17 NOVEMBER 2015

EUROPEAN HOSPITAL @ MEDICA

2

SPECIAL ISSUE: MEDICAL, TECHNICAL, PHARMACEUTICAL, INDUSTRIAL NEWS

DUSSELDORF • TUESDAY • 17 NOVEMBER 2015

Telemedicine in pathology

Higher costs and increased expenditure on time and resources are limiting factors

Increasing requirements for specialisation and diagnostic quality in pathology, on the one hand, and the importance of pathology findings for treatment planning, on the other, call for new solutions in pathomorphological diagnostics. One important starting point is the fast-paced opportunity for digitisation along with communication systems that facilitate the storage and transfer of large data volumes.

These open up new opportunities in pathology summarised by the term digital pathology. 'The term stands for procedures which facilitate improvements in quality and improved exchange with colleagues in the same field who may have a different or special expertise in certain areas. It also serves the improvement of communication with hospitals, both internally and across larger distances,' explains Professor Hans-Peter Sinn MD, who works at the Institute of Pathology at Heidelberg University Hospital.

Telemedicine in pathology used to be termed 'telepathology'. But this only means that a diagnosis is carried out over a certain distance for conventional preparations. It has a historical background, as there were efforts in the 1990s to transmit diagnostic images via bundled ISDN lines or similar, i.e. using out-dated means that have long been abandoned due to the unsatisfactory technology and limited validity.

Pathology and, in particular, tumour pathology, is increasingly integrating non-morphological procedures such as NGS (next generation sequencing) on which classifications are dependent. Histological preparations are now primarily digitised and made available by the server via virtual microscopy. 'The term 'digital pathology' not only comprises the transmission of images but also their metadata and additional information concerning the case, which the pathologist can use to gain a more complex understanding than with a microscopic image alone,' Professor Sinn explains.

Professor Hans-Peter Sinn MD, from the Division of Gynaecopathology, Heidelberg University Hospital

Process of digitisation is unstoppable

Digitisation in pathology facilitates improved standardisation, transparency and digital archiving of microscopy. However, there is also another important factor. 'Telemedicine in pathology allows the networking of pathologists with one another in an uncomplicated way, particularly with regards to specialist areas of expertise. There are networks for haematopathology and gynaeocopathology where content about histological preparations, research concepts or molecular procedures can be exchanged,' Sinn reports.

Telemedicine not only concerns patients and individual cases but also includes continued education, quality circles, lecture series, tumour registers and reference centres.

Is everything positive, then? By no means! 'The process of digitisation is unstoppable, but in the case of routine pathology has only just begun and poses particular challenges to this field. This concerns, for instance, the lack of standardisation of platforms, image formats and interfaces of virtual microscopy with pathology- and hospital information systems.

Currently, there is also a lack of non-proprietary solutions for the networking of subsystems for molecular pathology as well as immuno-histochemistry.'

Furthermore, financial aspects also play an important role. It would be misleading to assume that digitalisation and electronic provision of histological preparations and results definitely lowers costs per se by, for example, assuring that duplicate examinations are avoided. 'This is not actually the case with digital pathology,' says the expert, and substantiates this.

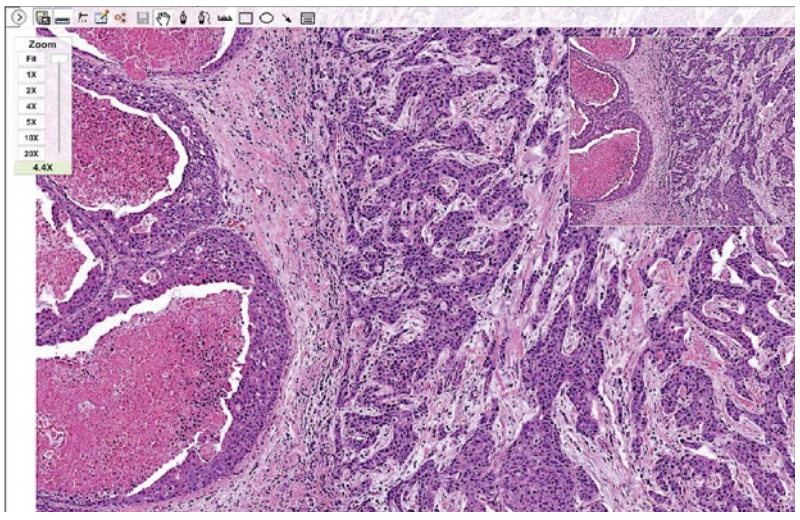
'Digitising histological preparations, or other pathological findings and making them available electronically for transmission if necessary, involves higher costs. We depend on the conventional histological, immunohistological and molecular methods and then we have to digitise them in a secondary procedure.

Therefore, digitisation is a secondary, expensive step. These days it is still easier and cheaper to put samples into envelopes and send them off. The costs of digital pathology are in the high six-figure range and therefore significantly higher than exchanging preparations in the conventional way.'

The amounts of data that need processing are a further problem: 'Due to the microscopic resolution needed, the image data takes up a lot more storage space than data stored in radiology, for instance. A single histological preparation, once digitised, converts into around one gigabyte of data. If we want to digitise our entire microscopic diagnostics we would generate several hundred terabytes of data a year and, over a period of several years for routine image documentation in microscopy for just one institute, would end up in the petabyte range. This is another reason why digitisation in pathology is still a lot less common and standardised than in other areas of medicine,' the expert points out.

Sinn is essentially in favour of further digitisation, which, as said, he believes to be unstoppable. However, he warns against being naïve about this: 'The introduction of telemedicine on a broader scale primarily improves the quality of care, and only secondarily the efficiency.

'In the future this is going to result in the opportunity to work more objectively and in a more networked manner through the increased digitisation of medical results. Therefore, the patient has the potential advantage of improved care, but higher costs and significantly increased expenditure regarding time and resources are limiting factors, particularly for pathology.'

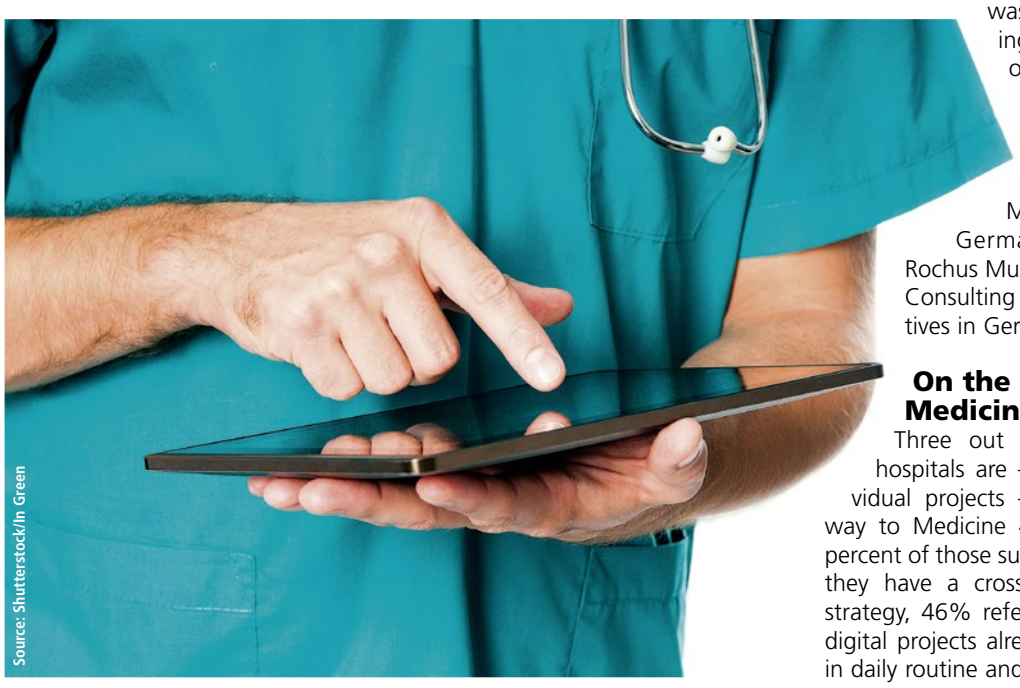


Telepathological depiction of a breast tumour in virtual microscopy

The digitisation of healthcare economy

For years discussions have been rife regarding the economic efficiency and efficiency of information and communication technology. In Germany the need is to catch up with the interoperability of technical standards and cross-industry approaches, Anja Behringer reports

German hospitals continue to face big economic challenges. Many clinical processes and workflows need to be controlled in a better way and require reorganisation to ensure survival. In the hospital of the future information technology (IT) will play a central role – from the management of administrative and medical data to the networking with other hospitals to obtain fast access to diagnostic results etc. Therefore we should look at how hospital operators can be supported and encouraged to increase their investments in the expansion of IT infrastructures. This is also a political topic.



Source: Shutterstock/In Green

Controlling clinical processes with IT

The Federal Government is using the 'Law on Safe Digital Communication and Applications in the Healthcare Sector' (E-Health-Law) to pave the way for a speedy expansion of a comprehensive digital infrastructure with a mandatory timetable.

Simultaneously, there will be financial incentives for surgeries and hospitals to digitise data sets for emergency cases and to switch to electronic letters. However, there are still data protection issues and the subject of patients' rights of self-governance over their healthcare data to be resolved.

The Study 'Digitisation of the Healthcare Industry' was introduced during the Conference on Health Economics in Hamburg: 'How far along on the way towards Medicine 4.0 are German hospitals?' Rochus Mummert Healthcare Consulting asked 310 executives in German hospitals.

On the way to Medicine 4.0

Three out of four German hospitals are – at least in individual projects – already on the way to Medicine 4.0. Twenty-eight percent of those surveyed stated that they have a cross-company digital strategy, 46% referred to individual digital projects already implemented in daily routine and 10% stated they were running test projects that are not yet completed. Eight percent are currently only watching developments in this field from the sidelines and 8% have not had any exposure to it at all.

The largest obstacle on the way to Medicine 4.0 is lack of finance – confirmed by 65% of all those surveyed – and 41% believe that the largest obstacle is particularly a general fear of change in hospitals. Two among every three hospital executives really do want to work in a more digitised environment. A further quarter could imagine themselves doing so, but would like to slow down the speed of this digital transformation.

However, those currently only just applying for jobs in the sector have to demonstrate a little more enthusiasm about their digital affinity. In the future, every other new job profile for business executives in the hospital will need digital know-how.

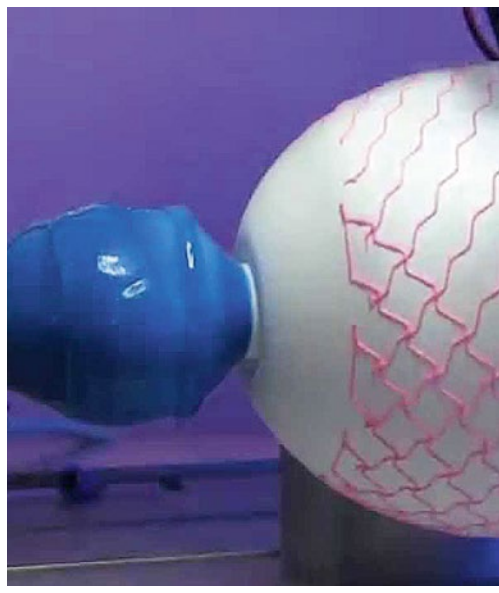
Every other hospital also deems medical and nursing care of patients as suitable areas for digitisation.

When asked which area will benefit most from information technology, 83% of those surveyed first stated purchasing, followed by administration, resource planning, finance and accounting. Around half voted for medical/nursing care.

Asked in which departments the workflows in the hospital will be changed the most through increasing digitisation over the next five to 10 years, 62 percent stated that they believe it would be administrative tasks, expecting a reduction in bureaucracy. 49 percent expect big changes in medical care and 37 percent also expect there to be changes in nursing care.

The digital transformation to Medicine 4.0 will definitely be a hospital topic. With professional introduction, this should not only benefit the budget but also the efficiency of employees' daily routines.

3-D pr



Report: Mark Nicholls

With 3-D printing revolutionising manufacturing, its healthcare potential is being explored for medical devices, prosthetics, dentistry and drug development.

One area under the spotlight is the creation of artificial muscles using a 3-D printing system.

In early November, Dr Fergal Coulter, who has played an important role in helping develop the technique, led discussions on the concept during a session at the EHI Live conference in England.

During our *European Hospital* interview, he outlined the manufacturing process, which he invented for his PhD, to create a system that could fabricate tubular artificial muscles.

His focus was on Dielectric Elastomer Actuators (DEAs), which he proposes could be used potentially to create a fully implantable, electrically actuated, cardiac assist device.

Bio-robotic devices and prosthetics

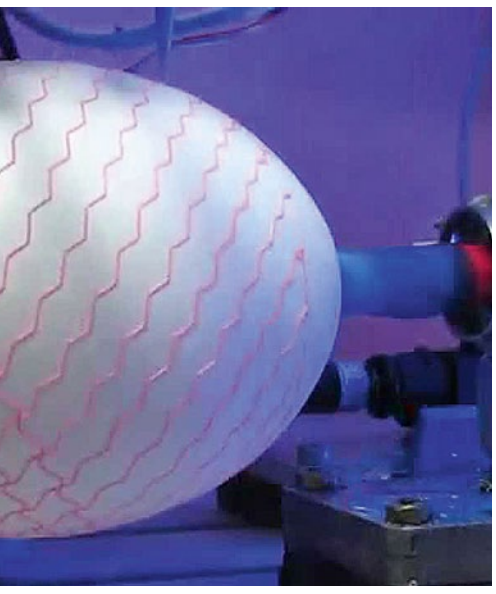
Coulter, currently with University College Dublin and the Swiss Federal Institute of Technology in Zurich, said Dielectric Elastomers are a subclass of electro-active polymers, often referred to as 'smart materials' or 'artificial muscles'.

Whilst the technology is still evolving, there is hope that they can eventually be used within in-vivo bio-robotic devices and prosthetics.

The process to create the artificial muscle or cardiac device involves a 3-D printer capable of spraying multiple thin layers of silicone in a tubular fashion on to a rotating form, or mandrel. 'These layers can be used as part of a solid state actuator, which when stimulated with a voltage will expand in area and, in doing so, act to pump blood – or any other fluid – in a peristaltic fashion,' Coulter explained. 'I designed the mandrel in such a way that compressed air can be passed through it from its central core to outer surface. Doing so has the effect of inflating the silicone layers, imparting a mechanical strain in the elastomer. This strain greatly improves the actuators' efficiency and reliability.'

With a need to maintain some of the mechanical strain after the 'balloon' is deflated, he designed and built the printer so it could measure – via a 3-D scan - the shape of the inflated structure, then calculate and print the geometry required for the extrusion of a hard but collapsible support lattice around the outside of the balloon. 'When the compressed

rinted muscles



3-D/4-D printing of inflatable structures

air is removed, this structure somewhat constrains the actuator layers - holding them under a degree of tension,' he said.

Soft, stretchable silicone layers

At EHI Live, in the live streamed session '4-D Printing of Inflated Structures for use in Dialectic Elastomer: Artificial Muscles?' the 4-D printing aspect referred to the fact that the shape of the object changes during and after the course of being printed.

The technique involves soft, stretchable silicone layers being interleaved and separated by conductive electrodes. When these electrodes are charged, they are attracted to each other electromagnetically and the force generated has the effect of compressing the silicone in one axis, thus expanding it in the other two.

Coulter sees the potential for the 3-D artificial muscles to be used in a number of areas. 'There's good potential for these to see use as active prosthetic sphincters and oesophagus and cardiac assist devices, as well as in non-clinical applications, such as in soft robotics and in space.' However, there is still more development work to be carried out before there is a clinical application.

The focus of his PhD, when at Nottingham Trent University (NTU), in England, was on the passive components of the device and design and building the 3-D printer itself. 'Work is still needed in printing the conductive electrodes and control circuitry,' he said, 'along with testing and approval from regulatory bodies.

Dr Fergal Coulter divides his time between University College Dublin and the Swiss Federal Institute of Technology in Zurich (ETHZ), an engineering, science, technology, mathematics and management university. Much of his work is based on fabricating bio-engineered scaffolds for diabetes research along with 3-D/4-D printing of alternative cardiac devices.

But I have completed the first step in building what is a complicated and challenging device.'

NTU, with England's National Health Service (NHS), has patented the concept with a view to further research and development.

In the longer term, Dr Coulter foresees great benefits for patients. 'As a pulsatile cardiac assist device, this could increase the mobility of patients who currently use a pneumatic aortic balloon pump, by removing the need for trans-cutaneous tubing, he explained.

'In some cases, constant flow "total artificial hearts", or indeed full surgical transplants, may not be needed. The primary purpose of the device is to increase the health of the existing heart by increasing the flow of oxygenated blood to the myocardium itself. Those suffering from oesophageal dysphagia or incontinence could also benefit.'

MAKE A NOTE:

Medica Education Conference
Symposium Neurology/Radiology:
MRI in neurology

Tuesday, 17 Nov 2015
12.45 p.m. – 2.15 p.m.
Room: 15
Chairman: Prof. Dr. Jens Fiehler, Hamburg

12.45 p.m. – 1.15 p.m.
Neuro MRI: Overview and cases
Prof. Dr. Jens Fiehler, Hamburg
1.15 p.m. – 1.45 p.m.
Neuro MRI: Diffusion
MD, PhD Johan Wikström, Uppsala
1.45 p.m. – 2.15 p.m.
Neuro MRI: Spectroscopy
Dr. Petra Pouwels, Amsterdam

INTERDISCIPLINARILY ACCEPTED AND MANDATORY STANDARDS ARE LACKING

Advancing the evaluation of telemedicine

Although there are many telemedically supported care concepts in Germany, most are still model projects. So far, only a minority has become part of nationwide, standard medical care. Methodically solid and thoroughly published evaluations can help to make the effectiveness and cost effectiveness of telemedicine applications more transparent for decision makers. With their recently developed principles for the evaluation of telemedical applications Katrin Arnold and Madlen Scheibe, at the Centre for Evidence Based Healthcare (ZEGV), University Hospital Carl Gustav Carus, Technische Universität Dresden, have created systematic guidelines for this purpose

The Issue - To date, a considerable number of telemedicine projects is either not being evaluated or the results of the evaluations are not, or only partly, published. 'This obstructs the potential knowledge gain for the healthcare system enormously,' says Katrin Arnold, and Madlen Scheibe adds: 'When evaluations of telemedicine applications are carried out these are of very varied methodical quality.' Therefore, various studies with methodical weaknesses have limitations as to their validity. There is a lack of interdisciplinarily accepted and mandatory standards. 'On the whole, the aforementioned problems are a hindrance when it comes to compiling resilient evidence on the effectiveness and cost effectiveness of telemedicine,' Scheibe explains. 'Against this background we have developed an evidence- and consensus-based set of evaluation principles to accompany the project CCS Telehealth - Eastern Saxony.'

Evaluation principles

Due to the aforementioned problems encountered with evaluation to date, there have now been efforts for some years to draft suitable methodological standards. There are big differences in quality with the ground rules for evaluation published to date – some (groups of) authors formulate their principles on the basis of systematically researched literature, and/or on the basis of a consensus shared by several experts. Others, however, make the process less transparent, which ultimately provides the opportunity to publish subjective, individual opinions. 'In our research we have systematically researched studies on evaluation principles that are based on systematic reviews, or on consensus procedures,' Arnold makes clear.

'From these we have extracted suggestions for evaluation principles which were then subjected to a formal consensus procedure with an interdisciplinary panel of experts. Our multi-stage procedure therefore based itself on the highest developmental level for medical guidelines,' she explains.

The agreed evaluation principles provide orientation for best practice in the planning, implementation and publication of telemedicine evaluations. They include, for instance, recommendations on study characteristics, outcome parameters and reporting standards (see box). Developed initially for quality assurance in the context of the CCS Telehealth Eastern Saxony Project, the intention was very much for these principles to be seized upon by other projects and initiatives.

Madlen Scheibe studied sociology and earned her doctorate in Health Sciences at Technische Universität Dresden. She is currently working as a research associate at the Centre for Evidence Based Healthcare at the University Hospital Carl Gustav Carus in Dresden. The focus of her research is on telemedicine and mobile health, particularly on the evaluation and quality assurance of innovative care concepts and the acceptance of telemedicine by older target groups.

Katrin Arnold studied sociology at Technische Universität Dresden. After several years of scientific research work at the Mental Health Services Research Unit at Ulm University she is currently working as a research associate at the Centre for Evidence Based Healthcare at the University Hospital Carl Gustav Carus in Dresden.
The core subjects of her research are telemedicine evaluation as well as psychiatric and neonatal care.

Intention

'We hope that the principles, together with other current initiatives in the field of telematically supported care concepts, will pave the way for a more wide-ranging use of telemedicine as part of standard medical care,' emphasises Katrin Arnold.The methodically solid, regular evalua-

THE PERFECT PARTNER FOR GYNAECOLOGY AND OBSTETRICS: THE SAMSUNG ULTRASOUND SYSTEM WS80A

Premium all-rounder for diagnostics and

Since December 2014, Dr Viola Schure and Dr Frank Schure have been using three Samsung WS80A Elite ultrasound systems in both sites of their joint practice in Hardheim and Adelsheim, Germany. The WS80A Elite not only offers excellent image quality and versatility in gynaecology, obstetrics and breast imaging, but also ElastoScanTM – a functional package that facilitates the diagnosis and surgery of breast cancer and other breast diseases. Moreover, one of the systems is used in other types of surgical interventions

"Elastoscan is the first tool to allow us rather clear differentiation of let's say a filled cyst and fibroadenoma or carcinoma," explains Dr Frank Schure and adds "Even mixed carcinoma and fibroadenoma that contain carcinoma are well visible." ElastoScanTM is a Samsung elastography technology which produces an elastogram showing the 2D image as well as the stiffness of the tissue in question on a colour-coded image. When breast cancer is suspected the physicians also use the WS80A's ElastoScanTM function to differentiate tissue structures and to get a first idea of mass dignity. "Thanks to the high 2D resolution we can detect breast tumours as small as one to five millimetres," says Dr Frank Schure. Statistically speaking women who receive treatment of cancer lesions smaller than 10 mm have a probability of survival for the next five years of 98.3 percent (smaller than 5 mm: 99.2 percent). Moreover these women usually can undergo breast-conserving surgery and rarely require major plastic surgery or chemotherapy. (Tumour registry of the Tumorzentrum Munich, Germany; Institute of. Biometrics; Data 1996-2002; Dr Birtel; Radiology Institute; Hamburg)

Frank and Viola Schure use the facilities of their cooperation partner, the hospital Hardheim, to perform breast cancer and other gynaecological surgeries, in total approx. 450 interventions annually across the gynaecological board. Here, another advantage of the WS80A Elite comes into play: the system's mobility.

During surgery the WS80A allows the physicians to easily localise the tumour without having to use markers or clips. "After the incision and the subcutaneous preparation we fixate the tumour under ultrasound guidance with a Kocher clamp – thus we can see the instruments very well," says Dr Schure.

At the same time the physicians delineate the tumour, if the lesion turns out to be spiculate, the ultrasound system is used to highlight spicules for closer examination. "We can sonographically determine the margins to completely remove the tumour and avoid a second intervention," Dr Viola Schure adds. In short: less loss of breast volume, fewer plastic corrections, fewer follow-up interventions and shorter surgery times. As soon as the tumour has been entirely removed it is placed on the instrument table, a marker is applied for the pathologist and ultrasound images are immediately generated. Thus the physicians determine the resection margins right in the operating room and verify that indeed the complete tumour was removed.

The tissue is sent to pathology but the fact that it was imaged right then and there,. in the OR, means that the need for re-resection is less likely.

"The fact that we do not need to have a second surgery is a major success, because we image the tissues immediately post-resection and can assess the margins quite well," explains Viola Schure.

This procedure allowed surgeons to dramatically reduce the number of re-excisions (see: Krekel et al. Lancet Oncol. 2013;14; 48-54; re-excision rate dropped from 17 to 3 percent; excision volume in breast-conserving surgery was reduced by 19 percent).

The ultrasound system WS80A is highly versatile and can be used in all types of exams that are performed in a gynaecological practice: vaginal, breast and obstetric ultrasound, Doppler and invasive diagnostics, to name a few.

Frank and Viola Schure see 6,200 to 6,600 patients per year. "With such a high throughput we need to be able to make accurate diagnoses quickly," says Dr Viola Schure. "Therefore we need a reliable ultrasound system with fast responses – and the WS80A fits the bill exactly." Workflows benefit from the easy operation of the system and the quick boot and shut-down. Moreover, the WS80A is equipped

Principles for quality assurance/evaluation of telemedical applications

1. Evaluation must be a mandatory part of planning and implementation of telemedical applications.
2. Planning and implementation of evaluations should include medical as well as methodological expertise.
3. Access to the data required for evaluation should be clear when planning the evaluation.
4. The basis for a prospective evaluation a priori should be a description of, and transparent documentation of, telemedical applications, the target group and the care objectives (among others, access, added value for the patient, benefit, patient safety, preservation of existing structures, cost effectiveness, speed) as well as of any intended implementation and inclusion of telemedicine into standard medical care.
5. The baseline (including patient characteristics and process features) should be described in detail and be transparently documented as the basis for a prospective evaluation.
6. The choice of the type of evaluation should be carried out depending on the objective of the evaluation, the implementation and development standard of the telemedical application and on an appropriate evidence level.
7. The evaluation should include process as well as results parameters under consideration of medical, technical and economic aspects.
8. The outcomes to be measured should be patient, user and care relevant and should be chosen depending on the objective of the application, the target group and the developmental standard of the application. The instruments to be used should be of a high standard (reliability, validity).
9. The evaluation should be carried out with adequate means to reduce systematic distortions and interference factors.
10. The evaluation plans and results should be registered and published fully, transparently and independent of the results, such as in the Database for Care Research Germany.

** These ground rules were passed word for word by the panel of experts of the CSS Telehealth Eastern Saxony project in the context of a consensus workshop. Any modifications are prohibited.

tion of telemedically supported care concepts is an essential prerequisite for their comprehensive implementation. This requires interdisciplinarily accepted evaluation principles that can help achieve effective quality assurance in the sense of a self-learning system. 'The evidence- and consensus based principles we developed make an important contribution towards this,' Madlen Scheibe is sure.
A detailed publication on the evaluation principles and their development methodology is currently being prepared.

The project, entitled 'CSS Telehealth Eastern Saxony', was implemented jointly by Carus Consilium Sachsen GmbH and T-Systems International GmbH and was made a reality by financial support from the European Regional Development Fund as well as from the Free State of Saxony.

d surgery

with a particularly narrow endovaginal probe with a 210° angle which means even very young patients can be easily imaged without discomfort.

Dr Frank Schure concluded: "We aim to provide excellent service with excellent results – and this is a goal we can only reach with excellent technology."

SAMSUNG DETAILS & CONTACT

Samsung Electronics HME | Wim van de Vooren, Clinical Marketing Manager, Health Medical Equipment, Am Kronberger Hang 6, 65824 Schwalbach, Ts.

Phone: +49 61 96 66-53 79
Mobile: +49 170 916 69 61
E-mail: wim.vandevooren@samsung.de

UK HOSPITAL DEVISES A DATA-REPORTING SUITE TO IMPROVE EMERGENCY CARE

IT app raises A&E management quality

Report: Mark Nicholls

An app to manage Accident & Emergency (A&E) services by providing staff with real-time data on attendances in departments, can also predict demand on a daily and hourly basis. The Wrightington, Wigan and Leigh (WWL) NHS Foundation Trust in England devised the app. With more than 4,600 staff members, the 758-bed district general hospital serves approximately 318,000 people and provides specialist orthopaedic services to a much wider regional, national and international catchment area.

The app also enables this trust to identify peaks and troughs in A&E, such as those that might be associated with bad weather.

The new suite of data reporting tools has been launched in collaboration with NHS Shared Business Services – a business support service for the NHS – and business intelligence experts at the WWL trust.

Known as 'HealthIntell', this is a suite of reporting applications, exclusively for the NHS, that will help the service's organisations address issues such as A&E winter pressures, procurement challenges and financial management.

The initiative aims to enable the health service to harness the power of data and technology and address some of the most pressing NHS challenges.

Rob Forster is Acting Chief Executive of Wrightington, Wigan and Leigh National Health Service Foundation Trust. He joined the trust as Deputy Director of Finance in April 2009, was appointed Director of Finance and Informatics in July 2011, and has been acting chief executive since February 2015.
After qualifying in Law, Forster became a chartered accountant. However, since joining the NHS, he has worked to combine the best innovation from private and public sectors to deliver quality care for patients to help provide best value for money for the NHS.

The trust's acting chief executive Rob Forster said: 'HealthIntell has huge promise for the NHS because it creates the right tools for the job by using the right people with the right expertise. We are already delivering applications that are making a difference, with more to come.'

As well as helping hospitals to cope better with A&E pressures, the HealthIntell application also aims to help hospitals to meet waiting time targets by presenting real-time data to doctors and other decision makers.

The app can predict demand on a daily and hourly basis, and allows trusts to use their own data to identify peaks and troughs – for example the likely rise in attendances due to bad weather or major sporting events.

It has already produced positive results for WWL, which include a reduction in the average total length of stay in A&E from 160 minutes in April 2014 to 130 minutes in February 2015 – a drop of 18.75%, which is well within the four-hour target for NHS hospital.

Information is presented in areas throughout the trust's hospitals, including through a large 70-inch touchscreen installed in A&E, which helps ensure the right staff members are available to meet demand and the right numbers of beds are available for patients likely to be admitted.

Mr Forster added: 'At WWL we see 280 patients come into A&E every day, of which 60 will need a bed. To cope with this, and adhere to

waiting time targets, we realised that having an accurate picture of what is happening is crucial. We can now plan ahead to meet demand."

He added that the trust has seen a direct impact of using the dashboard, with its A&E ranked the best performing among the eight acute trusts in the Greater Manchester area for the past six months.

During the development phase, a team of medics and administrators met weekly to help develop the tool with the business intelligence team.

'We are developing these applications in real time with real staff and putting in real hospitals and making sure it works,' said Forster.

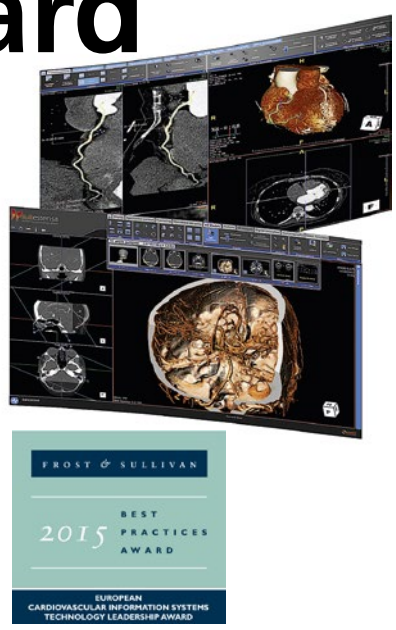
Further launch products include a Devolved Financial Management procurement app, which aims to help the NHS in managing budgetary constraints. This app presents budget holders with a simple view of expenditure across the organisation to highlight areas of concern and explain variances, to enable a quick response.

IT firm gains leadership award

Due to its technically advanced integration, user-friendly interface, and commitment to customer support, the healthcare IT firm Esaote has been granted Frost & Sullivan's 2015 Europe Technology Leadership Award in the Cardiovascular Information Systems market.

The firm produces enterprise-wide RIS, CVIS, and PACS territorial network solutions. Its Suitestensa platform is '… the most complete diagnostic imaging software for workflow management, from Modality to Enterprise IT systems, implementing Structured Report, 3-D/4-D image processing, Quantitative Analysis software, Endovascular Aortic Aneurysm Repair and TAVI workflows, multiplatform Web & Mobile PACS Solutions,' Esaote reports.

The platform is dedicated to radiology, nuclear medicine, radiotherapy, breast imaging, interventional radiology, orthopaedics, as well as



for the operating room, cardiac catheterisation, interventional cardiology, endovascular surgery, echocardiography, electrocardiography, electrophysiology, general cardiology, and cardiovascular surgery.

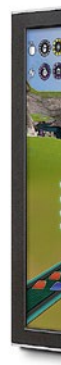
Aiming for streamlined filmless and paperless workflows, advanced diagnostic analysis applications and effective integration of all software and modalities, Esaote confirms: 'We are committed to enhance multidisciplinary health services and multiterritorial data sharing, simplifying information mobility and telemedicine challenges.'

Esaote is at Medica
Hall 09 / Stand A14

Physiotherapy virtual reality

Ensuring physiotherapy patients stick to their rehabilitation exercises is not simple. The BioGaming virtual reality platform aims to help physiotherapists to create exercise programmes that could engage patients more than traditional methods.

BioGaming has been designed by physiotherapists to create routines easily and provide patients with clinically effective home programmes to follow. 'The BioGaming platform captures a patient's movements using the Microsoft Kinect, a state-of-the-art 3-D camera and motion detection device,' the manufacturer reports. 'By using an advanced motion capture device, BioGaming enables precise tracking that generates immediate biofeedback for patients, as well as detailed reports that the physiotherapist can use to monitor progress. By virtually placing the patient inside the exercise games, BioGaming increases enjoyment and engagement, which leads to improved adherence.'



BioGam
Hall 05

BioGaming, which won the Innovation Award at MEDICA's eHealth Venture Summit in 2014, has received its CE mark and ISO 13485 certification, opening up the

Fundus screening enters shopping centres

Telemedicine in the Netherlands

Report: Sylvia Schulz

Telemedicine is taking strides throughout Europe. While in Germany telemedicine projects appear to be off to a slow start (see the electronic health card), in other countries progress is going full throttle. In September, at the German-Dutch symposium 'Using optimisation potential: Telemedicine and procurement management' a number of Dutch approaches were presented.

In the Netherlands, the National Expert Centre for Standardisation in E-health (Nictiz) was founded in 2002 to assist the Dutch government in e-health implementation. Ambitious targets were set and scheduled for completion by 2019; inter alia:

- 80% of the chronically ill have access to their patent record via Smartphone app or internet
- 75% of the chronically ill can measure certain parameters themselves, e.g. diabetes patients, and forward the data to physicians or other healthcare providers
- Every patient receiving homecare can access a physician 24/7 via a monitor.

The annual reports published by Nictiz to document the progress indicate that the Dutch are indeed far from reaching their defined goals. To date, only 10% of the chronically ill have electronic access to their patient record. In addition, while an impressive 40% of the chronically ill perform their own measurements, only 5% of the patients forward the data to the healthcare providers.

However, Dutch people increasingly accept telemedicine. The KSYOS TeleMedical Centre, a 'virtual' hospital located in Amstelveen, is a telemedicine services success story. The company now employs more than seven thousand physicians and paramedics.

The Centre provides care exclusively with the use of ICT. 'Through these innovative services, care is delivered independent of time and place and with the data travelling, rather than the patient: better, faster care, close to the patient at a lower cost,' says Professor Leonard Witkamp, director of the KSYOS TeleMedical Centre since 2005. Witkamp was also named professor by special appointment of Telemedicine at the University of Amsterdam's Faculty of Medicine (AMC-UvA) – a chair established on behalf of the Royal Dutch Medical Association (KNMG).


Source: LZG.NRW

Discussion was keen between Leonard Witkamp (centre) and symposium participants

There are currently several successful telemedicine services implemented by the Centre, such as Telefundus screening in diabetes and teledermatology. Diabetics previously had to see an ophthalmologist for their annual retina screening. Today, these patients go to an optometrist located in their neighbourhood shopping centre, where digital images are taken of the retina. These are assessed locally or remotely within two hours by a team of optometrists.

The local ophthalmologist randomly and anonymously inspects the quality of the images and the assessment. Abnormal cases are presented to the patient's general practitioner (GP), who may refer these digitally to the local ophthalmologist by teleophthalmology consultation. Where previously 100% of patients went to the ophthalmologist, now only four percent are physically referred. 'A huge improvement and acceleration of efficient care delivery at lower costs,' Witkamp notes.

Although teleconsultation is rolled out in many different medical specialties, teledermatology, as one of the first successful services, presents a fine example. The GP opens the patient's record, inserts the skin images obtained and adds medical information. These findings are then submitted to the dermatologist remotely, and together the doctors make a final diagnosis and establish a treatment plan.

Over 200,000 teleconsultations since 2005 show that teledermatology, provided the GP selects suitable patients, leads to a 74 percent reduction of physical referrals, with an average response time of 4.6 hours (median 2.0 hours). According to Witkamp, 'Savings of 20 to 40 percent in healthcare costs' are realised 'by improved efficiency and quality'.

The role of hospitals will become more specialised, as Leonard Witkamp predicts: 'Telemedicine will allow hospitals to focus on difficult and serious cases and the socially disadvantaged patients. In many centres throughout the region, GPs, pharmacists, opticians, physiotherapists and others will deliver more routine care under the remote direction and supervision of the doctor and specialist.'

enters

ning is at Medica / Stand M19

European market for the physiotherapy platform. The firm is also seeking FDA approval for the system's use in the United States.

Meanwhile, the BioGaming platform has become available to licensed physiotherapists right across Europe for clinical use.

3-D printed hearts

The CSI Congress (Congenital, Structural and Valvular Interventions) is one of the major fixtures for catheter therapy of congenital and structural heart defects. Key moments in this high profile event are live broadcasts and the audience can not only to listen to but also interact with the teams in the cath labs involved

Report: Ralf Mateblowski

At this year's CSI gathering, three live interventions – one case of mitral valve insufficiency, a degenerated bioprosthetic tricuspidal valve and a transcatheter aortic valve implantation, performed in Frankfurt/Germany in late June – demonstrated how patient-specific 3-D printed heart models can be used for surgical planning.

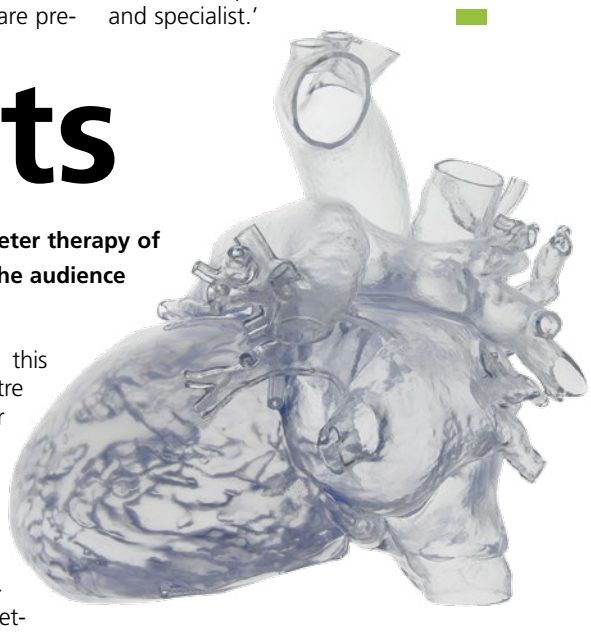
Belgium-based manufacturer Materialise offers software solutions and services for 3-D imaging and 3-D printing. Just before he began to enable the first live case, Dr Sameer Gafoor of the Cardio-Vascular Centre Frankfurt summarised his experiences with the firm's HeartPrint models. 'To see the model means to change strategies,' he said.

Based on CT, MRI and/or 3-D ultrasound image data, the transparent silicone models show the individual anatomy in amazingly realistic detail. This allows a physician in the pre-operative planning phase to literally get his hands on the structures he is going to see – down to the different tissue thicknesses of muscles and vessels, including calcifications! This kind of haptic exploration of the intervention site helps to decide whether catheter access will in the leg or the neck. In turn, that decision informs the choice of instruments to be used. In complex cases, interventional cardiologists and cardiac-surgeons can test their actual operating theatre strategy on the model, adapt their procedure, if needed, and even discuss it prior to the intervention, during the multidisciplinary cardio board. Thus, the entire team knows what's in store.

'Basically open heart interventions cannot be repeated,' Dr Gafoor explained, pointing at two further advantages of 3-D print models for planning purposes – high surgical success rates and markedly improved patient outcomes. Even more: the 'test runs' with the 3-D models reduce intervention time, which in turn has several positive side effects: shorter anaesthesia times reduce health risks for the patient resulting in faster recovery. For the hospital this translates into quicker theatre turn-around-times and shorter length of stay. In short: significant cost savings.

3-D models are not only used for intervention planning, they also support patient information very effectively: now the patient may better understand why the intervention is necessary and how it is going to be done. This should deepen trust in the physician and intervention acceptance – an important psychological factor, positively impacting on a patient's attitude before, during and after the intervention.

Obviously 'learning by 3-D model' is not limited to physicians, patients and families – it is also a perfect tool for training medical students and junior cardio-surgeons. Last, but not the least, the medical technology manufacturers benefit from 3-D models from the development, throughout pre-clinical trials to product marketing. While the use of 3-D models in cardiology, as described above, is more or less still in the beginning cranio-maxillofacial surgery and orthopaedic patients already receive 3-D printed implants. In these disciplines the innovation potential of 3-D print models to optimise patient-specific care is already being realised and the results indicate immense potential awaits exploration in cardiology – above all in paediatric patients, since a baby's heart can be merely the size of a walnut.



3-D printed cardiovascular model from Materialise, a registered Class 1 Medical Device

Raising resolution

It's time to make higher quality videos

Medical facilities today are confronted with implementing 4K resolution video in their surgical rooms. To that end, FSN Medical Technologies reports, 'We have the experience to design, develop and manufacture medical grade monitors and connecting infrastructure that present images with incredible 4K sharpness and colour depth. There are more pixels on a 4K-monitor screen - and more pixels can show more information. This means sharper pictures… a 4K display allows much more nuance and detail to be viewed by the doctor,' the manufacturer adds. 'The improvement over HD can be astonishing. Higher resolution images are simply better.'

FSN is at Medica Hall 10 / Stand G39

FSN has developed multi-streaming display technology that delivers a 4K picture, at 60 Hz, utilising a single DisplayPort 1.2 connection. DisplayPort can be combined with FSN's selection of optical fibre connectivity for the operating theatre (OT), the company points out. 'Fibre optic signals are immune to EMI, electromagnetic interference. Content transmitted over fibre optic cabling is inherently secure, a feature favoured in government, military, and medical environments.

'Fibre optic cable eliminates the restrictions of distance. Lengths can be hundreds or even thousands of metres. We have combined the best features of optical fibre and DisplayPort to efficiently transmit the clearest 4K signals.'

FSN's 4K LCD product selection comes with signal input options for DVI and DisplayPort, plus DC out power for smaller components.

The outer design is slim and sleek, with flush-front glass bezel; the technology within displays can create variable screen layouts, including picture-in-picture, and quad screen formats. 'For example, the firm continues, 'the information shown on four 27" HD monitors can now be displayed on one 55" 4K screen, in quad view, all in full 1080 resolution.'

FSN Medical Technologies is represented in the UK, Germany, USA, Korea and China.

Details: www.fsnmed.com.

The future of medical in

How is medical informatics doing? What kind of impact does the proliferation of new medical apps have over its practice? Which directions should the field take to continue to benefit medicine? A panel of the world's leading experts set out to answer all those questions during Medical Informatics Europe, the annual meeting of the European Federation of Medical Informatics (EFMI) that took place in Madrid in May

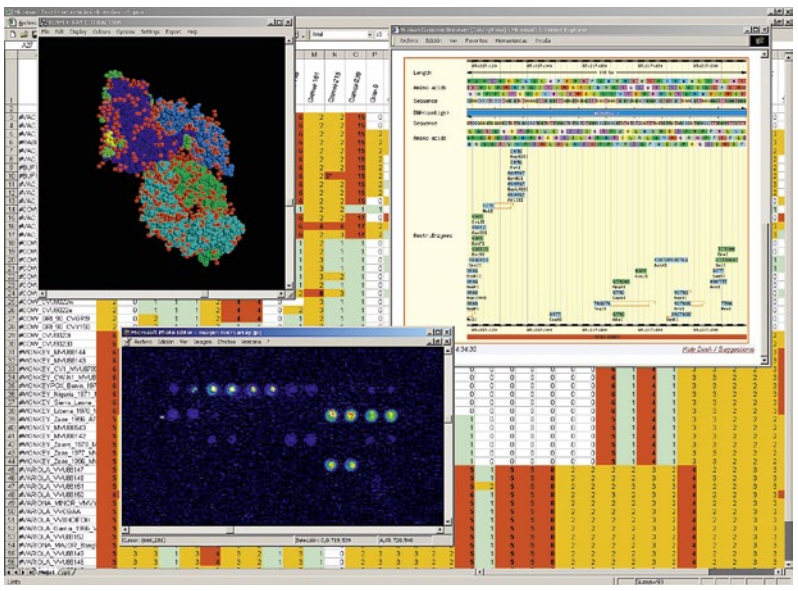
Report: Mélisande Rouger

Medical informatics, also called biomedical informatics, or health informatics, is facing a crucial moment. Not only does the boom in information technologies (IT) change healthcare practice, but also the discipline, which emerged in the 1960s, has shown certain inertia lately.

'As in many other well-established disciplines, there's a tendency for us researchers to stick to well known research methodologies rather than focus on technologies that would contribute better to our objectives of advancing healthcare and science,' said Reinhold Haux, director of the Peter L Reichertz institute for medical informatics at Braunschweig University, Germany.

'Maybe it's time to stand back and observe,' he added. 'Our field has taken a too mechanistic approach.

A Yale engineering and applied science graduate (1966), with PhD in Electrical Engineering from Hawaii Uni (1970), **Casimir A Kulikowski** is now a Professor at the Computer Science Dept, Rutgers State University of New Jersey, where he researches artificial intelligence, biomedical and health informatics and societal impact of computers in health and historical analysis. Rutgers Computer Science Dept (1984-'90), and directed its Research Resource on Artificial Intelligence in Medicine. Sadly, his presence and authorship in medical informatics are too many to add here.



A biomedical informatician's screen

We are happy if a system works according to our criteria and we forget to ask if it applies to the subject matter,' said Anne Moen, professor at the institute of health and society, University of Oslo, Norway, and current EFMI vice president.

A trained nurse, Moen insisted on the necessity of going back to healthcare, a subjective experience, when doing research. 'I would call for a return to practice, an expanded repertoire of methodologies and more interdisciplinary research factoring the healthcare knowledge experiences and wisdoms into the equation. We have a lot to gain from revisiting the past and reflecting on the level of analysis,' she believes. 'We need to continue developing sets of methods to account for the context of the situation and subjectivity of healthcare experience.'

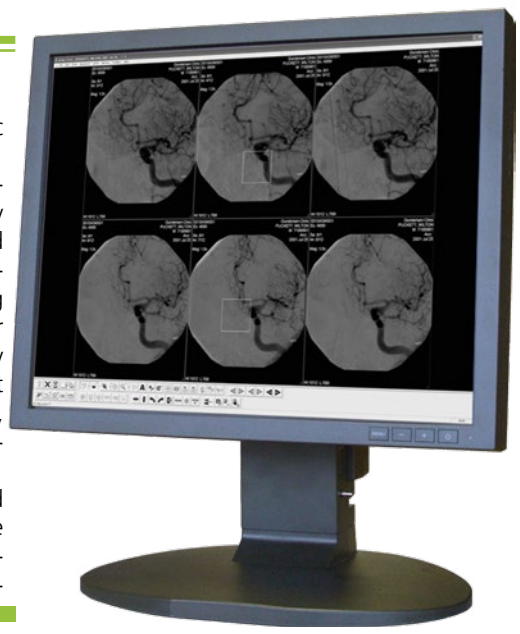
Casimir Kulikowski, professor of computer science at Rutgers University, New Jersey, questioned the very foundation of the field: 'It's missing. We all know that our field is horrendously heterogeneous and unhappily fragmented many times, because we have very different practitioners with very different goals, requirements, uses and types of information.'

Carrying out research in biomedical informatics is a complex task because it has to deal with translational medicine, different scales, types of information and knowledge. Kulikowski: 'Medical informatics is a meld: we have to deal with science, professional practice technologies and businesses; this has become very important and is a major controversial issue.'

Medical informatics can become confused with health IT, which is concerned primarily with juggling administrative, economical logistical supports for existing systems motivated by profit, which he deplores. The professor urged a return to 'the sensory, perceptual and social processes of patients, practitioners and scientists', and insisted on the centrality of doing good modelling, simulation and experimental design, instead of focusing on Big Data.

'Modelling is central to everything we do. It comes from the head, not the computer or the cloud. The cloud is an abstraction; the real clouds are

A new diagnostic/ modality display



Monitors are obviously critical for medical display – the greater the clarity of physiological features shown, the more accurately physicians can diagnose disease. The new CCL196A monitor, produced by the Japanese firm Totoku, is reported to be a diagnostic and modality display in one device. 'It's the ideal solution for CT and MR imaging,' explains Marcel Herrmann, Marketing Manager for Medical Displays at Totoku. 'An optimal image quality when displaying colour and grey scale images ensures the brightness of 900cd/m² and a contrast ratio of 1.000:1.

'The display is characterised by a variety of special features. As in all new Totoku models, the CCL196 has a LED backlight,' he adds. 'Compared to CCFL monitors these consume up to 30 percent less power and offer a longer lifetime of about 20 percent.'

The automatic calibration enables true colours and grey scale reproduction according to the Digital Imaging and Communications in Medicine (DICOM) Part 14 Greyscale Standard Display Function. 'The user can calibrate the colour temperature, luminance and contrast characteristics based on their needs.'

The CCL196 display also has flexible video inputs, a digital interface and an analogue BNC input. This ensures flexibility in connections with a wide range of modality systems. The Totoku Nagaoka Corp. was established as a display manufacturing plant by TOTOKU Electric Co. Ltd., which was founded in 1940. As well as producing electronic devices, the parent company specialises in manufacturing cables, connectors, heater products, suspension wires and contact probes that have a huge commercial presence in automobiles, technical and domestic equipment and much more.

The successful firm has implemented an ISO 9000S compliant quality management, assurance system and an ISO 14001 compliant environmental management system according to the International Organization for Standardisation (ISO). Thus it proudly declares a consistent management system overseeing the entire process, from design, development and production to after-sales service.

Totoku's Intelligent Devices and Solutions Division reports that the new display is already in mass production and available for international sales. Details: www.totoku.com

formatics

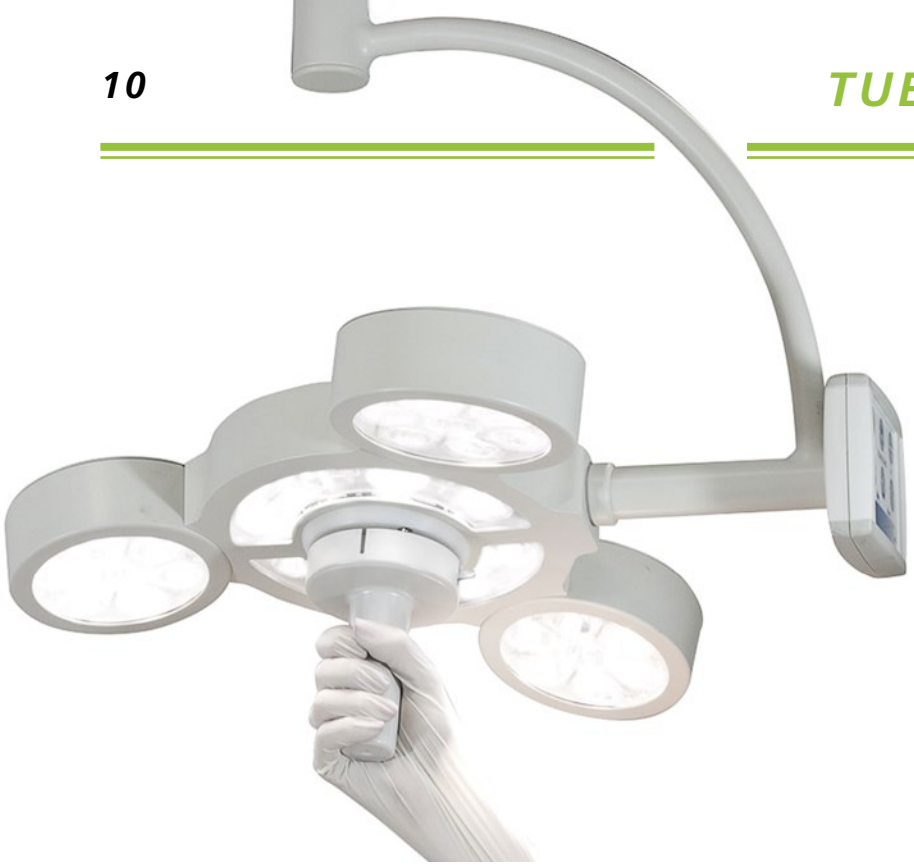
Professor Fernando J Martin-Sanchez, has a PhD in informatics (artificial intelligence) and medicine (ageing and neurodegenerative disease), and MSc in knowledge engineering and BSc in biochemistry and molecular biology. He is Chair of Health Informatics and inaugural Director of the Health and Biomedical Informatics Centre (HaBIC) at Melbourne University, and researches the role of informatics in translational research, precision medicine and participatory health (social media, quantified-self, mobile apps). In Madrid, he is CIO and Founding director of the Medical Bioinformatics Research Unit.

not data clouds. If we want to alleviate suffering and make scientific discoveries, we need to do things differently. The models of rational reasoning are seductive, but not real; they make great PR, but they don't work alone,' he argued.

The challenge is to bridge the abstractions of science and the realities of practice, and the key will be to know how to deal with sensory perceptive ways of working with automated and interactive software systems just as individuals do with each other, he explained. 'This is a completely new science that is needed and we in biomedical and health informatics had better be involved in it. We should not leave modelling body sensory intelligence to guys doing robotics. They are a totally different field, they are not dealing with human beings in the same way healthcare must.'

The role of medical informatics is being put to the test with the

Continued on page 10



LED optics bring shadow-less light

Cold light, long life, low energy consumption

'StarLED3 NX is based on the next generation LED technology, assuring cold light, long life and low energy consumption,' the Italian firm ACEM Medical Company reports. Suitable for surgical and operating theatre applications, it is ideal for diagnosis, gynaecology, dermatology, general medicine and surgery, and the Endo function provides light for endoscopy. Due to the company's own LED optics the lamp provides a homogeneous and shadow-less light that directs beams according to needs. 'The visual area is perfectly illuminated assuring both excellent visual comfort and working conditions. Its next generation LEDs produce an unparalleled quality of light with a colour temperature (CCT) of 4,500°K and a colour rendering index (CRI) of 95,' the manufacturer adds.

This ACEM model has a light intensity of 130,000 lux with a low energy consumption of 69W and the firm estimates the life cycle of its LEDs to be about 50,000 hours.

ACEM adds that the lamp's '… three reflectors produce a well-blended and intense cone of light focusable through the automatic adjustment of the light spot diameter. Its slim, practical and compact design makes it perfect for several uses.

The lamp is ergonomic, easy to move and to position and suitable for the laminar flows of the operating room.'

With an easy-to-clean shape and material and removable, sterilisable and easy- grip handle assure cleanliness, and the functions – on/off, light intensity, depth of field, endo, size, and sync to synchronise controls, are all adjusted via the easy-to-read, ergonomic and easy-to-clean I-SENSE control touch panel.

The model can be wall, or ceiling mounted, (Single, double configuration or with other StarLED NX lamps) and for trolley mounting the available ABPS rechargeable battery powered system, made by ACEM, is dedicated to power surgical lamps according to European Directive 93/42/EEC. The model, with ABPS, has the same performance and appearance, since the structure containing the battery is within the trolley base.

ACEM is at Medica Hall 10 / Stand E31

Full details: www.acem.it

AUTOIMMUNE AND GASTROENTERIC DISEASES

In vitro diagnoses speed up

'By presenting the ERA System at Medica 2015, Eurospital is starting a fascinating journey across the new frontiers in the in vitro diagnosis of autoimmune and gastroenteric diseases,' the Italian manufacturer reports.

This includes 'an innovative chemiluminescence random access walk-away system, based on paramagnetic particles, along with a complete line of IVD products for autoimmune and gastroenterological diseases originated from the outstanding activities of company's Research & Development department.'

Offering a high throughput (120 tests per hour) ERA provides the first result after 35 minutes and then every 30 seconds. Due to the wide, continuous uploading of samples, the simultaneous processing up to 16 methods and whole system flexibility, the tool works well for medium to large laboratories, where random access capability is clearly needed.

High-tech innovations include the presence on board of sonicator, automated reagent preparation and storage at 2-8°C.

Thus the system meets the need in the in vitro diagnosis of gastroenteric diseases (Celiac Disease, IBD/IBS), and autoimmune diseases (connective tissue diseases, phospholipids syndrome, vasculitis, rheumatic arthritis).

All reagents are ready-to-use and located within a pre-assembled reagent cartridge that allows direct upload onto the instrumentation, Eurospital adds. 'All kits provide quantitative tests based on in-memory calibration curves. No manual handling is required to run the tests.'

Eurospital SpA is at Medica Hall 3 / Stand E94

Experts ponder the future of medical informatics

continued from page 9

development of health IT and bio-informatics, according to Fernando J Martin-Sanchez, Chair of Health Informatics at the University of Melbourne. 'I don't think our field is in danger, but the relative importance of our contribution to medicine is a little bit at risk,' he said.

The development of the Human Genome Project fifteen years ago started a confusion between bio-informatics, which offer solutions for biological research, and medical informatics, which focuses on providing healthcare.

'This was the first sign that people were going to occupy this space. Some experts in bio-informatics claim they can solve and cure all the problems in medicine. This is not the right approach; they focus on dealing with molecular data and not so much with patient or clinical data,' Martin-Sanchez explained.

The advent of digital devices, apps, smart watches, sensors, wearables, and more, has exacerbated this phenomenon.

There is also a strong pressure from the industry to convince both patients and clinicians to use these devices, despite many unknown parameters in actual care.

Nevertheless, Martin-Sanchez believes this debate is a chance for medical informaticians to shine. 'I see this as an opportunity, not a threat, to continue with our methods, demonstrate our skills, generate evidence, measure outcomes, do some quality assurance regarding the data and protect data safety. We have been trained in those fields, not the bio-informatics or IT people. This is the role of medical informatics,' he stressed. 'We should make a strong case that we are the experts, we are the science behind IT.'.

EUROPEAN HOSPITAL
EUROPEAN HOSPITAL Publisher,
Theodor-Althoff-Str. 45,
45133 Essen, Germany
Phone: +49 (0)201 87 126 850
Fax: +49 (0)201 87 126 864
E-mail: info@european-hospital.com
www.healthcare-in-europe.com

Editor-in-Chief: Brenda Marsh
Art Director: Olaf Skrober
Managing Editor: Sylvia Schulz
Editorial team: Sascha Keutel, Marcel Rasch
Senior Writer: John Brosky
Executive Director: Daniela Zimmermann
Founded by Heinz-Jürgen Witzke

Correspondents
Austria: Michael Kraßnitzer, Christian Pruszinsky. **China:** Nat Whitney **France:** Annick Chapoy, Jane MacDougall.**Germany:** Anja Behringer, Annette Bus, Walter Depner, Bettina Döbereiner, Matthias Simon, Axel Viola, Cornelia Wels-Maug, Holger Zorn. **Great Britain:** Brenda Marsh, Mark Nicholls. **Malta:** Moira Mizzi. **Poland:** Pjotr Szoblik. **Russia:** Olga Ostrovskaya, Alla Astachova. **Spain:** Mélisande Rouger, Eduardo de la Sota. **Switzerland:** Dr. André Weissen. **USA:** Cynthia E. Keen, i.t. Communications, Nat Whitney.

Subscriptions
Janka Hoppe, European Hospital,
Theodor-Althoff-Str. 45, 45133 Essen, Germany

Intrinsically Italian X-ray units

Service no matter where in the world

Part of the IMD Group, and in the X-ray medical equipment market for over 25 years, Intermedical itself manufactures all the main components for its X-ray units in Italy. This, the firm reports, enables an unbeatable quality/price ratio, plus dependability from one of the biggest firms in radiology. 'Our service statistics show the reliability of our products with almost no need for interventions over the years. Intermedical has a widespread dealers' network to give service and guarantees its presence everywhere.

'Our units suffer no geographical or extreme weather conditions. We are present in the Amazon jungle, the Andes, Mexican and African deserts, Mongolia, Patagonia, Polynesia, Siberia, Sakhalin Island, Mekong Delta (Vietnam), Uzbekistan, Caribbean area, always granting service to our units. We guarantee service everywhere, at low prices, and continuity of production of the spare parts.'

Intermedical now offers analogue and digital mobile X-ray units and a complete range of C-arms starting from 3.5 kW or 5 kW power systems to 15 kW or 20 kW power equipment (available with 9" or 13" image intensifier or with 20x20 and 30x30 flat panel detector).

'By bringing together different technological concepts we succeeded in manufacturing and distributing interventional systems with 100 kW power and 1000 mA. These multipurpose systems for fluoroscopy, vascular intervention and angiography can be ceiling suspended or floor based. Both are available with image intensifier or flat panel detector. All the devices are designed to increase ease of use for operators, offering high performance combined with high positioning flexibility.'

Finally, the firm adds, with enthusiasm, 'We think that we can share the "Italian quality of life" through our products.'

Intermedical is at Medica
Hall 10 / Stand B32

MAKE A NOTE

Symposium Cardiology/Imaging
Venue: Room 15
Tuesday, 17 Nov 2015 ●
2.30 p.m. – 4.00 p.m

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

Printed by: WVD, Mörfelden-Walldorf, Germany
Publication frequency: bi-monthly
European Hospital ISSN 0942-9085

Representatives
China & Hongkong: Gavin Hua, Sun China Media Co, Ltd.
Phone: +86-0755-81 324 036
E-Mail: gh@european-hospital.com
Germany, Austria, Switzerland:
Ralf Mateblowski
Phone: +49 6735 912 993
E-Mail: rm@european-hospital.com
France, Italy, Spain: Eric Jund
Phone: +33 493 58 77 43
E-Mail: ej@european-hospital.com
GB, Scandinavia, BeNeLux: Simon Kramer
Phone/Fax: +31 180 6200 20
E-Mail: sk@european-hospital.com
Israel: Hannah Wizer, International Media Dep. of El-Ron Adv. & PR Co., Ltd.
Phone: +972-3-6 955 367
E-Mail: hw@european-hospital.com
South Korea: CH Park, MCI
Phone: +82 2 730 1234
E-Mail: chp@european-hospital.com
USA & Canada:
Hanna Politis, Media International
Tel: +1 301 869 66 10
E-Mail: hp@european-hospital.com

Expert assays for Vitamin D

DIAsource ImmunoAssays has launched a new ELISA (Enzyme-Linked Immunosorbent Assay) the 25OH Vitamin D Total ELISA 90', which the firm reports is the fastest of its kind due to short incubation time and hands-on time. 'This represents another important advantage in addition to the pre-treatment that is included in the microtiter plate,' the manufacturer adds.

Other key features include low sample volume, 100% automatable on open ELISA instruments, breakable wells format, calibration against the Thienpont's reference measurement procedure LC-MS/MS according to the Vitamin D Standardisation Programme (VDSP) and a 30-month shelf life.

DIAsource is at Medica Hall 3 / Stand B59

With this additional assay in its product line, the manufacturer says it has become the expert in Vitamin D measurement: 'The complete portfolio offers solutions for the measurement of 25OH Vitamin D, free 25OH Vitamin D and 1,25(OH)2 Vitamin D, both in RIA and ELISA formats.'

Additionally, the firm's Cortisol All In One radioactive assay, validated for use with serum, plasma, urine and saliva samples, is also available. 'The use of saliva presents the advantages that the sample collection is non-invasive, avoids stress induced rise in cortisol secretion, can be performed easily using dedicated Salivette,' DIAsource explains. 'Moreover, saliva is an excellent medium to measure steroids, because it's a natural ultra-filtrate of blood and provides measurement of the free cortisol, which is the best indicator of a biological active hormone.' In addition, with the Cortisol-RIA-CT (KIPI28000) no extraction is required to use the four different sample types, calibrated against the LC-MS reference method.

The new 25OH ELISA 90'

New tandem mass spectrometry

The new NeoMass AAAC from Finland's Labsystems Diagnostics is a primary screening test to detect inborn errors of metabolism, indicated by abnormal blood levels. The tandem mass spectrometry assay takes a quantitative measurement of amino acids, (acyl)carnitines and succinylacetone (SUAC) in newborn blood samples dried on filter paper.

'Free carnitine and acylcarnitines are markers of oxidative disorders of fatty acid metabolism and organic aciduria, while amino acids are biomarkers for aminoacidopathies. Elevated succinylacetone is an indication for tyrosinemia,' the manufacturer explains. 'As a unique feature, NeoMass AAAC also enables the detection of all urea cycle disorders by including a methodology to measure NAGS, CSP1 and OTC deficiencies together with the already detected deficiencies.'

Labsystems Diagnostics is at Medica Hall 3 / Stand F44 The Finland Pavilion

The easy-to-use kit, which can determine 15 amino acids and 13 (acyl)carnitines and SUAC, includes internal standards necessary for measuring all of these analytes. It also includes three controls: at endogenous, cut-off and abnormal levels, the firm adds. 'The extraction process is fast, applying a non-derivatised protocol. This assay has performed excellently regarding reproducibility and clinical accuracy.'

Labsystems Diagnostics also provides several traditional newborn screening assays, including a panel of eight fluorometric NBS assays, all available on the fully automated platform NS2400.

SmartLab™

Rudolph is at Medica Hall 16 / Stand D20-15

- The Hans Rudolph, inc. SmartLab™ Instrumentation System is a flexible system for measurement and analysis of respiratory signals in research applications.
- The base module can accept up to three pressure sensor modules for measuring flow from pneumotachs and airway or other pressures.
- Optional inputs include an oximeter, CO2 sensor, temperature and humidity and digital I/0.

- The PC software provides real time graphs and calculations of many common respiratory parameters.
- Data can be saved for analysis or replayed. Custom software modules can be developed for special applications.

The Swiss Army knife of radiology

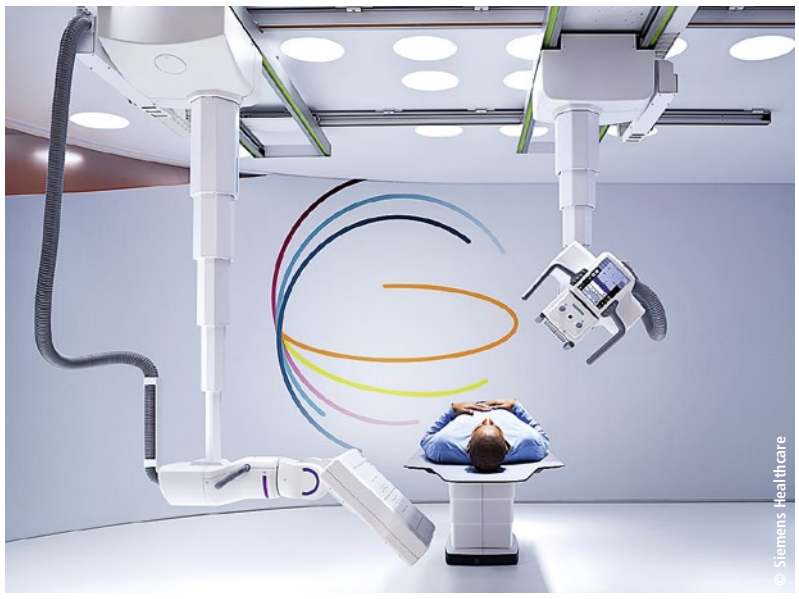
Combining robotic and medical technology


© Siemens Healthcare

Dr Bernd Montag, Chief Executive Officer at Siemens Healthcare

Report: Sascha Keutel

Not all innovations marketed as 'world premieres' actually make a significant impact on the world. However, the new robotic X-ray system 'Multitom Rax' (Robotic Advanced X-ray) introduced by Siemens Healthcare and the University Hospital Erlangen is one innovation in the world of medicine technology that deserves this label, the manufacturer reports. 'With the combination of robotic and medical technology the company is moving into a completely new class and completely new technology,' explains Siemens Healthcare CEO Dr Bernd Montag, introducing the new system. The Multitom Rax has two ceiling-mounted arms, which can be positioned automatically with robotic technology but also manually via servomotors if required. One arm moves the X-ray tube and the large touchscreen while the other carries the flat panel detector, which is 43cm x 43cm in size. This facilitates both static and dynamic images as well as fluoroscopic sequences. The user retains control of the system's movements at all times via remote control. The robotic technology moves the arms around the patient in a fully automated manner in the style of the 'Mars robot'.


© Siemens Healthcare

The two ceiling-mounted arms on Multitom Rax can be moved into position automatically, using robotic technology; they can also be moved manually, servo motor supported, when necessary – e.g. to make fine adjustments. While one arm moves the X-ray tube and the large touchscreen, the other carries the 43 x 43 cm flat panel detector, which can record static, dynamic and real 3-D sequences

'This type of technology allows an entirely new degree of precision and automation,' explains Francois Nolte, head of the business line X-ray products at Siemens Healthcare. It therefore also leads to more standardisation and a higher patient throughput.' The patient does not have to be repositioned, which also makes the examinations less painful. Nolte explains: 'The exact positioning of the robotic arms in all axes makes the examinations a lot easier: Whether the patient stands, sits or lies down, the robotic arms can approach him with precision. Our concept follows the motto: The scanner moves and not the patient.'

Optimising clinical workflows

Apart from more quality, improved workflow and increased precision, the new system will also improve the economic efficiency of medical care. Instead of having to acquire different equipment for different examination rooms, hospitals will only need to acquire one system for one room as the system can also be used to carry out fluoroscopy examinations and angiography applications along with the conventional 2-D X-ray images. This helps greatly with the optimisation of workflows.

'The Multitom Rax is designed as a universal device covering the entire range of X-ray diagnostics. It is, so to speak, like a Swiss Army knife for radiology,' explains Professor Michael Lell, Senior Consultant at the Institute of Radiology at the University Hospital Erlangen, in Germany.

Another innovation is also very important for the radiologist, Siemens points out. The Multitom Rax can generate 3-D images in real-time. Images taken while the patient is standing are particularly important for diagnosis finding because the knees, pelvis and spine visualise in a different way under body weight from when a patient lies down. This provides considerably more safety for the diagnosis.

Fine, hairline bone fractures are not always visible on conventional 2-dimensional X-ray images, necessitating additional CT scans, which in turn consume more time and, of course, incur more costs. The system therefore helps with long-term improvements in economic efficiency for hospitals, Bernd Montag is convinced. His conclusion: 'It will clearly be more expensive for hospitals not to have the new system.'

If a bone fracture is suspected, it was previously necessary to take a 3-D image using a CT system to ensure correct diagnosis. However, with Multitom Rax, a 3-dimensional image can be taken at the same system, so the patient does not wait for a further appointment or to be transferred to the CT unit


©:Clinic for Radiology and Nuclear Medicine, University Hospital, Basel, Switzerland (2)

Now, for the first time, Multitom Rax makes it possible to take 3-D images under a patient's natural weight bearing condition

The fully integrated automated system

Designed with Stanbio Chemistry reagents in mind

Over in Hall 3 at this year's trade show, EKF Diagnostics is launching a new clinical chemistry analyser. The Altair 240 bench-top platform is the firm's first fully-integrated, automated chemistry system. Also highlighted at the show are the latest additions to its range of Stanbio liquid-stable, LiquiColor and Liqui-UV clinical chemistry reagents.

EKF Diagnostics is at Medica Hall 3 / Stand C70

With LIS bi-directional connectivity, the Altair 240 can perform up to 480 tests per hour when using double arm functionality. In addition to being supported by the company's broad menu of Stanbio ready-to-use, bar coded, liquid reagents for routine and special chemistries, this system also provides the flexibility to configure open channel applications for many esoteric assays, EKF reports.

'Customers have long asked for a cost-effective platform designed with Stanbio Chemistry products in mind,' the firm explains. 'Built on 54 years of clinical chemistry expertise, this new platform enables EKF to offer a cost-effective solution, as either a main or back-up analyser, to improve productivity.'

The system easy to learn, operate and maintain, according to Albert Blanco, Business Unit Director for EKF's Central Laboratory Division. 'Because it runs on Windows 7, operators can easily navigate its intuitive, touch screen menu. Features such as the capability to use bar coded, primary sample tubes, auto-rerun, auto-dilution and STAT interruption, all function to maximise the system's overall efficiency.' At the Medica stand the stability and ease of use of the company's latest additions to its Stanbio clinical chemistry range are highlighted. 'This range includes clinical chemistry assays, controls and calibrators, which are fully compatible with most major brand open channel chemistry analysers, including the Altair 240,' EKF reports. 'A notable addition is the Stanbio Chemistry Glycated Serum Protein (GSP) LiquiColor test – a new diabetes biomarker test that provides a two to three week indicator of average blood glucose.'

Lab products on show also include Micro 12, SlidePrep and PlasmaPrep clinical centrifuges, as well as a full range of POC blood analysers, for haemoglobin, lactate, glucose, HbA1c tests for example.

New: The Altair 240 bench-top clinical chemistry analyser

MAKE A NOTE

Geriatrics, palliative and nutritional medicine

Venue: Room 15

Wednesday, 18 Nov 2015

- **9.00 a.m. – 10.00 a.m. Nutritional medicine: Dietary recommodations - scientific evidence.**

Chairman: Prof. Dr. Alfred Wirth, Bad Rothenfelde

Relieving pain

A self-heating medical device

Heat therapy has been used since ancient times as a natural remedy to improve blood flow and, consequently, oxygen supply to muscle tissue. The Italian firm FIS & DM Srl reports, 'In cases of painful joints, due to fatigue or muscle sprains and strains, in acute as well as chronic conditions, ThermoTherapy can help fight the pain, acting in the affected areas of the body and contributing to an effective solution for the discomfort associated with the presence of pain by relaxing the muscles.'

ThermoTherapy is the only line of self-heating medical devices completely manufactured in Italy, the company points out, adding that, from 2015 the patented designs and new zinc oxide based glue guarantee maximum comfort.

Full details: www.thermotherapy.it

FIS & DM Srl is at Medica Hall 16 / Stand B61

The 4K three-sensor can endo- or microscopy

Ikegami's new MKC-750UHD is a full 4K UHD camera designed to capture video of surgical operations. It can also be attached to a microscope or endoscope.

The 3-CMOS optical sensor can resolve much higher image detail than HD cameras, the manufacturer reports, pointing out that the horizontal resolution is 1600 TVL. Signal-to-noise ratio is 58 dB.

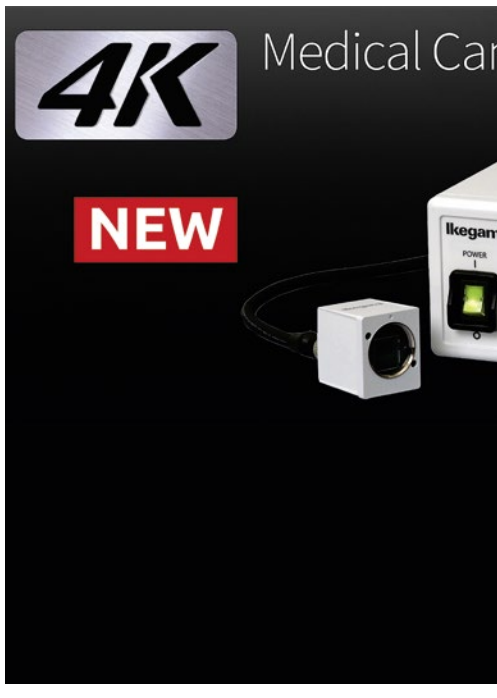
The MKC-750UHD, the company's first 4K 3-sensor medical camera, can produce pictures in UHD and full HD, allowing use with existing HD monitors as well as UHD displays. 'An integral Image Correction Function enables the camera to express high image resolution in detail,' Ikegami adds. 'Also included is a Gradation Correction Function which delivers high contrast without over-exposure or black-crushing.'

Structurally, the MKC-750 consists of miniature camera head with integral optics.

The head connects via cable to a mains-powered compact control unit (CCU). The camera and CCU have an antibiotic coating to assist infection control.

All major camera functions, plus the ability to record video and capture still images, can be controlled from the front panel of the CCU.

Ikegami is at Medica Hall 10 / Stand B12



Heart checks normally everyday

The wireless QardioCore EKG/ECG monitor from Qardio Europe Ltd has been designed to detect and manage cardiac conditions while patients lead a normal everyday life.

'Six subsystem layers of QardioCore's next gen sensor system, coupled with high performance cloud analytics, offers richer, more comprehensive insights into your heart health,' the company explains. 'Accurately it records and analyses over 20 million data points daily, along with other important heart metrics.'

Clinically validated and easy to use, the device continuously records an electrocardiogram, heart rate, heart rate variability, body temperature, respiratory rate, activity and stress levels,' the firm reports. 'Unlike traditional ECG EKG monitors,' the maker adds, 'QardioCore is free from pads, gels and messy wires. It's portable, discreet and water resistant to blend seamlessly into your daily routine. It works with the companion Qardio App where you can easily share your measurements with your doctor, trainer or family members.'

Qardio Europe Ltd is at Medica
Hall 15 / Stand A23

Technology-induced behaviour changer

Better tuition for hand cleansing

Hospital associated infections (HAIs) cause more than 250,000 unnecessary deaths in the developed world and 1.4 million cases a day worldwide. HandInScan Ltd is a Hungarian health technology company that aims to reduce those figures.

By providing immediate quality-assured feedback regarding hand hygiene, the company reports that its Hand-in-Scan device '… has been designed to help people learn the technique for proper hand hygiene.'

Wall mounted, and weighing 8 kgs, the 270 x 460 x 250 mm device has a 10" TFT LCD of 1280 x 800 pixels. There is also safety glass display protection and a touch-free mode for germ-free operation.

The user inserts the right hand into a gap in the aluminium casing for direct evaluation. Ultraviolet light and digital imaging are used, along with Artificial Intelligence software methods, to highlight disinfected versus unaffected areas after regular hand rubbing. From this, an objective overall quality score is given to offer an objective verification of the person's hand hygiene.

The CE certified device contains validated evidence-based technology and has a database of over 15,000 healthcare workers. The Hospital Information System (HIS) can be integrated on request with this is technology-induced behaviour changer.

In March 2015 the CE certified device was awarded 2nd prize in a European Austrian Science2Business competition.

Hand-In-Scan Ltd is at Medica
Hall 16 / Stand F50

Ear endoscopy increases demand

A dedicated new sterile single-use suction range

Novel, high quality single-use surgical instruments are on show at Medica. DTR Medical, an award-winning UK manufacturer based in Swansea, is demonstrating its new endoscopic ear range, designed in response to growing demand for this recent surgical approach.

'Featuring 3mm and 6mm bends to enable a more specific suction, the endoscopic ear range allows better visualisation of the internal ear structure,' the manufacturer reports.

The Otologist has a choice of Curved Endoscopic Suction Tubes for use with suction regulator and Curved Zoellner Suction Fine Ends used with a Zoellner Suction Handle. DTR Medical also intends to expand this range to include further options.

The range of new DTR products includes tools for ENT/MaxFax, general surgery, gynaecology, neurosurgical, ophthalmic and orthopaedic.

This year the company celebrates its first ten years in the international healthcare market.

Full details: www.dtrmedical.com

DTR is at Medica
Hall 16 / Stand F42

SonoScape

MEDICA®

9E25 10H05

S40

New S50

HD-500

High Definition
Video Endoscopy System

HD-330

High Resolution
Video Endoscopy System

S12

S22

S30

S9

S8EXP

New X5

2014 FROST & SULLIVAN
COMPANY OF THE YEAR IN ULTRASOUND MARKET
Presented To
SONOSCAPE COMPANY LIMITED

2013 FROST & SULLIVAN
ULTRASOUND MARKET GROWTH LEADERSHIP AWARD
Presented to
SONOSCAPE COMPANY LIMITED

2008 FROST & SULLIVAN
Entrepreneurial Company Award

2009 FROST & SULLIVAN
Product Quality Leadership Award

ISO 13485

CE 0197

www.sonoscape.com

Caring for Life through Innovation