

## Welcome to the European Medical Journal review of the Annual Meeting of **MEDICA**

he Messe Düsseldorf once again opened its doors to attendees of the world's largest medical trade fair, MEDICA, from 13<sup>th</sup>-16<sup>th</sup> November 2017. Comprised of medical professionals from hospitals, research, practices, and of course industry, there was a total of 123,500 visitors from over 130 different countries during the 4-day event, showing the high regard in which this trade fair is held by the medical community. MEDICA took place alongside COMPAMED, the leading international market platform for suppliers to the medical technology industry, and continues to be recognised as the place where collaboration between suppliers and their customers begins.

In a statement, Joachim Schäfer, Managing Director, Messe Düsseldorf GmbH emphasised the trend of increasing numbers of exhibitors and visitors from the emerging economies of the world: "Besides the 'classic' target markets of Europe, North America, and Japan, suppliers are also increasingly focussing on emerging economies in spite of some uncertainties. This is because people's willingness to spend on health is increasing with rising incomes in these markets. More and more prosperity-related diseases and greater life expectancies in these countries are additionally driving up demand for medical products and modern treatments."

In total, there were >5,000 exhibitors from 66 countries present at MEDICA 2017. A plethora of cutting-edge developments was on show, including electromedicine and medical technology, laboratory technology and diagnostics, physiotherapy and orthopaedic technology, commodities and consumables, information and communication technology, and medical furniture and specialist furnishings for hospitals and practices. With such broad coverage, MEDICA had something to offer medical professionals of any background.

In addition to the vast range of innovative medical products, devices, and instruments on display throughout the many halls of the Messe Düsseldorf, there was a wide range of new conferences and forums for healthcare professionals to attend to allow them to keep abreast of current developments in key areas. Amongst these was the introduction of the MEDICA Academy, which enabled doctors from all therapeutic areas to undertake further training in imaging,

# **MEDICA** 2017

MESSE DÜSSELDORF, DÜSSELDORF, GERMANY 13<sup>TH</sup>–16<sup>TH</sup> NOVEMBER 2017

Citation: EMJ Innov. 2018;2[1]:12-25. Congress Review.

hygiene, and surgical procedures over the 4-day event. On Thursday 16<sup>th</sup> November, there was a whole day event entitled 'Update your infection prevention measures', focussing on the pressing issue of the spread of infection and increasing resistance to treatment. Presentations about the causes, scale, and strategies in place to attempt to tackle this growing problem also took place during one of the days of the brand new MEDICA Labmed Forum. This particular forum concentrated on the latest trends in laboratory medicine.

There was also great interest from attendees in forums that had continued from previous years, such as the MEDICA Health IT Forum, which included an emphasis on the hot topic of artificial intelligence, and the MEDICA MEDICINE + SPORTS CONFERENCE, focussing on prevention of injury and other developments in sports medicine.

#### 66 Comprised of medical professionals from hospitals, research, practices, and of course industry, there was a total of 123,500 visitors from over 130 different countries during the 4-day event... 99

Another new aspect of MEDICA 2017 was the MEDICA Start-up Park, which aimed to give founders of young companies in medical innovations the unique opportunity to network with potential business partners and investors. The MEDICA App competition was a particular highlight, in which the medical applications of 15 start-up companies battled it out to gain first prize. In a fast-paced format, each company representative was given just 3 minutes to make their pitch, before being quizzed for 2 minutes by the watching jury of experts. Following the pitches, the jury had a short period of deliberation before announcing the top three prize winners. A company called 'iSIKCure' won first place for the development of a mobile health exchange platform designed specifically for the health markets in Africa. Along with the prizes from MEDICA, sponsors, and media partners, the winners received substantial media coverage and international recognition, which should greatly enhance their opportunities for future growth.

The next edition of MEDICA will take place from 12<sup>th</sup>-15<sup>th</sup> November 2018, and we look forward to seeing even more medical innovations and developments throughout the following year!



## Congress Highlights



The Growing Importance of more ubiguitous today than might be realised, stating: "We define all electronic components Wearables in Modern Medicine that are worn on the body, close to the body, WEARABLES were very much at the forefront or in the body as wearables." Under this broad of the MEDICA 2017 congress, with dedicated definition, it can be seen that the wearables sessions at the MEDICA CONNECTED revolution has been underway for a long time, HEALTHCARE FORUM, in addition to through the use of devices such as pacemakers The Wearable Technologies Show, which and hearing aids. Furthermore, there is still focussed on the very latest developments in significant room for expansion of the wearables the field. Wearables represent a significant market. It is estimated that 400 million advancement in the field of healthcare and wearables will be sold in 2020 and that  $\geq$ 50% are a vital component of medicine's ongoing of this figure will be medical wearables. digital revolution. A MEDICA background article detailed some key areas of focus in the wearables sector.

66 Medical wearables are being increasingly developed in the form of smart patches and will so enable patients to use long-term monitoring products and even receive medication in such a way that is almost invisible to others. 99

The scope of wearable technology is massive. with >150 million wearables sold globally in 2017 a figure that is projected to rise in the future. Christian Stammel, CEO of WT Wearable Technologies Group, Munich, Germany, explained how wearables are much





The vast scope offered by wearables is one of the main reasons why the market is predicted to have such significant growth. They provide new options in diagnosis, monitoring, and treatment across a huge range of medical specialities and are useful for rehabilitation, as well as inpatient and

outpatient care. One of many wearable innovations on show at MEDICA was a training glove for patients recovering from debilitating stroke. This glove used robotic support and motion sensors to facilitate movements, such as grasping, and improving the perception of touch. Another key aspect of wearables is the ability they offer to monitor vital patient data, either at home or in the clinic. When combined with miniaturisation, this will change the paradigm of monitoring and treatment. Mr Stammel expanded on this, saying: "Medical wearables are being increasingly developed in the form of smart patches and will so enable patients to use long-term monitoring products and even receive medication in such a way that is almost invisible to others."

Looking to the future, there are a number of challenges that must be overcome in order to maximise the impact of wearables, including medical licensing, data protection, and data interoperability. Furthermore, Mr Stammel raised the interesting point that existing hospital and clinic infrastructure would impede the adoption of wearables in that domain, meaning initial benefits were more likely to be seen in the outpatient setting. Bearing in mind the sheer scale of the opportunities offered by wearables, as well as their associated challenges, Mr Stammel concluded: "It is up to the medical profession to openly explore the new opportunities that are being opened up by digital innovations and to indicate their interest to the established suppliers of medical infrastructure solutions for practices and clinics." Fortunately, MEDICA 2017 was the perfect opportunity to do so.

## Augmented and Virtual **Reality Glasses Benefit Both Surgeon and Patient**

FUTURISTIC augmented and virtual reality evewear was presented for the first time at the MEDICA 2017 conference. By aiding both the healthcare professional and the patient, these innovative technologies demonstrate numerous possibilities for application in the clinical setting, including increasing the accuracy and precision of surgery. Described in a MEDICA press release dated 12<sup>th</sup> November 2017, two leading wearable products were presented at the event.

66 The MEDICA 2017 event highlighted the usefulness of augmented and virtual reality in helping healthcare professionals to improve patient quality of life by increasing accuracy, precision, and effectiveness of procedures 99 and therapies.





EUROPEAN MEDICAL JOURNAL

Researchers investigated methods of enhancing the operating skill of oncology surgeons when determining the exact location of lymph node metastases to ensure successful removal of the node. A navigation tool, named 3D-ARILE, was developed using an augmented reality system to virtually pinpoint the position of the lymph node through data glasses worn by the surgeon. This innovative procedural aid should make it easier for surgeons to confidently remove the lymph node when preventing metastasis of a malignant tumour.

In addition, methodologies have also been developed that use augmented reality to enable accurate surgical procedures to be performed on the ears. As well as allowing precise intraoperative measurements for middle-ear prostheses, augmented reality has also been used for simplification of cartilage trimming during an operation to close the eardrum. The surface of interest in the situs is virtually marked under a microscope, which can then be displayed through the surgeon's binoculars using augmented reality when cutting the eardrum. Not only does the use of augmented reality in this setting assist the surgeons and increase accuracy, it may also reduce the risks associated with such invasive surgery.

Moving the focus towards the patient, an exercise training device for use in medical rehabilitation centres has been developed which combines simple exercises with virtual reality glasses. Used as a method to strengthen the back muscles, the patient moves on the device according to the virtual trajectory shown via their glasses, having a desirable effect on muscle group training. A similar technology was also shown to be possible using a massaging armchair and has the possibility of assisting and comforting patients with muscle pains.

The MEDICA 2017 event highlighted the usefulness of augmented and virtual reality in helping healthcare professionals to improve patient quality of life by increasing accuracy, precision, and effectiveness of procedures and therapies. Many companies are investing in such technology and virtual reality systems may soon be implemented into everyday clinical practice.







#### **Innovative Technology Aids Detection and Diagnosis**

INNOVATIVE wearable products and applications that can be used to diagnose and monitor health conditions were a topic of interest at the MEDICA 2017 event. According to a MEDICA 2017 press release dated 12<sup>th</sup> November 2017, there are many new products in the wearable technology sector, as well as a range of portable applications that can be used to efficiently assist patients and medical professionals.

Moving away from the common fitnesstracking applications, the wearable technology sector has evolved greatly in recent years and novel medical products are constantly being developed. For example, a glove has been created that uses sensors on the palm of the hand to predict seizures by consistently measuring data and transmitting the information to the patient's doctor. By recording indicators like skin conductivity, muscle tone, heart rate, blood pressure, and temperature, the gloves can be used by doctors to better assess symptoms and assist their diagnoses. Patients with other neurocognitive conditions can also benefit from wearable technology, including alleviation of depression by application of a small electrical shock via a headset; this technology is also being investigated in Alzheimer's disease patients.

One of the most important topics in the field of wearable technologies at MEDICA 2017 was the use of smart patches. Also known as intelligent patches, these wearable products can monitor vital signs when applied to a patient's skin. The patches have been used to measure the process of wound healing by recording temperature changes and communicating any irregular measurements to the patients or doctors via an app. Physical activity is also recorded by the device and, to encourage physical exercise, motivating messages were also directed to the patient's smartphone in response to changes in physical activity.





## 66 By positively impacting therapy, prognosis, and hospital visit duration, wearables may have great benefits for patient survival, as well as health services around the world.

Other innovative applications include cloud- A plethora of studies was presented as part of based voice services combined with health this event, with topics ranging from the latest programmes. As well as answering personal in medical apps to the importance of sleep for tissue regeneration, injury prevention, and health questions, the voice service can initiate actions that will aid the patient's sporting performance. Prof Yannis Pitsiladis, everyday life and enhance their guality of life; University of Brighton, Brighton, UK, used for example, mattress pads can be connected this opportunity to showcase his work with to the software and heated on request. the SUB2 Marathon Project, a programme To assist diagnosis and treatment of potentially he founded with the goal of supporting top life-threatening cardiac conditions, app-based athletes to complete a marathon in <2 hours. ultrasound technology has also been developed By taking an incredibly personalised approach to enable physicians to perform sonography to training, including the analysis of genetic tests in any situation. The technology works data, transcriptomes, metabolites, proteomes, by activating the corresponding app on a and epigenomes, Prof Pitsiladis hopes to push smartphone and connecting it to a USB probe, human sporting performance to new heights which contains the system hardware. The and promote 'clean running'. wide utility of this device makes it invaluable, How personalised medicine relates to injury particularly in a preclinical emergency setting. recovery was also a pertinent subject of By positively impacting therapy, prognosis, discussion. Dr Götz Welsch, the Team Doctor and hospital visit duration, wearables may at Hamburger SV football club, discussed his have great benefits for patient survival, methodology regarding when to allow players as well as health services around the world.

#### **Sports Medicine Racing Towards** the Goal of Personalised Medicine

to 'return to activity', 'return to play', and finally 'return to competition'. This discussion was made all the more poignant in a following discussion by Prof Claus Reinsberger, INDIVIDUALISED medicine was at the heart Paderborn University, Paderborn, Germany of a wide range of discussions held at the regarding head injuries. The consequences of MEDICA MEDICINE + SPORTS CONFERENCE. this form of injury are often underestimated in an event celebrating its 5th anniversary as part sport because the severity of head injuries of the MEDICA trade fair 2017, in Düsseldorf, often only becomes apparent the day after Germany. In an increasingly digital age, the the damage was sustained. With sidelineamount of individualised data available for diagnosis still largely dependent on pupil analysis is unprecedented; a fact which, as reflex tests, Prof Reinsberger introduced a the conference showed, the world of sports safer diagnostic method in his presentation: 'Assessing Concussed Brains Between Clinic medicine is certainly using to its advantage. and Technology'.

99



## 6 Ultimately, this conference sought to emphasise that exercise is itself a form of medicine, showing its remarkable benefits not only for mental health, but also for cardiovascular disease and even many forms of cancer. 99

Digital innovations were, naturally, at the Izzy, an interactive chatbot accessed via forefront of this conference experience, with an enormous range of technology being showcased to supplement patients' sporting experience. Highlights here included a 'smart running coach', which operated based on biomechanical data, as well as devices for the real-time analysis of cardiac arrhythmias.

Ultimately, this conference sought to emphasise that exercise is itself a form of medicine, showing its remarkable benefits not only for mental health, but also for cardiovascular disease and even many forms of cancer. A growing dialogue between sports medical experts and healthcare professionals is paramount to ensuring a balanced, interdisciplinary approach to injury and disease.

#### **Chatbot Allows Conversation-Like Communication for Young Women** with Menstruation Questions

COMMUNICATION technology has changed radically in recent years, particularly in the last decade. With instant messaging across many different platforms becoming an integral part of everyday life, this platform presents Interaction between the user and Izzy is said an incredible opportunity for the medical field. A press release from this year's MEDICA congress highlights how an interactive chatbot is now being used by young women to guickly and easily answer guestions form of a real-time conversation rather than about menstruation.

Facebook messenger, allows young women to talk to 'her' about their menstrual cycle. This programme, specifically targeted at young women who are growing up in social environments where talking about pregnancy and menstrual cycles can be particularly difficult, is not designed to prevent pregnancies but to predict menstruation and ovulation cycles. By the end of August 2017, Izzy had received 750 comments and >1,000 shares on Facebook. This may seem like a bizarre way of communicating medical information, but by requiring only very little information and providing the comfort of not having to have the often-perceived embarrassing conversation with someone face-to-face, Izzy is meeting the needs of those unable, or too nervous, to seek answers to their questions in person.

#### 66 Izzy, an interactive chatbot accessed via Facebook messenger, allows young women to talk to 'her' about their menstrual cycle. 99

to be totally different to any other software currently available. Izzy differs from apps and other software in that there is no need for installation and communication takes the a questionnaire or flowchart.







EUROPEAN MEDICAL JOURNAL

Currently, Izzy is only English speaking, with the majority of users from the UK or USA, but in spite of this, there have also been a number of users in Germany. It is hoped by Izzy's creators that eventually this platform could be expanded to also be a marketplace for feminine healthcare products as described by Dr Hajnalka Hejja, CEO of Smart Health UG, Berlin, Germany: "Our plan is to develop specific services with companies whose target group is female."

#### The Digital Revolution Is Here!

THE DIGITALISATION craze in medicine is in full swing, according to a press release from this year's MEDICA congress. The implementation of information technology and precision medicine are examples of how the digitalisation of medicine is beginning to empower patients, as well as aiding medical professionals to carry out their jobs with increasing accuracy. Prof Erwin Böttinger, Chief Executive Officer of the Berlin Institute of Health, Berlin, Germany, presented a keynote speech at the MEDICA HEALTH IT FORUM as part of a panel discussion titled: 'The future is digital: How data and analytics will transform the healthcare market.' A summary of the discussion was presented in a press release from the congress.

The idea of a 'health cloud' was very much at the heart of the debate session, with the aim of collating all patient data onto one patient-controlled system, accessible anywhere at any time. It is hoped that the analysis of this patient data alongside clinical study information will allow for matchmaking between eligible patients and upcoming studies. This process would enable patients, with guidance from their doctors, to make informed decisions about which therapy path may be the most beneficial for them. The main obstacle highlighted was the transfer of data between sectors, which if not addressed, would hamper the progress of such a potentially national or international network.

The benefits of a system with detailed, genomic patient information have already been demonstrated in the USA. Clopidogrel, an anticoagulant prescribed to those having undergone coronary angioplasty, is inactive in one guarter of patients; as such, these

individuals are still at high risk of infarction, stroke, and other cardiovascular illnesses due to the beneficial effects of clopidogrel not being realised. However, an individual's resistance to clopidogrel can be determined by genetic testing. In the USA, software has been developed to allow a patient's genetic information to be screened almost instantly on a doctor's computer. Provided the genetic information is available, a doctor considering prescribing clopidogrel can utilise the patient's electronic file and instruct the programme to screen for a genetic predisposition to clopidogrel resistance. If the patient is resistant to the drug, a message will notify the doctor via their computer and an alternative solution will be suggested, preventing the prescription of a drug which will not help the patient.

#### 66 This is truly an exciting time for medical innovation! **?**?

Such comprehensive cloud-based data storage could cross many sectors of medicine and could even be managed by the patients themselves. In addition to the direct benefits to patient care, health services will also benefit from the significant reduction in expenditure previously incurred by the unnecessary use of ineffective drugs. This system will also help automate documentation and drug prescription, ultimately freeing up medical staff.





Analysing patient medical data, in combination with data collected from smartphones, fitness trackers, and smart watches, is hoped to be able to identify events which are likely to lead to undesirable outcomes. This use of big data is already being assessed in clinical trials for its reliability in diabetes; wearable technology collects data regarding the patient's normal daily routine and automatically identifies events that have a high probability of occurring in conjunction with hypoglycaemic events, such as long periods of sitting or a fall. If these events are detected, the patient will get a notification to eat something or a warning to see a doctor immediately. Not only does this technology provide early detection of potential medical incidences, it can also educate the patient on events that may occur because of changes in their disease status, allowing them to improve their own therapy or day-to-day activities to benefit their illness management.

The digital advances presented here represent just a snapshot of the effect this digital revolution may hold for both patients and medical professionals alike. This is truly an exciting time for medical innovation!

Novel Methods for Early Detection Prof Holdenrieder concluded by discussing biomarkers of future interest, and diagnostic and Treatment of Cancer tools that had not yet found their way into NEW procedures for the early detection clinical application. Circulating tumour cells, of cancer were discussed in Düsseldorf, cell-free nucleic acids, and genetic and Germany at the annual MEDICA trade fair. epigenetic changes to cell-free DNA and RNA The presentation opened with the question: may represent exciting new approaches for "Is it possible to diagnose cancer from blood?" early tumour detection. Moreover, circulating introducing blood biomarkers of cancer as a exosomes, small vesicles released by tumours, 'hot topic' for oncology. Screening and early may constitute a compartment with tumourdetection increases chances of identifying enriched material in the blood, adding another tumours at earlier stages of disease, when it method of early detection. Exciting novel is most likely to be curable, potentially even research into the potential of these markers before symptoms become noticeable. as cancer diagnostic tools is required.

#### 66 Circulating tumour cells, cell-free nucleic acids, and genetic and epigenetic changes to cell-free DNA and RNA may represent exciting new approaches for early tumour detection. **?**?

The latest developments in molecular and (MRSA), particularly with regard to those immunological treatment approaches have strains carried by tourists and herein lies produced some impressive improvements the necessity for a new conception of in recent years, even benefitting patients 'migration medicine'. whose disease is already at an advanced stage. One such development is the ability to Extrapolated data reveals that by 2050, detect molecular changes in DNA released the number of infection-related deaths will by the tumour into the blood stream. have increased more than 10-fold, with the Through continual patient monitoring during prevalence of multi-resistant bacteria posing and after therapy, clinicians can determine a serious threat. "Serious issues that will the efficacy of treatments. "Some centres are not be easy to deal with may soon develop already carrying out blood-based molecular if this problem is not brought to the public's trials during routine diagnostics," said attention more frequently", warned Dr Beniam Prof Stefan Holdenrieder, Director of the Ghebremedhin, Helios University Hospital Institute for Laboratory Medicine at the Wuppertal, Witten/Herdecke University, German Heart Centre, Munich, Germany. Witten, Germany.

#### 66 Serious issues that will not be easy to deal with may soon develop if this problem is not brought to the public's attention more frequently...



#### The Impact of Migration on Infectious Diseases

'DANGEROUS travel companions' was the poignant theme for the final day of the MEDICA trade fair, Dusseldorf, Germany, 13<sup>th</sup>–16<sup>th</sup> November 2017. This theme introduced the growing problem of multi-resistant infectious diseases, such as tuberculosis and methicillin-resistant Staphylococcus aureus



in the example of Germany. Following increasing globalisation and an influx of refugees, Germany's healthcare system must now be prepared to battle an increasing incidence of tuberculosis, 3/4-multi-resistant Gram-negative bacteria infections, increasing scabies incidence, and parasitic infections such as malaria. Given the nature of refugee migration, it is likely that the majority of refugees will have either travelled from or through an area at high-risk of multiresistant germs.

Reactivation of certain diseases in travellers also constitutes a risk, as Dr Ghebremedhin explained: "The greatest deficiency in the provision of care to migrants is the lack of support to help them deal with their psychosocial and physical stress they experienced during their migration, which means there is a risk of reactivation." This issue is exacerbated by the propensity to house migrants in close proximity with one another, thereby increasing the risk of an outbreak.

There is currently no affordable procedure for a simple, comprehensive screening for all the relevant multi-resistant Gram-negative bacteria, nor a way to detect the underlying molecular mechanisms of the bacteria using routine procedures. Subsequently, there is great unmet need for the optimisation of laboratory

These potential problems are well-expressed diagnostic tools with regard to economical screening for the migrated infections.

#### **Hygiene: Improving Compliance** to Hand Disinfection

BASIC HYGIENE is essential for prevention of transmissible diseases in healthcare environments; it acts to protect those receiving both inpatient and outpatient care, medical professionals, and visitors. The important issue of preventing nosocomial infection featured heavily at this year's MEDICA trade fair.

In the past, one of the most well-known, and effective, methods for infection prevention has been hand disinfection. The World Health Organization's (WHO) 'Clean Care is Safer Care' campaign has initiated an improvement in medical facilities providing in and outpatient care by implementing the Clean Hands Campaign (CHC).

In a MEDICA press release dated 15<sup>th</sup> September 2017, Dr Tobias Kramer, Institute of Hygiene and Medicine, Charité University Hospital, Berlin, Germany, who works on the CHC explained: "We still need to improve compliance with hand disinfection standards." To work as a long-term prevention strategy, these practices need to be supported by key stakeholders such as employees at management-level who have a direct influence over this environment.

...use of hand disinfection agents, reports on observations and compliance, sharing knowledge, memory aids, and optimised dispenser location and fitting, should be focussed on to improve hygiene conformity. 99

According to Dr Kramer, established methods It should also be noted that, in some cases, included in the CHC, including the use of hand 100% infection prevention cannot currently disinfection agents, reports on observations be achieved, in spite of the high level of and compliance, sharing knowledge, memory prophylactic measures undertaken. This is aids, and optimised dispenser location and the case for postoperative wound infections, fitting, should be focussed on to improve where strategies have typically been hygiene conformity. Adding to this, focussing erroneously based upon the notion that on employees at dispenser stations revealed bacteria enter the operating wound from evidence that when they established a within the hospital environment, whilst in disciplined commitment to hand disinfection reality they are often carried in from the standards, through methods such as external environment. As Dr Roland Schulzesetting targets, they produced a sustained Röbbecke, Institute for Medical Microbiology improvement in compliance. "Many patients and Hygiene, University Hospital Düsseldorf, already check the medication that they are Düsseldorf, Germany explains: "Most given by hospital staff and we want to incidences of POWI [post-operative wound encourage this same activity for hand infection] are rather caused by bacteria that disinfection," said Dr Kramer. the patient brings into the theatre themselves and these can only be partly eliminated." Both patients and staff can be unsure of As a result, recording data on this form of procedures in respect to hand disinfection, infection is of great importance, because its therefore a further factor to improve medical elimination cannot be achieved with the professionals' compliance to hand disinfection current level of data available. "This is relies on communicating this information because many of the significant risk factors effectively to patients, as well as their friends cannot be influenced, for example severe and relatives; in this way, these groups will primary disease, old age, obesity, and nicotine be better informed of when and where abuse," explained Dr Schulze-Röbbecke.

disinfection is necessary and can ensure an equivalent level of hygiene from staff.

#### **Challenges in Prevention Strategies:** Infection and Antibiotics

THE GLOBAL spread of infection and the rising levels of antibiotic resistance requires effective translation of current knowledge from preventative strategies into hygiene measures. Methods of diagnosis, although fundamentally different to traditional hygiene measures, also play a key role in some cases of infection and antibiotic resistance, according to a MEDICA press release dated 15<sup>th</sup> September 2017.

Furthermore, novel evidence shows how the 'Clean and Isolate' method of infection prevention in hospitals, used to combat antibiotic resistance, leads to poorer individual outcomes due to less contact Urinary tract infections are diagnosed through with hospital staff. Dr Anna Eva Lauprecht, clinical presentation and microbiological Essen-Mitte Clinic Group, Essen, Germany reports. Dr Thomas Schwarz, Institute for explained how this strategy is not sufficient Medical Microbiology and Hygiene, Johannes to produce a reduction in hospital infections, Gutenberg University of Mainz, Mainz, but noted that: "Clostridium difficile infections Germany, warned: "Both of these involve can be drastically reduced by Antibiotic disturbance variables that can lead to a Stewardship and by restricting prescription false diagnosis being given which in turn of certain groups of antibiotics." Thus, if leads to non-indicated antibiotic exposure." concretely implemented, antibiotic Consequently, the development of optimised stewardship could provide a low rate of strategies in the future could help prevent pathogen resistance to antibiotics; a crucial urinary tract infections. aspect in ensuring a safer improved quality of care.

## 66 Most incidences of POWI [post-operative wound infection] are rather caused by bacteria that the patient brings into the theatre themselves and these can only be partly eliminated.

99