EUROPEAN HOSPITAL DUSSELDORF THURSDAY 16 NOVEMBER

2006 @ MEDICA

NOVEMBER 2006

SPECIAL ISSUE: MEDICAL, TECHNICAL, PHARMACEUTICAL, INDUSTRIAL NEWS & MUCH MORE

A 'one-stop-shop' for disaster, rescue and emergency care

By Brenda Marsh

Visitors coming to MEDICA to purchase pre-hospital emergency equipment will not be disappointed. Specialist exhibitors are plentiful this year, demonstrating everything from novel bandages and splints to high-tech ambulance and rescue vehicles and more.

The aptly named **First Care Products**, for example, reports that its goods are: '…combat and clinically proven to provide benefits to victims and care-givers and have become relied upon as vital equipment in the treatment of haemorrhage and trauma related injuries'. Among its wares is the *Emergency Bandage*, which consolidates numerous pieces of equipment into a single device. Upon application, immediate pressure is exerted on the wound through its sterile, non-adherent pad, to bring about haemostasis. The bandage also provides a sterile secondary dressing, immobilisation of an injured limb or body part, and can be used to effect even more direct pressure to arrest severe bleeding. An additional advantage: it also can be self-applied.

This firm is launching new products at Medica. So, take a look!

Spencer Italia Srl also specialises in emergency rescue, life support and first response products, as well as health and safety goods. This firm is not only proud of its quality certification, but also its environmental record; the plastics used in products are 100% recyclable and painting methods are non-polluting: 'We invest in research for environmental protection because we feel obliged towards the Star of Life, which marks our brand, and towards the planet we all live on.'

Emergencia 2000 S.A., which has factories/offices in Europe (Spain, Portugal and Germany), Asia (SE branch in Bangkok) and

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SONY

Medical

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Medica 2006
November 15-18th, Düsseldorf
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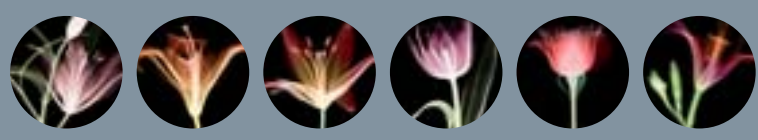

Meet us at MEDICA! Hall 7 Stand E15

The **European Hospital** team will be happy to hear about your research, products R&D and/or trials and launches, hospital management issues, or any other aspects of your work, so that we can discuss your editorial and/or advertising needs. (You can also locate our contact details on page 14).

Our publications are distributed to Europe's leading medical and hospital administrative personnel, making EUROPEAN HOSPITAL the leading pan-European medical and healthcare journal.

We also publish the hospital architecture/design magazine **D4 Health** and the **@MEDICA** series.

During this year's show, **three** special 2006@MEDICA editions will be distributed - on Wednesday, Thursday and Friday – so don't miss any! If you did not receive your ***free*** copies at the entrance of Messe Dusseldorf, simply visit our stand.

If you miss us at MEDICA, we will also be at **RSNA 2006**, held later this month in Chicago, USA. (South building. Hall A, stand 1008).

So, enjoy your visit – and let's meet!

2006@MEDICA – Tomorrow!

Friday's edition of **2006@MEDICA** will focus on **IT and telemedicine**, highlighting developments in PACS/RIS, electronic health cards etc. **Administration** is another important focus for our readers, as communications technology grows in advantages.

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America (USA) plus international distributors and agents, is truly a 'one-stop shop'. This firm's products include not only custom-designed ambulances but also ambulance accessories, stretchers, emergency and rescue equipment, folding carrying chairs, and devices for CPR, airway management, suction, resuscitation and oxygen, extrication and immobilisation, disaster management kits and much else.

The company also provides educational books, videos and CDs for emergency training.

Turnkey projects

Emergencia 2000 has found a natural niche in pre-hospital emergency medicine turnkey projects.

In the news… the pre-hospital health/ rescue video game

A team at the *University of Illinois at Chicago*, has developed a video game that could eliminate costly role-playing for training medical/rescue workers.

The series of simulations aims to realistically present events that could face health and rescue workers after a bio-terrorist attack, pandemic flu outbreak and other disasters in a major metropolitan area. It tracks how the 'player' responds to various scenarios, including how quickly patients they evaluate and treat patients.

Using bio-terrorism as the focus of first game, the video confronts health/rescue workers with potential problems possibly arising when thousands of them would have to dispense enormous amounts of drugs and vaccines following an attack. As the game opens, a TV newscaster warns of an anthrax attack. Following this, the public moves en masse towards emergency dispensing and vaccination centres. Among the 'people' arriving is someone who might have been exposed to anthrax and a hysteric who believes the world is ending.

Lars Ullberg, executive producer of the project at UIC's Centre for the Advancement of Distance Education, explained: 'In light of the disastrous response to Hurricane Katrina, it is clear that preparedness training needs to go a lot further. Simulations are the only efficient and cost-effective way to bridge the gap between theory and practice and to prepare our emergency workers for both the expected and unexpected.'

Today's MEDICA congresses and briefings

CONGRESSES

10:00 hrs – 13:00 hrs. Ground floor, room 01

The artery in the focus of modern imaging procedures – possibilities, limits, indications and results in arterial vascular imaging
Moderation: Prof Markus Düx (Frankfurt)

Ultrasound procedures: Prof Viola Hach-Wunderle (Frankfurt)

CT- and MR-Angiography: Prof Markus Düx (Frankfurt)

Digital subtraction angiography: Dr Claudius Dechow (Frankfurt)

10:00 – 13:00 hrs. 1st floor, room 4C

Pain therapy for the aged
Moderation: Dr Ann-Kathrin Meyer (Hamburg)
Organiser: VPK – Vereinigung Psychotherpeutisch tätiger Kassenärzte
DÄB – Deutscher Ärztinnenbund

10:00 – 13:00 hrs. 1st floor, room 17

3D-sonography in obstetrics and gynaecology
Moderation: Dr Jan Jürgens (Titisee-Neustadt)

Introduction to 3D-Technology: Dr Jan Jürgens (Titisee-Neustadt)

Areas of use in obstetrics and gynaecology: Dr Jan Jürgens (Titisee-Neustadt)

Demonstration of the processing possibilities for the blocks: Dr Jan Jürgens (Titisee-Neustadt)

Video demonstration of 4D-sonography-sequences: Dr Jörg Woll (Freiburg)

3D-ultrasound scan in the praxis, implementation – organisation – billing: Dr Andreas Heinzelmann (Verl)

Hands-on using a simulator, and if possible, pregnant patients: Dr Jan Jürgens (Titisee-Neustadt), Dr Jörg Woll (Freiburg)

10:00 – 13:00 hrs. 1st floor, room 19

Risk management (RM) in hospital and pre-clinic – opportunities, uses and effects
Moderation: Peter Gausmann (Detmold), Dr Alexander Dorsch (Haimhausen), Dr Joachim Koppenberg (Scuol)

GROUND ZERO

Workers suffer long-term health effects five years after World Trade Center terrorist attacks

By Karen M Dente

CANCER FROM ASBESTOS IS A SERIOUS FUTURE THREAT

New York, USA – A study released by Mount Sinai Hospital in New York and published in the journal *Environmental Health Perspectives* of the US National Institutes of Environmental Health Sciences confirms what earlier research has also indicated – a high number of the first responders and rescue workers are suffering from long-term health problems due to the toxic nature of the dust released by the collapse of the Twin Towers on September 11th, 2001.

The study of almost 10,000 workers showed that almost 70 percent reported new or exacerbated respiratory symptoms, such as persistent cough or shortness of breath, that occurred either during the recovery work at Ground Zero, or thereafter. Firemen were the most hardly hit population, since they arrived at the scene the earliest. More than half of all responders in this study reported symptoms up to two and a half years later.

'The fact that symptoms have been persistent for as long as they have is cause for concern,' said Philip J. Landrigan, Professor of Pediatrics and Chairman of the Department of Community and Preventive Medicine in the Mount Sinai School of Medicine in New York. 'When we take folks to pulmonary function tests we are seeing reductions in forced vital capacity, symptoms of restrictive lung disease,' he said. According to the conducted study, there is evidence of experimental abnormality in 28% of people who were non-smokers, and the percentage you would expect to see in the national population based on surveys the Center for Disease Control (CDC) conducted were 13 percent – that is a doubling.

It is estimated that about 40,000 people took part in the cleaning of the debris at the World Trade Center site. This included volunteers, firemen, policemen, diverse construction workers and medical examiners. In the first 24 hours after the attack, 240 New York firemen sought emergency medical care, and 50 were treated for acute respiratory symptoms resulting from inhalation of smoke and toxic dust – described by some firefighters in the immediate aftermath of the attack as being 'thick as soup'. A 'World Trade Center Cough' was seen in 332 firefighters in a study conducted six months after the attack in which a total of 10,116 firemen were evaluated.

The workers that took part in the study were for the most part not sick before the attack. 'We are talking about people who were previously healthy and actually many of them were to be described as being super fit – these were firefighters and construction workers, these were big, strong people,' said Dr. Landrigan.

Other than respiratory problems, the toxins in the alkaline dust led to other symptoms such as chronic sinusitis, gastrointestinal complaints including heartburn, and headaches.

The respiratory disease appears to be more than just the result of a slight irritation to the airway membranes. The dust was very caustic since the principal component was pulverised concrete, which is made up of calcium hydroxide and sodium hydroxide with water mixed together and hardened. 'When fine particles landed on people's respiratory membranes it burned them,' explained Landrigan. 'Initially it was an inflammation and subsequently as the inflammation receded it was replaced by scar tissue. I think that's why we are seeing the restrictive disease,' he said.

The biggest worry is the emergence of cancer related to asbestos exposure in the future, which typically has a latency of up to 30 years prior to diagnosis.

The enormous impact of the planes carrying 90,000 liters of jet fuel with the buildings constructed during the 1970s resulted in the generation of new complex materials. Tons of silicates, sulfates and metals were thrust into the air, along with microscopic shards of glass, lead, highly toxic fumes of dioxins, polycyclic hydrocarbons and pulverised asbestos – the North Tower contained asbestos up to the 40th floor for fire insulation before it was banned for use in construction due to its cancer-inducing nature.

Asbestos has been declared a proven human carcinogen by the Environmental Protection Agency (EPA) and by the International Agency for Research on Cancer of the World Health Organisation.

At a testimony before the United States Senate Committee on the Judiciary in April 2005, Dr Landrigan said, 'non-smoking asbestos workers have five times the background risk of lung cancer.' Asbestos has been demonstrated to lead to cancer of the lung, malignant mesothelioma of the pleura and peritoneum, cancer of the larynx, as well as other gastrointestinal cancers. It can also cause asbestosis, which is a progressive fibrotic disease of the lungs.

Current epidemiological studies provide evidence that exposures to asbestos for even one month under

Today's MEDICA congresses and briefings

14:30 – 17:30 hrs. Ground floor, room 01
The old heart patient – cardiac and surgical aspects
Moderation: Prof Dr Emmeran Gams (Dusseldorf)

14:30 – 17:30 hrs. Ground floor, room 2
Advances in cancer research
Moderation: Prof Georg Hoffmann (Grafrath), Prof Christopher Poremba (Dusseldorf)

14:30 – 17:30 hrs. 1st floor, room 5
Innovative management and problem solution procedures in healthcare
Moderation: Dipl.-Kfm. Otto Henker (Reutlingen)

14:30 – 17:30 hrs. 1st floor, room 18
Quality management and accreditation in medical laboratories
Moderation: Prof Rainer Haeckel (Bremen)
Organiser: AML, INSTAND and DGQML

14:30 – 17:30 hrs, 1st floor, room 19
Team/Crew Resource Management (CRM) – communication structures in medicine
Moderation: Prof Michael Henninger, Weingarten, Dr Joachim Koppenberg (Scuol), Dr Alexander Dorsch (Haimhausen)

13:00 hrs. Medica meet IT. Hall 15, stand G 48
Interoperability. Integration of ambulance and hospital information systems
Dirk Engels, Technical Head, Health-Comm GmbH

PRESS BRIEFINGS

10:30 hrs. North entrance, room 201
Interoperable communication between hospitals and surgeries – new online-solution for referral management
Asklepios/CompuGROUP Health Services GmbH, Koblenz

12.00 hrs. North entrance, room 201
New products & services
T-Systems Business Services GmbH (Bonn)

heavy exposure conditions can double the risk of lung cancer and increase the risk of death due to asbestos.

Asbestos was also found in the dust that settled in the apartments and other buildings around the World Trade Center. Besides the Mount Sinai Hospital and its five other academic teaching hospitals that form a Consortium of Clinics in the greater New York area and in New Jersey, and that are currently entitled to perform the Medical Screening Programme to screen and evaluate responders who worked at the site and follow them for medical conditions, the Bellevue Hospital at New York Medical University has its own small programme that is also evaluating residents living a few miles from the site.

Dr Joan Reibman, director of the asthma clinic at Bellevue, and colleagues conducted a study 16 months after the terror attack in conjunction with the New York Department of Health and Mental Hygiene, funded by a grant from the US Center for Disease Control, to look at the increased prevalence of respiratory illness among residents near Ground Zero. Of the 2,812 people residents studied, 60 percent showed symptoms such as cough, wheezing, or shortness of breath, compared to only 20 percent in the control group. The symptoms persisted beyond the initial exposure. A cough was seen four times as often as in the control group. The major limitation of the study due to the unexpected nature of the catastrophe was its reliance on self-reported information of the enrolled subjects. The programme at Bellevue is still rather humble, but is going to be augmented soon. Mayor Bloomberg of New York has recently pledged funding for the programme from government agencies so that the many affected New York residents, including those living in Brooklyn, who have not been captured by any of the prevailing monitoring and screening programmes can be folded into a health programme and watched over time.

The number of responders alone who have not yet been screened is thought to be about 10,000, since there was no official list of people who helped. 'Our goal is to get everyone who helped at Ground Zero monitored and treated,' said Dr John Howard, director of the National Institute of Environmental Health and Safety and acting federal coordinator for 9-11 related health programmes since February 2006, who sees himself as 'the eyes and ears of the people at Ground Zero'.

Collaboration

This project's success results from the collaboration of companies who have focused their specialist expertise on the various elements of communications needed to enhance disaster control. The soft/hardware company Cisco Systems provides the technical basis for victim tracking and tracing with its Router Cisco 3200 Series Wireless and Mobile Routers. Based in Australia, Orion Health creates workflow and integration solutions for medicine supplies, a software platform for the collection, processing and imaging of data, as well as solutions for hospitals, the police and control centres. Von Bergh Global Medical Consulting supplies the individual direction-finding transmitters needed for wireless transmission of data via GPS and GPRS systems, which monitor the location of victims.

ELECTRONIC SYSTEM HERALDS BETTER COORDINATION

Tracking and tracing

Smoke, sirens, people randomly racing, desperate cries for help, rescue workers pushed to their limits – catastrophes such as London's and Madrid's terrorist bomb attacks, or major incidents such as the Kaprun cable car accident that killed 155 people – in most of these chaotic situations the same elements confront rescuers: they must not only control psychological pressures but also coordinate all who are suddenly involved. In addition, victim identification and tracking, transportation and the checking of hospital capacities must be undertaken against enormous time limitations. In the first hour, help given to traumatised patients governs life or death outcomes.

Up to now, due to a lack of electronic communication at disaster sites, interaction within a rescue chain is slow and therefore engenders critical delays. Non-documentation of the transfer of victims to hospitals also can lead to overload in some hospitals. Additionally, neither police nor victims' relatives can obtain information quickly.

This dire situation is set to change. As a result of a joint project by Cisco, Orion Health and Von Bergh Global Medical Consulting, a *Victim Tracking and Tracing System* (VITTS) is being simultaneously introduced and tested in Germany, Belgium and the Netherlands.

During a large-scale simulation in Landstuhl, Germany, the system was demonstrated by Dr Martin von Bergh and Dr Thomas Luiz, who is medical head of the Rescue Services for Kaiserslautern's local government.

In essence, the VITTS consists of a Mobile Access Router that feeds data from rescue workers using hand-held PDAs, via GPRS, digital radio or directly via satellite into a central database. The data includes a victim's name, digital photograph, medical data, an identification number, and a treatment priority status, assigned to the victim as a barcode.

Parallel with the input into the hand-held PDA, the victim is equipped with a barcode and an

DURING DISASTERS victims


Martin von Bergh

electronic direction-finding transmitter. If continually worn, e.g. as a neckband, this transmitter will automatically indicate the victim's location at any time. Each transportation of a victim is transmitted via GPS and GPRS to monitors in main control centres, hospitals and police. Is the injured person still at the accident site or en route to hospital? Which hospital? What is its capacity? What is the patient's profile? These questions are answered and analysed in real-time, with a map showing the victim's location. This victim tracking enables better coordination and use of rescue resources; prompt information for relatives and patient data for hospitals to prepare for a victim before the ambulance arrives.

The system also allows simultaneous monitoring of several different disaster sites at the same time – an important advantage if considering recent events in London where the simultaneous occurrence of terrorist attacks could not be monitored and co-ordinated in control rooms, so that it was not possible to make a reliable assessment of where rescue teams were needed and where they could be withdrawn.

Presently, much of the input is manual; hospital profiles must be entered in advance because active input by the hospitals is not yet possible, but this is being worked on. The companies are also working on a standardisation of the system across Europe, so that victim tracking and tracing can occur across borders. Plans are afoot to further develop the user module (which currently has to be fixed in a vehicle) with the aim of achieving mobile use within Europe.

Although we might hope there will be no occasions when this clever system will be needed, the reality is that in future years it will provide many advances in medical care at disaster sites. And because of this the number of people surviving disasters will increase.


Electronic communications link services

A central database portal for emergency medical service

corpuls.net is a database system that amalgamates recorded data and information for use by emergency medical services (EMS), and makes them available to all EMS staff members, hospitals and accounts centres for further processes and review.corpuls.net offers detailed medical, operational, tactical and relevant accounting information, all properly documented and keyword accessible via a PC-client or web-interface. The system can be integrated with

hospital information systems (HIS), to enable hospital staff to immediately review and use all stored patient data from a rescue operation. Telemedicine applications, such as pre-registration of the patient in the accident and emergency (A&E) department, or medical consultation are also possible by using corpuls.net.

This system has been implemented by the German companies GS Elektromedizinische Geräte G. Stemple GmbH and medDV GmbH, in a partnership project. Their main aim is to improve documentation quality and storage of operational and management data. The new corpuls3 defibrillator/monitor system works closely with this 'Critical Care Documentation and Information Assistant', called NIDA. In addition the implementation of other medical devices (e.g. ventilation units) is possible.

Details: www.corpuls.com or www.medDV.de

Gliding comfortably away from danger

EVACUATION CHAIRS AND SYSTEMS

The revision of evacuation and first-aid procedures are among the many side effects in the aftermath of the 9/11 events in New York. However, evacuation is a less probable necessity in the case of a terrorist attack than in everyday events, such as natural disasters, gas leaks, chemical disasters, a blackout or fire. And, today, emergency logistics operators recognise the value and importance of products that make evacuations far more efficient.

What 9/11 also taught is that, during emergency evacuations, assistance is frequently needed not only for the physically disabled, but also for those who are injured, aged, or who are suffering mental and/or physical stress.

In terms of using transportation chairs, Spencer Italia S.r.l, which specialises in the production of emergency equipment, has masterminded the *Skid Series*, which have incorporated passive caterpillar belts that simply glide down stairs. 'On landing, the constructive geometry of the unit transfers all weight onto the main wheels to allow turning and movement. In addition, the

Pro Skid version is equipped with front and rear telescopic handles, which allow up stairs transportation,' Spencer reports. 'Careful examination of the whole chair will reveal a seat that has been very carefully studied; aesthetically and in its conceptually free styling.'

The chairs' robustness has been achieved by integrating technical requirements: 'The tortuous conformation of the welded frame, or the obvious originality of the seating posture,' the firm explains. 'The precocity of the aesthetics is underlined by the distribution of the angles, the back-rest that can be telescopically inclined, the adjustable head-rest and the handles for transportation that can also be detached from the chair itself.'

A case study performed by Gent Academic Hospital (Belgium) – Positive characteristics of the Spencer Skid Evacuation Chair – concluded:

- With the SKID you can ride, get down stairs and continue riding without having to take any action (opening the wheels, etc.)
- The 20 cm longer handle makes it possible the go down stairs in a more ergonomic way.
- Big wheels make an easier ride
- The person being evacuated has a more comfortable journey
- The seat is removable

Details: www.spencer.it

Terror

The 11/3/04 attacks consisted of a series of ten explosions aboard four commuter trains, during the height of the Madrid rush hour. Thirteen improvised explosive devices were reported to have been used, three did not detonate. The definite death toll was 191, and over 2,000 people were injured.

Immediately following these attacks, the emergency services began work. The Madrid Metro and *Atocha* Station were closed to citizens. At first the wounded were treated in field hospitals put to use in areas around the explosions sites.

Initially, the injured were then transferred in ambulances, buses, police cars and private vehicles to the main hospitals of Madrid (*Gregorio Marañón (GMUGH)*, *12 October*, *La Paz* and *La Princesa*) which, according to the Emergency Plan coordinated by the '112' emergency service, also evacuated the slightly injured to their homes, to avoid a collapse in medical services.

The citizens responded excellently to calls for blood donations from the health services. By late morning donations were no longer necessary, despite unceasing activity in all Madrid's hospitals. The dead were taken to Pavilion Six of IFEMA (one of Madrid's Trade Fair sites), where forensic surgeons identified corpses.

Medical management

Doctors from the Gregorio Marañon University General Hospital analysed the results of medical management of 312 survivors triaged to the GMUGH. Results confirmed the many consistent patterns to be expected following terrorist bombings, which virtually every other published series has documented. The great majority of immediate survivors (95%), were not critically injured. As the authors state, this is best explained by the selection bias caused by the immediate death of most of those with critical injuries. Although it appears quite favourable that 14 of these 1,885 immediate survivors (0.74%) subsequently died, it is important to recognise that this is deceptive, because most casualties were not at all at risk of death. The death rate was correctly expressed in this report as a percentage of only the critically injured casualties, who were truly at risk for death, and among whom all deaths occurred, resulting in a much heftier 'critical mortality' rate of 17% (14/82). This is a more accurate reflection of the quality of medical care given in such a mass casualty setting, and is a more accurate standard for comparison with other, similar bombings.

At the GMUGH, 91 of the 312 survivors evaluated (29%) were hospitalised, but 62 of these were not critically injured, yielding a substantial over-triage rate of 68%.

The danger with this degree of over-triage is in the potential to overwhelm limited medical resources and prevent that minority with critical injuries from being quickly identified and treated, thus increasing critical mortality. Although the authors did not believe that this interfered with their treatment, their 17.2% critical mortality at this level of over-triage falls well within the linear relationship demonstrated between over-triage and critical mortality.

FIRE AT

Dusseldorf Airport, 11th April 1996: During welding works, glowing cinders and metal pieces loosened then fell onto the false ceiling of the arrivals hall, which was coated with polystyrene. The smouldering fire turned into what must be the biggest airport fire in Europe. 17 people died, 72 people were seriously injured and several hundred received slight injuries. All 17 fatalities died an agonizing death from suffocation. Eight had been in the Air France VIP lounge, where smoke entered through the air conditioning system. The lack of a fireproof door had disastrous consequences. A door like that would have kept the stairwell free of smoke long enough for people to escape. A further problem: Rescue services knew that people were trapped, but did not know the exact location of the VIP lounge.

This fatal lack of knowledge could be traced back to insufficient co-operation between the airport-based works fire service and the municipal fire service. A member of the municipal team explained that the airport was like a blank spot to them and even the location of escape routes had been kept from them by the works fire service team at the airport. Did the airport-based team not want to let anybody in on their business? There

attacks in Madrid

INTERVENTION AND COSTS

By Eduardo de la Sota

They wrote, '*…the bombings occurred shortly before the start of a midweek workday when most clinicians and medical personnel were on their way to work or already in hospital, and night shifts were still on duty. This, together with empty operating rooms and personnel waiting for the first scheduled cases, proved decisive for the adequacy of the medical and surgical response at GMUGH and other hospitals. Had the blasts occurred just one hour later, the whole situation would have been much worse and very difficult to handle.*'

Eric R Frykberg, Professor of Surgery at the University of Florida College of Medicine and the author of a number of articles related to this subject, endorses their findings in his commentary, also published in Critical Care. He emphasises: '*… preventing as much as possible the arrival of so many non-critical victims to a definitive care hospital by performing triage first at outside sites before allowing them to inundate the hospital.*'

The authors conclude: '*All in all, common sense, diligence in the triage of patients and serenity seemed to prevail after the initial unavoidable chaos and emotional trauma common to these situations. There was in fact an abundance of medical teams, nursing staff, and resources to treat the critically injured, and no critically injured patient had a delay in treatment.*'

Mobilised emergency resources

According to the Community of Madrid Regional Government, the number of people and resources mobilised (excluding the national police) were:

Table I. 11 M Madrid. Resource Mobilisation

Persons	*Number*	*Vehicles*	*Number*
Municipal Police	2.488	Municipal police	942
SAMUR-Health professionals	215	SAMUR (ambulances)	119
SAMUR-Health volunteers	330		
Firemen	259	Firemen	38
Funeral Services	540	Funeral services	68
Clearing Machines	46		
Social workers	260		
Psychologists	150		
Educators	60		
Administrative	48		
Volunteers	460		

Psychological care for victims

Just a few hours after the terrorist attacks, the psychological care services for victims and their relatives went into operation. These services consisted of direct interventions among the affected people – mainly in IFEMA and the hospitals – and telephone attendance coordinated with the 112 emergency services. The Official College of Psychologists of Madrid 20 coordinated these services. Also, after the attacks, the Region of Madrid decided to organise a special psychological care service by engaging new staff for 18 months, to take care of additional needs.

11 M. Economic Costs

The results of the evaluation of the economic costs that can be attributed to the 11 March attacks are shown in table II. This evaluation was made by the application of conservative criteria to avoid any exaggeration in the numbers obtained. Therefore, these quantities should be considered as the minimum direct cost that the attacks incurred for the Madrilenian economy. Studies of the incidence of terrorism on the economy of countries or the regions in which those actions happened emphasise that, generally, even when such attacks are of great significance, the damages caused usually have a limited effect, only if they are considered individually and the terrorist threat is not persistent over time. Terrorism is a war of low intensity that produces a certain weakening of the economy in societies where they took place. This weakening only becomes significant when such attacks persist over time. This hypothesis is confirmed by data collected in this work, which confirm that the direct influence of the attacksof 11 March, in Madrid, has been limited. Furthermore, the effectiveness of the police and legal control has contributed decisively to the lack of the terrorist persistence.

Table II. 11 M. Economic Costs

Concepts	*Euros*
Rescue and initial attention to the victims	2.176.875 euros
Health cost of the attention to the victims	5.156.878 euros
Compensation to the victims	134.120.325 euros
Wage loss of the victims	2.375.988 euros
Psychological assistance to the victims	4.938.740 euros
March 12th demonstration	57.365.450 euros
Total cost (€)	211.584.762 euros

Source: Instituto de Análisis Industrial y Financiero (IAIF) – Universidad Complutense

The total amount turns out to be over 211.58 million euros. 63.4% of this number corresponds to the loss of 191 human lives and to injuries caused to almost 1,600 people directly affected by the attacks. Damages have been evaluated based on the compensation that victims are eligible to receive. A second important concept is the amount caused by the expression of the solidarity of society with those affected by such attacks. More than a quarter of the total cost considered by this study is related to the demonstration of 12/3/04. In third and fourth place, with an equivalent value around 2.5% are damages caused in railway infrastructures and housing, as well as the health cost of victim care.

DUSSELDORF AIRPORT

How insufficient rescue coordination claimed lives

are grounds for this assumption: A cartographer, who gave a witness statement during the ensuing trial, declared that, a few years ago he was given short shrift by the works fire service when offering to help with measuring and mapping out the airport grounds. According to media reports the witness was told at the time that, during rescue operations, guides would take external rescue services to where they would be needed.

Despite everything, the rescue teams managed to lead 2,000 people to safety. Due to the smoke level, many individual rescue operations had to be carried out using breathing apparatus; in some cases breathing apparatus suitable for long-term use. During the operation's first phase, a large number of people suffering from smoke inhalation needed care, for which many doctors and rescue personnel were being made available. At the same time as saving lives the fire fighters started tackling the fire in several places, something that proved difficult due to the confusing layout and heat.

Following the incident, the comprehensive rescue report compiled by the Dusseldorf Fire Service stated that it was only due to the quick assistance provided by the fire service and other rescue organisations, some of whom were also based in the surrounding communities, that the number of victims was not higher. Moreover, the report stated, '…buildings of this size, frequented by such large numbers of people, harbour unimaginable dangers which, in the future, must be addressed through optimisation of disaster prevention and control management'.

Nobody was called to account for the fire – the 11 defendants were fined but acquitted after a trial lasting five-and-a-half years. But changes have taken place at Dusseldorf Airport: With the reconstruction completed the airport is now deemed to be the safest in Europe and considered a model for other large airports. Communication was improved through the set-up of a central press office; equipment to help the fire service with orientation and location of victims was installed and significantly improved. Catastrophes such as this airport fire confirm the importance of coordination and cooperation between all the rescue services involved. Solo efforts cost lives.

Source: 112 spezial, Sonderheft D 3052 E, EFB-Verlagsgesellschaft, Beethovenstrasse 27, 63526 Erlensee)

NICOTINE ADDICTION

Over 50% of physicians do not have time to help smokers quit and 38% feel inappropriately trained, according to results from one of the largest international surveys of physicians' attitudes to smoking cessation, presented during September's European Society of Cardiology meeting in Barcelona.

Smoking is currently the world's leading preventable cause of premature death. In the EU, one hospitality industry employee dies each day due to exposure to tobacco smoke, but this is just the tip of the iceberg, said **Professor Bryan Williams**, University of Leicester, UK: 'Each year smoking kills 1.2 million people in Europe, including 450,000 from cardiovascular disease. Passive smoking is also associated with significant morbidity and mortality, including 7,000 deaths due to passive smoking at work and 72,000 deaths due to passive smoking at home.'

In the face of this alarming toll, an overwhelming majority of physicians surveyed said that smoking is difficult to treat – more difficult than high blood pressure or high cholesterol and on a par with obesity.

Like obesity it is harder to treat than high BP or cholesterol. Ian Mason PhD reports from Barcelona that cardiologists are urging a new approach to patients who smoke

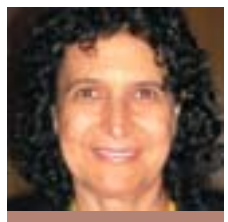
In the survey, some 2,836 physicians from 16 countries including France, Germany, Greece, Italy, Netherlands, Poland, Spain, Sweden, Switzerland, Turkey, UK were interviewed.

'The results highlight the practical difficulties doctors face in helping their patients quit smoking,' said **Professor Robert West**, Cancer Research UK. 'Whilst the considerable health risks associated with smoking are now relatively well known, the realities of enabling people to stop are proving more challenging. It is vital that smokers receive practical support and advice for quitting smoking from their doctors.'

Interestingly, the survey found a difference of opinion between physicians who smoke and those who do not. Only 57% of physicians who smoke stated 'smoking' as the most harmful activity for their patients, compared with 73% of non-smoking physicians, suggesting that some physicians who smoke may be underestimating the harmful effects of smoking.

Though a significant percentage of physicians say they discuss smoking with their smoking patients on every visit, or occasionally, their discussions generally focus either on repeating widely available public health messages or information gathering rather than actually facilitating quitting. Only 47% help the smoker develop a plan to quit, 39% recommend an over-the-counter (OTC) medication and 29% prescribe a prescription medication. North American doctors are more proactive with 76% helping the smoker to develop a plan to quit and 57% prescribing a medication, compared with 43% and 21% respectively in Europe.

Andrew Pipe: *'We are facing a Tsunami of preventable disease in years to come'*



Serena Tonstad: *'Smoking is not a manifestation of a weak will or character, but a chronic relapsing medical condition'*

The vast majority of doctors understand why quitting smoking is so difficult. Nearly all agree that smoking is an addictive behaviour and 81% consider it a chronic, relapsing medical condition. Indeed, 71% agree that smoking should be classified as a medical condition and 64% believe that if this were to happen, it would encourage more smokers to quit.

'To successfully combat deaths caused by smoking, everybody, both physicians and non-physicians, needs to reframe how we talk and think about smoking,' said **Professor Serena Tonstad**, Department of Preventive Cardiology, Ulleval University Hospital, Norway. 'Smoking is not a manifestation of a weak will or character, but a chronic relapsing medical condition caused by tobacco dependence. Many smokers may require medical treatment for this condition, because most smokers are addicted to inhaled nicotine. This addiction ultimately takes the life of one out of two smokers prematurely.'

When asked what would make it easier for them to help smokers to quit doctors were very clear.They agreed that they want more effective medication (81%), additional coaching on how to communicate and motivate smokers to quit (78%), and more widely publicised smoking cessation success rates (77%).

Professor Williams said that by 2010, the WHO estimates that the annual global cost of tobacco-related illness will be €407 billion. 'The number of Europeans dying from CVD due to smoking rose by 13% from 1990–2000. Although smoking has declined in many European countries, the rate of decline is now slowing. It is quite clear that in certain regions of Europe, particularly Eastern Europe, smoking rates are continuing to rise so I do not expect that the numbers dying from cardiovascular disease attributable to smoking will fall until new strategies begin to bite.'

The WHO estimates that under 5% of smokers who try to quit unaided manage to remain abstinent at one year. The physician has an important role to play as a 'partner' in helping patients quit, as well as providing professional advice and treatments to overcome tobacco dependence.

Professor Andrew Pipe, University of Ottawa Heart Institute, Canada, said that 86% of people in the EU are in favour of smoking bans in offices and other indoor workplaces, with 61% in favour of smoking bans in bars or pubs. Support is highest in countries where a ban has been implemented for more than one year, such as Italy, Sweden and Ireland.

'We are facing a Tsunami of preventable disease in years to come. It is so huge as to be almost incomprehensible,' said Professor Pipe. 'The evidence is quite clear, in Europe as elsewhere, that there is a huge burden of unnecessary morbidity and mortality which is produced by addiction to nicotine.'

THE BIG QUESTION

Could dinosaurs hold the key to solving human respiratory problems? By Meike Lerner

'In order to understand how something works, you have to look at the extremes, at the limits of the possible,' says **Professor Steven F Perry** (right) of the Institute for Zoology at Rheinische Friedrich-Wilhelms-Universität, Bonn, Germany. As far as respiratory biology is concerned, it was dinosaurs that reached those limits. Due to their enormous size and body weight they had to have a very well-developed respiratory apparatus. Prof. Perry, an expert in dinosaur research, has been able to unlock most of the secrets of their respiratory system.

'The dinosaurs' problem was the fact that body temperature rises proportionally to body size. This in turn affects the metabolism. In cold-blooded animals, the metabolic rate doubles with each 10 degrees of body temperature. Consequently, dinosaurs must have had an immense metabolic rate. To compensate for this, they had to take up lots of oxygen.' If we want to understand how this works we can look at birds, which still have a similar respiratory apparatus today. An avian lung can draw twice as much oxygen from the air as a human lung. Moreover, the bird lung has air-sacks that take in body warmth, which can be exhaled later. The respiration of dinosaurs must have happened in a very similar way.'

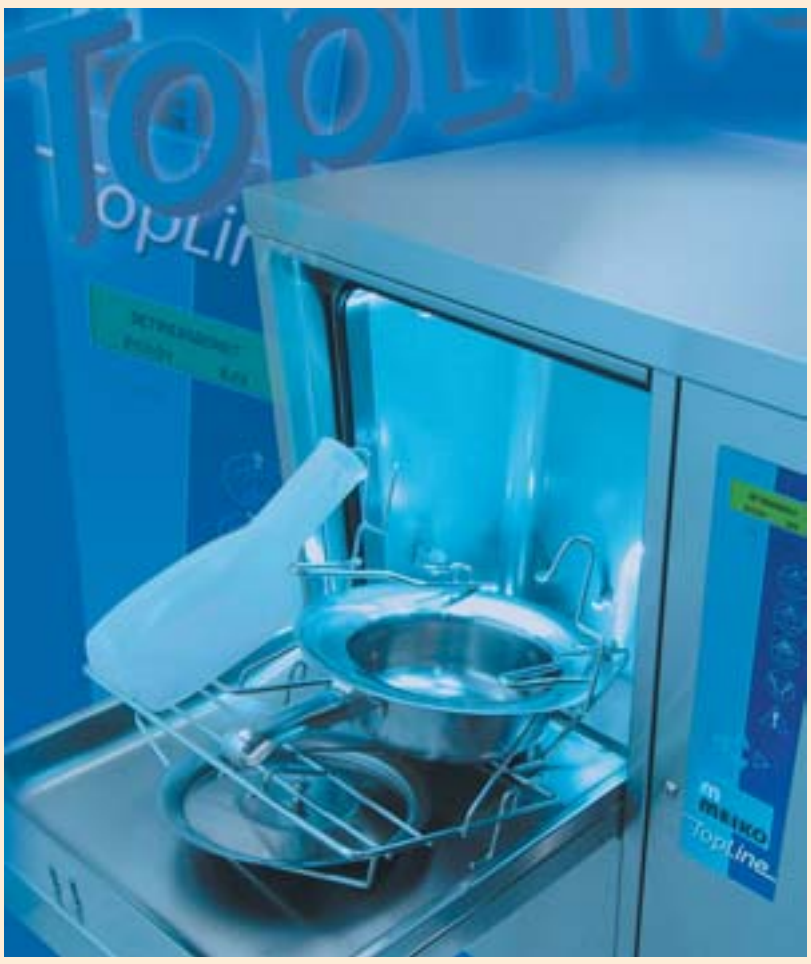
Such insights are relevant not only for the understanding of prehistoric animals but also for current research, Prof. Perry explained: 'Smaller animals, such as reptiles, have a wide variety of pulmonary 'construction plans' – and they all work. Here, metabolic rates are low and the lungs are large. That means the surface distribution is variable and the results are always successful. At the extreme ends of the scale, the possibilities are reduced, but that's where we see what's really important for respiration.'

Most importantly, however, we have to understand the links. How do size, diffusion capacity, gas exchange performance and the function of the pumping apparatus influence one another? These issues should be considered when we look at the respiratory apparatus as a whole. Thus, the scientists detect basic principles which – when looked at from an interdisciplinary point of view – can be relevant for human medicine as well.

In addition to dinosaur research, the interdisciplinary approach is another focus of Professor Perry's work. Last August, he organised the *1st International Congress of Respiratory Biology* (ICRB). 'I wanted to bring together people who work on the respiratory system of humans, plants, bacteria, fish, insects or dinosaurs in order to exchange results and find common ground. Basic research is very important here,' he explained.

The congress was a huge success and will be held again in 2009. Then, the organisers hope to attract more participants from human medicine, as there is enormous potential to learn from nature. Case in point: high-frequency respiration, meaning the fact that diffusion conditions (increase of molecular movement), can be improved by vibration. While this question is being researched in insects, it is relevant to paediatricians working with children who suffer respiratory problems. Prof. Perry concludes: 'This is only the beginning. But who knows? Maybe one day we will be able to implant air-sacks like those of birds and dinosaurs into the respiratory apparatus of people with breathing difficulties.'

Phenomenal success for bedpans




Markus Braun

Currently, the only bedpan cleaners with a totally sealed wash-chamber are the TopLine appliances made by Meiko. This feature protects staff, for example, against escaping steam when they remove utensils after cleaning (it also protects them from unpleasant smells). Integrated automatic disinfection management, combined with a novel telescopic rotary jet, produces enormous water and energy savings, whilst also achieving top level cleaning.

Additionally, if the appliance is fitted with the automatic door opening/closing technology, the door opens and closes at the wave of a hand. TopLine appliances also remove hygienists' concern about water-cooling utensils, which could cause recontamination by water-borne bacteria. The firm's new technology solves that problem: utensils treated in TopLine appliances are already cool at the end of the cycle, so are already dry, cool enough to handle and ready for immediate re-use. Additionally, the company's experts at Offenburg have reduced maintenance and service costs by using *M-Commander*, which enables precise analysis of the appliance's operating condition and status to be assessed on a PC or Palm PDA.

Available for a year, the TopLine range has achieved phenomenal market success. In conversation with **Markus Braun**, Manager, Sales and Marketing, Cleaning and Disinfection Appliances at Meiko, who is responsible for the project, we asked how this feat was achieved. 'In TopLine, Meiko has created an appliance which meets the long-held wishes of a wide range of customers and users – for example nursing staff, hygiene specialists and technical staff. At the start of the project,' he explained, 'their very different requirements were researched by our marketing team; their findings were then processed and incorporated into the appliance's design by our technical experts. The result is a product that can conquer the world! It meets the most stringent demands of the industrialised countries, a well as the more simple applications in the rest of the world. But, of course, this would be worth nothing without the efforts of our staff and sales partners internationally. Whether in production, design or sales, the success is due to our committed and highly motivated staff. I am happy to say that this, plus the unique advantages of TopLine, mean that our competitors must do a lot of catching up.'

Is the firm's production capacity sufficient to meet orders? 'The extraordinary demand showed that we had to overcome certain bottlenecks, but this does not cause me to lost sleep. We've already taken the right actions to satisfy demand, which are having the desired effect.'

The company, Based in Baden, Germany, Meiko's main market is in its own country. Other main markets are in Europe and Asia. 'The export share is steadily increasing and other companies confirm, time and again, that we are viewed as a global player in international markets'.

What looms in the immediate future? 'Things aren't getting any easier!' he replied. 'But we are going to stay out in front because we are flexible, committed and faster. This also makes us very close to our customers. Thanks to our strategy, hard work, readiness to innovate, our exceptional quality consciousness and passion for providing our customers with optimal solutions we remain on our successful course.'

WHAT ABOUT THE KITCHEN?

Every hospital is expected to be kept scrupulously clean, from the Accident & Emergency unit, to examination rooms, wards, surgical units and, of course, everywhere – and the list obviously includes catering areas.

Small wonder that people in the United Kingdom were shocked to read a report published this month by the independent consumer group *Which?* This reveals that hygiene standards in some hospital kitchens are appalling.

Although the Department of Health' efforts on hospital food improvement has shown effect in recent years, the group also found, from an online survey of 833 National Health Service (NHS) hospital patients, that 29% reported still feeling hungry after their hospital meals, compared with 4% of private patients.

***Which?* Researchers also had reviewed hygiene inspection reports, covering three years, from 50 hospitals. Among hygiene problems identified were lack of soap or hot water, poor refrigeration, with out-of-date foods and poor food safety procedures. Along with this, some had mould on cooking equipment, and reports of vermin, such as mice and cockroaches.**

In addition, medical supplies had been stored in some hospitals fridges specifically for food.

Of course, not all 50 hospital catering facilities were unhygienic; some were praised for cleanliness.

'You'd at least expect hospital kitchens to be clean,' commented Neil Fowler, editor of Which?

'Our survey also shows a low level of satisfaction with NHS hospital food. The government paints a rosy picture but the reality is very different, with many patients left with a nasty taste in their mouths.'

In 2005, the independent *Patient Environment Action Teams* found that 90% of hospitals were rated good or excellent for food standards compared with 17% in 2002.

This October, the independent *Healthcare Commission* reported that over 96% of the country's healthcare trusts met hospital food standards, and provided some 'excellent menus', but added that it recognised more improvements are needed, and work is now under way.

A large chamber washer/disinfector

Launched this year, by Steris Corporation in the USA, the Hamo Jupiter Large Chamber Washer/Disinfector incorporates the latest technology that meets up-to-date European and international standards for washing/disinfecting, the company reports.

Designed to clean and dry containers, case carts, trolleys and other large items, the Hamo Jupiter has five standard and 60 user configurable washing and thermo-disinfection programmes. It is available in single-door or pass-through versions and incorporates many standard features.

The machine's large, round cabin corners are less likely to cause biofilm build-up, the firm points out. The inner floor and ceiling are open, and over 100 oscillating stainless steel spray nozzles are directed towards them to ensure the whole unit is automatically cleaned during each cycle.

In the Medical 15 , a 15 kg medical pass-through washer, dual opposed doors are separated by a sanitised partition, to avoid cross contamination

Meet them in Minsk

Prestigious French firm seeks international distributors

Danube - one of the world's biggest manufacturers of flatwork dryer ironers, barrier washers, tumble dryers, and front-loading washer extractors - will exhibit its products at the 2007 laundry and dry-cleaning exhibition, organised by Minskexpo and held in Minsk, Belarus, from 21-24 February.

Although the company has distributors in over 52 countries, it is seeking even more distributors worldwide. 'Those prepared to be proactive will be able to offer quality, innovation and competitive prices to OPL markets,' the firm emphasises. The new distributors will be fully supported to market and promote these branded products as well as provide backup for their local customers.

The distributors' service staff will also receive training from Danube's own engineers (the firm has a registered training centre in France). These engineers can also help with the commissioning of equipment where needed, for example during big installations.

'The focus for distributors will be on washers and dryers - where the volume demand lies,' Danube said. (The firm's full range of laundry equipment includes front-loading washers from 6 to 55 kg, side-loading washers (including gas heated washers) from 27 to 67 kg, tumble dryers from 6 to 65 kg and barrier washers from 15 to 67 kg. Finishing equipment includes dryer ironers with widths from 1.4 m to 3.2 m with cylinder diameters of 200 mm, 320 mm and 500 mm, and optional feeders, folders, cross folders and stackers).

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

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

Video-conferences – These can be held with suppliers and sub-contractors, and to offer face-to-face advice for service engineers.

At www.danube-international.com distributors benefit from technical help in all areas, including spares, safety aspects and other data, and access maintenance instructions, technical drawings, electrical diagrams, interactive 3-D drawings and more.

Design and sizing of laundries is another web service.

Water purifiers for renal care network

UK – The 512-bed Leicester General Hospital, part of the University Hospitals of Leicester NHS Trust, provides a specialist renal service for up to four of the UK's eastern counties. Patients have received dialysis there since 1974, and today the hospital has over 800 established renal failure patients – a number expected to grow by about 8% annually. Treatment options for patients include haemodialysis, home haemodialysis, continuous ambulatory peritoneal dialysis, automated peritoneal dialysis and renal transplantation. It's one of the largest renal programmes in the UK, with satellite units in six other hospitals providing treatment for chronic renal problems as well as the provision of end-stage renal failure therapy. A Home Care Team also provides ongoing care to patients in the community who are on, or about to commence, dialysis treatment.

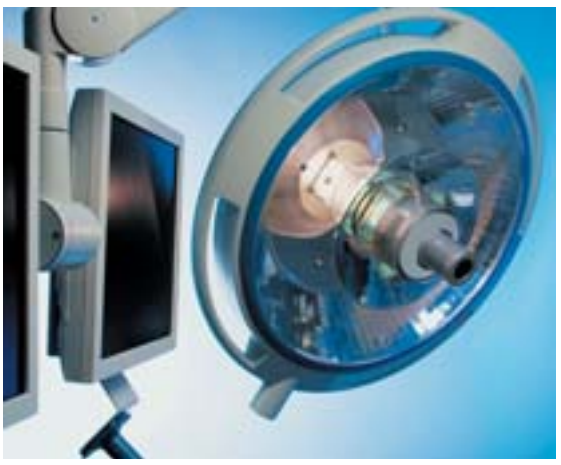
Recently, rather than installing a central water system, the hospital purchased 12 *HemoRO Hot* single station water purifiers, from ELGA Process Water, to supply its newest renal ward. 'We're building a new community-based satellite station, which will have a central renal water treatment system. It should be ready in two years,' explained Danny Withers, Renal Technician at Leicester General Hospital. 'In the meantime we have to cater for the growing number of patients here. We increased an existing eight-bed unit up to 12, but the central water system wasn't big enough so we decided, rather than spending a lot of money to increase the central system for a two year period, we would add four single station HemoRO Hot units. We've also provided a new temporary eight-bed unit and, for the same reason, have installed 8 HemoRO Hot units there.'

HemoRO Hot

The HemoRO Hot is microprocessor-controlled with automatic hot water sanitisation and the ability to access operational information and sanitisation records via the clear display and RS232 interface, ELGA reports. 'The high integrity hot water sanitisable reverse osmosis membrane provides a complete barrier to bacteria and endotoxins to ensure compliance with current renal water quality standards.

When the new satellite station opens, Danny Withers plans to use the HemoRO to start replacing the hospital's 20-year-old fleet of home dialysis water purifiers. 'The HemoRO Hot means I can get rid of sanitising chemicals in homecare applications,' he explained, 'and that will provide a higher level of safety for patients and nursing staff as well as being more eco-friendly.'

** ELGA Process Water is part of Veolia Water Solutions & Technologies (VWS), a subsidiary of Veolia Water.*



OR LIGHT WITH INTEGRATED CAMERA

Launching its space-saving Stella OR light with an integrated camera1 during this year's meeting of the *European Society of Anaesthesiology* (ESA), Dräger Medical explained: 'There is no need for an additional extension arm to suspend an external camera. The camera module is flexible and can be inter-exchanged within other operating rooms. In the future, existing Stella Medview OR lights can be retro-fitted to accommodate this module.'

The integrated auto-focus camera remains pinpointed on the operating field, and can be controlled by an infrared remote control, or from a control panel located on the wall in the non-sterile area.

To advance process optimisation in the operating theatre, during a procedure the work of both surgeon and anaesthesiologist needs enhancement. An integrated camera that can transmit its video signal directly to the anaesthesiologist's haemodynamic monitor provides such support, the company points out: 'If the monitor is a Kappa XLT, the video image from the camera is directly accessible at the workplace. In addition to seeing the patient's traditional vital signs, the anaesthesiologist can also view images from the camera as picture-in-picture.'

Those wishing to observe surgery, e.g. for learning purposes, can do so via a monitor also attached to the central axis. The one-chip camera is based on a Sony module and transmits still and moving images live - and in colour.

** The product is not available in all countries. Release in Europe is imminent.*

Launching – today at MEDICA!

System enables ventilator to be controlled by the patient's brain

MAQUET Critical Care is launching the NAVA (Neurally Adjusted Ventilatory Assist). Combining this with the firm's SERVO-i ventilator is a new approach to mechanical ventilation, MAQUET reports: 'It allows the patient to control the ventilator with his or her respiratory centre. NAVA represents a paradigm shift in the area of ventilation therapy.'

Signals from the brain's respiratory control centre are transmitted through the phrenic nerve to the diaphragm, where a catheter captures the electrical activity (Edi) and feeds it to the ventilator. The ventilator responds by providing the requested level of support to the patient. As the ventilator and diaphragm work with the same signal, the coupling between the two is virtually instantaneous, MAQUET explains. 'NAVA is a completely new mode of mechanical ventilation where the ventilator is controlled by the patient's respiratory centre on a breath-by-breath basis,' said Christer Sinderby, Assistant Professor, St. Michael's Hospital, Toronto, Canada. 'In addition to being a distinct mode of ventilation, NAVA also enables a complete evaluation of the neural respiratory control by capturing the electrical activity of the diaphragm. In other words, it offers a unique monitoring capability for the medical staff.'

Conventional mechanical ventilators sense patient effort by either a drop in airway pressure or a reversal in flow, the last and slowest reacting step in the chain of respiratory events. NAVA, on the other hand, senses the electrical activity of the diaphragm – the earliest respiratory signal that can be detected.

NAVA benefits:

- Improved synchrony between the patient and the ventilator
- Lung protection through avoidance of over or under assistance of the patient
- Improved synchrony helps minimize patient discomfort and agitation while it promotes spontaneous breathing
- The Edi signal can be used as decision support for medical staff concerning unloading or extubation
- The Edi signal can be used as a unique monitoring tool providing data on respiratory drive, volume requirements, effect of ventilatory settings and to gain indication for sedation and weaning

The NAVA function is available on MAQUET's SERVO-i ventilator; the only additional need is the NAVA software, an Edi Module and an Edi catheter. A NAVA upgrade for an existing SERVO-i ventilator is possible.

MAQUET is in Hall 12. Stand D 51/52

New generation camera and video communication systems

Two new camera systems, the ChromoVision 1 C and 3 C developed and produced by Berchtold, include high-performance auto-focus, automatic brightness control and fully automatic white balance functions - combined with ORICS, the multi-media communication system that includes real time video streaming and image storage.

Positioned in the centre of the surgical light, the cameras deliver shadow-free images in all lighting situations and can be integrated with a single, easy movement, the firm reports. 'Camera rotability is a great convenience for surgeons. It can be turned on its own axis by motor, always delivering upright images. ORICS can either be combined with our cameras or as a stand-alone version combined with any existing camera.'

ORICS & camera

The high-quality images and surgical sequences can be stored for further administrative tasks or used for training or quality assurance.

The Sopro 640 insufflator

Having incorporated customers' feedback, the Sopro insufflators' product line has been enlarged to include:

A bigger display - to show pre-selectable intra-abdominal pressure, allowing accurate adaptation to each patient; intra-cavity pressure; gas flow; alarm messages.

Pressure-controlled insufflation – enabling selection of insufflation mode high or low pressure.

Secondary functions – Control of bottle pressure; desufflation mode; a menu bar showing adjustment and pre-selection possibilities.

The manufacturer adds that these improvements are 'extremely simple to operate'.

SCIENTIFIC RESEARCH

NEUROBIOLOGY

THE 2006 EPPENDORF AND *Science* PRIZE

The annual international research prize of US$25,000 has been awarded to Doris Tsao PhD, of the USA, who is working at the University of Bremen, Germany. The award was presented for her work 'What's in a face? Recognition at the cellular level'.

The Prize is sponsored by Eppendorf AG, which produces systems and research tools for the biotechnology industry, and the journal, *Science*.

The Prize is open to young scientists who have obtained their PhD or MD within the past 10 years, and who have made outstanding contributions to neurobiological research, using methods of molecular and cell biology. This year there were around 50 applicants, from which the winner was chosen by a committee of scientists chaired by Dr Donald Kennedy, Editor-in-Chief of *Science* magazine.

The deadline for applications for next year's award is June 15, 2007. Details: www.eppendorf.com/prize.

Blood test may detect Alzheimer's disease before symptoms appear

100 years ago this November, Dr Alois Alzheimer produced the first description of the disease that would take his name. Today, in the UK, France, Italy or Germany around 750,000 to a million people suffer Alzheimer's disease. There is still no cure, the afflicted and their families still suffer, and research is under-funded.

However, a new blood test is under development that has detected two kinds of proteins found in people suffering Alzheimer's, and this could be used to diagnose the disease long before there are any symptoms, thus enabling earlier treatment.

Aiming to develop a biomarker to aid diagnosis or monitor disease progression, researchers led by Dr Simon Lovestone, at the MRC Centre for Neurodegeneration Research, King's College London, and the Institute of Psychiatry, London, have used two-dimensional gel electrophoresis coupled with mass spectrometry to search for biomarkers in peripheral tissue. Describing their study* Dr Lovestone said: 'We performed a case–control study of plasma using this proteomics approach to identify proteins that differ in the disease state relative to aged controls.' For the discovery-phase proteomics analysis, 50 Alzheimer's dementia patients and 50 healthy elderly people, were recruited. For validation, 511 people with Alzheimer's and other neurodegenerative diseases and healthy elderly volunteers were examined. 'Image analysis of the protein distribution of the gels alone identifies disease cases with 56% sensitivity and 80% specificity. Mass spectrometric analysis of the changes observed in 2-D electrophoresis identified a number of proteins previously implicated in the disease pathology, including complement factor H (CFH) precursor and -2-macroglobulin (-2M). Using semi-quantitative immunoblotting, the elevation of CFH and -2M was shown to be specific for Alzheimer's disease and to correlate with disease severity although alternative assays would be necessary to improve sensitivity and specificity. These findings suggest that blood may be a rich source for biomarkers of Alzheimer's disease and that CFH, together with other proteins such as -2M may be a specific markers of this illness.'

***The study is funded by the Alzheimer's Research Trust, UK.**
Literature: '*Proteome-based plasma biomarkers for Alzheimer's disease*'. A Hye, S Lynham, M Thambisetty, M Causevic, J Campbell, H L Byers, C Hooper, F Rijsdijk, S J Tabrizi, S Banner, C E Shaw, C Foy, M Poppe, N Archer, G Hamilton, J Powell, R G Brown, P Sham, M Ward and S Lovestone Brain 2006 129(11):3042-3050; doi:10.1093/brain/awl279

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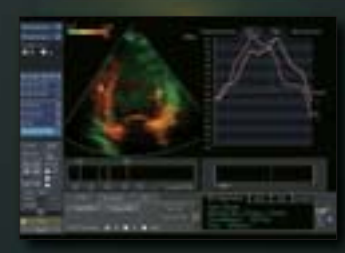

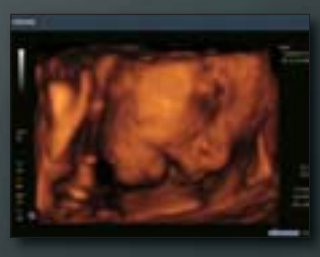

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