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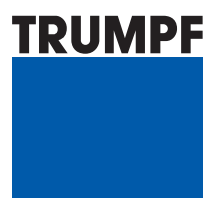


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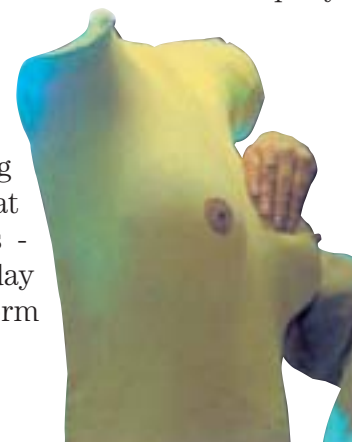
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Ever since humans began to use tools, wove cloth and invented the wheel, useful ideas have rippled out and fused with others to improve life. In our age, and today at MEDICA, we may well wonder at how rapidly that symbiosis occurs. From astronauts' medical monitoring to baby safety garments, from computerisation to telemedicine, from materials engineering to the lifelike human forms that help teach tomorrow's doctors - the stunning inventions of one day are becoming the public norm quicker than ever.

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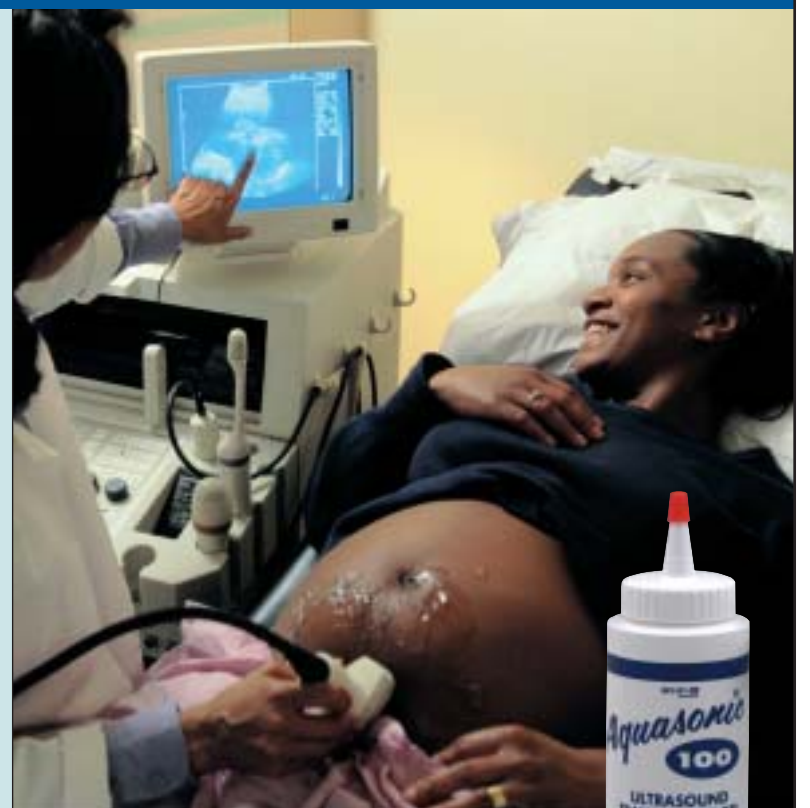
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Tents prepared for A&E patients

Accident or emergency patients may be treated in inflatable 6-8 bed heated tents, to ease pressure on beleaguered wards in 'unforeseen circumstances', according to the UK's Department of Health. These tents also could be used for new admissions - until beds become available.

The plan is said to have come about because ambulances have been used as temporary accommodation when space is not available in some hospitals. Although the ambulance service is reported as responding to 75% of 999 calls within eight minutes, despite the number of these calls increasing by 40% in the last five years, Chris Grayling, Shadow Health Minister for the Conservative Party, said the situation was 'appalling' and that he knew of at least three emergency departments that regularly have patients turned away from hospitals altogether, or of ambulances forced to wait outside for hours.

The tents, transported in a special vehicle and manned by trained staff, would be set up at or near A&E departments, said a Ministry of Health representative.

A new US survey of schoolchildren underlines anxieties experienced in the EU about healthy lifestyles and the need to educate the public - and particularly the young - for health reasons.

In the study, in rural N. Carolina, conducted by Professor Joanne Harrell, University of North Carolina and presented at an American Heart Association meeting, results indicated that children are showing physical changes that could make them more likely to develop diabetes or heart disease. Many were obese, had high blood pressure or showed potentially dangerous levels of cholesterol, factors which could lead to a syndrome linked to heart disease in adulthood.

Childhood obesity is rated as one of the most significant threats to future adult health in western society, and evidence is emerging that teenagers are well on the way to developing diabetes.

The 3,000 children studied were between eight and 17 years old,

Western society

Health promotion is vital

leading ordinary lives, and they were tested for a variety of physical markers that have been linked to what is called 'metabolic syndrome'. In adults, this syndrome is seen as an indicator of future heart or diabetic diseases.

Tests included measurements of blood pressure, blood sugar, insulin and 'good' cholesterol.

Over 42% of the children had a cholesterol problem, one in four was overweight, while over 16% had high insulin blood levels. High blood pressure was less common: under 8% of the sample. Under 20% showed glucose intolerance - linked to development of diabetes. One in eight showed a combination of three or more of those risk factors.

Prof. Harrell said: 'They were regular, normal kids, but we found risk factors that are clear danger signs for the future. If nothing is done, many

of these children could develop type 2 diabetes and heart disease.'

As the dietary habits of children in the EU have altered, in terms of intake of fast foods - and 'junk' foods - similar concerns are being expressed here. In Britain, for example, where obesity in six-year-olds has doubled in the last decade, there have been calls to control promotions for 'unhealthy' foods that are targeted at children by manufacturers, and to force manufacturers to provide low fat, salt and sugar recipes foods that aimed at children.

Additionally it has been suggested that the height and weight of children should be monitored from aged 5 years, and regularly as they develop.

Additionally, in Britain, it was found that only 30% of men and 20% of women take enough daily exercise to keep healthy - experts recommend 10,000 steps, but the average adult is estimated to cover only about 3,000.

As part of the British Health Foundation's 'Walking the way to Health Initiative (WHI)' over 85,000 stepometers were distributed in 2002 to people who wanted to increase their walking levels. And now general practitioners (GPs), in areas of England where there are high levels of heart disease, are set to prescribe these pocket-sized devices to encourage patients to walk and so lower the risk of heart disease.

Health Secretary John Reid, who supports the initiative, said that with the help of GPs, patients could make changes to their lifestyles which would have long-term benefits for their health, added: 'For many of us, finding the time and enthusiasm to exercise is not easy. Over two thirds of adults don't take enough exercise to benefit their health. Tackling coronary heart disease and obesity are government priorities and lack of physical activity is a major contributory factor to both.'

Doctors cave in to patients' demands

In a study jointly conducted by consultants Cap Gemini Ernst & Young with the French university INSEAD, it was found that over 30% of 1421 physicians questioned in the US, France and Germany and Great Britain* had prescribed medications or therapies about which they were not sufficiently informed - or did not think were the right choice for certain cases - because their patients had demanded them. Over 30% of patients questioned for the study also said they had explicitly asked doctors for brands of medication. (*In Great Britain, only eight physicians were surveyed, so the company said figures are not representative).

Nevertheless, the majority of the 4042 patients studied said they trusted their physicians.

In the study, 76 managers from pharmaceutical companies and 33 providers such as health insurers were also surveyed in the period January-May 2003.

Information confuses patients - The patients' level of information is mostly a result of their own research, the study found. Two thirds regularly used sources other than their physicians for information on diseases and therapies - whether their health insurers, friends and family, media or pharmacists. Surprisingly, the internet did not play a major role, the report pointed out. Only 28% said they use it as a source of information (e.g. Germany: 34% USA: 40%). However, many patients complained that information overkill is confusing.

'There is a high demand for information which is a challenge for all players in the healthcare market,' said Dr Rolf Badenhoop, Vice President, Life Sciences Division, Cap Gemini Ernst & Young, adding that pharmaceutical companies could help doctors more.

Source: Cap Gemini Ernst & Young. www.de.cgey.com.

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Forget bioterrorism plans!

Professor says fear adversely affects healthcare delivery

The group Physicians for Social Responsibility (PSR) has been publicly opposed the US war in Iraq, advertising this under the slogan 'No to Pre-emptive War'. Now, Victor Sidel MD, Professor of medicine at the Albert Einstein College of Medicine in New York, and co-founder of PSR, has criticised the US government for emphasising the possibility of biological warfare to the extent that public healthcare system resources are being diverted and healthcare could be adversely affected. Such attacks have not played a major role in wars or terrorism during the past century, he pointed out.

Americans are dying from preventable infectious diseases and food-borne illnesses, he said, adding that the current fear of bioterrorism could also lead to inappropriate immunisation and use of antibiotics. As an example, he said Seattle had experienced its worst outbreak of tuberculosis in 30 years, yet the government insisted that resources should be used for smallpox vaccinations.

Source: The Canadian Medical Association Journal (November 2003)



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Changing the healthcare paradigm



Pamela G Bailey, President of the Advanced Medical Technology Association (AdvaMed), U.S.A.

Advanced medical technologies are transforming healthcare by aiding in the prevention, early detection, diagnosis, monitoring, and treatment of disease. They are also creating improved quality of life for patients and increased long-term cost savings for many diseases. Healthcare experts are pointing to the advent of a new health economy in which rapid breakthroughs in technology are leading to better healthcare at lower costs.

This transformation is accelerating and will continue to do so in coming years, as the healthcare system embraces innovations such as micro-miniature and computer-assisted surgery technologies, non-invasive DNA-based diagnostics, tissue-engineered organs and integrated advanced information technologies.

Enormous promise exists in the area of telemedicine to streamline the most expensive types of care while giving our clinicians much better insight into the patients they treat. For example:

- Pacemakers can be monitored through telemedicine, eliminating expensive hospital visits.
- Advances in implantable cardioverter defibrillators allow data to be downloaded and saved onto a special Website so physicians can monitor patients' heart functions through the Internet.
- A pilot programme for elderly care uses home telemonitoring systems that include a video screen, speakerphone, stethoscope and blood pressure cuff. This enables nurses to make weekly 'tele-visits' from a remote location to patients to check blood pressure and listen to heartbeats. These technologies are finding their way into every aspect of modern healthcare from:
- Portable and wireless patient monitors that enable caregivers to observe vital signs more efficiently and effectively.
- Use of remote monitoring technology for electrocardiograms that allows physicians to adjust treatments for heart failure patients because of the added insight gained from the technology.
- Hospitals that have installed wireless access points for technologies that improve information systems, reduce medical errors and reduce hospital costs - as doctors can retrieve medical data at a patient's bedside and nurses can record medication at the point of administration.
- Hand-held computer systems that ensure medications and blood samples for lab tests always match the correct patient to prevent errors.
- E-mail prescriptions sent directly to a patient's pharmacy.

One of the first generations of the remote medicine concept, telemedicine, has already proven to be cost-effective: this can provide effective patient monitoring for only US\$30 per day, less than half the cost of home care and a third the cost of nursing care in the US. The cost savings are most dramatic when compared with the average US\$820 per day for in-patient care.

The other exciting aspect of these technologies is that they can transform the doctor/patient

relationship, and empower patients - as in the use of more convenient treatment settings (out-patient clinics and patients' homes). This real life observation of patients can be continuous so that physicians can truly understand their own patients' issues and needs. The value also can be measured in terms of overall quality, efficiency and

economic benefits. Productivity is the other side of better patient outcomes - everyone gains if more patients can be treated better and restored to health more quickly.

Healthcare policies must reinforce the importance of patient access to innovation such as remote medical technologies. Regulatory frameworks need to streamline market clearances and reviews with appropriate criteria.

In the US, many of these critical services are not yet recognised or reimbursed by our insurance companies and by the Medicare programme that pays for our senior citizens. This is also an issue in several European countries. Although these

products save money by reducing hospital and doctors visits, many providers are not reimbursed for using advanced technologies. As a result, patients are obliged to come to a physician's office to access outdated technology, instead of taking advantage of better, more comprehensive monitoring options.

New medical technologies can allow people to live longer, healthier and more independent lives with fewer medical complications and reduced disabilities. This transformation is reducing time spent in hospitals and nursing homes, and is making our healthcare system more efficient and productive.



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Visit us at Medica2003 / Hall13 / Stand C26

In Europe an average of 8.6% of GDP is spent on healthcare in Europe. Of this figure, only 6.37% goes to medical technology (i.e. 0.54% of GDP), according to the European Medical Technology Industry Association's (EUcomed) Industry Profile 2003, a unique compilation of facts and figures about the European medical technology industry, which was released Cannes, on the occasion of the Eucomed Annual General Meeting events in October.

Whereas in the EU15 and EFTA countries, 8.77% of GDP is spent on healthcare, of which 6.38% goes to medical technology (i.e. 0.56% of GDP for medical technology), the average percentages are 4.88% and 6.09% for the EU accession countries (i.e. 0.29% of GDP for medical technology). In the US, expenditure on healthcare is 13.9% of GDP, with 5.1% for medical technology.

EUcomed's Industry Profile 2003

The Eucomed Industry Profile 2003 positions the medical technology sector as a key economic player and growth value creator in Europe: with some 9345 medical technology companies, over 80% of which are SMEs, the sector achieves total sales of 54.8 billion Euro (Germany, France, Italy, the UK and Spain account for 78% of the total), employs some 386,000 people, and invests heavily in R&D (6.35% of sales).

The Industry Profile 2003 contains more statistics about the industry, and in each case, a complete breakdown for the 15 EU

states, 3 EFTA countries and the Accession countries. The book (75 pages) is divided into 6 sections: *What is the Medical Technology Industry? The Medical Technology Market Place* (12 pages); *Today's Healthcare Priorities* (28 pages - cardiovascular disease, cancer and musculoskeletal disorders are among the 12 healthcare priorities documented); *Medical Technology and EU Legislation*; *International Initiatives*; and *Challenges and Opportunities Ahead*.

The medical technology industry offers a wide variety of products - from the syringe or bandage, the wheelchair or hearing aid, to high-tech cardiac implants and dialysis machines, tissue engineered skin and blood safety devices. All these medical technology products are 'medical devices' according to the definition of the EU Medical Devices Directive (93/42/EC), article 1 of which covers '...any instrument, apparatus, appliance, materials or other article, whether used alone or in combination, including the software necessary for its proper application intended by the manufacturer to be used for human beings for the purpose of:

- * diagnosis, prevention, monitoring, treatment or alleviation of disease
- * diagnosis, monitoring, treatment, or alleviation of or compensation for an injury or handicap
- * investigation, replacement or modification of the anatomy or of a physiological process control of conception and which does not achieve its principal intended action in or on the human body by pharmacological, immunological or metabolic means, but which may be assisted in its function by such means'

According to the Global Medical Devices Nomenclature (GMDN) the product range includes the following categories:

- aids for disabled persons: wheelchair, crutch, standing support, electrical bed, hearing aids
- active and non-active implantable devices: stent, cardiac pacemaker, hip implant, neurostimulator, insulin pump
- anaesthetic/respiratory equipment: oxygen mask, anaesthesia breathing circuit, gas delivery unit
- orthopaedic devices: knee prosthesis, orthopaedic shoe, spinal corset
- dental devices: dentistry tools & drills, alloys & resins, dental floss, tooth brush
- electromedical and imaging equipment: x-ray machine, scanner, electrocardiograph, monitor, laser, microscope
- in-vitro diagnostics: devices for clinical chemistry, microbiology, immunology, genetic tests
- ophthalmic devices: contact lenses, optometer, optical lens, eye glasses, ophthalmoscope
- surgical instruments: scalpel, surgical drill, forceps, tube, drain, sutures, mask
- biotechnological products: tissue engineered bone, cartilage and skin
- medical disposables: bandage, dressing, syringe.

Further details: eucomed@eucomed.be

EU-Hungary PECA amended

Eucomed, the European Medical Technology Industry Association, has welcomed the official announcement, this November, of the amended EU-Hungary PECA - from which the 'rule of origin' clause has been removed.

PECA stands for 'Protocol to the Europe Agreement between the European Community and a third Country on Conformity Assessment and Acceptance of Industrial Products'. This type of agreement creates an expanded single market for certain products before candidate countries join the European Union, Eucomed points out.

The association has been calling for the removal of the 'rule of origin' clause in the agreement with Hungary, because this prevented CE marked medical technologies manufactured outside the EU from being traded freely in Hungary without undergoing additional technical evaluation.

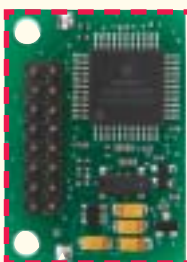
'I am very pleased that the industry's efforts to obtain this important amendment to the PECA with Hungary have been crowned with success! A large number of innovative medical technology products are manufactured outside the EU - for example, in the United States. Once these technologies have acquired the CE marking, there is no reason why they should undergo additional technical evaluation that would simply delay their availability to patients and clinicians,' said Maurice Wagner, Director General of Eucomed.

The EU Council decided on 22 September to remove the rule of origin clause from the EU-Hungary PECA agreement. Eucomed very much hopes that a similar provision will be introduced in any future agreement of the PECA type.

Hungary will formally join the EU on 1 May 2004.

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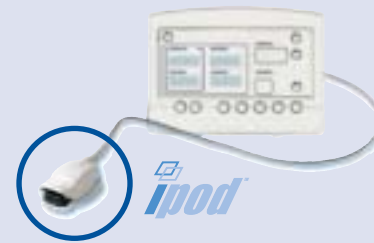


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This year marks the tenth anniversary of a close co-operation between the USA's Commercial Service at the Dusseldorf Consulate and MEDICA management, led by Horst Giesen MEDICA Event Director and his team. As a result of this valuable and continuing relationship the department is to award a Certificate of Appreciation for Achievement in Trade at a reception in the USA Pavilion (Hall 3 - C30-4) on 21 November, at 6 pm.

The department pointed out that the fully-furnished space provided at MEDICA as a Corporate Executive Office (CEO) plus additional support: '...has been a critical factor in our being able to expose innovative, small US medical and diagnostic products to the global medical business community and to provide professional, on-site service to the American exhibitors, over the years the largest foreign contingent at MEDICA.

'It is our wish to recognize Mr. Giesen for his outstanding efforts and the sustained support which he has provided - support that has helped scores of US companies in the USA Pavilions and our Corporate Executive Office incubator to introduce their products to the German and international markets and enabled our office to assist those companies, effectively and efficiently, in doing so.'



Help with device applications

Obelis (OEARC) reports that it has joined with RAA (Regulatory Affairs Associates) LLC, to offer '... a more complete international solution'. RAA a US-based Regulatory Affairs consultancy is a linked community of experienced professionals, each with about 30 years experience in their field, who help small and medium sized medical device companies to complete 510(k) and PMA applications in the USA.

International group purchasing



According to a recent study conducted by a former principal analyst at the Congressional Budget Office, hospitals save patients over \$30 billion each year by purchasing products through group contracts.

Health Industry Group Purchasing Association (HIGPA), a chartered trade association of approximately 170 health care purchasing and supply chain organisations, which hosted its second Annual Global Summit on Health Care Purchasing & Supply this year, has a membership that includes many of the world's leading healthcare product manufacturers, distributors, wholesalers and related suppliers.

The HIGPA said the fundamental principle of its annual summit is to foster the creation of knowledge-based strategies and co-ordinated systematic approaches to healthcare group purchasing practices worldwide. Topics covered included: advancing healthcare technologies, purchasing best practices, bio-terrorism, global partnership opportunities and e-business standardisation. Details: www.higpa.org.

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The Mamagoose Pyjama



Textiles take off

Report by Brenda Marsh

Smart cloths and smart clothes

Molecular scientists working in nanotechnology and polymer research have produced biomedical textiles that can deliver slow release drugs transdermally - e.g. hormones, pain killers and nicotine doses, now commonly absorbed by patients from drug infused skin patches. Other new textiles are used to patch up hernias and are fashioned into vascular prostheses, and many other medical devices.

Smart clothing - with integrated sensors - is another exciting field of work, because garments can be used to monitor and transmit vital patient data and, in time, may deliver medications in a perhaps gentler way for patients who suffer neuro-dermal problems, or antiseptic

substances to those recovering from burns injuries. Diabetics could also be better served if insulin could be delivered more simply.

However, producing such clothing would not be easy, said Astrid Bason in a report for marketing consultants Frost and Sullivan. 'The coating of textiles with suitable molecules for drug containment and delivery is a big scientific challenge. Examples include cyclodextrins, a unique group of cyclic oligomers of glucose, which can incorporate and recognise other molecules in their molecular cavities. This unique characteristic can be used to incorporate active substances



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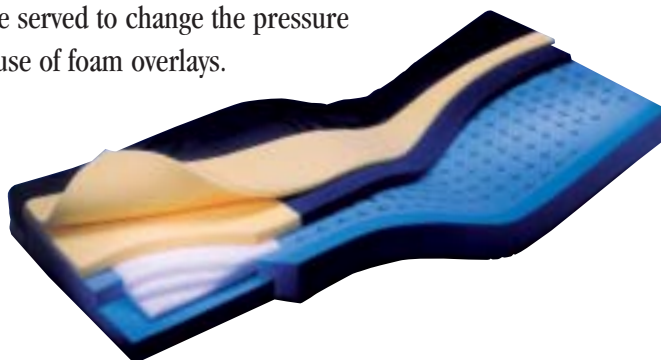


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into their molecular structure leading to a variety of potentially promising medical applications including transdermal drug delivery.' Theoretically the possibilities are endless, the report added. 'It remains to be seen if such smart clothes are technically feasible to produce and, not less important, within acceptable costs. However, such applications are not likely to be ready within the next 5 years.'

Nonetheless, some biomedical clothing is already a reality.

From space to baby wear

The Mamagoose pyjama, developed by Verhaert with the University of Brussels (ULB), draws on technology used in two space applications: the analogue biomechanics recorder experiment (ANBRE) and the respiratory inductive plethysmograph suit (RIP). This transfer of technology designed for space to earth application is partially financed by IWT, the Belgian institute for the promotion of scientific and technological research in industry.

Dany Robberecht, responsible for Marketing at Verhaert New Products & Services, recalls that the initial idea to create a baby suit to research sudden infant death syndrome (SIDS) - commonly known as cot death - came from Professor Paiva of ULB. In 1993,

ULB and Verhaert developed the respiratory inductive plethysmograph suit to study the respiration of astronauts during space missions.

Prof. Paiva had the idea of adapting this concept to create a baby suit to continuously monitor infants during sleep and to sound an alarm at the first symptoms of a possible unexpected death. In partnership, numerous models were produced and tested leading to the development of the Mamagoose prototypes.

Since then, the prototypes have been tested on many babies in different hospitals, environments and conditions. These include babies of various weights and sizes, when they are in different 'moods' such

The BabyGuard



as calm, nervous or upset, and when they are sleeping in different positions. To date, the results have been extremely promising. 'The efficiency of this new application has now been demonstrated,' Dany Robberecht said. 'These Mamagoose prototypes offer market opportunities as high-end medical devices, but also downscaled spin-off products may find market applications as low-cost consumer products complementing current care products such as baby phones.'

The pyjamas have five special sensors positioned over the breast and stomach: three monitor the infant's heartbeat and two monitor respiration. This multi-sensor system guarantees a high level of measuring precision, Dany Robberecht pointed out. The special sensors are actually built into the cloth and have no direct contact with the body, thus creating no discomfort for the baby. The control unit with alarm system is connected to the garment and continuously monitors and processes the signals received from the five sensors. It is programmed with an alarm algorithm that scans the respiration pattern to detect unexpected and possibly dangerous situations. If found, the alarm system is activated. In addition, the selective memory records data for a certain period before and after the alarm to assist physicians to make a diagnosis.

The garment has two parts: the first, which comes into direct contact with the baby, can be machine-washed and the second, which contains the sensor system, can be washed by hand. Made of non-allergic material, and designed to keep the sensors in place during use, the pyjama comes in three sizes.

Verhaert will be responsible for producing Mamagoose once the tests currently being carried out in Germany have been completed while the biomedical physics laboratory of ULB will be responsible for improving the processing algorithm and for providing pediatri-

cians with feedback on the research results.

The Mamagoose system can also be connected to a PC, which further analyses and stores the data. As more data are collected more situations can be programmed, more precise monitoring can be carried out and the system will generate fewer false alarms. This data will also enable paediatricians and the ULB Research Institute to carry out further research into the cause of cot deaths.

According to Dany Robberecht,

the Mamagoose product is ready to be manufactured and marketed by a commercial partner.

- The compact Mamagoose-based BabyGuard - a low cost spin-off for consumers - combines highly accurate sensors integrated in a chest pad with a miniaturized computer unit, which sounds an alarm if a critical event occurs. It is based on an intelligent algorithm and the firm reports that it provides full baby monitoring features in combination with a baby phone, even when a baby sleeps.

The LifeShirt

Worn during daily life, the LifeShirt System, made by US firm Vivo-Metrics, has been used in various research projects, for example observing heart failure, coughs and sleep. The LifeShirt has also given researchers the opportunity to observe how daily emotional events and reactions relate to changes in respiratory and cardiac parameters, and they believe this kind of monitoring could present a physiological basis for developing therapies for a many psycho-physiological disorders, such as muscle pain and irrita-

ble bowel syndromes, non-cardiac chest pain and panic disorders.

People living decades from now, may smile when they look back at our awe of such developments, for such medical aids will surely advance, become more refined and reduced in size, and perhaps be merely commonplace as daily items of wear - just as 'Liberty bodices' were during my childhood - but they were only used to keep the chest warm and hopefully stave off pneumonia, or worse, TB! These newer concepts may lead to life-saving of a far more positive and even interventional nature.

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The Aerospray Acid-Fast Slide Stainer/Cyto centrifuge offers significant advantages over hand staining without the possibility of cross contamination. Its automated features precisely control all phases of the stain cycle and assure you of consistent reproducibility.

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Wescor's Aerospray Hematology Slide Stainer/Cyto centrifuge offers user controllability with custom staining options.

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- **Dual Addition Ports** - allows pre-wetting, which enhances good cell recovery.
- **Shallow Rotor Profile** - provides easy access and visibility.
- **Large 7mm Cell Area** - makes screening easier.

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Gram staining is easy, fast and economical with Wescor's Aerospray® Microbiology Slide Stainer/Cyto centrifuge. With an optional rotor it converts to a superb cyto centrifuge featuring 8-slide capacity and keyboard programmability.

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USA CEO Center

Hall 14 D58



The Commercial Service of the United States invites Medica Visitors to the USA CEO Center to meet with high level executives of US companies. Please stop by to meet with the following participating companies:

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Mr. Richard Thompson, e-mail: rthompson@comcast.net, www.americanbionostica.com
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MONITORING electromagnetic fields

The RadMan is a small, personal radiation monitor, produced by Narda Safety Test Solutions, specialist in measurement and analysis of electromagnetic fields. Worn on the body, the device is used to detect leaks and make quick pre-tests of EMF exposure, and provides visual and acoustic warning signals when threshold values are exceeded, e.g. during service work on transmitting equipment for radio relay, satellite and broadcast communications as well as radar and telecommunication facilities.

By moving the yellow absorber cap to a different socket, RadMan can be transformed from a personal

monitor into a pre-tester and leak detector.

The sensors are integrated in an orthogonal pattern, allowing them to measure electrical fields up to 40 GHz, and magnetic fields up to 1 GHz, separately and independently of direction.

The XT version has long-term data memory for monitoring and recording the minimum, maximum and average radiation levels. Via analysis software it is also possible to evaluate results as easy-to-read graphics or tables, the maker points out.

The firm has also launched the Type 11C probe for isotropic measurement of high-frequency

electromagnetic fields. The Type 11C probe measures the broad frequency range from 27 MHz to 60 GHz, and the firm says it is also unusually sensitive due to its diode-based design. It can also measure from extremely low levels of 0.7 V/m to a maximum of 300 V/m, which enables it to gather the measurements frequently needed at base stations for mobile communications.

'With the high frequency EMR-200 and EMR-300 measuring devices, the Type 11C probe is the ideal measurement solution for high-frequency fields up to 60 GHz. It is also possible to collect data in the vicinity of satellite



The wearable RadMan

SAFETY SYSTEM

In July this year a newborn was abducted from a Dortmund hospital. Such an 'abduction of newborns won't be possible anymore,' says biometric systems Inc of Mitterfelden, reporting that it has installed an iris recognition system in the Helios Hospital in Borna, to protect the infants department. A year ago this firm also installed a system at Bad Reichenhall's city hospital. The firm works under a license agreement with Iridian Technologies, the patent holder for iris recognition systems.

'Highly accurate technology now permits only authorized individuals, like mothers, doctors and nurses, to gain access to the infants department,' the firm reports. 'These people will enrol their iris in the system by glancing at an iris-recognition camera. In seconds, a unique iris code template is generated that will later be matched against "live" samples of the iris whenever that person wants to enter the room. Once the child is released from the infant station, the mother's iris code data is removed from the system and they are no longer allowed access.

Iris recognition used in German hospitals



'Iris recognition technology identifies people by the unique patterns of the iris - the coloured ring around the pupil of the eye. The system examines over 240 degrees of freedom in the human iris to create a 512-byte data template used to identify individuals and/or authenticate user privileges. Iris recognition is deemed to be the highest-accuracy, single-factor biometric identification in the world,' the firm points out, adding that this is a cost effective security system.

EMF hazards

Recently, a survey of electromagnetic fields (EMFs) created by 100 mobile radio transmitters was carried out in North Rhine-Westphalia, by EMV-Services, a firm in the T-V Nord Group, on behalf of the Information Centre Mobile Radio e.V. Berlin. Radio frequencies and radiation from fixed network cordless landlines were also measured. The team reported: 'Readings were consistently well below the legal limits. Transmitters with the lowest fields could have created fields 4,000 times higher, but still have been within legal limits.'

However, the readings may not reflect the possible health effects of the radiation, said Simon Best, publisher of the quarterly news report EMFs -Electromagnetic Hazard & Therapy (www.em-hazard-therapy.com). 'All present national and international exposure limits are based only on thermal (heating) effects on biological systems, whereas there is growing evidence and a body of opinion (mainly of scientists independent of telecoms or governmental bodies) that levels of EM radiation well below those at which heating occurs can have significant adverse effects on people. No present legal limits takes account of this evidence and thus should be treated with caution. As an example, a very recent, peer-reviewed study by the Dutch Ministry of Health has found adverse effects on people from mobile phone mast radiation at levels as low as 1 volt per metre, far below the current guidance level!

The report is being submitted for publication in a medical journal but is available on http://www.ez.nl/beleid/home_ond/gsm/docs/TNO-FEL_REPORT_03148_Definitief.pdf.

Germany - During in-patient care, over 500 million cannulas, catheters and vein-sets are used in Germany annually, and the number of stab, cut and scrape injuries in hospitals is estimated to be at least 500,000 annually. Experts assume that only 10% of all cases are reported, and the estimated number of unknown cases is clearly higher.

During October's BVMed workshop (attended by over 40 representatives from worker safety organisations, statutory accident insurances and industry) entitled: 'Sharps injuries: causes, effects and avoidance', it was pointed out that the new regulation on biological work-related substances in healthcare and nursing services requires that, during a fundamentally risky activity that presents an infection risk: 'pointed, sharp or breakable work devices should be replaced by



Prof. Friedrich Hofmann and Dr. Nenad Kralj, both from Wupertal University, estimated the cost of sharps injuries at 30 million euros annually

Save injuries



Over 40 representatives from worker safety organisations, statutory accident insurances and industry discussed the problem of sharps injuries at the BVMed workshop

appropriate work devices that contain a smaller danger of stab or cut injuries'. The regulations also emphasise the responsibility of healthcare employers to prevent injury from needles, and that educational measures and investments in the avoidance of sharps injuries should reduce the potentially enormous danger to medical staff, patients and those who clean or handle waste.

In terms of medical, social and ultimately the economic value of protec-

ADVICE: changing rules for device quality

Germany - TÜV Süddeutschland, a leading technical service provider in the industrial, product and transportation sectors, has 11,600 employees in over 130 locations worldwide. The company's services include consultancy, testing, certification and training in safety, quality, environmental protection and operating efficiency. TÜV Product Service specialises in product testing, evaluation and certification, with regard to safety, electromagnetic compatibility, telecommunication competency, usability and quality. About 1000 employees carry out tests in compliance with current international safety standards.

Experts from this company will be at **MEDICA** (19-22 November, Dusseldorf, Hall 12, Stand 12/F71) to give further information on EN ISO 13485:2003. Additionally, Yasushi Murayama, TÜV Product Service Japan will give a presentation on ISO 13485:2003, as well as on new Japanese regulations (MEDICA.19 November, Room D).

The firm points out that, as of 14 July 2006, the standard EN ISO 13485:2003 will supersede the current versions EN ISO 13485:2000 (formerly: EN 46001:1996) and EN ISO 13488:2000 (formerly: EN 46002) to become a standard CE mark for medical device manufacturers who distribute medical products in the European Union. EN ISO 13485 and EN 46001 are applicable to companies that perform their own design activities. EN ISO 13488 and EN 46002 are valid for manufacturers and service providers without design activities.

EN ISO 13485:2000 is the European version of the ISO 13485:1996 and is based on ISO 9001:1994 elements, just as EN ISO 13488:2000 is based on ISO 13488:1886 and ISO 9002:1994. Hence the newly revised ISO 9001:2001 has had a significant effect on the new medical device quality standard that follows a similar processing approach. The (EN) ISO 13485:2003 has some

additional requirements compared with the old standards that need to be fulfilled with regard to quality objectives, resource management, risk management throughout product realization, data analysis, customer feedback and internal & external communication.

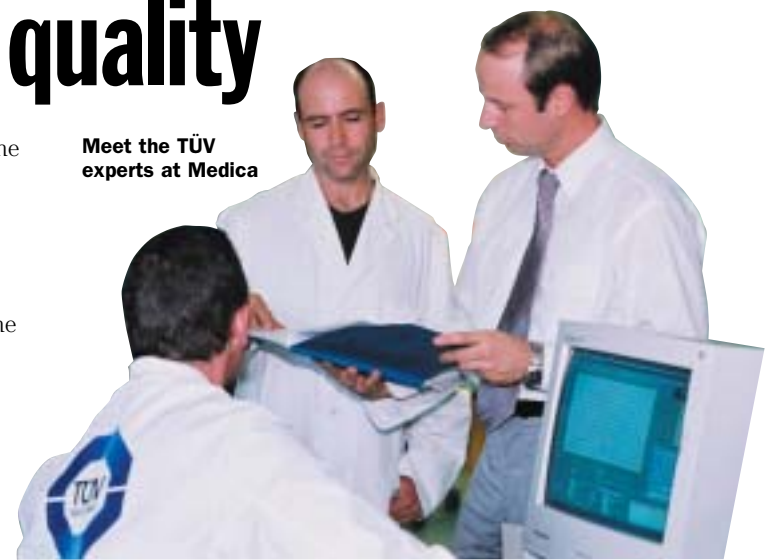
(EN) ISO 13485:2003 allows the exclusion of processes from the product realisation phase if not required for regulatory purposes. Via the 'permissible exclusion' of the design and development phase from the quality management system, (EN) ISO 13488:1996 is no longer

necessary and will become obsolete at the end of the transition period.

The responsible ISO standardisation committee has proposed a three-year transition period beginning 15.07.2003. During this time both the new and old standards will co-exist. On 14.07.2006 the two old ISO standards will be fully withdrawn. But manufacturers beware: Transition periods for the use of (EN) ISO 13485:2003 for regulatory purposes e.g. in Europe and Canada may be different!

Source: TÜV Süddeutschland Holding AG

Meet the TÜV experts at Medica



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and costs

Use safety sharps



tion from sharps injuries has been proved in several studies.

For example, a US study found that 84% of sharps injuries could be avoided by using the new safety products on the market, in conjunction with organisational measures.

This also makes economic sense, BvMed explained, because, in Germany alone, worker safety organisations and statutory accident insurances estimate related accident costs to be 12 million euros annually.

Nanotechnology and biotechnology/medicine are interacting in a number of surprising and inventive ways to create the new discipline nanobiotechnology. From earlier, simpler disease detection, improved imaging and rapid assessment of potential drug candidates to optimal drug delivery, nanobiotechnology is brimming with possibilities, says Girish Solanki, Technical Insight Analyst. 'Besides facilitating detection of the minutest traces of diseases such as cancer - or perhaps detecting a single spore of pathogen - nanostructured

materials and nanodevices could provide better diagnosis of complex diseases and enable unprecedented drug delivery,' he points out in a new report from marketing consultants Frost and Sullivan.

'With a new generation of nanochips we could obtain much more accurate medical diagnosis; quickly and efficiently screen the mind-boggling array of drug candidates and perform targeted delivery of drugs and vaccines as never before,' he adds.

The report continues: Forecasts suggest that nano-enabled services could potentially represent up to

Nanotechnology

'Microchips will soon edge out unwieldy, lab-based procedures'

\$180 billion annually in medicine and healthcare by 2015.

Investments in a few biomedical nanotechnology firms appear to mirror the upbeat sentiment: at \$10 million or more each, these exceed those for firms in many other nanotechnology sectors.

There has also been significant progress in other areas: novel nanostructured materials that serve as templates for tissue replacement and enable better treatment of burns and bone replacement have been developed. While this has certainly reduced the incidence of burn related fatalities, researchers are still in the early stages of their attempt to induce bone tissue growth through polymer templates.

In terms of drug delivery, developments in nano-encapsulation offer the promise of enhanced delivery and absorption. Here, the relatively inert nanocapsule adheres to and releases the drug solely at the target tissue site, thereby obviating toxicity concerns. Immune reactions associated with the use of modified viruses as the vector of gene-delivery, have trained the spotlight on carbon nanotubes, now being considered for drug delivery in gene therapy.

Additionally, researchers are looking at magnetic nanoparticles containing drugs for delivery to specific body areas by means of a magnetic field. This is likely to boost therapeutic benefit while minimising side effects elsewhere in the body.

Similarly, there have been encouraging advancements in microfluidics, which enable modification of drug levels within the body in real time, thereby avoiding fluctuations in drug concentration.

Researchers are also working on electrospun fibre bandages as an attractive alternative to traditional gauze and elastic bandages. Created from flannel-like fabric,

they are said to instantly staunch bleeding and can be left in situ because the body can absorb them.

Nanotechnology is also likely to enhance biomolecular imaging. Researchers are focusing on ways to use AFM on organic materials, to scan materials in vivo quickly and accurately but minimally impact on organic material. In addition, non-invasive imaging technologies, such as diffusion tensor magnetic resonance imaging (DT-MRI), are likely to provide detailed images of soft tissue structure, which will enable better detection of the development, degeneration, disease and ageing in the tissue.

In terms of detecting DNA sequences in the body, implanted nanosensors might enable simpler and more effective diagnosis. For instance, implanted devices could dispatch a signal to a pump to release more insulin for diabetics, and in time, similar devices could

be developed to deliver a wider range of medications.

Quantum dots, which can bond chemically to biological molecules and emit bright, fluorescent light, also could become effective early carcinoma-detection agents. 'As a promising bar coding technology that can encode genes and proteins, quantum dots could potentially be employed to enhance the sensitivity of diagnostic tests for molecules that are hard to detect, such as those in cancer cells, or even AIDS or hepatitis viruses,' Girish Solanki points out, who concludes that there is, 'frenetic R&D activity in nanobiotechnology, which could lead to real devices that will edge out unwieldy lab-based procedures with economical, accurate microchips in the near term'.

Details: Report: Nanotechnology Industry Impact Research Service. Code: D254. www.technical-insights.frost.com



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HAND-HELD DATA CAPTURE

Eindhoven, The Netherlands - Hand Held Products (specialising in auto identification data collection (AIDC) for 30 years) has launched two new mobile computers for in-house and in-transit data collection.

Powered by the firm's 4th generation Adaptus Imaging Technology, and with an ultra-slim, yet strong and lightweight design, the devices incorporate a computer, digital camera, and triple-radio with integrated wireless WAN, LAN and PAN. They also include an Intel X-Scale processor; the Microsoft Pocket PC operating platform; a lithium-ion battery, and colour display.

The firm reports that Dolphin 9500 and 9550 are ideal for decoding bar codes, capturing signatures, taking photographs, communicating with vendors and dispatchers, and more. (The open software architecture provides a flexible and scalable platform for easy integration into any mobile data collection requirements).



Quick and at the bedside



BLOOD GLUCOSE TESTS

With just a 6 µl blood sample, the ecoSolo II is said to evaluate the blood glucose level in 5-10 seconds. For use directly in wards, this portable device, which utilises wet chemical strip testing, contains a self-cleansing chip that evaluates whole blood. Each chip is usable for four weeks.

The manufacturer, Care diagnostica GmbH, also reports that the German *Ärztblatt* stated, in its September report on expenditure, that the wet chemical method is the better choice.

The firm also points out that ecoSolo II, a low cost point-of-care testing solution, meets the criteria of the new German General Medical Council guidelines.

Data is recorded automatically and can be forwarded to a central server, where the measuring device is checked. If the quality norm is not met, blocking is automatic.

At MEDICA, the Care diagnostica GmbH team will present ecoSolo II in **Hall 3 Stand 13**.

away operation. Stat samples can be run with minimal interruption to routine workflow.

'The system allows user-defined decision rules, which can then be transferred to COULTER LH 700 series haematology instruments, simplifying system set-up and lab performance across multiple systems. Approximately 20,000 sets of results and graphics can be stored on the instrument.'

'The system seamlessly integrates with COULTER LH 700 series instruments, sharing the same reagents, controls and calibrators for consistent results. In addition, the LH 500 has virtually the same user interface, eliminating the need for additional technologist training,' the firm points out. 'The LH 500 can perform up to 75 samples per hour. Sample volume is 185 μ L in primary mode and 125 μ L in manual mode. Pre-diluted samples, including sodium citrate samples, can be processed and the LH 500 will calculate the final result.'

Visit us at Medica: Hall 1/Stand 1D04

Beckman Coulter Inc is a leading manufacturer of instrument systems, chemistries and supplies that simplify and automate laboratory processes. The company's clinical diagnostics solutions aim to simplify and automate laboratory processes and these include automation, clinical chemistry, haematology, immunodiagnosics and flow cytometry systems, as well as rapid test kits, reagents and quality control chemistries. Employing over 9,500 people internationally, the firm has placed over 125,000 instrument systems in 130 countries. In 2002, the firm's annual sales reached US\$2.06 billion.



Haematology - automated testing

The need to reduce overall costs by improving laboratory efficiency and maximising labour resources - whilst maintaining operator safety and error limitation - has increased in recent years. Beckman Coulter, a leading provider of haematology and automated solutions for the diagnostics laboratory, says it regularly responds to these user needs through an on-going research and development (R&D) programme that brings new and innovative instrument systems to market.

At this year's Medica, the company is launching two new instruments - the LH1500 series, a new line of haematology automated systems, and the COULTER LH500, a high-performance testing instrument.

The new LH 1500 series features the diagnostic industry's only comprehensive haematology automation systems, the firm points out. 'Each system can manage the entire haematology testing process from pre-analytical sorting to post-analytical storage. Systems in the series

perform sample tracking, sorting and processing, as well as automated cassette loading and unloading, retrieval of tests for repeat and reflex testing - and more.'

Currently, 12 standard configurations are available and include two to four COULTER LH 700 series haematology analysers, with or without integrated slide-making and slide-staining capabilities. Configurations may include an inlet unit with a 200-tube capacity, outlet unit with 200-tube capacity, stockyard with 1,000-tube capacity and LH connection units.

'With the LH 1500 series, technologists place samples directly into the inlet; the tubes are then inserted automatically into individual carriers and routed to the appropriate haematology analyser or outlet for non-CBC tests, such as HbA1c, sedimentation rates and non-haematology tests. Tubes for haematology testing are transferred to instrument cassettes, which are loaded into the analyser by a robotic arm.

'STAT samples can be added to



Beckman Coulter launches two new instruments

the line at any time. The LH 1500 series can switch from automation mode to independent mode with full feature capability, including the use of cassette and manual modes. After analysis, the tubes are automatically removed from the analyser and sorted into the outlet or stockyard,' the company explains.

Beckman Coulter expects to offer additional configurations of the LH 1500 series, including cus-

tom configurations to help meet laboratories diverse testing requirements. Among these configurations, the company intends to provide laboratories with the flexibility to connect haematology lines to coagulation and chemistry lines.

'Designed for mid- to high-volume laboratories, the LH 500 offers complete blood counts with five-part differential analysis and features advanced three-dimensional VCS (volume, conductivity, scatter) technology, which provides the highest level of sensitivity, specificity and efficiency in white blood cell (WBC) differential analysis.

'The instrument's expanded linearity limits extend from zero to 200,000 cells/ μ L for WBCs, while platelet linearity extends from zero to 2 million cells/ μ L. The system also features improved platelet performance, decreasing flags and the need for manual reviews when platelet numbers are less than 20,000 cells/ μ L. In addition, the LH 500 helps reduce operator intervention by offering continuous sample loading for complete walk-

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GETINGE

**Bowa's
arc plus
unit**

Argon assisted electrosurgery



Argon plasma coagulation considerably extends the possibilities of monopolar electrosurgery, says Bowa, manufacturer of electrosurgical unit arc plus. In this process, the firm points out that ionised argon gas reinforces the known effect of non-contact high-frequency spray coagulation and offers many important advantages.

As an inert gas, Argon produces a low-oxygen atmosphere at the point of coagulation. Traumatization of the tissue is reduced, necrosis minimal and coagulation depth restricted to a few millimetres, which reduces intra-operative bleeding and effects better wound healing.

The argon plasma beam produces a constant degree of coagulation, particularly in the case of larger working areas. The plasma beam prefers tissue with low electrical resistance, so it can be applied not only axially but also laterally, with respect to the electrode.

The coagulation electrode is always applied in a non-contact

mode, which avoids any sticking of the tip to biological tissue

The action of smoke is drastically reduced during argon plasma coagulation, which, particularly in endoscopic applications, leads to better vision and less frequent cleaning of the lens.

New surgical applications

In the resection of parenchymatous tissue, for example in liver surgery, uniform coagulation results can be achieved over a large area in the lowest possible time.

The low penetration depth of coagulation ensures the greatest possible safety in all applications in areas where there is a risk of perforation, such as in gastroenterology.

The process may be used in flexible as well as rigid endoscopy and has found a firm place in bronchoscopy, laparoscopy and thoracoscopy.

The arc plus unit, an addition to the BOWA range of electrosurgical units, has an interface that ensures smooth communication between the generator and the argon unit; however, with suitable modification arc plus, can also be adapted to

third-party equipment.

- The manufacturer adds that this easy-to-operate equipment offers
- Continuous self-testing
- Gas connection for two gas tanks
- Auto purge rinsing function with electrode-dependent gas pressure control
- Individual gas flow control for 'cut' and 'coag'
- Automatic monitoring when igniting the argon plasma beam in combination with the arc 350 HF unit
- Automatic or manual changeover to reserve tank
- Automatic saving of settings
- Error documentation
- Uninterrupted documentation of the arc plus operating data in conjunction with the arc plus HF unit

The equipment - comprised of the arc plus HF electrosurgical unit and argon unit - has a related range of reusable handles, electrodes and flexible probes, and a customised trolley to contain the generator and argon unit, plus two argon tanks, and a laptop.

BRANDING: medical technology

Report by Fred Held, industrial designer at

Corporate product design is important for medical technology, and firms paying little attention to this will be left behind because the increasingly complex technologies and functions of products are hard to differentiate and experience.

Purchasing decisions rest on beliefs that one product is better than another, and/or one product is cheaper than another. This is very dangerous for manufacturers of high quality products because price dominates decisions, which is rational. So, products made in low wage countries can easily become successful. It is important to counteract these developments by ensuring that a product's quality and innovation are readily recognisable by customers. Therefore, aesthetic design and outstanding ergonomics are essential. Nonetheless, a brand's refinement and competence are vital for long-term success and should be in the forefront of product

presentation.

Our company not only focuses on the design of a product, but also on its ergonomics. We also develop a uniform brand design.

A few years ago we looked at research into the psychology of perception and recognition, which was used to develop handbooks for the design of products and product programmes based on their features. From this, we developed a method.

For example, most companies tend to manufacture an entire product range in one colour, usually placing the logo at the top left corner. This works - if at all - only with small product ranges. However, if you are looking at 20 products or more - for example, we have worked with Olympus Winter & Ibe for years, and this firm markets over 600 instruments - you must come up with more ideas to achieve a unified look. You need many different characteristics, so that each



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3M has launched the 4020 Data Logger - an electronic monitor that records up to 18,000 measuring points, while logging temperature and time during washing, rinsing and drying. This, says the maker, provides 'reliable, independent monitoring of washing and disinfection equipment, such as clocked transfer line systems and tunnel washers.'

After programming in activation time, temperature sensing frequen-

On show at MEDICA



a complex product range - by recognisable handling, compatible functionality and, of course, homogenous aesthetics.

Product components such as keyboards, logos, typography, connections, colouring, surfaces, materials, building groups etc. are described and separately defined by appearance. The defined features must represent the company and brand's objectives - in visual, haptic and acoustic terms. With medical equipment it is always beneficial for as many features as possible to be linked to functions and to integrate fully into the product's appearance.

Branding means that you do not deal with one single issue, but with a manufacturer's entire product range. The development of characteristics is usually completed in a few months, but because medical technology products are usually replaced in long cycles covering over five years, putting ideas into practice with all the products in a brand takes a corresponding period of time.

All the companies whose corporate product design we have undertaken are doing either well or very well! The real 'art' is to develop unique features and make them a reality, and still maintaining those features after five years. Quite often, after such a period, companies have the urge to try something new - but that may be the point in time when consumers are learning to recognise the brand's products - and that recognition period is only the first step towards developing a true brand image.

Automatic instrument tracking and tracing



2-D code, lasered onto surgical instruments

An integrated, automatic tracking and tracing solution will be demonstrated at MEDICA by SATO Deutschland GmbH, a subsidiary of Japan's SATO Corporation, which specialises in label and bar-code printers, and data collection systems.

The equipment automatically scans wristbands to identify patients, and enables quick, easy management of surgical instruments.

A joint development between SATO and UK firm Scantrack Healthcare Systems, the device lasers a 2-D code onto surgical instruments, which avoids delivery of incorrect instruments or incomplete trays to operating theatres, and reduces shrinkage of high-value items, the firm points out.

Additionally: 'The system provides complete visibility over the entire lifecycle of key hospital assets. All instruments, medicines, blood products, and treatments are logged in a database, and are clearly assigned to individual patients.'

MEDICA. Hall 16 - stand G05



MB 200. The portable printer enables use of the identification track anywhere



The CT 400. Antimicrobial casing makes the series suitable for use in clean rooms

Disinfection of surgical instruments



Monitor checks process

cies and sensor time, the compact Data Logger is placed inside washing/disinfection equipment, and data obtained can be downloaded, edited and interpreted via 3M's 4021 interface and 4022 Data Logger Software, and integrated into any existing tracking system.

Annual calibration is recommended to guarantee high release security - for which the firm provides a special service, including certification.

Hall 6 - Stand F06



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Gel may eliminate spectacles or laser surgery

Melbourne, Australia - Contents in the eye's lens can harden with age and so reduce vision. In the late 80s, US scientists showed that the substance inside an ageing monkey's lens could be replaced with silicone oil, and this restored the animal's ability to focus - but then the oil leaked out.

Now scientists at the Australian Government's multi-national Vision Co-operative Research Centre (Vision CRC) have developed a gel to replace the natural lens contents, and this they believe will reverse vision deterioration and eliminate the need for cataract surgery. Tested with success on rabbits, the gel will now be tested on monkeys, after which human trials may follow, before the end of 2004, said Arthur Ho of Vision CRC, in a report in the journal *New Scientist*.

Inserting the gel follows a similar procedure for cataract removal, except the lens itself is not replaced - instead its contents are sucked out. After the gel is pumped in to replace them, it is given a burst of UV light and this turns it from a thick oil consistency into a jelly-like substance - a 15-minute procedure, Arthur Ho pointed out.

The research is obviously still in progress, but Hugh Taylor, director of the Centre for Eye Research Australia, said the technique has enormous potential and could '... totally change ophthalmic surgery - if we can get it right.'



Hearts for girls, planes for boys

60 percent of all vision deficiencies in children, such as crossed eyes (strabismus) are detected too late, according to the German Organisation of Professional Ophthalmologists (BVA). Eye tests during infancy are therefore indispensable, because therapy with spectacles or occlusive patches is only possible if the disorder is detected early enough.

The 3M Company's range of colourful Opticlude patches is very popular among young patients, and the firm has extended the range with new versions specifically designed to meet the taste of boys and girls. Design motifs were developed following a survey held in kindergartens, which revealed that girls prefer colourful star and heart motifs, while boys prefer airplane and racing car designs. However, a unisex version - with dinosaur motifs - appeals equally to boys and girls.

Loosen up - to save sight!

A tight necktie, although smart, could result in false eye test results and, worse, could lose the wearer his sight, according to new research published in the *British Journal of Ophthalmology* [Effect of a tight necktie on intra-ocular pressure. 2003; 87: 946-8].

Dr Robert Ritch, and team, at the Department of Ophthalmology, New York Eye and Ear Infirmary, USA, tested the internal blood pressure of one eye in each of 20 healthy men and 20 male patients with glaucoma. This was done in three stages: when participants wore an open shirt collar, three minutes after donning a tight necktie, and three minutes after loosening their ties. The healthy men tended to be younger than those with glaucoma.

60% of men with glaucoma and 70% of the healthy men experienced an increase in internal eye blood pressure after wearing a tight necktie for three minutes; there were no differences between the two groups before necktie tightening and after necktie loosening. The increases ranged from over 2 mm Hg to over 4 mm Hg. Men of all ages were affected.

Raised internal eye blood pressure is the most important known risk factor for the development and progression of glaucoma, say the authors. But the effect of wearing a tight neck tie while undergoing an eye test could also lead to a false diagnosis of high intra-ocular pressure or even glaucoma itself, particularly for men with thick necks, they point out.

The researchers speculate that a tight neck tie constricts the jugular vein, which raises venous pressure, which then raises intra-ocular pressure.

Through the

At MEDICA visitors can meet manufacturers of endoscopes and other surgical instruments plus optical devices for minimally invasive surgery (MIS), and there are also researchers and other experts in this field to recount advances.

In the ten years since keyhole or minimally invasive surgery (MIS) began, much has progressed, and statistics from Berlin's Moabit Hospital underline the rapid pace. For example, ten years ago 20% of all gallstones were disintegrated with shock waves by the internists at Moabit. However, today the gall bladder is firmly back in the surgeons' hands and no patients receive cholelithotripsy. Also in that period, open gall bladder surgery declined to its current level of 3%. Almost all gall bladder removal is now done with minimally invasive techniques.

Today, MIS techniques can be scientifically evaluated, and the preliminary balance is somewhat sobering. Of the three most common operations, which constitute 50% of all surgical interventions, only the stone-plagued and inflamed gall bladder shows convincing rates: about 80%

of all gallbladders are now removed in keyhole operations.

The appendix was also a likely candidate for removal with bikini-compatible miniature incisions. But the use of MIS for this has not seduced all surgeons. In Germany only every other appendix is removed in this way, and only every third inguinal hernia is approached with keyhole surgery.

The gentle removal of the appendix is an established, but not a standardised procedure. While gall bladder patients can vote with their feet, appendix patients are emergency cases - and the incision size is a secondary consideration. Nonetheless, the trend towards keyhole surgery is gaining strength for the appendix also.

The use of the keyhole technique in inguinal hernia operations remains controversial. These are common surgical cases - about 150,000 operations annually in Germany. Those who would prefer to use MIS face defenders of an established and very safe open surgery technique. Over the past 20 years three conventional open procedures and two endoscopic procedures have

HF surgical equipment

The Elektrotom 630, equipped with microprocessor and sensor technology, '...is revolutionising the high-tech class of HF equipment with its unsurpassed, simple, practical and brilliant design,' says the manufacturer. The equipment provides:

- PACC - Patient contact control,

permanent and dynamic neutral electrode monitoring

- GSC - Unit self check - the device is checked during operation
- Bi-Co-Start - Activation of the bipolar generator due to tissue contact with the forceps tips
- GastroCut - a special current for polypectomy and papillotomy
- BSP - Beamer-spray-power, capacity from 10 watts, developed by Berchtold
- MFC - Microprocessor function control - microprocessor monitors all functions
- FDC - Faulty dosing control, HF power monitored by microprocessor
- Two monopolar HF outputs, activated via two independent foot switches or handles
- One bipolar output, activated via foot switch or by Bi-Co-Start



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*source:
Ranking: Design 2002/ 2003
Ranking: Design 2001/ 2002
2000/2001 not published!
Ranking: Design 1999/ 2000

Sheffield's steel for surgery

Established 120 years ago, the surgical instrument manufacturer Downs Surgical is based in Sheffield, England, where, traditionally, Britain's world famous and best steel products have been made.

The company will be presenting its surgical products at MEDICA, and has a direct sales operation in the UK supported by an international network of distribution partners.

keyhole A decade of MIS

been developed. Like the fickleness of fashion, methods in inguinal hernia surgery have alternated. Presently, there is no general standard.

Less complications and fewer returns

However, there does appear to be a reason for replacing the conventional inguinal hernia operation with an endoscopic method: every tenth patient receiving conventional surgery will come under the knife again because the hernia recurs. With a third needing repeat surgery, keyhole clearly yields better results with a lower complication rate.

Keyhole surgery on the intestine is similar to endoscopic surgery of an inguinal hernia. Nothing has been clarified. Recommendations on how to operate on the rectum and large intestine presently cannot be given. Even in conventional open intestinal surgery, surgeons are far from standardising the procedure.

Surgery is still a 'craft'. Individual experience counts more than the conducting of scientific studies. So it is not surprising that the claim that keyhole surgery

causes less wound pain still remains to be confirmed. In terms of gall bladder removal, expert opinions in medical literature diverge to such an extent that an evaluation of provable pain reduction is impossible. With respect to inguinal hernia operations, at most a trend towards less pain after a keyhole operation can be detected.

The formula 'Small incisions equal less pain and quicker recovery' does not stand up to scrutiny. Certainly it would be desirable if the choice of surgical technique could affect the frequency of chronic pain.

As before, it remains unchanged that opinions and not scientific proof determine how operations are performed in the 21st century. No operating technique has been introduced recently that is based on scientific studies that meet this criterion. At a time when healthcare resources are becoming limited, the call for more rationality in the introduction of new medical techniques will become noticeable. Physicians and patients can observe with anticipation how keyhole surgery fares over the next ten years.

Source: MEDICA

Cardiology: resynchronisation devices

Each year, only about 400 out of some 5,000 Germans needing a heart transplant can receive them - and the waiting period is one year. The Heart Centre in Bad Oeynhausen is using a special ultrasound technique to determine the degree of beat asynchronicity of the ventricles, to ascertain which patients of this kind could benefit from resynchronisation therapy. Could this new treatment keep them going indefinitely?

Cardiac insufficiency is not only a therapeutic challenge, but also an economic one. This is the most common diagnosis at the time of hospital discharge - causing almost every tenth hospital admission. Nearly 80% of patients afflicted with cardiac insufficiency

one year is anticipated, despite full exploitation of the standard drug therapy. Nevertheless, 10-15% die annually from a mild form of cardiac insufficiency.

Approximately 3 million Germans suffer from myocardial insufficiency. 100,000 new cases are added annually. Three in four patients are over 65. With progressing cardiac insufficiency, family doctors observe dramatically declining physical endurance in their patients, the onset of dyspnea, and a decline in general well-being. The patient is hospitalised with increasing frequency.

Now, however, about 180,000 German patients suffering advanced cardiac insufficiency are benefiting from resynchronisation therapy - using electrodes in both ventricles in a pacemaker-like implant.

It remains unclear whether heart transplantation can be delayed for only a few years - i.e. whether implanting the heart co-ordinator merely serves as a temporary bridge until transplantation - or if this can be a permanent therapy. However, it is certain that the ventricle implant increases pumping capacity and restores the shrunken ventricle. According to current experience, one in five patients can be taken off the heart transplant list due to resynchronisation. This new therapy also appears to offer an alternative for those who cannot receive transplants - whether due to age or concomitant diseases.

are hospitalised at least twice a year. One in two patients have two or more concomitant diseases.

The course of heart insufficiency is dramatic. When the mass of heart muscle capable of contracting declines, the pumping organ loses its contractile force and suffers from overload - the result is insufficiency. For example, among older people arterial hypertension leads to myocardial insufficiency. In a cross-section of the general population coronary heart disease is the dominant cause.

Anyone suffering from myocardial insufficiency has a significantly reduced life expectancy. The mortality rate for symptomatic myocardial insufficiency five years after the diagnosis is more than 50 percent. In cases of advanced illness a 20% mortality rate within

Theatre lights: a new range



firm reports that its modular system features '...flat screen technology, finger touch manoeuvrability and exceptional deep cavity illumination and shadow control'.

'Customers are constantly telling us that firms too often ignore the reality of working in a busy operating theatre,' said Philip Kennedy of Eschmann. 'We have developed a system of lights and monitors which provide hospitals with unparalleled flexibility and substantially improved clinical outcomes.'

Eschmann Equipment, a specialist firm producing operating theatre tables and electrosurgery equipment, has launched a range of operating lights. Based on the needs of users internationally, the

High-tech exam lamp

The new halux Iris examination lamp has a specially designed reflector system, combining facet and parabolic technology, which, says the manufacturer, guarantees precise, true-colour and neutral white light - ideal for the most sophisticated examinations.

With a compact and closed hinge system, the lamp also offers increased smoothness and maneuverability due to the spring relieving arm.

Produced in wall or free-standing versions, the casing design has smooth surfaces to satisfy stringent hygiene.

This light complies with EG 93/42, class 1 and has been constructed and tested according to EN 60 601.

Gloves

Greece - Hypoallergenic latex surgical gloves, manufactured by Greek company Demophorius Ltd, covering all surgical applications, will be on show at MEDICA.

Straight edged Demotek Surgical Gloves are anatomically shaped and are available with a smooth or textured surface. Demotek Latex Examination Gloves are class 1 disposables and are non-sterile, ambidextrous with straight finger and beaded cuff. They are available with smooth or textured surface, powdered or powder free. The firm also makes vinyl and nitrile examination gloves. All conform to CE requirements.

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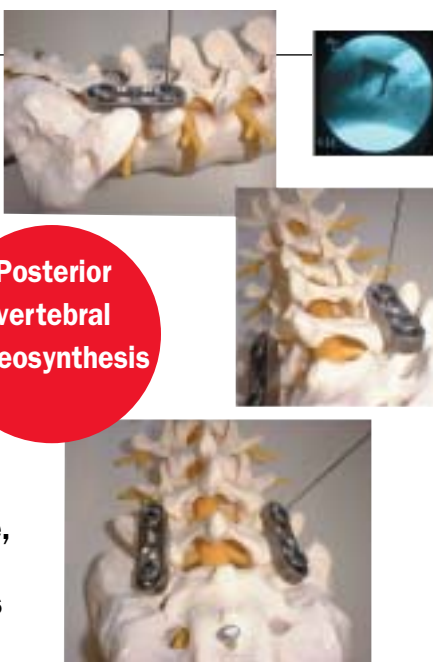
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MIS for spinal stabilisation

The WSH percutaneous arthrodesis system offers a minimally invasive surgery (MIS) technique to correct an unstable spine without open surgery and in a shorter time, with less blood loss, less post-op pain, and significant reduction in the costs of surgery and hospitalisation, says Neuro France Implants, the system's manufacturer

Posterior vertebral osteosynthesis



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During open surgery a median incision is made to uncover the spine and to fix several vertebrae together with pedicle screws and plates or rods. This posterior vertebral surgery takes hours and generates muscular trauma, significant blood loss, and infection risks. Open surgery also requires general anaesthesia.

Using the WSH percutaneous system, only neurolept analgesic with local anaesthesia is needed, and 17mm incisions are made where the screws will be implanted. Through the small incisions, all the implants are inserted, using dilators and a working tube, until bone contact is made and they are fixed. Because muscles are simply pushed aside, they suffer no trauma, and blood loss or infection risk is limited. Surgery time is also shortened.

The WSH system is also an economically sound choice, says Neuro France, because no special equipment is needed. The x-ray material necessary is the same as for open surgery: a C-arm mobile x-ray. The instrument set of the WSH system is incredibly simple, the firm adds.

The system will not replace open surgery in the future, because the percutaneous technique is still limited to some very specific indications; the main one being the invalidating unstable spine without neurological signs. When there is a need for a neurological intervention, the WSH system cannot be used.

Why did Neuro France develop the WSH system? 'Many people suffer from unstable spine. Up to now their treatment consists of drugs and physiotherapy. Sometimes the patient will feel better, but in many cases it does not help.

Many of these people suffer severe pain for several years, they would even accept open surgery but the indication is not yet there. Many of them become depressed and then undergo an anti-depression treatment. Their psychology becomes altered and their memory registers pain. Often, after 10 years of continuous treatments, their spine has deteriorated to a point where open surgery is indicated, but

often even if that is successful, they still feel the former pain, even if less, because it has been registered in their memories.

The WSH system was developed to prevent patients from years of suffering. The stabilisation of the vertebral articulation will suppress the pain, considerably diminish the quantity of drugs taken and it participates in the restoration of the patients' psychology.'

TITAN the table for heavy patients

Obesity is on the increase - and traditional operating tables are often pushed to the limits of their capacities under great weights. They are particularly stretched when extreme inclines or repositioning is needed. Now a new table has been designed to meet this special need.



The name says it all - Titan - a new universal

operating table from specialist manufacturer Trumpf Medizin Systeme, based in Saalfeld, Germany. This, specially designed for heavy patients. The heavy-duty table, specially designed for overweight patients, easily carries up to 450 kg. Yet it is as flexible, mobile and adaptable to various surgical needs as any other Trumpf operating table, the firm reports.

Patients can be positioned with the help of electromotor adjusters. The working height of the table platform can be adjusted infinitely within a 500 mm range to suit the surgical need. The option to adjust the table to a very low position is also particularly advantageous, the firm adds. 'Surgeons no longer have to stand on steps to work optimally. The longitudinal displacement, with a range of 300 mm, and the large adjustment angles of the individual table components set standards in this weight class. Anaesthesiologists particularly praise the good adjustment options of the head section for intubation and ventilation of obese patients, procedures that are often difficult.'

The Titan rolls on four freely-moving, low-resistance wheels, and an extra electrically driven wheel can be lowered and used during patient transportation. Patients can be collected on this table on arrival and need not be transferred to another in the operating theatre. The electric brakes prevent this table from moving during surgery.

Titan's many options are controlled by infrared remote control or via corded manual devices or foot pedals.

The table has extensive modular accessories for adaptation to all surgical specialties, the firm adds. 'The coupling points between the individual table panel components ensure stable fastening as well as easy set-up and conversion. Special carbon segments allow 360-degree radiography without any interfering metal elements and enable problem-free use of the various imaging methods.'

RADIOSURGERY

The radio surgical device radioSURG 2200 has high frequency waves of 2.2 MHz that are so precisely adjusted, says the maker, that incisions made are histologically barely distinguishable from those made by a scalpel. Using a 'brush technique' for incisions, there is no pressure or tension, and no thermal damage occurs in the surrounding area due to cutting or coagulation. 'The adjustable coagulation degree (1-9) and the adjustable coagulation duration - from 0.05 seconds to permanent - allows for an immediate gentle hemostasis

of smaller and larger vessels, and a high output of 100 Watts for cutting and 90 Watts for coagulation, coupled with a frequency of 2.2 MHz, makes the radioSURG 2200 clearly distinguishable from other units,' the firm adds.

A clear and highly functional arrangement of operating elements also makes it easy to master this device. The digital indicator displays chosen parameters and a built-in memory stores the latest settings. The change between cutting and coagulation mode can be done without having to touch the unit



during surgery, the firm points out.

The device also meets hygienic standards and its wide range of applications (cutting, cutting with simultaneous coagulation, unipolar and bipolar coagulation) render it suitable for a large variety of treatment methods, so the acquisition of one unit is sufficient for an entire clinic or practice, the firm adds.

Placing prostheses is no easy task, and some believe perhaps 50% are inserted askew. But now novel navigation systems can help to precisely implant for example, artificial hip joints. Among the many innovations on show at MEDICA 2003 are state-of-the-art imaging systems to aid insertion of endoprosthesis. 'Hip, knee, shoulder, elbow, finger and ankle joints - there's hardly a joint that isn't replaceable,' the organisers point out. Arthritis is primarily the disease that makes endoprosthesis so necessary. 'Among 180,000 implants annually in



'Computer-supported navigation will prevail'

Orthopaedic specialist and expert in endoprosthesis, Erwin Morscher, of Basel, Switzerland, said: 'I am convinced that computer-supported navigation technology will prevail and the number of unhinged joints will certainly be reduced as a result.' Planning before a hip endoprosthesis should be a matter of course in any case. He added: 'If you don't plan, you are planning to fail.'

However, it still remains to be seen if deviations of the head from an ideal position affect wear, loosening or the stability

Navigation systems reduce implant errors

Germany, artificial hip joints lead in frequency, followed by artificial knee replacement - with at least 60,000 interventions.'

Whilst surgical researchers working on orthopaedic and accident patients have concentrated on the firm fitting of a prosthesis stem in the thighbone, not nearly as much attention has been given to the correct position of the artificial head and socket. As a result, numerous socket alignments are crooked, perhaps in 50% of these patients - and if the location of the socket bed is extremely misaligned, the hip may unhinge and destabilise. Then the patient must undergo another operation.

Precise pre-surgical measurements

Three different angle positions must be maintained, two in positioning the socket and one in positioning the shaft. The objective of optimal biomechanical room for movement in the hip joint has only been achieved if these three angles are correct. However, a means of measuring these angles and maintaining them in the operating theatre has not been satisfactorily solved. But, say the organis-

ers, a solution is in sight. A newly developed, computer-supported navigation procedure improves the positioning of instruments and implants during the operation and enables interactive measuring of angles.

The principle: The surgeon places artificial 'markers' in the bony part of the joint, and the markers are imaged together with x-rays before surgery takes place - and they must not subsequently be moved. The preliminary images in the theatre monitor can then be reconciled by patient positioning on the operating table - but instrument positioning is still missing.

The solution: The instrument is fitted with infrared light diodes that are recorded via a stereo camera, so that the instrument's position in three-dimensional space can be determined. Magnetic and ultrasound-based systems are also used as alternatives to the optical procedure. The instrument will be shown with its markers in its exact position on the x-ray monitor no matter where it is. All three demands in surgical navigation are now fulfilled: instrument positioning, patient anatomy and preliminary x-rays are reconciled.

of artificial hips. It must be assumed that an unfavourable angle causes more wear but no one knows where an unfavourable angle begins.

The experts agree that inexact implant and axial deviation will result in a premature loosening of knee joint prosthesis. Studies demonstrate that every third knee replacement results in a poor positioning on the operated knee - with significant consequences for the implant's durability.

Digital image processing goes a step further than advanced marking for surgical navigation. A new x-ray procedure allows for real time imaging directly at the operating table, with the x-ray apparatus performing a semicircular swinging motion around the surgical site. The result is up to 100 images of the same region from different positions within two minutes. Three imaging planes of the same region from three different angles are the outcome. Patient marking for navigation can be omitted.

Currently, this system is being used for precise fitting of the joint surfaces of broken bones. In principle, control images of this type could be produced, at will, during the operation, if radiation exposure did not set a limit.

Percutaneous discectomy

US firm Clarus Medical LLC, which specialises in endoscopic, minimally invasive products to treat spinal pain and also produces fibre optic products for airway management, will be at this year's Medica.

Among the firm's offerings: the Nucleotome system, which the company says, has set the standard for safety and efficacy in percutaneous discectomy in well over 125,000 uses. The equipment has an automated shaver and provides continuous irrigation to remove disc nucleus. Surgical instruments are available for use through the working cannula. The Nucleotome has a blunt distal tip and produces no heat to cause safety problems or patient comfort. Nuclear material is aspirated and collected for possible later examination.

Mobile therapy

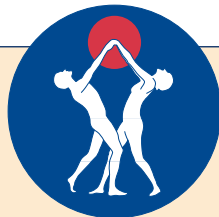
Pulsed magnetic fields

Dr Goettfert Systems, which holds the world patent for developments in pulsed magnetic field therapies for mobile use in surgeries, clinics and at home, reports increasing demand from surgeries and clinics, which '... reflects therapists' and patients' interest and satisfaction, and also highlights the limitations of equipment previously available in this market. Business people, freelance professionals, managers, sales reps and sports people have ever busier lifestyles or are always on the move,' the firm adds, 'and despite needing treatment it cannot be performed in a surgery or at home.'

The firm points out that its mobile G-ogo sport device is '...the ideal solution for this patient group. It combines all the advantages of a professional pulsed

magnetic field device with the benefits of its mobility. Comfortable to wear and without needing power, it offers a wide range of convenient applications for patients and therapists.

'Within a very short time we have become a consultant for orthopaedic specialists and a market leader for pulsed magnetic field therapy systems,' the firm adds. 'Our expert team realises the dynamic and efficient implementation of new developments such as the patented G-ogo systems or our G-support CD-ROM with a mix of courage, an entrepreneurial spirit and without external investors.' Explaining why it does not use intermediaries or a sales force, the firm point out that it relies on good recommendations from doctors, therapists and patients: '... the aim and result of our work'.



Arthritis: relieving pain

Medicure, a pulsating magnetic-field device used to relieve pain, measures just 25 x 76 x 110 mm, and comes with a velcro bandage for application on painful areas.

The manufacturer says this device meets with the Medicinal Product Laws (Class IIb) for pain relief, and that scientific studies have shown that Medicure '... is particularly effective in the treatment of arthritis'. The device has three frequency programmes, which are, the firm adds: '... very effective in treating head and joint complaints, general arteriosclerosis, poor concentration etc.'

Sports training

In an interview with 'Neue Apotheken Illustrierte/Gesundheit' (1/11/03), Georg Hackl, bob sleigh racer and Olympic medallist, said he has suffered arthritis in his joints for seven years. 'The more I trained and lifted weights, the better I became in my sport. But I trained excessively and obviously caused myself damage. Less would have been more.'

He recommends moderate weight training to strengthen the neck and supporting muscles, but only under competent instruction, in fitness clubs and therapy centres. He also describes in the magazine how he still achieves top sporting results despite arthritis. Details: <http://www.nai.de>



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You find Dr. Goettfert Systems at MEDICA 2003 in Dusseldorf, hall 11, stand 11B02.

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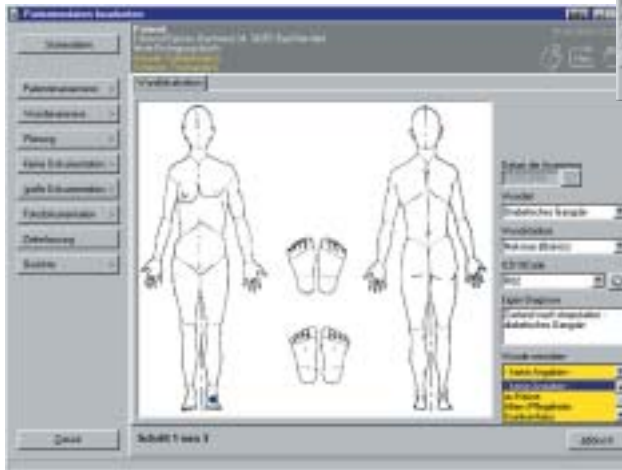
Form your own opinion at Medica 2003:
 Ecolab GmbH & Co. OHG

Hall 10 / Booth C 04

Electronic wound management

It is now compulsory to provide full documentation/evidence that medical care meets current standards, from the initial diagnosis of decubitus ulcers onwards (even for first grade ulcers, according to Seiler). This can be achieved through photography or digital data and image processing.

A programme to document wound treatment and progress should - apart from clearly showing progressive images - capture the wound anamnesis, therapy suggestions, key data, treatment planning,



reporting and statistics, the firm Akestes GmbH points out. 'The system should also supply forms for those purposes. Programmes should also be clearly structured and user-friendly, to gain the acceptance of even the most sceptical members of staff, thus speeding up workflow.'

Akestes believes its dedicated wound management programme (in German, English and Dutch) meets those demands. You can see this system in Hall 17 - stand C19. Or details: www.akestes.de

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16 slides processor Visit us in Hall 1, Booth 1A02

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Ambulatory infusion and feeding pumps

Working on electronic drug delivery systems, the firm Q-Core has now produced the AP 34-M Ambulatory Infusion Pump and the EF 34-M Ambulatory Feeding Pump. These can be seen in Hall 6 - Stand G57. The company reports that these devices can vastly improve patient lifestyles by allowing them to receive therapy outside a hospital and bringing them mobility during therapy, and that the devices are cost-effective, and cut healthcare spending by shortening hospital in-patient days.

Based on Electromagnetic Flow Control (EFC™) technology, Q-Core's technological platform leverages software algorithms to power pump and valve applications. The software enables device miniaturisation and allows pump operation both horizontally and vertically, without restrictions on operating position.

The pumps' include a modular control unit employing graphic



touch screen for data entry, a specially designed body that fits into a frame for convenient bedside use (hospital/institutional) and optional remote supervision through a cellular network.

Q-Core CEO Eran Resheff said, 'With the healthcare market's growing emphasis on shifting

patient care from hospitals to alternative care sites, including the home or office, an increasingly aging population in North America and Europe and more attention being paid to proper pain management therapies, Q-Core's solution represents cutting-edge technology ready for deployment.'

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Hall 14, A10

The new 325 dpi printer

'With a multitude of new enhancements our successor to the P91E outshines its predecessor,' said Mitsubishi Electric when launching its new analogue, black and white video printer, the P93E to document images for ultrasound, endoscopy and microscopy. '256 greyscales at a resolution of 325 dpi (12.8 dots per mm) ensure the reproduction of pictures in the finest detail. In comparison: the predecessor P91E delivered 260dpi. For fine correction the new printer also offers 39 steps for brightness and contrast (from -19 to +19).

'The print speed for an image in normal format is 3.9 seconds - the P93E is almost 1.7 seconds faster than the previous model. Time is also saved when printing in the side format: here the printer needs just 8.4 seconds - over a second less than the P91E. A further enhancement: the picture memory now delivers 10 frames, which you can select individually. Seven different paper formats are available. And the P93E can print an image from 0.5 to 2.0 times its original size in 0.1 steps.

It also comes with a Test Print function and a Paper Save function for multiple printouts.'

By further adaptation, the picture adjustment settings are now controlled by a turn-switch at the front and the values can be read on the LED display. 'The new video printer is also lighter and smaller than the previous model - by about 18% (volume), the firm adds. 'It now fits easily into most workspaces and, weighing just 2.8 kg, is the ideal solution for mobile medical equipment.'

Sleep-related disorders



The sleep diagnosis equipment market generates revenues of some US\$90 million annually in the United States alone (Frost & Sullivan). Sleep disorders problems affect 50 to 70 million Americans of all ages, an anomaly giving rise to high blood pressure, strokes, congestive heart failure, depression and an overall decreased quality of life.

Recently, Andromed Inc of Montreal, Canada, an innovative high-tech medical company, and Medcare, which specialises in equipment for the diagnosis of sleep-

related disorders, agreed to jointly evaluate the clinical advantages of integrating their i-stethos electronic stethoscope and the Androsonix biological sound sensor.

The Androsonix is a single-use, non-invasive, active acoustic contact sensor that is applied directly to the patients' skin, where it captures and continuously transmits vibrations generated by the heart and lungs. The Androsonix is the only instrument allowing for the recording of such biological sounds in order to help assess the patient's clinical condition, the firm reports.

In April 2003, Andromed filed an international patent application covering

115 countries. The Company's management has announced that its patent, registered as 'Piezoelectric Biological Sound Monitor with Printed Circuit Board', has been officially accepted in the USA.

Andromed Inc says it created the world's first fully electronic stethoscope and specialises in producing non-invasive patient monitoring systems and telehealth.

Medcare (est. 1994) specialises in equipment to diagnose sleep disorders. In 1999, with ResMed, the firm formulated an alliance aligning sleep diagnostics and therapy solutions.

Mobile traction therapy

Disk Dr. is an ambulatory traction belt that widens the interval between the vertebrae by applying air pressure. The maker points out that the device '... is useful to reinforce the extensor at the lumbar vertebrae'.

The two models - for waist and neck - are contoured for body shape and can be worn inside clothing. To prepare for use without assistance, a portable air pump can be used.

Meeting ISO 9002, ISO 13488 and EN 46002 standards, this product is patented in the USA, Japan and Korea and has CE approval and FDA listing (Document No.:B 115761).

Award for wound healing gel

London, UK - A bio-active gel that is said to heal wounds in half the time it currently takes, has won the award for the Best Biotechnology Start-Up at the Medical Futures Innovation Awards.

Developed by scientists at University College London, 'Nexagon' works by speeding up the rate of wound closure and reducing inflammation, and the researchers believe the gel has a wide range of potential applications, including cosmetic surgery and chronic wounds, as well as a possible application in reducing the spread of damage following spinal cord injury. Elderly patients could particularly benefit from its use, because they are more prone to slow healing wounds and infection.

It is anticipated that the gel's potential impact on treatment and recovery times could reduce length of hospital stays and result in substantial savings to health services.

Dr David Becker, of UCL's Department of Anatomy and Developmental Biology, who led the project, said: 'An estimated 95 million people world-wide suffer wounds each year, and yet few effective wound healing treatments have been developed, so there remains a large unmet need. I would like to see this product go through to clinical development so that patients can take advantage of this revolutionary technology as soon as possible.'

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Only hospitals that make in-patients into out-patients quickly but with quality care, will survive the DRGs accounting system, which determines invoicing at a flat rate depending on the diagnosis and not duration of in-patient stay. In seeking an efficient answer that meets both medical and business needs, an IT 'clinical pathway' concept now seems the only route forward, and the *MEDICA meet.IT* section at this year's show is packed with exhibitors displaying their progress in process-oriented IT solutions.

But what is this buzz phrase 'clinical pathway'? In theory, using IT for case planning and much else, will eliminate chance occurrences, long periods in departmental waiting rooms,

postponed surgery, or unnecessarily long bed occupancy that's the pathway - i.e. a standardised approach and thorough process management for controlling complex structures - and it should also indicate how specific illnesses must be treated, what is happening where in the clinic and how much it costs.

However, this is easier said than done. Gall bladder removal is a good example of the problems faced, for this intervention is poorly standardised. Neither the time sequence in which patients are moved, from admission to discharge, nor the operation procedure is uniform in, for example, German clinics. The multitude of surgical materials used in this procedure also demonstrates difficulties in

standardisation.

However, there are fields in which success has been experienced - the surgical team in a Franconian hospital was able to save two-thirds of laboratory costs by implementing process pathways. 16 post-operative blood examinations per patient used to be requested, but now an average of 1.5 are needed. Routine ultrasound checks after an operation, performed for years, were recognised as superfluous and abandoned. Discharge dates

Clinical pathways found - at MEDICA

Experience
advances
systems

were also tightened up and the logistics improved to such an extent that the stay of gallbladder patients in the surgical department was reduced from 6.2 to 4.7 days.

Possibly the biggest hurdle encountered in introducing such pathways to a process-oriented hospital is openness with information. Data transparency is often a taboo topic in German clinics, and many hospitals have no entrepreneurial culture. Nonetheless, hospitals do develop their own patient pathways and, occasionally, clinics even create their own software - albeit a cumbersome and inefficient

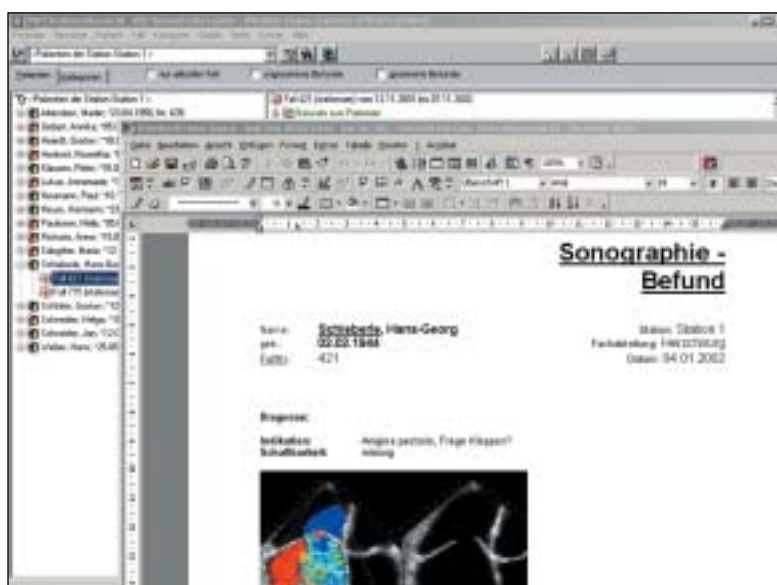
approach - and some hospitals have individual pathways completely represented in electronic data processing. The next step in paperless clinical pathways is the paperless visit with the small handheld computers now available.

In halls 16 and 17 over 330 exhibitors are offering medical IT solutions that show developments in this field and a route towards a transparent holistic system. The objective is to represent the entire hospital and all its resources, with all diagnostic and treatment steps available at any time, both from a medical and an economic

perspective.

MEDICA meet.IT offers lectures and presentations under the title *MEDICA meet.IT Das Forum*, and the Spitzenverband Informationstechnologie im Gesundheitswesen (Central Association for Information Technology in Healthcare) invites you to attend. Software users can report their experiences of process-oriented, comprehensive solutions, and experts can discuss their latest IT workflow products. ● And don't forget *MEDICA meet.IT Der Club* where the hospital decision makers meet software manufacturers.

Colour for the electronic medical record



Berlin software specialist Algo Vision LuraTech, developer of JPEG2000 implementations and technology for the compression of digital images like x-rays and scanned documents in colour, has produced LuraDocument.jpgm - a high-performance compression software based on the new ISO standard JPEG2000/Part 6 for documents scanned in color that contain both bitonal elements such as text or tables as well as pictures.

An original can be scanned in high-res during hospital admission and compressed with LuraDocument.jpgm. In the process, text and images are segmented, then com-

pressed separately, each with the optimal algorithm. This method guarantees an excellent visual quality and files of a very small size, the firm reports. 'LuraDocument.jpgm has already been successfully integrated into our modular, web-based hospital management system iMedOne and this is already in use in hospitals in Neuss, Gummersbach, Dinslaken and Essen in Germany,' adds the Cologne-based company ITB AG.

The software will be presented by ITB AG at MEDICA, Hall 16 - Stand C40

Further details: www.algovision-luratech.com or www.itb-ag.com

COMING OF AGE

The versatile stethoscope

Andromed Inc of Montreal, Canada, and Hewlett-Packard Healthcare Solutions, have agreed to promote the hp iPAQ Pocket PC h5450 /STG/i-stethos Diagnostic Mobility Solution in North America. The firms say this will enable healthcare professionals use their stethoscopes to visualise, interpret, transmit, store and email heart and lung sounds.

'Medical professional's world-wide will benefit from enhanced non-invasive point-of-care devices which include cost-effective and diagnostic products to better manage patient care. Andromed is committed to working with industry leaders to better leverage our core technology as leaders in the acquisition of biological sounds,' said Rodney Williams, Andromed's Vice President, Sales/Marketing.

'It's exciting to see firms like Andromed utilizing HP Technology integrated with diagnostic equipment such as a stethoscope,' Ken Jarvis, Manager HP Healthcare Solutions & Alliances added.

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INTRODUCING Soarian Cardiology



Soarian Cardiology provides individual electronic patient records (EPRs), available at any workstation or bedside wireless system

Using Soarian Cardiology, made by Siemens Medical Solutions (Med) a cardiac care team can build a continuous, comprehensive electronic patient record, which includes medications, lab results, images, ECG, physiological waveforms, plus documentation, the firm reports: 'Used departmentally or in conjunction with the hospital-wide Soarian health information system, this provides a holistic solution to the cardiology professional and seamless, real-time integration with

the complete enterprise patient record.'

In managing and controlling the administration of medications Soarian Cardiology also issues warnings on contraindications or hazardous interactions, leading to improved patient safety.

Used successfully in the USA since 2002, cardiologists have documented and reported treatment steps and diagnoses - in any sequence, at any time, and by a number of people, says the firm.

'To create the report, the system automatically compiles information from a variety of sources. For example, it integrates data from the haemodynamic system, the hospital information system (HIS), electrocardiography (ECG), or the laboratory and pharmacy system. Information on consumed materials can be automatically transferred to the hospital's material management system, thereby optimising inventory management and ensuring greater cost transparency.'

Professor Erich R Reinhardt, Chairman of the Board of Siemens Medical Solutions says the system has produced: 'More efficient work, shorter examination times, fewer errors - Soarian Cardiology can help providers save time and costs while increasing satisfaction for both hospital personnel and patients.' Patient data - In addition to personal data, a variety of clinical information, such as medication administered, lab reports, image data, physiological waveforms, or medical-nursing documentation are included. In addition, it provides a clinical summary of the complete patient history over a period of years. It is available at any workstation: in the OR, the physician's office, or - using a wireless tablet PC, for example - at the bedside. Soarian Cardiology can be imple-

mented as a stand-alone departmental system or in connection with the hospital-wide Soarian solution.

'Finally, integrating functions that support registry submissions is also extremely important. By using Soarian Cardiology, the required information can be transmitted promptly and completely. This includes information regarding possible complications during cardiac treatment. Hospital personnel can also access this information: the documentation status is transparent for every patient, and missing information is displayed directly in the task list of the treating physician. Forms are pre-populated with information, and the documentation can be completed step by step.'

The user interface is based on 'syngo', the software standard developed by Med. In addition to the patient record, a list of work steps to be completed is displayed based on

the user's role - physician, technician, nurse, etc.

This system is in use at the South Carolina Heart Centre (SCHC), and Siemens Med says by using the software the time required to create a diagnostic report, e.g. after a catheter examination, has been reduced from at least 24 hours to only a few minutes. This workflow improvement has increased annual profits at SCHC by up to \$720,000, the firm adds. 'The system received the prestigious TEPR-(Towards the Electronic Patient Record)-Award for 2003 due to the significant profit gain SCHC was able to realize.

Siemens adds that it sees enormous growth potential for cardiology information systems in the European market as well as in the USA. 'For example, in Germany 20% of planned investments for cath labs include IT systems.

Nurse-patient communications - and more



EccoLine - a new hospital communication system from Tunstall - was launched this year as a successor to NewLine. Compatible with its predecessor, EccoLine's PrimusGlobal control centre software can be extended by diverse functional modules as needed. The tasks of PrimusGlobal include displaying and co-ordinating all messages, protocolling all system events and supporting other communication and organisation systems. Links with paging and DECT systems from established manufacturers are an important aspect of this, Tunstall reports. 'PrimusGlobal has proven credentials as software for call control centres, but ward implementation also brings useful advantages.'

Another innovation from the Westphalian light call specialist is

the EccoLine ComTerminal, which acts as a communication medium between patients' bedrooms and nurse stations or a control centre. 'The new ComTerminal not only optimises staff communication, but also provides major support when streamlining organisational workflows. Call forwarding is an integrated feature, and voice announcements can be transmitted directly to specific rooms or throughout the ward or unit. Excellent voice quality ensures even better communication between nursing staff, while for patients the reassuring virtues of voice contact come fully into play,' the firm points out.

The new, ergonomically designed EccoLine bedside combination unit for patients is multifunctional, as well as water and shock proof.

Apart from the generous red call button with precise pressure point, it has an integrated location light. The full range of peripherals, such as radio and TV, are under perfect control, the firm adds.

'The synthesis of value and convenience is equally reflected in peripheral interfacing. Tunstall's OpenConcept philosophy builds on a customised interface architecture to integrate the best system components for the job in hand - for example, telephones, radios or TV sets. EccoLine's various components, with and without voice functions, can each be tailored to meet the particular requirements of client operations.

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Hall 6

3M Medica
Hsin Kuang Yeh
O-Core
Smiths Medical

booth F06
booth L50
booth G57
booth H30

Hall 8

Korea E & Ex
EUROPEAN HOSPITAL

booth E23
booth E15



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Änderungen vorbehalten/Subject to alteration/Stand: 07/2003

Hall 1

Beckmann Coulter
DAS Digital and Analog Systems
Tekia

booth D04
booth A02
booth E16

Hall 2

Roche Diagnostics

booth A07

Hall 9

Esaote Biomedica Deutschland booth A22
Mitsubishi Electric Europe booth E63
Parker Laboratories booth D41
Toshiba Medical Systems booth D05

Hallen/Halls 1, 2, 3

Labortechnik, Diagnostica, Arzneimittel
 Laboratory equipment, diagnostics, drugs

Halle/Hall 4

Physiotherapie/Orthopädietechnik
 Physiotherapy/orthopaedic equipment

Hallen/Halls 5, 6

Bedarfs- und Verbrauchsartikel, Textilien
 Commodities and consumer goods, textiles

Hallen/Halls 7 – 15

Elektromedizin, Medizintechnik
 Electromedicine, medical technology

Halle/Hall 7

Schwerpunkt Chirurgische Instrumente
 Focal point: surgical instruments

Halle/Hall 12

Schwerpunkt Sterilisationstechnik
 Focal point: sterilisation technology

Halle/Hall 8.1

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Halle/Hall 15

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 Medical support units, operating tables,
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Raumeinrichtung
 Room furnishing

Halle/Hall 16

Informations- und Kommunikationstechnik
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Facility Management

Halle/Hall 17

Informations- und Kommunikationstechnik
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 Information and communications
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**Hall 10**

BOWA-electronic booth G05
Ecolab booth C04
Richard Wolf booth D57
Siemens Medical Solutions booth A18
WISAP Gesellschaft für wissenschaftlichen Apparatebau booth F39

Hall 11

Derungs Licht booth B26
Dräger Medical booth J39
Dr. Goettfert Systems booth B02
Komet Medical, Gebr. Brasseler booth A26
Nonin booth D42

Hall 12

Maquet booth D51
SciCan booth D33
Schaerer Mayfield Schweiz booth D32

Hall 13

Listem booth C26
Mars Medical Products booth C44-2
Uroplasty booth G18

Hall 14

BG Industries booth B24-5
Burlington Medical Supplies booth G41
Carley Lamps booth A34-8
IPAS booth G48
Medline Industries booth A10
Unitract booth A24
USA CEO Center booth D58

Hall 15

Trumpf Kreuzer Medizin Systeme booth C23

Hall 16

Nations HealthCareer School of Management booth D61
Sato Deutschland booth G05

Hall 17

Akestes booth C19

Hall 3

Starplex Scientific booth D66
Wescor booth D95

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The Netherlands - The Sint-Maartenskliniek Hospital, Nijmegen (one of Europe's leading hospitals in orthopaedics, rheumatology and rehabilitation) has signed a multi-million euro supply and servicing contract with Agfa for a complete ADCTM CR (Computed Radiography) solution, together with a hospital-wide RIS/PACS system.

Belgian and Luxemburg hospitals - Earlier this year Agfa also signed agreements (worth c. six million euros) with seven hospitals to provide in-house digital care networks and link with the hospitals' surrounding care networks, involving ADC Computed Radiography (CR) and integration of the RIS/PACS with IMPAXTM.

Luxembourg is generally considered a pilot case for Luxemburg hospitals, with whom extensive communication exists. Working closely with its IT department, Agfa managed to right-size CR and IMPAX solutions. The two campuses of this hospital share data over a fixed leased line, using the same archive and offering the

Agfa: Communications contracts flow in

The digital network will be the basis for growth towards a full-blown EPR (Electronic Patient Record) at the hospital. Dr M Obradov, Head of the Radiology Department, said the network will help in planning, preparation and surgical procedures.

Australia - In September, Agfa also agreed a \$17 million PACS/RIS contract. Perth's primary teaching hospitals and, ultimately, the state's secondary and regional centres will access the system.

David Chambers, General Manager of Agfa HealthCare Sales Asia-Pacific said the project - called WA PACS - is designed for comprehensive health image management in Western Australia (WA) and will be the largest of its kind in the Oceania region.

Unlike similar large-scale projects undertaken by Agfa HealthCare at major hospitals in Queensland and in Auckland, the WA tertiary hospitals will use one common PACS database and storage sub-system, rather than operating as separate site-linked entities. The consolidated informatics system will be designed to have complete 'redundancy', so that it will continue functioning even if the primary data centre fails. Connection to the data centres for all hospitals will be via a dedicated gigabit wide-area network.

In addition, University hospitals AZ Brugmann (Brussels) and AZ Damiaan (Ostend), introduced five-year plans to change to a digital environment. With Agfa, the Brugmann hospital (part of IRIS, the largest healthcare group in Brussels) will digitise radiology and clinical information in the outpatient clinic, emergency centre and central services department.

AZ Damiaan, a merger of two private hospitals two kilometres apart, transports patients by bus between the campuses for examinations. The introduction by Agfa of ADC CR solutions on both sites, connecting them with an Agfa RIS/PACS Broker (RIS Gateway), is the first step to complete use of IMPAX. Agfa Finance offered a flexible solution for the hospital to annually budget a fixed operational cost for seven years.

The Cliniques du Sud



surrounding care network to access the information with a web browser over Agfa's IMPAX WEB1000TM server.

Additionally, the new Hôpital Kirchberg, will install ADCTM CR solutions, including CR mammography, and Agfa's RIS/IMPAX solution, and the Centre Hospitalier du Nord wanted its IMPAX solution connected to the existing RIS and to expand its ADC CR infrastructure.

VITAL DUST - for resuscitation

Although small, a new device can give doctors the 'big picture' of patients' vital signs, researchers reported this month, at the Resuscitation Science Symposium at the American Heart Association's Scientific Sessions 2003. Called Vital Dust, it mea-

sures just 6x5 centimetres, and consists of a small, low-power computer connected to a sensor that fits over the patient's fingertip. Running on two AA batteries the device includes an embedded microprocessor, memory, and a wireless communication interface.

Vital Dust transmits patient data to a hospital, or centralised location, allowing others to see the data and also gain a global view of all patients in the field who are being similarly monitored. It measures heart rate and the percent of oxygen saturation in the blood, an important indicator of a person's cardiopulmonary status. A radio transmits the information to a wearable or handheld computer, where it is displayed for a medical team.

'If there is a mass casualty event, having this information on all the victims will allow the emergency medical technicians to triage right then and there, giving the sickest people priority. In single-person casualties, we'll know right away if the patient has a sudden change in status and needs immediate attention,' said Matt Welsh PhD, assistant professor of computer science at Harvard University, one of Vital Dust's developers and the lead author of the study.

'This advance may lead to a more rapid triaging system,' added Steve Moulton MD, one of the researchers who tested the device.

Another unique feature of Vital Dust is its ability to store the pre-hospital electronic medical record together with a record of the

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DZ: How will your recent links with the two big companies, Instrumentarium and Amersham, affect the European medical technology market?

BvP: The acquisition of Instrumentarium and the planned merger with Amersham signal GE's ambitious growth targets outside the United States. While GE already holds major market shares in the US, the European - and particularly the German - market still offers enormous growth potential. Currently, GE is investing heavily in Europe - to expand its market presence to new fields. This strategy encompasses

innovation into top-quality products. With this strategy, we want to contribute, from very early on, to the prevention of diseases and symptoms, which means we expand our product portfolio to meet the demand for a comprehensive one-stop-shopping solution and that we develop new areas of applications for innovative technologies. This is where the acquisition of Instrumentarium fits - with this acquisition we strengthen our surgery-operating theatre and intensive care divisions, so we can offer customers even better complete solutions. Our mammography product range also benefits from

major market shares. The contacts Amersham has with hospitals - contacts that are not necessarily identical with ours - are very interesting for us.

DZ: You are talking about partnership. But in fact GE will buy Amersham?

BvP: For GE, acquisition above all means integration and use of synergies. In practice, acquired divisions profit from GE's



Bernd von Polheim, Vice President of GE Medical Systems Central Europe, describes the present and future impact of acquisitions and mergers, in an interview with Daniela Zimmermann, Executive Director of European Hospital

GE: ventures into new avenues

the acquisition of companies such as Instrumentarium or Amersham so as to widen existing platforms and gain access to new markets.

DZ: Apart from economic benefits what kind of innovation potential do you see in those acquisitions?

BvP: All initiatives in our operation reflect the GE company philosophy: we focus on the customer and thus - by extension - on the patient. We put enormous efforts into transforming technical

the acquisition. However, we will have to hive off the c-arms division of Ziehm Instrumentarium due to monopoly issues. The momentum we are currently gaining lies above all in the GE Medical Systems Information Technology division, which encompasses intensive care, cardiology, respiration, and our RIS/PACS solutions.

DZ: What do you expect from the merger with Amersham - one of the biggest diagnostics and biotechnology companies?

BvP: Currently, we are waiting for a go-ahead from the German Monopolies and Mergers Commission, but are confident we will have the green light for this merger very soon. Possible synergies with Amersham are expected, above all in imaging diagnostics - that is, contrast media, which are increasingly used in those procedures - and in the future in molecular imaging: genetics. Thus we will open entirely new application possibilities for imaging diagnostics.

DZ: Your competitors Philips and Siemens are also focusing on molecular imaging. Is this the horse to bet on?

BvP: Developments in basic research and medical technology have reached a point where closer co-operation between pharmaceuticals and medical technology is absolutely necessary. We are no longer talking about merely maintaining and recovering health. Today we are focusing on positively influencing health. To develop the necessary research potential different disciplines must work together. The time has come to venture out on new paths. This is something the entire industry understands pretty well - be it Philips, Siemens, GE, or whoever. The only question is: How can we best achieve that objective? We think that with Amersham we have found a partner who ideally complements our portfolio and with whom we can optimally realise our common goals. On a global scale, Amersham holds

company philosophy and the Six Sigma quality management system. Existing know-how is adequately integrated into the new company organisation. This is a top-priority decision for GE, as you can easily see from the fact that Amersham's Board of Directors has been appointed directly to GE senior management - the body where all group-wide strategic decisions are made. This means the Amersham staff will have the opportunity to shape these decisions.

DZ: What are GE's plans for 2004?

BvP: We will firmly continue our strategy to develop and expand existing market potential in Europe. Above all, this encompasses offering our customers complete diagnostics solutions.

DZ: Does these mean more acquisitions?

BvP: If it makes strategic sense, yes! We have not been active in all fields for some time and undoubtedly there's one or other field that would nicely complete our portfolio - for example, therapy, which was an area we made a conscious decision to quit some years ago. Or hospital information systems, an area in which we are not yet directly active. So far, we have co-operated with manufacturers of existing systems, but it might make sense to intensify those co-operations.

DZ: The latter is a delicate issue - we have been talking about EPR, HIS and RIS and the need to integrate hospital data, as well as cope with DRGs for some time...

BvP: Yes. Presently all or almost all hospitals have different IT solutions. Although everybody provides interfaces to link the different systems so that they can communicate, there are different philosophies on how to integrate. When you talk with users in various hospitals you realise that not everyone is happy with what they've got - particularly since the first systems were merely

administration-oriented. This is important in terms of DRGs - to consolidate all data. On the other hand, the modules have to generate all patient-related data, and these must be channelled into one system. This process requires digitisation - whether in the context of telemedicine or off-site departments. With digitisation you can communicate via the internet or intranet directly with a diagnostics department without loss of quality. This is the essential advantage of digital information.

DZ: This is not new - it has been talked about for years.

BvP: But very few have realised it! GE is, and remains convinced that digital technologies are the future of the healthcare system. No matter whether you are talking about early detection, more precise and faster diagnoses, improved data exchange among physicians or basic research - the medical benefits of digitisation are obvious. It also enables better workflow and greater cost transparency. The acquisition of Instrumentarium and Amersham will help us optimise our complete solutions and push digitalisation ahead.

monitoring

patient's vital signs.

'This form of data management enables a copy of the pre-hospital record to travel with the patient, giving hospital-based personnel the ability to review what was done in the field and determine how those maneuvers may have influenced the resuscitation process,' said Moulton.

Moulton and his study co-authors are integrating Vital Dust sensors with iRevive, a pre-hospital, mobile database, to automate the process of capturing patient information.

One of the unique features is that the radio can adjust the power for transmitting information, Dr Welsh said. 'If a patient's heart rate slows dangerously or his oxygen saturation level drops precipitously, the system will automatically adjust the transmission power so that a stronger signal is sent out and has a greater chance of being received by the paramedic. The radio would back off transmitting other patients' data, thus giving a critical patient's signal an even greater chance of going through.' This is the first wireless network designed to give priority to victims that are in critical condition, he added. 'Continuous real-time monitoring of vital signs in the field should greatly improve the effectiveness of emergency medical care.'

● Co-authors: Dan Myung AB and Mark Gaynor PhD. Abstract P11303

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1st PACS in Lithuania

Sweden & Baltic telemedicine links

Vilnius University Hospital, a 1,000-bed teaching hospital handling about 300,000 out-patients and 30,000 in-patients annually, has been chosen to showcase a PACS.

Two years ago doctors at the Vilnius joined the Baltic International Telemedicine Network, a project that offers Estonian, Latvian and Lithuanian hospitals the opportunity to discuss difficult clinical cases with colleagues at Uppsala University Hospital, Sweden. At first, images were sent to Sweden by the Vilnius radiologists as hard copy or by e-mail, then a document camera for printed images and a direct DICOM connection were used.

Although this experimental telemedicine project is over, digital imaging is continuing, due to the PACS installation. The radiology

department's MR scanner, four-slice CT scanner, and two digital x-ray units are linked by digital network, and the radiologists either report soft-copy images on four workstations, each located next to a RIS terminal, or review images on an additional double-monitor workstation. Nine other clinical departments, including neurology and surgery, are linked to the PACS via a Web server.

Dr Nomedas Valeviciene, associate professor of radiology at the hospital said some radiologists were 'suspicious' of the system at first, but now find it easier to view a case history and compare images, and discuss cases interdepartmentally.

The hospital is now discussing transmitting images electronically with a nearby hospital, which has a new computer system.

Pocket radiation meter

Germany - The GISMA Business School has become a partner in a joint venture between Krannert Business School, Purdue University (USA), Tias Business School, Tilburg University (Netherlands), Graduate School of Business, Central European University (Hungary) and ESCP-EAP European School of Management (France). Together they are providing the 'International Master's in Management (IMM)' course - an executive MBA programme that leads to an MBA degree with an optional spe-

cialisation in healthcare management, through collaboration with Medical School Hanover (MHH).

Executives who presently hold significant responsibilities in their organisations are participating in the two-year part time MBA Programme. As promising managers, the school says, 'They are adept at managing their time, challenging themselves intellectually, and want to interact with people of different functional and cultural backgrounds while maintaining their full job responsibilities.'

RIS for US market

Eastman Kodak Company plans to expand the availability of its radiology information system (RIS) to medical facilities in the USA in 2004. The firm adds that its RIS 2010 - already available in Europe and Australia - will debut in countries beyond the U.S. at a later time.

'Almost 80% of US hospitals have radiology information systems that are over 10 years old, so a large opportunity exists to install new systems,' said L. Jeffrey Markin, General Manager of Healthcare Information Systems and Vice President, Kodak's Health Imaging Group. 'We also see the potential for integrating these systems with other Kodak medical imaging technology.'

Medical facilities almost always integrate radiology information systems - which serve as the information management backbone for a radiology department - with picture archiving and communications systems (PACS). This combination of image-centric PACS and information-centric RIS enables hospitals and imaging centres to simultaneously manage and archive medical

images and other patient data, thus improving productivity, the firm pointed out.

The trend toward such systems is apparent in a '2003 Hospital CIO Survey', conducted by Bank of America Securities, which indicates that 58% of chief information officers in US hospitals plan to purchase PACS within the next three years. Based on research by Frost & Sullivan, Kodak also estimates that the PACS market is growing rapidly at 12-15% annually.

In May, Kodak completed a RIS 2010 installation at John Hunter Hospital in New South Wales, Australia, which performs approximately 87,000 radiological examinations per annum. The company is now completing installation of RIS 2010s in seven other regional hospitals, which comprise Hunter Area Health Service.

In addition to PACS/RIS, Kodak's Health Imaging Group offers digital medical image capture technologies, such as Kodak DirectView computed radiography and digital radiography systems.

Digital mammography

The Sectra MicroDose Mammography system reduces radiation five-fold, compared with traditional film-based examinations, says its Swedish manufacturer. The first two systems from this IT and medical technology firm are being used in the Swedish municipal hospital in Helsingborg, and will be used in the 1100-bed + Klinikum Krefeld, Germany, following their recent order, said Dr. Torbjörn Kronander, President of Sectra Intec AB.

'With Sectra's system, we aim to avoid exposing women to higher radiation levels than necessary, while at the same time maintaining, or in some cases, increasing the very high image quality required for mammography examinations,' said Professor Fiedler MD, head of Krefeld's radiology department.

With Sectra MicroDose Mammography images are available on a diagnostic workstation in seconds,

so that a patient could receive the result immediately after the examination. The doctor can evaluate the images and be further aided in his diagnosis by digital image processing. A further advantage with the digital system is that all images are stored in a digital archive, which means that access to old and new images is immediate.

The system is based on a completely new detection technology, counting every individual X-ray photon, the firm added. Close to 95% of X-ray photons that pass through the breast are detected and used for diagnosis, resulting in significantly lower doses of radiation without compromising image quality.

The mammography unit is invented and developed by the co-owned development company Mamea Imaging AB, Stockholm, Sweden.

Goods transportation

Manual handling is minimal

Automated guided vehicles that can be used for transporting food, medication, laundry, sterile items, medical equipment, and waste etc. made by the MLR System GmbH company, of Ludwigsburg, Germany are going on show for the first time at this year's MEDICA. (Hall 14)



The firm points out that the open vehicle in the Caesar series is designed for the kind of roll containers commonly used in hospitals. The vehicle runs under the containers, lifts them and transports them to the area determined by the AGV host computer - also a MLR system. Each container displays a barcode that is read by the AGV, so that the control system LogOS-hospital - which also manages the containers - can track the exact location of each container.

The Caesar is an extremely compact vehicle, so hospital lifts can be used for collectin and deliveries between floors, and it can move close to work areas. Manual handling is restricted to a minimum, the firm also points out.

Designer supply units

Also on show at MEDICA: French company TLV focuses strongly on infection prevention by producing supply units that have smooth surfaces and anti-dust contours as well as the necessary cutting-edge technology. The firm will launch a new modular concept at Medica, which is the work of top international designer Christophe Pillet.

TLV products include a bed head unit and the Multicare ICU ceiling supply unit. 'Designed for wards by the internationally famous designer/architect Jean-Marie Massaud, the new Hi-beam bed head unit offers user friendly ergonomics, easy to clean surfaces and cost-saving T5 technologies,' the firm adds.



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Breast cancer training

When three highly motivated disability nurses approached Dr Nick Tucker, a University of Warwick plastics engineer, they asked him to help them create a teaching aid that could assist in teaching breast cancer awareness and self-inspection to people with learning difficulties.

The resulting mannequin consists of a fibreglass torso, which can be fitted with 4 different interchangeable types of breast implants, all containing different tissue anomalies (lumps). The torso with the silicone rubber breast implants has a latex 'skin' that makes the model appear and feel true-to-life.

The device enables individuals to learn self-examination. It will benefit all women but will be of particular benefit to those with learning difficulties who's limited reading skills limit how much they can learn from many breast cancer self examination training methods. The mannequin will also be particularly useful when working with women with



cultural inhibitions that otherwise impede them learning about self-examination.

Clinical trials are underway to investigate the use of the mannequins in a GP surgery, a residential home for learning disability and a cancer treatment centre. The team report that early results of these trails have been very positive. Now Dr Tucker and the nurses are investigating the development of a similar model for testicular cancer.

Source: University of Warwick

REALISTIC ORGANS

Researchers at the University at Buffalo are combining 21st-century materials and computerised sensors to create a simulator for surgical training with artificial organs that feel, smell and respond like living tissue in the human body.

Leading the project, David Fineberg, a clinical assistant professor of surgery and oral and maxillofacial surgery in the UB School of Medicine and Biomedical Sciences, said he wants to change the way surgeons train. He also wants to change the way content is delivered across many industries and disciplines, including the teaching of

mathematics and science.

Dr Fineberg and Thenkurussi Kesavadas, PhD, UB associate professor of mechanical and aerospace engineering and director of UB's Virtual Reality Laboratory, are working on one organ at a time, with \$100,000 in development funds from the New York State Office of Science Technology and Academic Research (NYSTAR).

Using cadaver organs, the team has made casts of the liver and spleen, and are working with a materials company to find polymers that feel like living tissue with which to fill the casts. Dr Kesavadas is

translating the tactile information into electronic data, and trying to capture the properties of human tissue by using a virtual-reality glove, and a database of information is being created to accurately describe the biomechanical properties of soft tissue under various conditions.

Initially, the model organs will be used as individual teaching tools. Dr Fineberg plans to market them and the technology platform for a number of uses to generate funds to finish the surgical simulator prototype. He then plans to produce a 'liver trainer', to help teach liver physiology, and to follow this with a pancreas model.

Source: University at Buffalo

NURSES training

ON SHOW AT MEDICA

Specialising in nursing education models, the Smile Group Corporation has produced a new model named the Silver Age Doll. Made of silicon and with PU foam stuffing with bone, the model is 150-155 cm tall and weighs 11 kgs.

Practising exercises: bathing, body wiping, clothing changes, patient transfer techniques, denture removal and cleaning. The fingers and toes are flexible and can be bent.

Five business schools unite

International MBA in healthcare management

Germany - The GISMA Business School has become a partner in a joint venture between Krannert Business School, Purdue University (USA), Tias Business School, Tilburg University (Netherlands), Graduate School of Business, Central European University (Hungary) and ESCP-EAP European School of Management (France). Together they are providing the 'International Master's in Management (IMM)' course - an executive MBA programme that leads to an MBA degree with an optional specialisation in healthcare management, through collaboration with Medical School Hanover (MHH).

Executives who presently hold significant responsibilities in their organisations are participating in the two-year part time MBA Programme. As promising managers, the school says, 'They are adept at managing their time, challenging themselves intellectually, and want to interact with people of different functional and cultural backgrounds while maintaining their full job responsibilities.'



GISMA Business School, Hanover

'Requirements imposed on doctors that are outside the medical field are steadily increasing,' said Dr Michael Daum, explaining why he is currently studying in the two-year programme offered by The Hanover School of Health Management (HSHM). Dr Daum aims to obtain an international Executive MBA with a specialisation in healthcare management. 'The MBA ties in with my professional experiences. It's highly practical and intense.'

The HSHM course was initiated by Professor Matthias Schoenemark (left) and Prof Volker Amelung (right) professor of Health Service Research at the Medizinische Hochschule Hanover. Centre: Courses are run in co-operation with the GISMA Business School, of which Prof Karlheinz Schwuchow (centre) is managing director.

Training reduces ICU pneumonia cases

'Educating healthcare workers who care for mechanically ventilated patients can decrease the rate of ventilator-associated pneumonia,' said Jeanne E. Zack, BSN, Washington University School of Medicine, Department of Hospital Epidemiology and Infection Control, co-author of a study published in The Society of Critical Care Medicine journal Critical Care Medicine.

The results of the survey, carried out in Barnes-Jewish Hospital, showed a decline of 57.6% in ventilator-associated pneumonia. In addition to reducing pneumonia, the programme also resulted in cost savings estimated to be between \$425,606 and \$4.05 million.

The education programme, developed by a multidisciplinary task force, consisted of a ten-page study module on risk factors and practice modifications involved in ventilator-associated pneumonia, training at staff meetings, and formal lectures. Fact sheets and posters reinforcing the information were posted throughout the ICUs and the department of respiratory care services. The education programme was directed at respiratory care practitioners who care for the mechanically ventilated patients and intensive care unit nursing staff.

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