cancer patients who come to Sloan-Kettering are offered MRSI.

EH correspondent Karen Dente interviewed Dr Hricak at the Cancer Centre

'We look at exactly where the tumour is located and how far it has spread, so we can then make a better decision as to the further course of treatment,' said Dr Hricak.

The alternatives are surgery or radiation therapy. MRSI not only helps in deciding the proper choice of treatment, but also in treatment planning. 'In the case of radiation therapy, we really look at the location of the tumour, and when they proceed with radiation therapy, under guidance of MRSI, there is more certainty that the exact tumour area is covered.' Before surgery is performed, MRSI aids in deciding whether to excise the neurovascular bundle, depending on the tumour's location. This type of imaging is also used for local recurring cancers, as well as for patients

only half the picture - 'well, probably more than half, but at least we say so here,' she added, laughing.

MRSI looks at membrane proliferation via a visible ratio of the metabolites choline and citrate. Depending on the elevation of this ratio, insights into the state of the cancer can be made.

Unlike FDG, a radionuclide glucose metabolite used in PET scanning, '... the choline to citrate ratio is very good at distinguishing malignant from healthy tissue', said Dr Steven Larson, Chief of the Nuclear Medicine Service at the Centre. 'MRSI now helps in defining better degrees of specificity, since tumours are more likely at certain metabolic ratios.' Dr Larson sees the most promising benefit of MRSI to be in helping surgeons to remove the right



Hedvik Hricak



# MR spectroscopic prostate gland imaging

with an elevated PSA and three consecutive negative biopsies. In those cases, MRSI and MRI are offered, and a biopsy is guided by findings on the MRI.

'MRSI can never be used in isolation,' Dr Hricak points out. MRI offers outstanding anatomical information, while MRSI only delivers metabolic information. Combining the two into one provides a more accurate picture of the tumour's location - far better than MRI alone, which, according to Dr. Hricak, '... gives

regions without damaging neural structures around the prostate gland. MR spectroscopic imaging is also widely used in other areas, such as the brain and heart.

Dr Hricak emphasises that it is very difficult for the untrained eye to accurately read images presented by MRSI, and refers to several studies that have shown great 'inter observer variability'. She pointed out that it takes time to learn, and that there is a great need to train future physicians to work with emerging technologies

in a clinical setting. By assuming a more a general leadership and mentoring role, Dr Hricak now wants to help others chart a course to excellence in imaging science and clinical care. 'Understanding technology is important, but helping to develop a generation of young scientists and physicians is essential for our future,' she said. Her work now involves helping to open doors for junior scientists and physicians, to inspire them, keeping her goal for the advancement of clinical care in mind.

She very much hopes that MRSI will become a standard addition to MRI in the care of patients diagnosed with prostate cancer. However, she could not be certain that this will be the only exciting new imaging modality widely used in the future. 'If you look down the line five years from now, molecular imaging will make a great breakthrough in our ability to detect cancer, predict outcome and really design patient specific therapy, really tailored to the individual. We hope that will come with molecular imaging.'

## The 18th EAU Congress

**Professor D Frohneberg (below), Director of the Urology Clinic at the Karlsruhe Academic Teaching Hospital, Freiburg University, describes aspects of new urology guidelines to be presented in Madrid**

**SPAIN. 12-15 MARCH** - In the past seven years over 130 urology experts, supported by the European Association of Urology (EAU) Board, and governed by the Health Care Office, successfully published guidelines covering almost all interests and subjects in European urology - including urogenital trauma, neurogenic bladder disorders, renal transplantation and pain management.

Additionally, guidelines on specific subjects and problems of the ageing male are progressing.

Traumatic injuries to the genitourinary tract are seen in 2.2 - 10.3% of patients admitted to hospitals. Standardisation and classification of these injuries help to select appropriate therapy and predict best treatment results. Thus establishing rules and a scaling system for diagnostic measures and initial emergency treatment is extremely important to guarantee adequate therapy for a patient often suffering multi-disciplinary traumatic injuries.

European experts in urogenital trauma will present a detailed summary based on a review of worldwide literature.

On the other hand congenital courses of neurogenic bladder dysfunction, such as myelomeningocele, produces damage to urogenital organs, which, in the long run are comparable with trauma-induced paraplegia and lesions of the neural plexus of the small pelvis after pelvic surgery, for example. Toxic neuropathia, in diabetic patients for example, may also result in neurogenic bladder dysfunction.

Routinely, those cases involve a time-consuming diagnostic process to evaluate neurophysiological disorders of bladder function. Additionally, the lesions may not be stable during their lifetime. Adequate management of lower urinary tract symptoms often mislead, or disguise probably severe damage to the upper urinary tract. Therapeutic options in the early treatment phase avoid renal damage and renal failure

during lifetime therapy. Both surgical and medical approaches must be used differently or combined.

The guidelines on urogenic bladder dysfunction offer a complete overview of the actual scientific publications, evaluated by experts in this field.

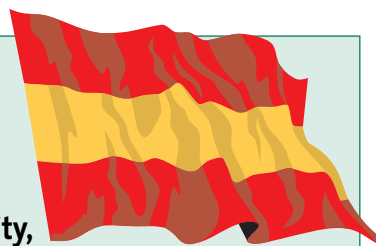
In addition, an exchange of knowledge and attitudes in the treatment of patients with acute and chronic pain is summarised in the section on pain management.

An interdisciplinary team - urologists, anaesthetists and pain specialists - has guaranteed an actual review of the literature that results in recommendations and therapy schemes.

Last but not least experts in renal transplantation volunteered and co-operated in establishing the guidelines on renal transplantation. Due to different European healthcare systems these experts have been very ambitious to provide our urologists with guidelines on the basis of an expert review of all literature in this field.

All medical professionals must be aware of government tendencies to regulate medical quality and patient information on an official basis, which often bypasses the advice of the scientific medical associations. Nevertheless, this almost complete list of urological guidelines provides urologists with the best therapy options, and also can provide patients and officials with appropriate and adequate guidelines and recommendations that are renewed on a regular basis within one to two years of follow up.

Both surgical and medical approaches must be used differently or combined.



## Saving nerves and

**CC: What is your department's main focus?**

**LK:** There are several areas of expertise. This is the internationally known centre for prostate cancer. Treatments ranging from traditional surgery to non-surgical approaches, including laparoscopic and robotic, gene therapy research, radiation therapy, and genetic studies to determine who may develop prostate cancer and who may be treated earlier, perhaps non-surgically.

In our prostate cancer procedure, the technique is to remove the prostate and spare the nerves that control erections. This was developed here by Dr Patrick Walsh, and also perfected here. So, we have perhaps the world's best rate for preserving potency of the nerves. We are now looking into other ways to preserve them with less invasive surgery. Presently the outcome is not 100%, but it varies depending upon the case. Older patients have less hope of having erections than younger men. Also, there are more extensive cancers, and sometimes the nerves must be removed to completely remove the cancer - the primary goal of this surgery:

We also have a very active programme in minimally invasive surgery for kidney tumours and blockages. This can be done without making a big incision -

laparoscopically. For some smaller tumours, we can now just put a needle into the tumour using local anaesthesia, then destroy it with various energies.

We also have a group working on incontinence - controlling urine - and we are working with our gynaecologists to find new ways to help people with urinary leakage.

In addition we offer a variety of post-medical and surgical treatments, to help men with enlarged prostates to urinate better.

**CC: Would you describe the department's latest research?**

**LK:** My main area is in minimally invasive surgery and robotics. Our laboratory is working on developing robotic devices that will allow us to do surgery through much smaller incisions and, hopefully, eventually no incisions.

There is technology now - in some cases we can destroy tissue inside the body without making any incision. This is experimental, but we hope to move that along.

We are also very interested in telemedicine, to care for patients over long distances, so they don't have to leave home and travel far. Our laboratory also works with telerobotics, so we can actually do procedures at long distances.

**CC: How does laparoscopic surgery help kidney cancer and live donor transplant patients?**



# Focus

## urinary tract infections

**BUDAPEST** - Urologists, clinical microbiologists and infectious disease specialists from 32 countries met in January for the 'Hot topics in urinary tract infections' symposium. Part of a series, Hot Topic meetings are organised by The European Society for Clinical Microbiology and Infectious Diseases (ESCHMID) in collaboration with various organ-related specialist societies. The meeting resulted from collaboration with the European Society for Infections in Urology (ESIU), a division of the European Association of Urology (EAU).

Urinary tract infections (UTI) are among the commonest infections seen in the community and in hospitals. In the USA over eight million cases of cystitis occur annually, and over 100,000 patients (95% women) are hospitalised for acute pyelonephritis each year.

UTIs are by far the most common nosocomial infection (NAUTI), due to the frequent use of urinary catheters. In urology departments NAUTIs are also caused by the relatively contaminated location of urological surgery with instruments introduced to the urinary tract, frequent use of urinary catheters and drains and the use of intestine for replacement surgery. Large proportions of urinary stones relate to pathogens in the urinary tract. For these reasons effective antimicro-

bial prophylaxis is extremely important in urological surgery.

### Antimicrobial resistance

Some patients have special risk factors for developing and maintaining UTI, which also make a case more difficult to treat. Common risk factors are diabetes, immunosuppression, urinary retention and catheters. These complicated UTI generally cannot be cured unless the underlying condition is resolved. Repeated courses of antibiotics are often administered, resulting in drug resistance among pathogens.

Most cases of uncomplicated UTI are successfully treated, with few easily measurable, seriously adverse events in the course of the disease. However, the incidence of UTI and NAUTI, the pathogens involved and resistance patterns can be easily registered and have become important benchmarks for infection control and hospital healthcare. Furthermore, this is extremely important information, because most courses of antibiotics are pre-

scribed for UTI on an empirical basis, before the results of bacteriological culture are known.

In Budapest, Kahlmeter (Sweden) presented results from an international community-based study on antimicrobial resistance among pathogens causing cystitis. In some countries in Southern and Eastern Europe the resistance rates to frequently used antibiotics is a cause of concern. Consequently, more broad-spectrum antibiotics must be prescribed, and within hospitals resistant strains threaten the effect of peri-operative antimicrobial prophylaxis.

### Seeking new antibiotics and administration regimens

In the first decades after WWII, doctors saw new antibiotics developed at only a few years' interval. Today no new antibiotics can be seen in the horizon. Thus it is of paramount importance to keep the use of currently available antibiotics under scientific control.

During the meeting Marchese et al (Italy) presented an assessment of Fosfomicin, a relatively new mem-

brane active peptide agent. The drug had 99% activity against E. coli, the most common urinary tract pathogen. Effect was seen even in biofilms - particularly important in complicated UTI.

Wagenlehner and colleagues (Germany) presented clinical studies on linezolid, a substance in a new class of antibiotics that have a particular effect against Gram-positive pathogens. The drug had favourable effects on most mecillinam-resistant strains.

In pharmacodynamic studies the new extended release formulation of ciprofloxacin was shown to have excellent bactericidal effect in both once daily and twice daily administration. Riffer et al (USA) achieved 95% clinical success with ciprofloxacin 500mg once daily for three days in uncomplicated cystitis.

Graninger (Vienna) presented study data supporting the use of pivmecillinam as a first line empirical treatment of acute cystitis.

### Facing responsibility

European urologists within ESIU

By **Truls E Bjerklund Johansen MD PhD**, co-chairman of the European Society for Infections in Urology, and Professor of Urology at the Telemark Hospital, University of Tromso, Norway



**Professor Louis R. Kavoussi, expert in minimally invasive approaches to urological diseases, describes his pioneering work in laparoscopic nephrectomy for cancer and live renal transplant, and a prostate cancer procedure developed by Dr. Patrick C. Walsh, Chairman of the Brady Urological Institute. Prof. Kavoussi is Vice-Chairman of Urology, Professor of Urology Surgery and Chief of the Endourology Division at Johns Hopkins Medical Institutions Interview by Claudia Costabile**

## much else



At the American College of Surgeon's 86th Clinical Congress in Chicago, Prof. Kavoussi used a remote controlled robot camera to direct surgeons operating on a patient 700 miles away, at the John Hopkins Bayview Medical Centre, Baltimore

**LK:** The advantages of this surgery include shorter hospitalisation, less pain and quicker recuperation, as well as better cosmetic results compared to open surgery.

However, the surgery is easy for a patient but hard for doctors. A surgeon needs a lot of extra training to become facile in laparoscopic surgery, but results overcome disadvantages for the doctors, and we shouldn't develop a procedure just because it might be

easy. The main goal is to make it easier and less painful for the patient to recover.

At present, we also hope to develop technology so that, using an X-Ray image, we can place a needle or probe into a tumour to destroy it completely by 'cooking' it. So far, so good. We are still investigating that.

**CC: What are your hopes in terms of renal obstruction, kidney stones and testicular cancer?**

**LK:** We're working with colleagues to develop a vaccine to try to prevent kidney stones - using gene therapy. Certain people who have kidney stones disease have family genes that we may be able to change, to prevent them having stones.

Likewise, with testicular cancer we're developing laparoscopy for patients who need more extensive surgery, to avoid the big incision, which usually runs from the chest all the way down to the pubic bone. Hopefully, with the laparoscopic approach, we can avoid that and people can get back to activity quicker.

Finally, with urinary obstruction there are ways of suturing things together. We have several different robotic devices that can suture, to help us do less invasive surgeries.

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## A promising new erectile dysfunction drug may oust Viagra

## PT-141 gets results

NEW YORK - Even though still undergoing phase II trials, a new sexual dysfunction drug termed PT-141 is showing positive results in a group of patients who had previously shown an inadequate response to Pfizer Inc's Viagra.

After testing PT-141 as a treatment for erectile dysfunction against a placebo, the drug was tested on 24 men, unable to sustain an erection more than 25% of the time after taking at least a 100mg dose of Viagra. In the phase II a

trial, over 80% of the men, aged 37-54, could achieve erections sufficient for sexual intercourse after taking the new drug.

PT-141 had a highly significant effect on both the primary and secondary efficacy endpoints relating to the time of penile rigidity. The average duration of erectile dysfunction in the study group was more than eight years. The individual scores in the International Index of Erectile Function (IIEF) domain score averaged about 11. A

score below 11 is considered severe, with 11-16 being moderate and more than 26 considered normal.

Palatin Technologies Inc, the company testing PT-141, plans to advance the drug to two phase II b trials that will enrol about 300 men with erectile dysfunction, according to the President and CEO, Dr Carl

Spana. They are hoping to develop the agent to treat sexual dysfunction in both men and women.

The first trial will begin midway through this year in the US, while a second will begin before the end of 2003, possibly to include European patients.

Trial results surpassed all expectations, and were encouraging, since no clinically adverse events were noted and side effects were generally mild.

Raymond Rosen, principal investigator and Professor of Psychiatry and Medicine at Robert Wood

Johnson Medical School, said PT-141 was '... an exciting new investigational drug with great potential for treatment of male erectile dysfunction'.

Palatin's research suggests that PT-141 works through activation of melanocortin receptors in the CNS, rather than acting directly on the vascular system. Studies such as these are increasing the understanding of the basic mechanisms that control sexual responses in both men and women.

In addition to oral treatment, a nasal application is being developed.

## New kidney test on the horizon

## The cause of two types of kidney disease lies in a gene mutation in urinary protein

Medullary cystic kidney disease type 2 starts in childhood and is a progressive disease of both kidneys, eventually leading to renal failure and death. Familial juvenile hyperuricaemic nephropathy is caused by the kidneys' inability to process purines, found in many foods. This leads to a build-up of uric acid, potentially causing gout, and eventually renal failure.

Definitive diagnosis of both conditions is often possible only after extensive disease has occurred, but now new research findings may result in a definitive diagnostic test. Dr Tom Hart et al, at the University of Pittsburgh, Pittsburgh, USA (pub: Journal of Medical Genetics (2002; 39: 882-92), have found that the same gene mutation in a urinary protein causes these two kidney diseases. DNA analysis and gene mapping studies were carried out on four large families, spanning several generations. Three families had a history of familial juvenile hyperuricaemic nephropathy and one medullary cystic kidney disease. Four different gene mutations for the protein uromodulin were found across these families for both diseases.

High levels of this protein are normally excreted in urine, although the exact role of the protein remains a mystery, the researchers say it might act as an antioxidant, and may help to preserve the impermeability of the Loop of Henle.

Although long suspected to have a role in these diseases, this is the first time that research has shown conclusive evidence that uromodulin is a prime suspect. Because these diseases are autosomal dominant (i.e. every family member has a one in two chance of being affected), a definitive test could be devised. Conclusive results before the development of symptoms would mean early treatment and the prevention of the long term and potentially serious complications of both diseases, the researchers point out. It could also be particularly important for siblings wanting to act as kidney donors for brothers or sisters who already have symptoms. Details: www.bma.org.uk - Journal of Medical Genetics.

## Non-invasive X-ray meters

SWEDEN - The Unfors Mult-O-Meter 730-series - a new generation of non-

invasive X-ray meters - have been designed to simplify the measurement procedure.

Unfors also reports that operation of these pocket-sized meters takes just ten seconds to learn. 'The instrument has just two control buttons: on/off and parameter for scrolling through measured values,' the firm adds. 'No set-up time is needed. The specially designed LCD clearly indicates measured value and unit together.'

'The Unfors Mult-O-Meter 731L offers the most cost effective way for simultaneous measurements. This meter uses an external current clamp for non-invasive measurements of mA and mAs. The clamp can be used when the mA is greater than 50 and the diameter of the high voltage cable is less than 23 mm. An external detector measures the kVp, dose, rate, time and pulses in the range 50-150 kVp, with high accuracy. The meter is calibrated to international traceable standards.'

'For reports, measurements can be transmitted via an



infrared interface to Excel. Other models with different parameters, including kVp, dose, dose rate and exposure time, are available within the Unfors Mult-O-Meter family.

'The meters are CE approved and Unfors Instruments is certified in accordance with ISO 9001 and EN 46001.'

Details: www.Unifors.com

## Topical anaesthetic cleared

USA - The FDA has cleared Akorn to market a lidocaine jelly bioequivalent to AstraZeneca's Xylocaine Jelly. The product is a topical anaesthetic used by urologists and hospitals.



## Ruesch AquaFlate

## For faster balloon catheterisation

The AquaFlate balloon catheter is hygienic and speeds up catheterisation, says its manufacturer Ruesch GmbH. 'Unlike conventional catheters, this new product comes with a syringe that already contains the precise amount of sterile water required. The syringe is packed in the same box as the catheter, but protected by separate packaging. Consequently it remains sterile until ready for use, thus ensuring aseptic technique for the care personnel. The reduction in preparatory work saves both time during catheterisation and money.'

Two self-adhesive pre-printed labels, on the back of the catheter packaging, contain all relevant product information, and these can be fixed to the patient file as an update that also avoids errors, the firm adds.

The product comes in two versions:

- Brillant, latex-free, made of 100% silicone
- SympaCath, made of natural latex and featuring hydrogel coating.

Both are available in standard or shorter lengths.

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## EDUCATION

## The EUREP course

PRAGUE, CZECH REPUBLIC - EUREP, the European Urology Residents Education Programme, (29 August - 3 September) is a teaching programme developed exclusively for European urological residents. (Scientific Board: European School of Urology Board Members. Course directors: C Chapple, R Nijman, W Artibani).

The aims are optimal preparation of the final year resident for the Fellow of the European Board of Urology (FEBU) examination.

## Modules

- Renal Cancer- Bladder Cancer - Penile Cancer/Testis Cancer.
- Prostate Cancer- BPH/Prostatitis.
- Stones- Endourological techniques - Infection in Urology
- Prolapse - Incontinence - Pharmacotherapy/Painful Bladder Disorders - Neurourology - Urodynamics
- Paediatric Urology- Trauma- Transplantation- Reconstruction - Andrology

Supported by an unrestricted educational grant from Sanofi-Synthelabo, travel and accommodation costs will be covered for participants.

Contact for ESU - Phone +31 26 3890680

## Learning (and skiing)

Professor Frans M J Debruyne, Course Director for the European School of Urology (ESU), says the European Urological Winter Forum has built up a respected reputation '... due to excellent and distinguished international faculty teaching as well as the enthusiasm and interaction of the delegates, who make educational sessions lively, stimulating and relevant for every day urological practice'.

Short presentations will summarise the latest achievements in urology, followed by a programme covering most aspects of the field, with state of the art lectures alternating with interactive discussions, workshops, etc. (... and, this forum will take place in Davos, allowing many delegates to fit in some skiing - if time allows!)

Contact: esu@uroweb.nl



## Cash offer for PC-based ECG firm

**DELFT, THE NETHERLANDS** - Cardio Control NV and Welch Allyn Inc, of Skaneateles Falls, NY, have announced that the US firm has made a cash offer for all outstanding shares (at six euros each) of Cardio Control's stock. Based on the number of outstanding shares and options on shares, the expected offer could be over 18 million euros. Cardio Control predicts 2002 revenues to be just over 10 million euros.

Welch Allyn (founded 1915) employs 2,300 people and manufactures medical diagnostic equipment, patient monitoring systems and miniature precision lamps. It has also successfully expanded into new product areas, e.g. diagnostic cardiology. The transaction, the firm says, will further its

interest in advancing worldwide cardio pulmonary and information management sales. If the deal materialises, the company will own at least 95% of the issued share capital of Cardio Control.

Dick G van Luijk, MD of Cardio Control, pointed out that, as part of Welch Allyn, the firm also expects to accelerate growth in sales of its diagnostic systems for heart and lung functions. In recent years the company also launched software that records and analyses combined medical and patient data for both centralised and remote use (with built-in features for telemedicine and connectivity with electronic medical record software).

## Byrne wins Goethe's smoke-free bust

**AUSTRIA** - David Byrne, EU Commissioner for Health and Consumer Protection, has received the Goethe Challenge Trophy for a Smoke Free Environment for his initiation of the pan-European information campaign entitled 'Feel free to say no!' Aimed at preventing adolescents from taking up smoking, this was the first campaign aimed at convincing youngsters that it's 'cooler' to resist temptation, despite advertisements to the contrary.

Accepting the award from

Professor Fritz Kempner, at the 5th European Health Forum Gastein, David Byrne pointed out that over half a million Europeans die annually due to direct and indirect smoking. Dedicating the trophy to his anti-smoking colleagues, he added that he sees the award as encouragement for a European health policy aimed at stopping smoking.

The author Johann Wolfgang von Goethe campaigned for a smoke-free environment 200 years ago, and the Goethe Endowment



Prof. Fritz Kempner and EU Commissioner David Byrne with Prof. Porthine, founder of the Goethe Endowment for Non-smoking

for Non-smoking has annually presented the 20kg, silver bust of Goethe (value 50,000 euros), since 1992 - to institutions, universities or individuals who have contributed to this aim.

## 100 million infusion devices

**GERMANY** - A decade after opening a facility at Pfeiffewiesen, B. Braun Melsungen AG has reported an annual manufacturing output of infusion devices (Intrafix and Eurofix) topping 100 million. In 1992 the output was 55.2 million infusion/transfusion devices per annum. 'We are manufacturing almost twice the quantity on the same floor space,' said Hans-Dieter Froehlich, production manager at Pfeiffewiesen, possible due to 'continuous technological development and ... well-trained employees working in teams'.

The firm adds that it will soon top the billion mark in its Melsungen factory.

## Progress must match patients' confidence

Over 70% of German patients have considerable confidence in doctor's equipment used for prophylactic medical examinations, according to a poll presented at MEDICA 2002 by Cortex Biophysik GmbH of Leipzig, Germany.

The majority of those polled said top priorities for medical equipment/instruments are quality and precision. Nonetheless, the majority of medical professionals polled said they would replace equipment (particularly for car-

diac and circulatory treatments) only after five to ten years - generally because of the nation's weak economy plus healthcare changes.

In view of these findings, Dr Matthias Gehrke, CEO of Cortex Biophysik pointed out that patients' confidence in sophisticated technology must be maintained and that research, development and use of the best equipment, especially for ergospirometry - focusing on the heart, circulation, breathing or metabolism - is of prime importance.

## INNOVATIONS

### 3-year warranty extension for vaporiser

**UK** - Penlon Limited, the 50-year-old anaesthesia systems firm, has extended the 12-month warranty on its Delta Vaporiser to three years - at no cost to its customers.

Delta has proved ultra-reliable and successful since its 2000 introduction. (In 2002, Penlon received a Queen's Award for Enterprise -



Innovation Category- for this product). Delta sales, in over 100 countries, have reached almost £14 million (including over £4 million in the USA).

Craig Thompson, Penlon's Marketing Manager, said, 'The warranty extension adds to Delta's impressive list of features - outstanding performance over the widest range of vapour concentration and temperatures, particularly at low flows, low body-weight, ease of use and a maintenance-free system'.

## Embryology

**GERMANY** - In recognition of his work in developmental biology, Professor Christof Niehrs, head of the Department of Molecular Embryology at the German Cancer Research Centre, has been presented with the 2003 Gottfried Wilhelm Leibniz Prize by the German Research Council (DFG).

Worth about 1.55 euros, the award is the highest for research in Germany, and is used to support research over a five-year period, with spending according to the scientist's requirements. So far there have been eleven recipients.



## Gaining the Japanese G-mark

**JAPAN** - The Electromedical Systems Division of Siemens Medical Solutions has been awarded a G-Mark for Servo-1 an advanced ventilator platform suitable for use for patients from neonates, through infants to adults, features advanced treatment options.

The G-Mark award, based on the 'Good Design Selection System' established by the Ministry of International Trade and Industry in 1957, is conferred by the country's Good Design Award organisation. In Japan, the logo signals high quality, practicality, pleasing ergonomics - and good value for money, Siemens says.



## Everyone wants one!

Disney movie characters Mickey Mouse, Pluto et al, decorating Nexcare bandages, have already delighted children - and now Nexcare Disney Gel Warmbottles have been launched. Made in washable velvety material that has been allergy tested and is tear and bite proof. There's no risk of burns due to leaks or easy-to-open plugs, the manufacturer reports. The non-toxic gel filling warms in 90 seconds, at 650 watts, and keeps warm longer than conventional hot-water bottles.

Made by 3M, these are available at pharmacies (rrp: 9.95 euros).



## Disetronic to split in Roche deal

**SWITZERLAND** - The pharmaceutical firm Roche has made a public tender offer for the medical device supplier Disetronic, an acquisition amounting to 1.09 billion euros.

With sales of 121.4 million euros in the first nine months of the 2002/2003 accounting period, Disetronic is Europe's leading and the USA's second manufacturer of insulin pumps. Its infusion systems will become part of Roche Diagnostic's Diabetes Care unit. Roche will not acquire the firm's injection systems division. This will be bought by Willy Michel, Disetronic's founder, chairman and major shareholder, who will form an independent company.

This deal could make Roche Diagnostics one of the main providers of integrated diabetes management and, Roche points out, the worldwide diabetes market is worth 477.5 million euros, holding an 11% annual growth rate.

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## NUTRITION



# One more time: 'Is alcohol medicinal?'

Although studies of the benefits of moderate alcohol consumption abound, most are epidemiological and findings often conflict. Stefan Pruszensky reports from Austria on a current, comparative study, described at the 5th European Health Forum in Gastein

'Dr Reinhard Resch, of the Institute for Physical Medicine and Rehabilitation, Landeskrankenhaus, Krems, Austria, described his current prospective, randomised, open, comparative study, aimed at discovering if wine really does have health-promoting properties.

He takes 'drink' to mean a moderate, measured consumption of wine (about 20mg daily) without dependency. The study concentrates on white wine, because the positive benefits of moderate consumption of the red - said to include a good effect on cardio-vascular function - have been sufficiently shown in large-scale studies of recent years, he points out. These benefits may prove no greater than those of white wine.

Dr Resch is testing two equally sized, mixed-sex groups of volunteers of various ages, all of whom received advice on diet and exercise. Members of the control group consume no alcohol. The others consume white wine over a period of twelve weeks, based on the above

guidelines. The exact amount depends on the alcohol content of the wine. Wines chosen for the study include Gruener Veltliner, White Burgundy, Riesling and Welschriesling. Clinical data such as liver function, blood sugar and blood fat content are being measured in both groups, along with 'soft' factors such as subjective well-being and general quality of life.

We will report on Dr Resch's findings - due for publication early this year.'

# Med. diet checks arthritis



SWEDEN - A Mediterranean diet significantly lessens rheumatoid arthritis symptoms, according to a small study by Dr Lars Skoldstam et al, of the Department of Medicine, Visby Hospital, (pub: Annals of Rheumatic Diseases 2003; 62: 208-14).

26 people with stable rheumatoid arthritis were assigned to an experimental Mediterranean/Cretan diet for three months. The remainder stayed on their usual diet. Both groups were similar in weight and smoking habits.

Olive and canola oils were used as a primary source of fat in the Med. diet, which was high in fish, poultry, fruit, vegetables, and

legumes, and low in red meat and high fat dairy produce.

During the three-month trial, for the first three weeks the patients received lunch and dinner at the hospital, where they were taught about Mediterranean food and cooking.

Disease activity, reflected in joint tenderness and swelling, physical function, quality of life, and use of anti-inflammatory drugs were clinically assessed at the beginning of the study, and at three, six and week intervals. Secondary measures included biochemical indicators, pain severity, and a standard grip test.

The patients on the Mediterranean diet lost 3 kg in weight, and cholesterol levels fell after three weeks. Otherwise there was little difference until six weeks later, when the index of inflammatory activity began to fall in the Med. diet candidates.

After 12 weeks, both physical function and vitality had also improved, and in total, nine out of the 14 variables had also improved. There was no evidence of any changes in the group following their normal diet.

The authors caution that a larger, longer study would be needed before definitive conclusions can be drawn.

## Fruit combats cancer

UK - High fruit consumption during childhood may reduce the risk of developing cancer as an adult, and increasing fruit intake may be associated with lower death rates from all causes, according to results from a long term study of almost 4,000 people, published in the Journal of Epidemiology and Community Health (Fruit, vegetables, and antioxidants in childhood and risk of adult cancer: the Boyd Orr cohort 2003; 57: 218-25)

The study found little evidence that vitamins C, E, and beta carotene were responsible for the apparently protective effects of fruit.



## LINK UP

2003

### MARCH

6-10 Birmingham, UK  
**17th Annual Congress of the European Association of Urology**  
 Birmingham, UK,

7-11 Vienna, Austria  
**ECR 2003**  
[www.ecr.org](http://www.ecr.org)

11-13 Tel Aviv, Israel  
**National Biotechnology Week**

12-15 Monte Carlo, France  
**Heart & Brain - 6th International Conference on Stroke & 3rd Conference of the Mediterranean Stroke Society**

12-15 St. Gallen, Switzerland  
**Primary Therapy of Early Breast Cancer 2003**  
[www.oncoconferences.ch](http://www.oncoconferences.ch)

12-15 Madrid, Spain  
**EAU-Congress of the European Association of Urology**

18-21, Brussels, Belgium  
**ICEM 23rd International Symposium on Intensive Care and Emergency Medicine**  
[www.intensive.org](http://www.intensive.org)

19-21 Cairo, Egypt  
**1st PanArab 'IT in medicine' congress & fair**  
 Organised by the Egyptian Society of Health Awareness IT & telemedicine section.  
[www.arabimmed.com](http://www.arabimmed.com)

19 - 22, Posen, Poland  
**SALMED 2003**  
[www.mtp.com.pl](http://www.mtp.com.pl)

19-22 Barcelona, Spain  
**4th International Glaucoma Symposium**

20-23 Istanbul, Turkey  
**Expomed 2003, Lab-tech 2003 and Istanbul Hospital Supplies Equipment Fair** Venue: Tuyap Fair, Convention & Congress Centre, Beylikduzu.  
 Details: [www.tuyap.com](http://www.tuyap.com)

24 - 26 Zurich, Switzerland  
**2nd Global Medical Forum**

## GLOBAL EVENTS

2002/3

25-27 Istanbul, Turkey  
**Expomed - International Fair of Medical Technology and Hospital Equipment**

25-27 Nuremberg, Germany  
**Altenpflege + HealthCare 2003**  
[www.altenpflege-healthcare.de](http://www.altenpflege-healthcare.de)

28-2 April Istanbul, Turkey  
**European Association for the Study of the Liver. www.easl.ch**

30-2 April Chicago, Illinois, USA  
**ACC 52nd Annual Scientific Session of the American College of Cardiology.**  
[www.acc.org](http://www.acc.org)

30-2 April Miami, USA  
**15th National HIV/AIDS Update Conference**  
[www.amfar.org](http://www.amfar.org)

### APRIL

1-4 Munich, Germany  
**1st International Trade Fair and BioAnalytica Conference**  
[www.bioanalytica.de](http://www.bioanalytica.de)

2-5 The Hague, Netherlands  
**EAPC - 8th Congress of European Association for Palliative Care**  
[www.eapcnet.org](http://www.eapcnet.org)

2-5 Verona, Italy  
**37th Annual Meeting of the European Society for Clinical Investigation**  
 The Pathophysiology Of Diseases: From Bench To Bedside. A vast array of subjects, from molecular pathophysiology to emergency med. & critical care. Contact: Giovanni Ricevuti, MD, Dept. Internal Medicine & Therapeutics, University of Pavia. giovanni.ricevuti@unipv.it Details: [www.genomica.net/ESCI/ESCI.htm](http://www.genomica.net/ESCI/ESCI.htm)

2-5 Hague, The Netherlands  
**8th Congress of the European Association for Palliative Care**  
[www.eapcnet.org/theHague2003](http://www.eapcnet.org/theHague2003)

5 - 9 Toronto, Canada  
**94th AACR Annual Meeting 2003**  
[www.aacr.org](http://www.aacr.org)

6-10 Brussels, Belgium  
**13th International Meeting of the European Society of Gynaecological Oncology - ESGO**  
[www.esgo.org/esgo13](http://www.esgo.org/esgo13)

9-11 Luxembourg  
**Telemedicine & Telecare International Trade Fair**  
[www.telemedicine.lu](http://www.telemedicine.lu)

9-13 Munich, Germany  
**German Congress of Anaesthesia**  
[www.mcn-nuernberg.de](http://www.mcn-nuernberg.de)

9-13 Sicily  
**21st Annual Meeting of the European Society for Paediatric Infectious Diseases (ESPID)**

24-25 Brussels, Belgium  
**Intensive Care - international consensus conference**  
[www.escim.org](http://www.escim.org)

24-26 Mannheim, Germany  
**69th Annual Meeting of German Cardiac Society**  
[www.dgkardio.de](http://www.dgkardio.de)

24-27 Berlin  
**4th World Congress on Controversies in Obstetrics, Gynaecology & Infertility**

26-30 Florence, Italy  
**ICNC - 6th International Conference of Nuclear Cardiology**

26-30 Lyon, France  
**6th European Congress of Endocrinology**  
[www.endocrinology2003.com](http://www.endocrinology2003.com)

29-5 May Munich, Germany  
**German Congress of Surgery**  
[www.dgch.de](http://www.dgch.de)

MAY  
 7-10 Karlsruhe, Germany  
**REHAB 2003**

1-4 Buenos Aires, Argentina  
**Congress of the International Society for Non-invasive Electrocardiology**

The XII Congress of Cardiology for the Consultant and Inter-American Forum on CV Prevention

8-9 New York, USA  
**Valves in the Heart of the Big Apple III: Evaluation & Management of Valvular Heart Diseases 2003**

10-16 Toronto, Canada  
**ISMRM**  
 11th Scientific Meeting and Exhibition of the International Society for Magnetic Resonance in Medicine

18-22 Prague, Czech Republic  
**2nd World Congress of the International Society of Physical Rehabilitation Medicine- ISPRM**

25-28 Prague, Czech Republic  
**EACTA 2003, European Association of Cardiothoracic Anaesthesiologists**  
[www.eacta.org](http://www.eacta.org)

### JUNE

1-4 Montreal, Canada  
**10th congress of the World Federation for Ultrasound in Medicine and Biology**  
[www.aium.org](http://www.aium.org)

2-5 Verona, Italy  
**37th Annual Meeting of the European Society for Clinical Investigation**

3 - 6 Genoa, Italy  
**ESPR- Annual Meeting of the European Society of Paediatric Radiology**

11-14 Helsinki, Finland  
**XXX International Congress on Electrocardiology**

15-17 Lapland, Finland  
**Midnight Sun Symposium on Electrocardiology**

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