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 countries, representing 250,000 midwives; the National Federation of Nurses, comprising of cross-national associations and 700,000 dentists.

In a press release, the groups point out that the catastrophic effects on women and children’s health, borne overwhelmingly by civilians, with particularly health consequences of even ‘conventional’ war are ignored. The International Red Cross and Red Crescent, and the International Committee of the Red Cross, have already called for a ban on landmines and cluster bombs, and for all parties to cease hostilities until the Red Cross and Red Crescent can deliver humanitarian assistance.

For some years, while Europeans have slept, electronic banking and other systems have been served online and overnight by technicians working in different time zones, such as those in Bangalore. 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 tele-radiology 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 Bangladesh. Following this, Indian radiologists will be employed and receive advanced US training.

The PACS system will enable access to a full patient care 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 employment.

IN BRIEF

New HFN1 virus puts WHO on alert

Geneva - 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 (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 1918 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 (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, continue to find 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.

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 (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.

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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 arrangements for laboratory diagnostic testing are being made available to National Influenza Centres and other Members of the Global Influenza Surveillance Network.

TV soap hits labs

UK - 14,000 additional cervical smear tests were performed in Manchester and in the North of England. One hundred and ninety one million people died directly or indirectly due to armed conflict. Most were civilians.

Civilian deaths
About 35 people are killed every hour as a direct result of war. The World Health Organisation, said an alert to receive injured personnel flown back from field hospitals. 6,000 casualties are predicted in the first four days of battle.
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 healthcare 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 do allow rollovers of 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 prove that he could have averged through a catastrophic health insurance, be self-employed, or brings a small company. These tight restrictions by the Federal Government make it very difficult for most consumers to actually qualify.

FSAs, 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 Akers, 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 1990s, where employers ask HMOS to tightly control costs, who then answered that control of choice - are becoming increasingly unfeasible,’ he adds. US consumers no longer want to participate in tightly regulated plans. They want to become increasingly involved in the financing decision making process concerning their healthcare. Perhaps the future in the US will see a return to the partial indemnity plans prevalent during the 1970s.’

Karen Denton: EH US correspondent

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**Resuscitation at a Glance**

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The ZOLL AED Plus lays out the whole rescue in pictures and voice and text prompts. From the first thing to do when you get on the scene, to administering defibrillation and doing CPR while the AED Plus gives feedback on compression and rate. All with a new, simplified one-piece electrode, consumer batteries, small size, light weight, and a price you'd never pictured possible.
WHAT DO CROSS BORDER patients think?

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 Hurelbel, European Commission, DG Health and Consumer Protection, says, ‘The individual Member States can neither quantify patient migration nor can they project 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 Bogner, 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, 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.

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 77%.

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 316, pp 371-2). 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
MANAGEMENT

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 unemployed doctors who have specifically trained for 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 of foreign doctors and nurses and other professionals is exempt from these regulations.

Norway has a high tradition of recruiting 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 immigration. Professionals in a range of sectors, from building and industry to the healthcare sector.

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

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 10 million per year for recruitment of healthcare professionals. In 1998, around 200 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 is a significant number of Swedish and Danish healthcare professionals.

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 17,700 are of working age. Only about 1000 doctors leave Finland per year.

Finland has a long tradition of recruiting doctors and healthcare professionals both from the Nordic countries and from outside the EU. In 2002, the country approached Poland and the Czech Republic to recruit doctors, but the process is much more complicated due to extensive recruitment fairs in non-EU citizens working in Sweden.

The government is currently working on a special provision for doctors who want to work in Finland 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.

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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 started an evaluation aimed at reducing the number of specialties. 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 specialties would allow doctors to cover more than one specialty. 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 specialties is 20:2:1, 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 specialty.

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.

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 to Abdominal and Gastrointestinal Radiology (333, +43%), Musculoskeletal Radiology (201, +54%) and Genitourinary Radiology (173, +74%). 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.

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 defense of the quality of our specialty.

See you at a digital ECR!
New at the ECR

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, busy 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, with wall-mounted cassette holder, produces 180 images per hour and has a 61cm x 61cm cassette size. The new system is designed for cardiac and trauma imaging and includes 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.

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 and 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...
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.

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 ultrasound 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
The world’s first, fully-digitised Heart Centre

Company Profile

DELT 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 Geerits, about this new product plus the structure and scope of his company in today’s highly competitive healthcare market.

DELT Diagnostic Imaging (DDI) is a subsidiary of Deloitte Instruments NV, which has medical and industrial divisions. Within the medical division, DDI concentrates on radiology, whilst Nuclotron, its sister company, focuses on radiotherapy. DDI is comprised of three groups: the Delti Diagnost (software - PACS systems) division, the Diagnost Systems (formerly OldiTech - hardware - producer of the new Thorascan) and the DeliTech Benelux (system integration, which covers), as well as DDL (data management). They have a lot of experience, he tells us, ‘We understand the kind of problems that occur when you install soft- or hardwars. So we can offer a better service.

Guido Geerits refers to Thorascan as a ‘Rolls Royce’ in its field - offering a very low dose and very high image quality. OldiTech has 20 years of experience in the production of thorax equipment, and Thorascan is the latest technology, having a direct radiology (DR) system. DDI is unique as they produce a PACS system, define a single 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 thin-radiology to link with general practitioners (GPs). There is also a huge need for very high-quality digital thorax equipment - Thorascan is digital, so it must be in both the hardware and software market - we have products that are very interesting now and for the future.

The small system can be used as a roving radiology system, which is a huge benefit for hospitals. If a hospital has a problem with something, it can be replaced. DDI can develop its systems to make use of the latest technology and to meet the requirements of the future. The system can be used as a mini-PACS in a smaller hospital or as a large PACS system in a larger hospital.

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It is this combination of strong relationships with hospitals and suppliers, as well as the development of the latest technology, that has allowed DDI to be successful in the market and to provide high-quality products to hospitals worldwide.
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:** Is 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 (PAVD) 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 telediagnosis, 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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Helmut Kzaek, Moderator, Hygiene Professional, Bergisch Gladbach

Bacterial nosocomial infections (NI) are mainly caused by bacteria belonging to ‘normal’ microbial flora colonising the human micro-organism. The main micro-ecological systems are the intestinal tract, mucous of the oropharynx, urogenital tract and the skin. Other bacteria associated with NI have their natural habitat in moist areas (e.g. Pseudomonas spp.) and plants (e.g. Stenotrophomonas maltophilia, Burkholderia cepacia). Bacterial species relevant to nosocomial infections are conditional pathogens that exert their pathogenic effect in the wrong place at the wrong time. Although not intentional, treatments and nursing can place bacteria in the wrong places (e.g. injections, incisions, catheters, ventilation).

Nosocomial infections originating from the patient’s natural flora are ‘autogenous’ and ‘endogenous’. 30% of healthy humans are colonised in the vestibulum nasi by Staphylococcus aureus. Molecular typing has demonstrated that most wound infections after primarily surgical are caused by the same strain that colonise patient’s nasal cavity. Exogenous infections, bacteria come from outside to predisposed epithete and the main transmission route is via the doctors’ and other personnel’s hands; other routes (directly from the colonising flora of medical teams or from the patient’s environment) are obviously of minor importance. The progress in medicine (e.g. intensive care, surgery, haematology, nephrology) and the increasing age of patients have led to higher risks for infections, thus increasing consumption of antibiotics and selective pressure in favour of antibiotic resistant bacteria. This is clearly reflected by prevalence of multi-resistance to different antibiotic classes in S. aureus from healthy carriers, from sporadic nosocomial infections and from outbreaks of nosocomial infections. As is particularly known for methicillin resistant S. aureus (MRSA), multiple resistant epidemic strains have evolved that possess a pronounced capacity to spread in nosocomial settings. Epidemiological MRSA can be identified by genomic fingerprints. These strains are widely disseminated in Central European hospitals and even intercontinentally, due to neglect in hospital transfers of patients colonised or infected with multiresistant bacteria -such transfers should be precluded by a warning to the receiving institution. Among many risk factors for dissemination inside a hospital, the most important are unfavourable patient-staff ratios and antibiotic selective pressure. Antibiotics do not just act against a targeted pathogen, but also affect colonising microflora, which are eradicated by long lasting antibiotic treatment and replaced by multiresistant nosocomial strains.

Historically, antibiotics can be used only for a quite short period. Bacterial resistance has always followed the introduction of new substances. During the past 10 years an alarming development of antibiotic resistance has been observed.

Conclusions
Results from bacteriological diagnosis of nosocomial infections should be continually analysed, as an early warning for transmissions and emerging of multiresistant strains and of new resistance types. A number of recommendations, from management of MRSA outbreaks, are known to be effective for infection control. Countries with low prevalence of MRSA have strong infection control systems. The recommendations are a compilation of various measures. Although not always evidenced based for some situations, they should be fully utilised. The inefficacies should be demonstrated not the opposite! Records of nosocomial pathogens and their resistance profiles should be analysed together with data on antibiotic resistance to steer antibiotic regimes.

Tests for Legionnaire’s disease

UK - Two new kits designed to help engineers and contractors comply with the demands of the HSE’s Legionnaires’disease MCoP LB have been launched by JS Humidifiers. These compact, portable kits include equipment to monitor chemical levels and microbes in most water systems, such as cooling towers that are regularly dosed with biocides. The JS LBC test kit includes a digital thermometer, digital pH meter with buffer solutions, and digital conductivity meter with conductivity solution, offering fast accurate results, the firm reports. Other equipment includes reagents and indicators for water hardness as well as chlorine, alkalinity, oxidising biode and iron levels, plus dip slides for microbial testing.

The JS LBB is designed for lower risk water systems, where chemical treatment is not typically required. This basic kit incorporates free chlorine and pH level tests, a thermometer, a conductivity meter and dip slides. Each kit has a lightweight carry case, which includes instructions, dip slides, sample bottles and tubes, filter papers, syringes and stirrers.

Consumable items from the kits can be purchased separately and incubators, to provide the conditions recommended in LB for dip slide development, are also available. Additionally, JS offers an UKAS approved water testing service for Legionella and a specialist risk assessment service for humidifiers.

JS Humidifiers is offering 2000 FREE dip slides to those who would like to test the microbial content of their water systems as part of their monitoring programme. To claim free dip slides, maintenance engineers and facilities managers should call JS on +44 (0) 1908 830200. Details: dixton@jshumidifiers.com

Materials with specific recycling regulations
- Non-critical - Material with only skin contact (e.g. electrodes)
- Semi-critical - Material that has contact with mucous membrane or diseased skin.
- Critical - Material that enters the body or has blood contact.

This requires special processing.

About 650,000 nosocomial infections are caused annually in Germany by incorrect or erroneous recycling procedures of medical products. Corresponding figures for homes or out-patient treatment centres are not available.

Last November, the DGV (German Society for the supply of sterile goods) and the Robert Koch Institute (RKI) presented new guidelines for recycling medical products in Potdam. These will be binding in future medical trials, hospital compliance with the guidelines will facilitate the burden of proof.

The guidelines, which consist of urgent recommendations for all hospitals, are based on professional commentaries (category Iib). A complex quality management system for a centralised sterilisation process is required, simply looking at an instrument cannot determine whether it has been sterilised. The user must be able to rely on internal quality assurance procedures.
Surveillance of nosocomial infections has proved a valuable tool for internal quality management, said Dirk Zolldann and Dr Sebastian 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 reference for device-associated nosocomial infections and surgical site infections. The KISS criteria are similar to the USAs National Nosocomial Infection Surveillance System (NNIS) for benchmarking, (From January 2001, according the countrys 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 Centers for Disease Control and Prevention (CDC).

According to the teams 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 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 components 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.’

The RKI Guidelines specify that personnel working in Central Sterilization 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 300 members, who are recycling specialists in hospitals. In coming years, the society will update the curricula for intensive Workshops 1-5. 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 or: www.rki.de

As demand increases and resources tighten, its becoming harder - and more crucial - for radiologists to maximise productivity. Kodak solves this dilemma, with products and systems that give you better access to diagnostic information, integrate with your current equipment, and provide a platform for future growth. We listen to where you are going today, and where you want to be tomorrow. And then offer intelligent imaging choices across the entire film-to-digital spectrum to make it all happen. Customers around the globe depend on Kodak’s 100-year legacy in medical imaging. That same expertise can help you achieve success.

For more information visit www.kodak.com/go/health.
In the US about 450,000 people a year die from sudden cardiac arrest, which is the third most common cause of death in the Western world. In Germany the figure is about 80,000. 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 sudden cardiac death. In Europe, three out of four death certificates give 'heart disease' as the primary cause, and even if 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.

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

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**The multi-purpose monitor**

Award-winning Austrian innovation checks out NASA astronauts

A pioneering innovation, awarded the Austrian Innovation Award 2002 (worth €100,000), the multi-purpose monitor offers valuable information about brain functions, continuous blood pressure measurement (beat-to-beat), volume from one heartbeat to another, which provides important information about brain functions, continuous blood pressure measurement (beat-to-beat), volume from one heartbeat to another, which provides important information about brain functions, continuous blood pressure measurement (beat-to-beat), volume from one heartbeat to another, which provides important information about brain functions, continuous blood pressure measurement (beat-to-beat), volume from one heartbeat to another, which provides important information about brain functions, continuous blood pressure measurement (beat-to-beat), volume from one heartbeat to another, which provides important information about brain functions, continuous blood pressure measurement (beat-to-beat), volume from one 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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 2008, 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/m³, 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 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 medical air from the pharmacy was considered a pharmaceutical, which means that the responsibility of pharmacies supplying hospitals. Thus pharmacies 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
Debate: What is air?

This approach might represent a wish and hope that the Pharmaceutical Products Act will 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 considered a pharmaceutical, but a foodstuff. And the DKG (German Hospital Association) believes the EN 737-3 requirements have proved their value, 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 Giesen-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 do not exist - so it might 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 -40°C (equivalent to 67 ppm of water vapour in one cubic meter of air) not only overrides it but actual ly harms patients. Literature on this cites a requirement for long-term arterial respiration an air temperature of 22°C 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.

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 it is set 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 catalytic converters, thus saving on operating costs. It is also due to a functional necessity: the amount of harmful substances in air should be limited, when used for artificial respiration. Whether it is double, 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 turbines. Where other - 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 specifications. Many hospitals far exceed the time limit granted for transition through the time limit for compliance with air quality characteristics is only achieved, particularly for medical use, if no harmful substances in air are supplied. For the requirement for residual humidity in compressed air, the goal is 67 ppm. This level is also specified in the standard for medical air. The DKG (German Hospital Association) believes the EN 737-3 requirements have proved their value, at least, no negative consequences are known about air quality specified by this.

USA - life monitoring equipment and software called eICU, produced by Visicu Inc, has reduced intensive care unit (ICU) mortality rates at Sentara Norfolk General Hospital, Virginia, by 25% and shortened the average length of stay for patients hospitalised in an ICU by 27%. The study is led 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 treated 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 monitors, doctors and critical care nurses at the eICU command centre make virtual rounds of patients. Intensivists can communicate with 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 medical 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 $2,750, based on avoided patients being treated in a lower cost bed. eICU, which is based in Baltimore-based firm in 1998. Details: www.visicu.com.

Long-term data on the use of Xigris [drotrecogin alfa (activated)] in treatment of adult patients with severe sepsis and multiple organ failure in addition to standard therapy, has 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 patient’s 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 infection, which are a serious risk period (p=0.048). CATH for over two years. 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 intensive care therapy, with no additional treatment necessary. Professor Rossaint concluded that treatment for sepsis revolves around five factors: source control, administration of antibiotics, early targeting-oriented circulation management, artificial respiration, endocrinial and metabolic management as well as administration of recombinant human activator of 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 ‘APC: Experiences in clinical use’. Details: haoa@haoa-health.de

Sepsis therapy ups survival rates

Bottom line: Clean respiratory air benefits patients

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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 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.

Recent results and discoveries in the critically ill may be present throughout the body. Recent studies suggest that exploring microcirculation with this technique could help to guide therapy in the critically ill.

Microcirculation - Recently, better monitoring of the microcirculation has become possible, via minimally invasive optical methods (orthogonal polarization 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 stay. 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 optionally involve discussions with the nursing team, and with the patient wherever possible, Professor Vincent points out.

Your hand is an important part of your care. It's not too big or too small. It's that right size for you.
Memorial Sloan-Kettering Cancer Centre praises itself as the world’s oldest urology institution devoted to prevention, patient care, research and education in urology. It is located in 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 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 1970s. Soon after Dr Hricak came to the Centre in 1999 from the UCSF, where the first clinical magnetic resonance unit was developed in the MSKCC. The clinical trial, which started in 2001, 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.

Dr Hricak points out.

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.'

**UROLOGY**

**NEW!**

**MR spectroscopic prostate gland imaging**

**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 range from traditional surgery to non-surgical approaches, including laparoscopic and robotic, gene therapy, 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 with our best rate for preserving the nerves 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 with 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 telemedicine, so we can actually do procedures at long distances.**

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

**Dr Larson sees the most promising benefit of MRSI to be in helping surgeons to remove the right part of the prostate, or other cancers, without damaging healthy tissue.**

**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.'

**Saving nerves and**

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

**The 18th EU 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

**EH correspondent Karen Dente interviewed Dr Hricak at the Cancer Centre**
Focus

Urinary tract infections

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

Many Else

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.

Professor 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

BUDAPEST - Urologists, clinical microbiologists and infectious disease specialists from 22 countries met in January for the ‘Hot Topics in urinary tract infections’ symposium. Part of a series, Hot Topics meetings are organised by The European Society for Clinical Microbiology and Infectious Diseases (ESCMID) 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 (UTIs) are among the most common infections seen in the community and in hospitalised patients. In the USA, 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 intravenous replacement surgery. Large proportions of urinary stones relate to pathogens in the urinary tract. For these reasons effective antimicrobial 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 advanced age, immunosuppression, urinary retention and catheters. These complicated UTI cases 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, their resistance pattern, as well as the use of antibiotics in urology departments has become a challenge in the last few years.

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 Fosfomycin, a relatively new member active peptide agent. The drug had 99% activity against E. coli, the most common urinary tract pathogens. Effect was seen even in biofilms - particularly important in complicated UTI.

Wagenlehner and colleagues (Germany) presented clinical studies on a substance in a new class of antibiotics that have a particular effect against Gram-positive pathogens. The drug had favourable effects on most meticillin-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 administrations. Riffert et al (USA) achieved 95% clinical success with ciprofloxacin 500mg once daily for three days in uncomplicated cystitis.

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

Facing responsibility

European urologists within ESIU have invited microbiologists (ESCHMID) to join in a pan-European prevalence study, to register the incidence of NAUTI, the pathogens involved and their resistance pattern, as well as the use of antibiotics in urology departments for prophylaxis and treatment.

The study will provide an international overview of NAUTI important because pathogens do not respect geographical borders. Taking part will stimulus urological departments to monitor NAUTI, which has become an important quality parameter for hospital care. The study will be combined with a quality improvement effort regarding protocols for the use of urinary catheters and antimicrobial prophylaxis.

The study plan, publicly launched at the Budapest meeting, will be discussed in more detail during the EAU-congress (Madrid, March 2003). Detailed information about the study will be found at the ESIUEAU website on UROWEB on the Internet. European Hospitals are strongly recommended to join this study.

At the American College of Surgeons’ 86th Clinical Congress in Chicago, Prof. Kaouss was using a remote controlled robot camera to direct surgeons operating on a patient 200 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 overcame 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 an obstruction there are ways of suturing things together. We have several different robotic devices that can suture, to help us do less invasive surgeries.

UROLOGY

electrosurgery for the 21st century

• computerized clinical unit
• superior cutting performance by spark regulation "arc-control"
• allows bipolar cutting
• 4 individual outputs for monopolar and bipolar instruments
• high current coagulation “LigaSafe” optionally
• special programs for TUR, cardiac surgery, microsurgery, argon coagulation

The future is arc!
NEW YORK - Even though still undergoing phase II a 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 treat- ment 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 suf- ficient for sexual intercourse after taking the medication.

PT-141 had a highly significant effect on both the primary and sec- ondary efficacy endpoints relating to the time of penile rigidity. The average duration of erectile dys- function in the study group was more than eight years. The individ- ual 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 enroll 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 dysfunc- tion 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 expecta- tions, and were encouraging, since no clinically adverse events were noted and side effects were generally mild.

Raymond Rosen, principal invest- igator and Professor of Psychiatry and Medicine at Robert Wood Johnson Medical School, said PT-141 was ‘...an exciting new investi- gational drug with great potential for treatment of male erectile dys- function’.

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 understand- ing of the basic mechanisms that control sexual responses in both men and women.

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

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, measured values, the firm adds. ‘No set-up time is needed. The specially designed LCD clearly indicates measured value and unit together.’

‘The Unfors Multi-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 Multi-O-Meter family. ‘The meters are CE approved and Unfors Instruments is certified in accordance with ISO 9001 and EN 46001.’

Details: www.Unfors.com

Topical anaesthetic cleared

USA - The FDA has cleared Akorn to market a lido- caine jelly bioequivalent to AstraZeneca’s Xylocaine jelly. The product is a topi- cal anaesthetic used by urologists and hospitals.

Ruesch AquaFlat

For faster balloon catheterisation

The AquaFlat 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 prepara- tory 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:

- Brilliant, latex-free, made of 100% silicone
- Sympath, made of dung latex not containing hydrogel coating.

Both are available in standard or shorter lengths.

Ruesch GmbH, PO Box 1180, 71385 Kernen, Germany.
Phone: +49 (0) 7151 406 0 Fax: +49 (0) 7151 406 150
E-mail: info@ruesch.de. www.ruesch.de

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@euroweb.nl

EDUCATION

The EUREP course

PRAGUE, CZECH REPUBLIC - EUREP, the European Urology Residents Education Programme, (29 August - 3 September) is a training programme developed exclusively for European uroni- cal residents. Scientific Board: European School of Urology Board Members. Course direc- tors: C. Ghappie, R. Nijman, W. Arntini).

The aims are optimal prepara- tion of the final year resident for the Fellow of the European Board of Urology (FEBU) exami- nation.

Supported by an unrestricted educa- tional grant from Sanofi-Synthelabo, travel and accommodation costs will be covered for participants. Contact for ESU - Phone +31 26 3890680

UROLOGY

A promising new erectile dysfunction drug may oust Viagra

PT-141 gets results

The product comes in two versions:

- dose of Viagra. In the phase II a

Non-invasive X-ray meters

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 pro- gressive disease of both kidneys, eventually leading to renal failure and death. Familial juvenile hyperuricaemic nephropathy is caused by the kidney’s 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 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: 85-92) have found that this same gene mutation in a urinary protein causes these two kidney diseases. DNA analysis and gene mapping stud- ies were carried out on four large families, spanning several generations.

Three families had a history of familial juvenile hyperuricaemic nephropa- thy and one medullary cystic kidney disease. Four different gene muta- tions 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 loops 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 symp- toms 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.


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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 diagnostic and information management sales. If the deal materialises, the company will own at least 96% 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.

**INNOVATIONS**

**3-year warranty extension for vapouriser**

UK - Penlon Limited, the 50-year-old anaesthesia systems firm, has extended the 12-month warranty on its Delta Vapouriser 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 - Consumer Protection, has received the award for Non-smoking for the second consecutive year.

**Progress must match patients' confidence**

Over 70% of German patients have considerable confidence in doctor's equipment used for prophylactic and medical examinations, according to a poll presented at MEDICA 2002 by Cortex Bio-Physics, a supplier of DIETRO, an acquisition of Roche. According to the survey, 70% of those polled said they would replace equipment, particularly for card 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 Gehke, CEO of Cortex Bio-Physics, pointed out that patients' confidence in sophisticated technology must be maintained if research, development and use of the best equipment, especially for ergospirometry - focusing on the heart, circulation, breathing or metabolism - is of prime importance.

**Gaining the Japanese G-mark**

JAPAN - The Electromedical Systems Division of Siemens Medical Solutions has been awarded a G-Mark for Servo-I 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 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 warmer longer than conventional hot-water bottles.

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

**Company, News, Awards & Innovations**

**Cash offer for PC-based ECG firm**

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 smoke?’. 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 Kempfert, 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 Foundation 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.
One more time: ‘Is alcohol medicinal?’

Although studies of the benefits of moderate alcohol consumption abound, most are epidemiological and findings often conflict. Stefan Pukszyn’s 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, Landeskrankenanstalten, Krems, Austria, described an on-going study that is currently ongoing, and which, if completed, would bring new insights into the debate on ‘alcohol medicinal’.

Resch is testing two equally sized groups of mixed volunteers of various ages, all of whom received advice on diet and exercise. Members of the control group consumed no alcohol. The other consumed white wine, based on the above guidelines. The exact amount depends on the alcohol content of the wine. Wines chosen for the study include Grüner Veltliner, White Burgundy, Riesling and Weißburgund. Clinical data such as liver function, blood sugar and blood fat content are being measured in both groups, along with subjective and objective well being and general quality of life.

We will report on Dr. Resch’s findings ‘due for publication early this year’.

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

A people whose 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 products.

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 twelve-month 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 patients.

After 12 weeks, both physical function and mortality had also improved, and in total, nine out of the 14 variables had improved.

There was little evidence of any changes in the group following their normal diet.

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