

# HOSPITALS

by Arab Hospital Magazine



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## PUBLISHER'S NOTE

### SMART HOSPITALS Investment in Future and Success

Various analytical studies predict that by 2025, 10% of hospitals globally will have completed or be in various stages of implementing smart hospital initiatives. They also forecast the market opportunity to reach about \$11 billion with the data analytics market. In this context, it is also required to develop various sectors related to hospital activity, including pharmacy and various medical services.

Research indicates that smart hospital focuses on three major areas – operational efficiency, clinical excellence, and patient-centricity – with technological advances leveraged for these three areas to derive smart insights. Market opportunity will make revenues reach \$5.9 billion in 2018.

However, the two largest challenges obstructing hospitals from achieving the smart hospital vision are interoperability and cybersecurity. To truly achieve a 'smart' status by deriving intelligent insights, various devices, systems and networks in the hospital must 'talk' to one another in ways that are coherent and complete for a holistic analysis.

However, this does not mean that this goal is hard to achieve, but we should avoid these challenges and hedge their risks. Hospitals will become "smart hospitals" and being on the right path can help achieve the desired goal.

The Publisher

*S. Chammas*

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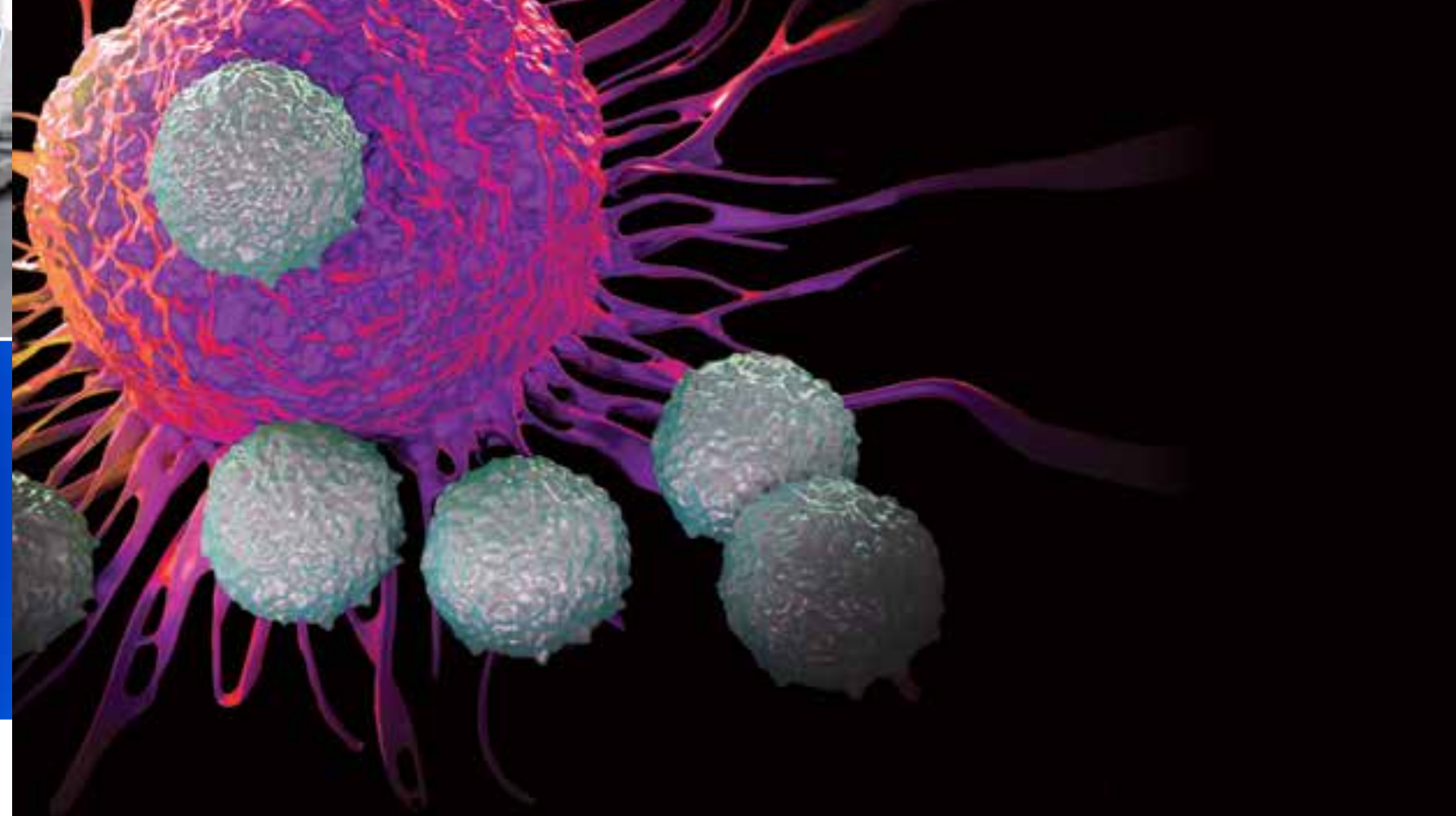
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## FDA APPROVES HISTORIC CANCER BREAKTHROUGH

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## Smart solution by LINET

### Hospital bed as a smart device

The era of the Internet of Things in Healthcare Things, a network-connected healthcare aid is just beginning. Smart technologies can create a more efficient healthcare system in terms of time, energy and cost. With analysts at Market-Research.com claiming that the sector will be worth \$117 million by 2020. We see here a great opportunity for offering solutions that will make healthcare more effective and will simplify what are sometimes unnecessarily complicated hospital processes. A report last year by IDC indicated that enterprise mobility will have penetrated over 80% of MEA healthcare organizations, with over a third of organizations having already developed corporate smart devices.

With online data on mobile devices, healthcare professionals can monitor patients more effectively. Collecting data from various devices searched in applications can help direct healthcare to where it is currently needed. Staff creates proactive management of prevention because prevention is always the most effective treatment.

### All about safety

The place where patients spend the most time is the hospital bed. Together with the fact that modern hospital beds are increasingly sophisticated products, it is logical to create smart beds with their own functional applications. In line with these trends, LINET has developed beds that are connected online and information about the bed is displayed on a PC or mobile device and is part of the central hospital system. Using sensors and their own application known as BedMonitor, they know how to measure the patient's weight or the patient's presence on the bed, thus helping to save human lives.

The system provides clear and comprehensive information about hospital ward bed settings to the caregiver and, in the event of a compromise of any bed safety feature, it immediately reports this situation. They collect data into cloud source repositories which are then available for analysis and improvement of processes.

We know how to visualize data and information well and evaluate them in a truly user-friendly environment. We set the outputs depending on the needs of the customer. We can display them at a specified central site, for example, at a nurses' station and on nurses' and doctors' mobile devices or on wall panels. BedMonitor is fully compatible with Eleganza 2 bed and TOP ICU products Eleganza 5 and Multicare beds.

### Data under control

The strong aspect of the BedMonitor project is its compatibility with the central hospital system. Connectivity and connection to so-called big data greatly enable management to evaluate the effectiveness of the purchased equipment – hospital beds. A very important factor, especially in the health sector, is security. Data in the hospital system, including very private and sensitive information, are potentially highly vulnerable to abuse. The security of our systems is under the strictest control and the data is protected by encryption.

The Internet of Healthcare Things is growing, developing and increasingly affecting our lives. We want to develop our smart system further, to contribute towards creating a friendly, safe and problem-free functioning hospital.

**Jiri Plecity**

Managing director Linet MEA



## Cleveland Clinic Abu Dhabi

Performs Innovative New Procedure for Digestive Disease



Physicians at Cleveland Clinic Abu Dhabi have performed the region's first "POP" procedures, an innovative technique that can alleviate the debilitating symptoms of gastroparesis, a chronic digestive disease.

The non-surgical technique, known as Per Oral Pyloromyotomy (POP), is based on techniques pioneered in Japan and is now available at Cleveland Clinic Abu Dhabi, where four UAE National patients have already undergone the procedure this year. Gastroparesis, which is also known as delayed gastric emptying or "paralyzed stomach", is a disease that prevents a patient's stomach from digesting food and emptying properly. Sufferers experience a range of debilitating symptoms, such as severe nausea, vomiting, heartburn, extreme weight loss, bloating and acid reflux.

While diabetes is one of the main causes of gastroparesis, other illnesses can also cause the disease, such as chronic pancreatitis, cystic fibrosis, kidney disease, Turner's syndrome and Parkinson's disease. In some cases, the cause is unknown and can also occur after previous surgical procedures on the stomach.

### THE GCC'S FIRST 'POP' PROCEDURES ALLEVIATE CHRONIC SYMPTOMS FOR SUFFERERS OF GASTROPARESIS

"Gastroparesis affects millions of people around the world," said Dr. **Matthew Kroh**, Chief of the Digestive Disease Institute at Cleveland Clinic Abu Dhabi. "In terms of incidence, it is one of the fastest-growing diseases that we are currently treating in the Institute and, with more than one mil-

lion people suffering from diabetes in the UAE, gastroparesis is a looming disease burden in the future."

The POP procedure allows physicians to cut the pylorus – the muscular valve that empties the stomach – without surgery. The procedure is performed through the mouth using advanced endoscopic tools and under high-definition vision, which lessens the risk of complications and eliminates the trauma of open surgery. A 35-year-old male patient suffering from cerebral palsy, a birth-related disorder that affects the brain and nervous system, and multiple medical problems underwent the POP procedure earlier this year, while two patients were women in their 50s suffering from Type 2 diabetes.

All four were referred to Cleveland Clinic Abu Dhabi by the Imperial College London Diabetes Centre, part of Mubadala's network of world-class healthcare providers.

"To be able to manage the full spectrum of care for the three UAE National patients who have suffered from gastroparesis is very rewarding. Giving these patients the support and treatment they really need – and watching them steadily improve – makes it all worthwhile," concluded **Dr. Kroh**.

Cleveland Clinic Abu Dhabi's Digestive Disease Institute leads the way in gastrointestinal care in the region through a range of advanced procedures. These include minimally invasive and robotic bariatric, hernia, gastrointestinal, and colorectal surgeries, as well the treatment of pancreatic, liver, and biliary diseases.

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## IVI Middle East Fertility Clinic, Muscat

has recently reported first two successful pregnancies following PGD



**Dr. Human Fatemi**

Subspecialist Reproductive Medicine & Reproductive Surgery, Medical Director, IVI Middle East Fertility Clinic

**P**re-implantation Genetic Diagnosis (PGD) has been instrumental in helping couples prevent the risk of having a child with genetic disorders, according to IVI Middle East Fertility Clinic. The fertility centre recently reported its first two successful PGD pregnancies in Muscat, Oman.

"PGD is a technique where medical experts can check the genes in an embryo before pregnancy occurs.

Couples who have alterations or mutations in their genes, or who have a risk of having children with genetic disorders, benefit from this screening. PGD is the latest reproductive technological advancement in medical science and is immensely important as it gives possibility to these couples to have healthy children and reduces the burden on the family, the healthcare system and society as a whole," said **Prof. Dr. Human Fatemi**, Subspecialist Reproductive Medicine & Reproductive Surgery, Medical Director, IVI Middle East Fertility Clinic.

IVI Middle East Fertility Clinic has made several advances in the reproductive medicine field. The clinic has recently reported two successful pregnancies in Muscat following PGD, which not only highlights the outstanding proficiency of the embryology team but also demonstrates the adeptness of the clinical team for their sustained effort and commitment to achieving 73 percent successful pregnancy rates.

"We are very proud to report that the first two couples who received this treatment have successful pregnancies, where embryos free of genetic disorders were transferred. This is another step in advancing fertility healthcare in Oman and we are happy to be part of such progress," Dr. Francisco Ruiz, IVF Specialist, IVI Middle East Fertility Clinic, Muscat.

Until this year, Omani couples traveled abroad to seek PGD. However, with IVI Middle East Fertility Clinic reporting successful pregnancies following PGD, couples have not only found a new hope but also have access to the world's best treatment options in the region.

The procedure for PGD test is simple. It includes obtaining eggs from the mother and injecting them with the husband's sperm. The fertilized eggs are then followed for five or six days until they become embryos, inside the IVF lab. Then a biopsy is performed from the mature embryo when cells are examined to rule out any genetic mutation/alteration. This process takes about ten days. In the meanwhile, the embryos are frozen by a process known as cryopreservation. When the results from the diagnostic process are available, normal embryos without the genetic disorder are transferred into the mother's uterus.

"With reproductive genetic risk and infertility becoming a global problem, at IVI Middle East Fertility Clinic we are committed to helping couples with our advanced medical care - now and in the coming years," concluded **Prof. Dr. Human Fatemi**.

IVI is the world leader in delivering fertility care with 71 clinics worldwide and more than 160,000 healthy babies born worldwide. They offer a comprehensive range of infertility treatments for both male and female conditions including specific genetic screening, where applicable, to avoid inherited diseases. IVI has the world's most advanced research technology and a team of highly experienced specialists. Their compassionate clinical team ensures that couples seeking IVF treatment are well informed about the details of their treatment and expected results. It is their unique combination of expertise, science, technology and care that enables IVI Muscat to deliver pregnancy success rates of over 72% in the region.



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## The 7<sup>th</sup> Pan Arab Human Genetics Conference

to be launched this January



**Abdullah Bin Souqat**

Executive Director of Hamdan Medical Award

**T**he Center for Arab Genomic Studies, a division of the Sheikh Hamdan Bin Rashid Al Maktoum Award for Medical Sciences, will organize the 7<sup>th</sup> Pan Arab Human Genetics Conference from the 18<sup>th</sup> to 20<sup>th</sup> January, at the Conrad Hotel, Dubai.

**Dr. Mahmoud Taleb Al-Ali**, the Director of the Center for Arab Genomic Studies and the Chairperson of the Scientific Committee of the Conference, said, "Our Arab world has made considerable progress in human genetics research, as is clearly evident from the vast repository of research data in the CTGA database curated and maintained by the Centre for Arab Genomic Studies (CAGS). This database has passed a major milestone with the number of its records exceeding two thousand, thus contributing to the reinforcement of the global status of the



**Dr. Mahmoud Taleb Al-Ali**

Director of the Center for Arab Genomic Studies and the Chairperson of the Scientific Committee of the Conference

CTGA database as the largest ethnic genetic database in the world."

Dr. Mahmoud Taleb Al-Ali reviewed the main topics to be discussed in the conference. These being, Precision Medicine, Big Data in Human Genetics, Genomics of Multifactorial Disorders, as well as the Current Trends in Human Genetics including, Genome Editing, Human Microbiome, and Metabolomics.

This conference is part of the biennial series of conferences that showcase an average of 30 oral lectures and 100 participating research posters each time. The conferences are also accompanied by workshops imparting clinical training as well as the practical hands-on experience of useful clinical and laboratory techniques, such as genetic counseling, cytogenetics, and bioinformatics.

On his part **HE Abdullah bin Souqat**, Executive Director of Sheikh Hamdan bin Rashid Award for Medical Sciences conveyed sincere thanks and gratitude to H.H. Sheikh Hamdan bin Rashid Al Maktoum Deputy Ruler of Dubai, UAE Minister of Finance and the Patron of the Award for his consistent follow-up and keenness to support the events of this major scientific forum, which has become, in record time, at the forefront of events in the field of human genetics at the regional level, and an important icon in defining new horizons for the future of our health and medical sectors in UAE.

He also praised the achievements of the Centre for Arab Genomic Studies, which is focused on two parallel levels; firstly, the diversification of scientific contributions and secondly, the consolidation of relations with Arab researchers. The latter is what the conference has achieved over its six previous sessions that have succeeded in achieving the main objectives of the Arab Center for Genetic Studies. He also paid tribute to the members of the Arab Council of the Center, a constellation of scientists with proven expertise in the field of genetics sciences.

It should be mentioned that the 7<sup>th</sup> PAHGC is held with the participation of a group of prominent regional and international genetics specialists, such as Dr. Fawzan Al-Koraya, Professor of Human Genetics, Faculty of Medicine, Al-Faisal University, King Faisal Hospital, and Dr. Andrew Morris, Professor of Biostatistics and Genetic Sciences, University of Liverpool, UK.



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## An art contest for youth

to help raise health awareness

**T**he Ministry of Health and Prevention (MoHP) recently introduced an art competition to raise awareness on lifestyle-related medical conditions and tap into young people's creativity and innovativeness.

The 'Art for Health' competition seeks to help realize the objective of UAE Vision 2021 aimed at building a world-class health sector with robust preventive measures to reduce the cases of lifestyle-related diseases such as obesity, heart ailment and diabetes.

To establish a globally accepted local health system, **Abdul Rahman bin Mohammed Al Owais**, Minister of Health and Prevention, said: "The ministry is continuously strengthening its preventive measures, launching programmes and building a healthcare system based on UAE Vision 2021, the National Agenda, the Government Excellence System, Smart Government Initiative, the National Strategy for Innovation, and Sustainable Development Strategy 2030."

He said that the competition underscores the role of the arts, and youth, the country's future leaders, in delivering relevant social messages to wider members of the local society and various community segments about chronic diseases.

**Dr. Hussein Abdel-Rahman Rand**, Assistant Undersecretary for Health Clinics and Centres, said the competition is also aligned with the ministry's initiatives in promoting healthier lifestyles in local communities; providing comprehensive and integrated healthcare solutions delivered in innovative and sustainable ways; and preventing the spread of diseases in cooperation with its partners. "The ministry and its partners formulated the National Strategy for the Control of Non-Communicable Diseases 2017-2021. The national socio-economic framework envisions a world-class local health system and a broader medical coverage to improve the domestic sector based on approved methods such as

the national lifestyle indicators, combating obesity in children and reducing the mortality rate among people with heart disease and diabetes," he said.

Dr. Rand further stated that the art competition aims to encourage young people to come up with ideas in relation to the UAE's health sector. According to him, positive health behaviors contribute significantly to the reduction of chronic diseases.

### How to participate

**Dr. Fadila Mohammed Sharif**, Director of Health Education and Promotion, noted that the competition is an innovative way to raise awareness and encourage the youth to support and make a difference in the ministry's efforts in promoting a healthy lifestyle. She said the contest is open to people aged 18 to 30. "Those who wish to participate in the competition must register on its official website and choose the categories - film, infographics, photography, or graphics - and submit or upload their entries online."

## Nannies, caregivers and parents

will be trained in importance of nutritious food consumption

**T**aking care of children can be very challenging for parents. Given that several mothers in the UAE are working women, much of the primary caregiving responsibilities - especially of providing food and nutrition to children - are performed by nannies.

The Al Jalila Cultural Centre for Children's (AJCCC) official nutritionist, **Sheikha Al Ahbabi**, said: "In several households across the UAE, housemaids double up as nannies. In most

cases, these women are not educated and are unaware of what is healthy for children and what's not."

Speaking to Khaleej Times at the sidelines of the press conference that announced the launch of the center's January-February cultural activities, Al Ahbabi stated that the center will launch a free event for nannies, caregivers, parents, and children on the importance of nutritious food consumption. The event, 'The Loop', is set to take place on February 3 and will host over 140 people including parents,

nannies, and children. Pre-registration can be done by visiting the center at Umm Suqeim 3 or over the phone.

Al Ahbabi and the center decided to launch the programme, after noticing that students at the AJCCC were bringing in junk food such as a cheese slice sandwiches, biscuits and juices for major meals. "We have to face the facts: in many households across the UAE, nannies are the primary caregivers. This programme is aimed at educating them on what's healthy for the family," she added.



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## 36% expat respondents in the UAE

do not visit a GP when sick

About 41 percent of GCC residents go directly to a specialist when they fall ill, as opposed to seeing a general practitioner (GP) or family doctor, a survey says. The survey commissioned by Arab Health 2018 - conducted by YouGov in December 2017, with over 2,700 participants from across the GCC - revealed that there is a lack of awareness of the benefits of visiting a GP in the GCC, with only 34 percent of survey respondents visiting them.

When looking at the UAE results, the survey showed a clear distinction between healthcare habits of nationals and expats. Fifty percent of the Emirati nationals surveyed stated that they do not go directly to a specialist without consulting a GP, while 33 percent opt to visit a specialist when they are ill. In comparison to this, an average of 36 percent of expat respondents residing in the UAE stated they do not visit a GP when sick, and 28 percent go directly to a specialist. This suggests that the local population is more likely to visit a primary healthcare provider and have

a family doctor than the expat population, highlighting a lack of awareness on the importance of establishing a relationship with a GP outside of their native countries.

"The GCC, particularly the UAE, has a large expat population. This can make it challenging for patients to create and maintain long-standing relationships with a primary healthcare provider, with one doctor or clinic having visibility over the patient's medical history and care. However, we recommend that residents find a trusted family physician who can coordinate their medical care including referring them to specialists when necessary," said **Dr. Rahul Goyal**, Consultant Family Medicine and Physician Clinical Informatics Lead, Mediclinic, Dubai.

"Family physicians possess unique attitudes, skills and knowledge, which qualify them to provide ongoing, comprehensive medical care to each member of the family," said **Dr. Nahed Monsef**, Director of Health Affairs Department, Primary Healthcare Services

Sector, Dubai Health Authority (DHA).

"In addition to diagnosing and treating acute and chronic illnesses, family physicians provide routine health screenings and counseling on lifestyle changes in an effort to prevent illnesses before they develop. The cornerstone of family medicine is an ongoing, personal patient-physician relationship focused on integrated care that provides optimal medical care by looking at the whole person, rather than focusing on just one organ system. "Family physician does every effort needed to communicate clearly with consulting specialists to coordinate care and minimise inconvenience to patients," Dr. Monsef added.

**Katie Briggs**, Executive Director, Arab Health 2018, said: "The 43<sup>rd</sup> edition of Arab Health introduces new conferences that focus on topics that are relevant for today's practitioners and patients. The family medicine conference will welcome an active panel of notable local and international experts in a wide range of medical areas."

## Every hour one person gets a stroke in UAE

At least 50 per cent of stroke patients in the UAE are below the age of 45, which is an alarming statistic that calls for urgent lifestyle changes and an increase in awareness, according to a senior doctor. In the UAE, after road accidents, stroke is the second leading cause of disability. Annually 8,000-10,000 patients in the UAE get a stroke; this means every hour, one person gets a stroke.

Approximately 8,000 to 10,000 patients get a stroke per year in the UAE, said **Dr Suhail Al Rukn**, Stroke and Neurology Consultant and Head of Stroke Unit at Rashid Hospital. "Stroke awareness in the UAE is particularly important," he said. "Fifty per cent of the stroke patients in the UAE are below the age of 45 years, as compared to the global average, where 80 per cent of stroke patients are above the age of 65 years. For the UAE, this is an alarming statistic and calls for urgent lifestyle changes and increase in awareness," he warned. Stating the reason for such high numbers, Dr Al Rukn said that the sedentary lifestyle, diabetes, obesity, dependence on fatty foods and a diet high in salts were some causes. "In the UAE, 18 to 20 per cent of the population is obese, 20 per cent of population are diabetics. Moreover, high salt consumption is a major issue. The average amount of salt needed on a daily basis is two grammes, however, the average amount of salt people in the UAE consume per day is 15 grammes, which is way above the required limit," he added.

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## 7<sup>th</sup> ISN-EMAN Update in Nephrology

Under the Patronage of H.H. Sheikh Hamdan Bin Rashid Al Maktoum

Under the patronage of H.H. Sheikh Hamdan Bin Rashid Al Maktoum, Deputy Ruler of Dubai, Minister of Finance, UAE and President of Dubai Health Authority, H.E. Humaid Al Qatami, Chairman of the Board and Director-General of the Dubai Health Authority inaugurated the 7<sup>th</sup> ISN-EMAN Update in Nephrology, which kick-started at InterContinental Dubai Festival City, Dubai, UAE, in presence of a number of senior health leaders.

This year, the conference is supported by Sheikh Hamdan bin Rashid Al Maktoum Award for Medical Sciences, the International Society

of Peritoneal Dialysis (ISPD), and the International Society of Haemodialysis (ISHD). In addition, Kidney Disease: Improving Global Outcomes (KDIGO) have joined forces to lead a highly educational congress related to speciality medicine concerning kidney functions, problems, preservation of kidney health and the treatment.

In the opening speech of the conference H.E. Al Qatami said: "This conference reaffirms the cooperation among various stakeholders in the healthcare sector in the UAE and beyond, and the joint efforts to advance scientific and medical research in the field of Nephrology and renal diseases.

Such conferences represent valuable opportunities to exploit latest expertise and advanced techniques available on global levels to develop the local healthcare sector."

**Dr. Mona Alrukhaimi**, the conference President, also commented on this occasion: "The Seventh Educational Conference of the International Society of Nephrology 2017 will discuss a wide range of topics covering all Clinical Nephrology, Dialysis and Transplantation, in addition to featuring the latest technologies and methodologies in this regard. This year, the congress and workshops is accredited by Ministry of Health with 16.25 CME points."

## Sheikh Hamdan bin Rashid Al Maktoum Award

for Medical Sciences organizes the Rare Disease Day

Sheikh Hamdan bin Rashid Al Maktoum Award for Medical Sciences organized the Rare Disease Day competition for public and private schools in the UAE for the third year in a row.

The objectives of the competition are to raise students' awareness and promote their positive attitudes towards health challenges, particularly towards "Rare Diseases", to promote the principles of research and exploration and to develop the talents of students and encourage them to innovate and participate in competitions. The competition includes a variety of categories which target different talents of students, such as the Written Work Competition, which encourages students to submit a literary story in the context

of either Rare Disease Day in general or about the suffering of a patient in particular. Other categories include art and painting competitions, handcrafts around Rare Diseases, as well as Theatrical, Musical, and Radio Works, all around the theme of rare diseases. Entries must be sent no later than 15 January 2018 according to the Terms of the competition on the website: <http://rdduae.ae/>.

In this context, His Excellency **Abdullah Bin Souqat**, the Executive Director of the Award, expressed the interest of the award by highlighting the issue of rare diseases in the United Arab Emirates, which is one of the most interested countries to preserve the rights of special needs. He also stressed that the main objective of the competition is to educate all

groups of society on rare diseases and how to prevent them as well as the best way to detect them early.

He added that the award is always keen to support these activities and scientific and practical programs, based on the directives of His Highness Sheikh Hamdan bin Rashid Al Maktoum, Deputy Ruler of Dubai, Minister of Finance, Sponsor of the Award, in order to increase awareness and knowledge of diseases among members of society in the United Arab Emirates and the Arab region.

It is worth mentioning that the competition will be organized by the Organizing Committee for the Rare Disease Day 2018. Names of winners from each category will be announced later through the website of rare diseases.



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## Study shows low mortality, stroke risks

for minimally invasive aortic valve replacements



**Joseph Lamelas, MD, FACS**

Professor and Associate Chief Of Cardiac Surgery in the Division of Cardiothoracic Surgery at Baylor College of Medicine

**A**n analysis of more than 1,000 minimally invasive aortic valve replacements and more than 400 additional associated procedures over a five-and-a-half-year period performed by Dr. Joseph Lamelas, Professor and Associate Chief Of Cardiac Surgery in the Division of Cardiothoracic Surgery at Baylor College of Medicine, showed low stroke rates and high survival rates in all age groups within 30 days of surgery. His report appears in the *Journal of Thoracic and Cardiovascular Surgery*.

Aortic valve replacements are performed when treating aortic valve stenosis or aortic valve regurgitation. Aortic valve stenosis occurs when the aortic valve opening is narrowing and restricts the blood flow from the left ventricle to the aorta. This makes the heart work harder to pump blood to the body. Aortic valve regurgitation takes place when there is a

leakage of blood through the aortic valve into the left ventricle. Lamelas performs a minimally invasive procedure to replace the aortic valve. The procedure requires only a two-inch incision between the ribs rather than opening the breastbone. This results in a shorter stay in the hospital and a faster recovery time.

To document the results of this particular approach, Lamelas assessed more than 1,000 of his aortic valve replacement procedures over a five-and-a-half year period. He also assessed more than 400 additional concomitant procedures, meaning the patient had an aortic valve procedure with another procedure such as mitral valve repair or ascending aorta replacement. The procedures were performed when Lamelas was with Mount Sinai Heart Institute in Miami Beach, Fla., between January 2009 and July 2015. Lamelas currently conducts surgeries at Baylor. St. Luke's Medical Center.

Lamelas and colleagues compared patients less than 80 years old to those over 80 years old. They found the mortality rate in patients who only had the aortic valve replacement was 1.3 percent and 3.2 percent in the group that had a concomitant procedure. The risk of stroke was 0.8 percent and 1.1 percent, respectively, in both age groups.

"We found that the risk of mortality and stroke was a little bit higher for older patients, but not statistically significant compared to the younger patients," said Lamelas. In addition, they found low rates of complication in all age groups, a significantly reduced length of stay in the hospital, low postoperative complication rates and a low postoperative length of stay. In the concomitant group, results also were similar.

"These results further demonstrate that there is no need to do a full sternotomy if we have this procedure available," said Lamelas, who is a pioneer in the field of minimally invasive heart surgery and has developed facilitating instruments for the procedure. Others who took part in the study include Dr. Maurice Mawad, Dr. Roy Williams, Ursula Weiss Keller, Qianzi Zhang and Dr. Angelo LaPietra with Mount Sinai in Miami. Lamelas receives honoraria from Medtronic, St. Jude and On-Q and has an ownership interest in Miami Instruments.

**For more information contact International Services at Baylor St Luke's Medical Center Via email at** [international@stlukeshealth.org](mailto:international@stlukeshealth.org) or call +1 832 355 3350 or visit [StLukesInternational.org](http://StLukesInternational.org) Texas Medical Center, Houston, Texas - USA

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## Importance of clinical testing

highlighted during MEDLAB 2018



**T**he largest attended expo worldwide will be taking place between 5<sup>th</sup> and 8<sup>th</sup> February 2018. The MEDLAB Exhibition welcomes more than 600 exhibitors and 25,000 attendees, giving the opportunity for leading laboratories and manufacturers to showcase their products and services, and initiate business opportunities in the vigorously growing healthcare market in the Middle East.

Tom Coleman, Group Exhibition Director of MEDLAB Series stated: "Lab tests guide over 70 percent of medical decisions and personalized medicine, opening new windows to modern-day healthcare. At this year's MEDLAB conference, we discuss how a talented pool of pathologists, biochemists, medical laboratory scientists, and other highly skilled medical staff can add value to improve the quality of the patient diagnostics and overall healthcare system." At the Congress, leading medical practitioners discuss the increasingly important role clinical laboratory professionals play in today's healthcare

system, from early detection and diagnosis to customised treatment plans based on the patient's unique genetic structure. Laboratory testing is key to improving patient care and the quality of services provided.

**Dr. Nader Lessan**, the Consultant Endocrinologist at the Imperial College London Diabetes Centre and Chair of Endocrinology conference at MEDLAB 2018, stated: "Most and perhaps all medical specialties rely on biochemical and other laboratory disciplines in reaching correct diagnoses. This is even more crucial in Endocrinology where correct course of action directly depends on biochemical and hormonal results. Conditions such as hypothyroidism, hyperthyroidism and of course, diabetes are common examples. Less common examples include acromegaly, Cushing Syndrome, and pheochromocytoma; a close relationship between the laboratory and the clinician is pivotal to patient management".

The process of laboratory testing includes a laboratory technologist or

nurse collecting the patient's sample of blood, tissue and/or other biological matter, which is then sent on to the laboratory where it is uniquely identified and examined to derive meaningful results for doctors.

The laboratory testing process forms the basis of many other processes, including diagnosis and treatment, and therefore, it is of utmost importance to continuously improve the process and stay up-to-date with the latest technologies and advancement in the industry to better serve our patients today.

**Carlo Kaabar**, Director of Laboratory Services and Outreach at the American Hospital Dubai and Chair of the Laboratory Management conference at MEDLAB 2018, stated: "Today there are several laboratory tests that are far more accessible to patients than ever before. Advances in science and technology have enabled emerging laboratory tests to determine whether patients will respond to prescribed drugs prior to beginning therapy, ensuring that the first treatment patients receive, is the right one."

**Dr. Najat Rashid**, Chief of Laboratory Services at Sheikh Khalifa Medical City Ajman, Ministry of Presidential Affairs and Chair of the Clinical Chemistry conference at MEDLAB 2018, stated: "It is critical for the healthcare community to raise awareness on the importance of clinical tests in order for them to reach their full potential and combat public health issues. In addition, policies and regulations must continue to be adopted to encourage innovation and facilitate patient access to tests while ensuring that the tests are safe and effective."

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## Hamdan Medical Award

welcomes grant funding applications for scientific projects



**Abdullah Bin Souqat**

Executive Director of Hamdan Medical Award

**S**heikh Hamdan bin Rashid Al Maktoum Award for Medical Sciences invites applications for funding scientific medical projects from the United Arab Emirates, for its 10<sup>th</sup> term (2017-2018).

This was announced by His Excellency **Abdullah Bin Souqat**, Executive Director of the Award. He pointed out the leading role of the award as the oldest provider of scientific research in the United Arab Emirates with over 18 years of ongoing support for medical research. Supporting medical research enriching the culture of scientific research among doctors in the UAE is one of the main objectives of the Award.

Detailing the application process for the research grant, he said, "All requests for support along with supplementary documents and



**Prof. Sehamuddin Galadari**

the Chairman of the Medical Research Grant Committee

papers are required to be submitted electronically through the electronic portal. This will facilitate researchers to submit the required papers in addition to taking all the necessary evaluation procedures for this research. The Award will also launch an advertising campaign to open the door to receive requests for research support. This campaign will target most academic institutions and research and therapeutic centers across all emirates, in order to provide as many researchers as possible with support requests."

**Prof. Sehamuddin Galadari**, the Chairman of the Medical Research



Grant Committee said: "The submitted projects will be reviewed by two panels of local and international reviewers, and the importance of each project and the potentials of its success will be considered in light of its scientific values and the need for them in the UAE health institutions".

The Medical Research Support Center of the Sheikh Hamdan Bin Rashid Al Maktoum Award for Medical Sciences is one of the most important centers that has contributed to the scientific research process in UAE.

Over the past 18 years, it has funded 103 scientific research worth AED 20 million, from the most important universities in the UAE such as the University of Sharjah, Emirates University, and New York University Abu Dhabi, as well as from institutions such as the Ministry of Health and the Dubai Health Authority.

In doing so, the Center has helped establish the role of scientific research in the medical field by focusing on critical health issues within the UAE and has played a major role in building a sustainable research climate and the transfer of knowledge.

Applicants for the Medical Research Support are requested to apply through the online applications system at <http://hmaward.org.ae/mrg/>. The deadline to submit the applications is the 31<sup>st</sup> of March 2018.



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## Cardiac care critical for people living with type 2 diabetes

Diabetes management is not only about reducing blood sugar



**Dr. Najiba M Abdulrazzaq**

Consultant Internist  
Head of Medical Department  
Al Baraha Hospital  
Head of Infection Prevention and  
Control Central Committee

**D**iabetes and its complications are major causes of death in most countries. The thin line between life and death is often the lack of awareness.

Despite the fact that lifestyle interventions and adherence to medications are central to disease prevention and management, public health education is still needed at the population level to address the public lack of awareness of the disease, its complications and their lasting effects on a person's health and psyche. Moreover, it is important to encourage behavior change to prevent type 2 diabetes' multiple complications.

Type 2 diabetes is the most prevalent form of diabetes and has increased alongside cultural and societal changes. In high-income countries, up to 91% of adults with the disease have type 2 diabetes. In the Middle

East and North Africa Region (MENA), two out of five adults with diabetes are actually undiagnosed.

People with type 2 diabetes are at increased risk of heart disease and stroke. When patients have both hypertension and diabetes, it is evident that the risk for cardiovascular disease (CVD) doubles. In fact, cardiovascular disease is the most common cause of death and disability among people with diabetes. Further risks are aggravated by high cholesterol, smoking and sedentary lifestyle.

Awareness campaigns, specialized clinics, and financial investments are some of the actions implemented to address not only the increase in the number of diagnosed patients but to raise awareness and prevent diabetes complications within the diabetic population. The American Diabetes Association recommends that in all patients with diabetes, cardiovascular risk factors should be systematically assessed at least annually. To prevent adverse effects on one's health, it is

most advisable to manage glucose, also called blood sugar. There is growing evidence supporting the cardio-protective benefits of some pharmacological agents over the others in certain cohorts of patients, however, research in this field is still ongoing to provide more details.

The high blood glucose due to diabetes damages not only blood vessels but also one's nervous system, kidneys and eyes. Reducing one's weight especially through a balanced diet and exercise can decrease insulin concentration and increase insulin sensitivity. Also; restricting from harmful lifestyle habits such as smoking can further help, in addition to controlling the blood pressure and cholesterol. Reducing CVD outcomes associated with diabetes requires a global approach that focuses on the reduction of multiple risk factors for CVD. Completing the annual cycle of care can help achieve better outcomes for people with diabetes. Regular assessments can prevent complications and other adverse outcomes associated with the disease.



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## DIABETES: Liberation Through Innovation



**Amer Haddadin,**  
Regional Director, Abbott Diabetes Care

**D**iabetes levels are at an all-time high, with more than 425 million people living with the disease across the globe. To exacerbate matters, as many as 4 million people will have lost their lives to diabetes and its complications by the end of 2017, according to the IDF Diabetes Atlas 2017.<sup>1</sup>

Like most Gulf countries, the situation is no better in the UAE; the high prevalence of diabetes resulted in having more than 1 million people with type 1 and type 2 diabetes (age 20-79). This means that one in every nine people are afflicted by the disease, with as many as 482,500 of those cases still undiagnosed.<sup>1</sup>

While type 1 diabetes is more easily identifiable, although its cause and prevention are not known with currently available knowledge, it arguably types 2 diabetes that poses a greater threat as symptoms may only surface once complications have already set in. Furthermore, type 2 diabetes was only seen in adults until recently, but it is now increasingly prevalent among children.<sup>2</sup> Usually, there are several ways of managing the disease; healthy lifestyle choices,



**Dr. Abdulrazzaq Al-Madani**  
President, Emirates Diabetes Society

educating patients on self-management of diabetes and adherence to pharmacological interventions being some of them. However, it is also becoming increasingly clear that traditional technologies for self-management may no longer be adequate for the comprehensive management diabetes requires.

The conventional method of checking glucose levels approximately 6-8 times a day is still useful for patients with diabetes using insulin, but there is a notable data void between assessments. Depending on an individual and their lifestyle, their glucose levels may rise, drop or remain flat during that period and this crucial information sits in a veritable blind spot.

Another challenge with traditional methods of monitoring glucose levels as outlined earlier is ensuring patients adhere to clinical recommendations. Looking specifically at the region, according to a regional survey, more than half the residents of UAE, Saudi Arabia, and Kuwait feel anxious about having to prick their fingers multiple times a day, and a similar percentage believe testing glucose levels regularly interferes

with the daily lives of people with diabetes. This underscores the need for a more convenient method to monitor glucose levels.<sup>3</sup>

Although the technology to gather glucose data, which, importantly, did not require multiple fingerprick calibrations, was not available with traditional self-checking methods, replacing routine fingerpicking is now entirely possible with flash glucose monitoring system such as Abbott's FreeStyle Libre. The scope of glycaemic data and ease of its collection makes flash glucose monitoring system paramount to more effective management of diabetes.

The Abbott FreeStyle Libre flash glucose monitoring system allows patients to monitor their interstitial fluid glucose via a sensor on the back of the upper arm, eliminating the need for routine finger pricking while delivering instant results\*. The FreeStyle Libre sensor, which lasts for up to 14 days, automatically measures the patient's glucose day and night and without the need for fingerprick calibration. FreeStyle Libre system typically delivers a user's 8-hour glucose history together with a trend arrow to show if their glucose levels are steady, rising or dropping.

**This technology provides a cutting-edge method of glucose monitoring to support an effective diabetes management program and helps doctors to make better-informed therapy decisions.**

To further enhance the efficacy and scope of this innovative technology, Abbott recently launched the Abbott Diabetes Academy in collaboration with the Emirates Diabetes Society and Dubai Healthcare City

to support healthcare professionals with breakthrough training on methods and solutions for more effective patient management.

With its mission to shift the paradigm in diabetes management and become one of the leading education and training partners for the regional public and private healthcare and diabetes community, the Abbott Diabetes Academy is providing practical tools which can be applied by endocrinologists, diabetologists, and educators to improve the management of diabetes.

**Amer Haddadin**, Regional Director, Abbott Diabetes Care, said: "There is an increasing occurrence

of diabetes in the region, making its effective management all the more important. At Abbott, we identified some of the key issues that stood in the way of achieving that goal and addressed them. We are now able to gather actionable, real-time data without the associated inconvenience of fingerprick calibration. Not only does this substantially improve the quality of life of people with diabetes, through our academy, it provides healthcare professionals with deeper insight for better management of the disease. We are delighted to have the endorsement of the EDS and DHCC to make this academy a reality; it is an honor to be granted the support of such prominent organizations."

**Located in the heart of Dubai Healthcare City, the Abbott Diabetes Academy has devised an innovative program, designed in collaboration with the leading experts in the field, which includes cutting-edge solutions for disease management.**

The program is made up of four learning modules, the first of which looks beyond HbA1c to assess current practices. The second module deals with understanding Ambulatory Glucose Profile (AGP), AGP as a reporting standard and clinical decision-making with AGP.

The third module addresses fundamentals of glucose monitoring and introduces new technology solutions, such as the Abbott FreeStyle Libre flash glucose monitoring system. The system integrates AGP and enables effective glucose data management. The program isn't merely theory-based, using interactive and collaborative workshops as part of the curriculum to ensure that the entire program is as engaging as it is informative.





This course is completed with practical case studies, patient education and the standardization of glucose data reporting to make for a more personalized setting. Each group is limited to just 8 participants, promoting immersive discussions and a greater exchange of ideas and experiences between attendees.

"What Abbott has started with The Abbott Diabetes Academy is a huge step in the right direction, We're thankful to them for starting this journey, and we hope it allows us to achieve the goal we are all looking

for," said **Dr. Abdulrazzaq Al-Madani**, President, Emirates Diabetes Society. Clinical practice tools and patient education materials can help physicians and their healthcare teams to effectively meet the needs of people with or at risk for diabetes.<sup>4</sup>

The Abbott Diabetes Academy encourages healthcare professionals to sign up via website: [www.abbottdiabetesacademy-me.com](http://www.abbottdiabetesacademy-me.com) and get equipped to better tackle what is quite possibly one of the biggest medical crises facing our generation and beyond.

For more information on Abbott FreeStyle Libre flash glucose monitoring system, visit [www.freestylelibre.ae](http://www.freestylelibre.ae). Abbott is a global healthcare company devoted to improving life through the development of products and technologies that span the breadth of healthcare.

With a portfolio of leading, science-based offerings in diagnostics, medical devices, nutritionals and branded generic pharmaceuticals, Abbott serves people in more than 150 countries and employs approximately 94,000 people. [www.abbottarabia.com](http://www.abbottarabia.com)

[www.abbottdiabetesacademy-me.com](http://www.abbottdiabetesacademy-me.com)



#### References:

- 1.IDF Diabetes Atlas, Eighth Edition, 2017
- 2.WHO Diabetes fact sheet updated November 2017
- 3.YouGov Survey, 2017
- 4.National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK).

#### \*Disclaimer

A fingerprick test using a blood glucose meter is required during times of rapidly changing glucose levels when interstitial fluid glucose levels may not accurately reflect blood glucose levels, or if hypoglycemia or impending hypoglycemia is reported or the symptoms do not match the system readings.



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## American Hospital Dubai

successfully conducts Dubai's first ever CT scan-based high dose Brachytherapy radiation treatment



**Dr. Tarek Dufan**

MD, Msc, FRCPC, Director of Radiation Oncology

**A**merican Hospital Dubai successfully conducted High Dose Brachytherapy radiation treatment on a patient diagnosed with cervical cancer—a first-of-its-kind procedure to be done in

the Dubai and Northern Emirates area. The procedure was performed by a team of radiation oncology experts led by Dr. Tarek Dufan, the hospital's Director for Radiation Oncology, using the CT scan-based high dose brachytherapy radiation. The patient was kept under deep sedation during the procedure and was also sent home on the same day of the treatment.

American Hospital Dubai is the only DHA-certified Brachytherapy unit in Dubai and the Northern Emirates. It is also a fully certified International Centre of Excellence for Brachytherapy and Radiotherapy to Varian Medical Systems, a leading radiation oncology treatments, and software maker. Brachytherapy, which is also called internal radiation therapy, allows a physician to use a higher total

dose of radiation in order to treat a smaller area in a shorter time possible with high dose rate radiation treatment. The procedure involves the delivery of a high dose of radiation to the cancer mass while also saving the surrounding normal structures. The technique is now being used as an option to treat individuals diagnosed with cervical, uterus, prostate, lung, esophagus, breast, head and neck cancers.

**Dr. Dufan** said, "We are proud to reveal that American Hospital Dubai was able to successfully perform its first Brachytherapy radiation treatment. During the session, we

placed the patient under sedation and performed the procedure, which involved the use certain applicator device to deliver the high dose rate radiation Iridium seed to eliminate the cancer mass in the cervix area. Post-procedure, we found that the patient was alright and was not required to be confined to observation.

The successful treatment demonstrates American Hospital Dubai's strong commitment towards providing world-class healthcare services to our patients. We are confident that the availability of this new treatment in Dubai will play a significant role in our efforts to help treat patients diagnosed with cancer."

## American Hospital Dubai

successfully performs first CT fluoroscopy-guided lung biopsy



**Dr. Dunia Gazi Abdelrahman**

MD, Radiologist

**A** team of radiologists and pulmonologists from the American Hospital Dubai successfully performed its first case of computerized tomography (CT) fluoroscopy-guided lung biopsy using its newly acquired low-radiation dosage CT scanner.

The hospital is the first in the Middle East region to offer the state-of-the-art CT scanner with reduced radiation dose requirements as part of its bid to deliver advanced medical support at the local and regional levels. Its first case of CT fluoroscopy-guided lung biopsy procedure marks another groundbreaking milestone in its initiatives relating to the provision of superior medical care.

**Dr. Dunia Gazi Abdelrahman**, MD, Radiologist at American Hospital Dubai, said: "CT-guided biopsy, in general, is rarely used compared with an ultrasound-guided biopsy but it has been proven effective in other

anatomical areas such as lungs and bones. The CT fluoroscopy capability of our modern CT scanner allowed our renowned team of specialists to push through with the procedure without any major concern. This is indeed a momentous event for the American Hospital Dubai as we continue to innovate in the delivery of our services in line with our commitment to high-quality patient care and in support of the growing healthcare system in Dubai and the UAE."

**LATEST DEVELOPMENT MARKS ANOTHER MILESTONE IN HOSPITAL'S INITIATIVES TO PROVIDE ADVANCED MEDICAL SUPPORT**

CT fluoroscopy not only enables faster and crisp image reconstruction but it also reduces radiation exposure. Using a co-axial needle technique for a more stable position, the procedure is less invasive and more economical than surgery.

"This latest development is a concrete demonstration of the American Hospital Dubai's unwavering quest to always be ahead of its competitors when it comes to extending pioneering and best-in-class health solutions.

Additionally, we have shown our sustained willingness to keep abreast of the latest global trends and apply the same in our processes and procedures to guarantee quality and best outcomes in our services. Rest assured that we will consistently embark on similar endeavors to effectively address the health needs of all our patients," Dr. Dunia concluded.



Medical Director, Gilead Sciences Eastern Europe and Middle East

## Dr. Samer El-Ali

“HIV is now considered a chronic disease”

**D**r. Samer El-Ali, Medical Director, Gilead Sciences Eastern Europe and Middle East, gave “Hospitals” magazine the below interview on the sidelines of the 2<sup>nd</sup> HIV Summit in the Middle East held in Dubai.

**We would like to start by highlighting on the agenda of this summit? What are the main topics? How many attendees?**

The 2<sup>nd</sup> HIV Summit in the Middle East, accredited by the Health Authority Abu Dhabi and supported by Gilead Sciences, has seen over 100 international and Middle East experts convene in Dubai on December 15 and 16, 2017.

The Summit, entitled ‘Today’s Choices – Tomorrow’s Health’ discussed recent updates and developments in the field of Human Immunodeficiency Virus (HIV) in the region.

For the second consecutive year, the Summit gathered leading infectious disease experts committed to the exchange of know-how and best practices focused on HIV management. The experts at the HIV Summit aimed to explore the challenges



of linkage to care as a key factor in changing the HIV epidemiology and achieving the UNAIDS 90-90-90 goal particularly focusing on optimizing community testing and access to treatment as prerequisites for linkage to care.

**Tell us about the recent figures on spreading of HIV in the world? Are they growing?**

According to the latest data available from the Joint UN Program on HIV and AIDS (UNAIDS) an estimated

36.7 million [30.8 million–42.9 million] people globally are living with HIV. Even though new HIV infections have declined by 16% since 2010, 1.8 million [1.6 million–2.1 million] became newly infected with HIV in 2016.

Today 1 in 3 people living with HIV still do not know their HIV status, so only 20.9 million [18.4 million–21.7 million] were accessing antiretroviral therapy in June 2017 and 1.0 million [830 000–1.2 million] people died from AIDS-related illnesses in 2016.

In 2016, there were 230 000 [160

000–380 000] people living with HIV in the Middle East and North Africa, out of which an estimated 18 000 [11 000–39 000] were new HIV infections and an estimated 11 000 [7700–19 000] people died of AIDS-related illnesses. Between 2010 and 2016, the number of AIDS-related deaths in the region increased by 19%.

When it comes to the treatment coverage, 24% [15–41%] among people living with HIV have been receiving treatment, of course, figures will vary from one country to the other.

GCC countries – fortunately – are showing a low prevalence of HIV infections relatively to countries like Iran, Sudan & Morocco, however, the new infections rates are still a concern.

**Is there an action strategy to raise awareness about this disease, in terms of the prevention or the mechanism of treatment and follow-up?**

Gilead is actively involved in several medical community partnerships that focus on expanding screening programs, encouraging patients to take an active role in their treatment and linking them to prompt, appropriate medical care.

It is crucial to educate both decision-makers and the population at large that the treatment and management of HIV have come a long way, with many of HIV patients now able to look forward to having a normal life expectancy. As such, HIV is now a chronic manageable condition.

**Is there a development in the quality of tests that diagnose the disease?**

The quality of tests that diagnose HIV was never in question. It is the accessibility of testing and stigma

related to HIV that hinder the diagnosis. Many people who might have been exposed to HIV worry about doing the test because of the potential consequences they might face in their communities if tested positive.

When we polled the Summit’s attendees and asked them what is the most difficult area in achieving 90-90-90, 43.2% responded – testing – confirming that all countries face the same issue, especially countries that have a low prevalence of HIV.

**We would like you to talk about modern treatments that control HIV and limit its development?**

Gilead is motivated by the urgent need to develop and deliver medicines that help save and improve lives, and for 30 years, Gilead has focused on the development of an antiretroviral therapy to treat HIV/AIDS, helping transform HIV infection from a fatal and debilitating disease into a chronic, manageable condition. In 2006, Gilead introduced the first single tablet regimen to treat HIV,

transforming the treatment of the disease. Today we have five single tablet regimens available to patients and providers to help address the diverse needs of HIV patients worldwide.

Advances in treatment over the last 30 years mean that HIV is now considered a chronic condition and people living with HIV can expect to live almost as long as the general population.

**To what extent is managing HIV treatment important to achieve the desired results? How can this be done?**

Many barriers remain to further expanding HIV treatment, although momentum is on the side of progress. There is now clear evidence that treatment scale-up can help turn the tide of the epidemic, and that treating more people can help reduce AIDS deaths and prevent new HIV infections. Achieving the goal of universal access to HIV treatment is within reach, and has never been more important.





## Infectious disease experts

share latest developments in HIV treatment at the 2<sup>nd</sup> HIV Summit in Dubai



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**Dr. Samer El-Ali**, Medical Director, Gilead Sciences Eastern Europe and Middle East stated: "For the second consecutive year, HIV Summit gathered leading infectious disease experts committed to the exchange of know-how and best practices focused on HIV management. Our ambition is to provide healthcare community in

the Middle East a platform for continuous education on the effective HIV treatment, which leads to the better support for the people affected by HIV across the region."

According to the latest data available from the Joint UN Program on HIV and AIDS (UNAIDS) an estimated 36.7 million [30.8 million–42.9 million] people globally are living with HIV. Even though new HIV infections have declined by 16% since 2010, 1.8 million [1.6 million–2.1 million] became newly infected with HIV in 2016. Today 1 in 3 people living with HIV still do not know their HIV status, so only 20.9 million [18.4 million–21.7 million] were accessing antiretroviral therapy in June 2017 and 1.0 million [830 000–1.2 million] people died from AIDS-related illnesses in 2016.

On the occasion of World AIDS day, **Dr Tedros Adhanom Ghebreyesus**, WHO Director-General, issued a statement saying: "Providing the right health services to those who need them, in itself, isn't enough. If we are to achieve equity, to reach universal health coverage and to ensure the right to health for all, we need to work beyond the health system. The broader policy and social environment continues to play a critical role in shaping HIV epidemics and facilitating or hindering effective responses. The principle of 'everybody counts' must be enshrined in policies, laws and practices that span across all relevant sectors, adopting a whole-of-government approach."

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the Middle East and North Africa, out of which an estimated 18 000 [11 000–39 000] were new HIV infections and an estimated 11 000 [7700–19 000] people died of AIDS-related illnesses. Between 2010 and 2016, the number of AIDS-related deaths in the region increased by 19%. When it comes to the treatment coverage, 24% [15–41%] among people living with HIV have been receiving treatment. The experts at the HIV Summit aimed to explore the challenges of linkage to care as a key factor in changing the HIV epidemiology and achieving the UNAIDS 90-90-90 goal particularly focusing on optimising community testing and access to treatment as prerequisites for linkage to care.

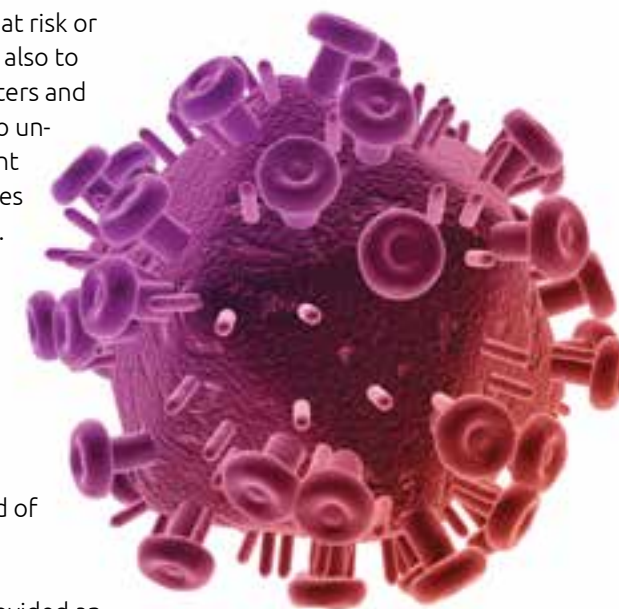
**Dr Abdullah al Hokail**, ID Consultant, King Faisal Specialist Hospital and Research Centre, Riyadh stated: "One of the problems we are facing in the Middle East is the access to the testing, mainly because many people are not aware how serious the problem is. Across the region, there is the avoidance of the topic in the media. But people need to be educated. Testing is very important and it is a key to linkage to care and viral suppression. People also shy away from the testing as they are afraid of potential consequences. Namely in some countries around the Middle East HIV positive expats might be asked to leave, while locals might lose their jobs. Therefore, in order to improve testing rates these aspects need to be re-evaluated."

The treatment and management of HIV has come a long way, with many of HIV patients now able to look forward to having a normal life expectancy. As such, HIV is now a chronic manageable condition; therefore, experts at the Summit looked beyond virologic suppression and prevention

of opportunistic infections, with the objective to consider the whole picture in HIV care.

**Jacques Mokhbat** MD, Professor of Medicine, Division of Infectious Diseases, Lebanese American University, School of Medicine said: "It is very important to spread the message of the importance of the treatment not only to the population at risk or vulnerable population, but also to the decision-makers, ministers and governments. They need to understand that the treatment works, is effective, preserves life and stops transmission. They need to understand that individuals who are on treatment and responding well will live a normal and healthy life, with a normal lifespan and quality of life. Understanding this will stop the spread of epidemic."

The 2<sup>nd</sup> HIV Summit provided an interactive platform to review the recent clinical data and to share real-world experiences of treating complex patient cases with HIV in Western and Middle-Eastern regions. Infectious disease leaders at the Summit shared insights and best practices that can optimize the treatment outcomes for HIV patients. Experts from UAE, KSA, Kuwait, Oman, Lebanon, UK and Germany had an opportunity to exchange know-how and challenges with some of the world's leading infectious disease specialists. By creating a continuous medical education platform that empowers local, regional and international infectious disease experts to connect and exchange ideas, Gilead Sciences reaffirms its commitment to educational efforts for healthcare professionals in the field of HIV.



THE 2<sup>ND</sup> HIV SUMMIT PROVIDED AN INTERACTIVE PLATFORM TO REVIEW THE RECENT CLINICAL DATA AND TO SHARE REAL-WORLD EXPERIENCES OF TREATING COMPLEX PATIENT CASES WITH HIV IN WESTERN AND MIDDLE-EASTERN REGIONS



## The Kuwait HEALTHCARE Infrastructure

Landscape Development is  
Shaping the Future

**K**uwait had the most modern healthcare infrastructure in the region as mentioned by the WHO and considered as a high-income country.

The sector of healthcare is facing a rapid growth based on the massive investment in the infrastructure of healthcare as the MOH has doubled the spending in healthcare during

the past 5 years to reach USD 6.6 billion in 2016. And the public sector is contributing 80% of the healthcare market and operates 15 hospitals and some of the primary care and

polyclinic network. The percentage of healthcare expenditure by MOH is relatively stable at around 7% from the total government expenditure during 2010-2016, and that is reflected on

increasing the expenditure value following the total spending and GDP of the country. Currently, there are more than 20 large healthcare governmental

### Dr. Osama Abdelrazek

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projects in the pipeline with USD 12 billion budget to add more than 11,200 hospital beds. And the MOH is working on expansion projects of 8 hospitals with adding (~4,600 beds), 150 operating rooms, and 500 outpatients' clinics. Also, the private sector has currently more than 12 private hospitals that are providing medical services through 1,038 hospital beds, and many private hospitals are planning to be opened during next years to add more than 1,800 beds as well. On the other hand, Kuwait has recently upgraded the road ambulance fleets by adding 54 digital and online enabled ambulances that are linked to hospitals emergency care departments and other ambulances through the internet. Also, air ambulance aviation and scooter ambulances were initiated in Kuwait to reach the international standards in emergency services.

### The Hospitals Development Strategy

The MOH is working on an expansion plan for the country's healthcare infrastructure over the next 10 years, on top of developing current hospitals to improve the overall healthcare services. The new hospitals building is one of the most important projects in Kuwait, and MOH has a plan to build some new hospitals around Kuwait different governors such as ALJAHRA hospital (~1,100 beds) as a full service general secondary care along with the infrastructure to accommodate with territory care capabilities, as well as multi-specialty dental center accommodating approximately 100 clinics and the hospital construction is intended to be carried out with fast-track execution method in a period of approximately two years. Kuwait Academic Medical Center,

(~600 beds) Kuwait's only medical school, has operated without its own academic medical center since its inception in 1973 and has relied on the neighboring Mubarak General Hospital, and Kuwait University will look to build its own facility on the Mubarak General Hospital Campus. Public Institute for Social Security (PIFSS) is working on building new medical city for Retirees (~500 beds) that is proposed by the private company for health investments. Ministry of Interior initially planned in 2014 for building new Police Hospital (~300 beds) and they expand the project to (~500 beds).

Kuwait Oil Company (KOC) is currently being constructed - a new hospital on the Kuwait Oil Company campus in Ahmadi (~350 beds). The Ministry of Public Work is working on building two new hospitals (~1500 beds) in the new urban areas in addition to JABER hospital with (~1,200) beds located in South Surra area. Physical Medicine and Rehabilitation hospital is a new project located in Al Andalus area (~500 beds). On the top of ALSABAH hospital is allocated a land of 81,000 square meters in the Sabah Al-Ahamd City in the South of Kuwait. with capacity of (~7,000 beds). Also, the MOH is moving forward in the development, construction and expansion projects plan in the ALSABAH hospital (~731 beds), AMIRI hospital (~415 beds), FARWANIA hospital (~955 beds), ALADAN hospital (~638 beds), Infectious Disease hospital (~224 beds) & IBN SINA hospital (~427 beds), in addition to the Kuwait Center for Cancer Control (~618 beds) and they are due for completion during the years 2017/2020 and will lead to the doubling of hospital beds' capacity,

and ALRAZI hospital will reach (~540 beds) by the completion of the project on 28,000 square meters and budgeted USD 103 Million. The healthcare landscape of Kuwait is dynamic, and it continues to have strong needs to create an independent healthcare regulatory authority to lead the policy development, licensing, quality assurance and the overseas healthcare functions in Kuwait. The Kuwait Health Authority will help guide the Kuwaiti healthcare system away from segregation of care, as currently there are seven government entities are involved in building, contacting and operating hospitals in Kuwait.

### The Private Investment Opportunities

The country's new healthcare authority is expected to increase private sector investment, improving the overall quality of healthcare services. The MOH envisions the private sector to be instrumental in the overall development of the medical sector as they see that the private sector will be the main player in the medical sector development. Kuwait government has realized that the healthcare will not be fully privatized, and form privatization law for any organization that needs to invest in the private healthcare sector.

The healthcare authority is expected to increase the investment in the private sector to improve the overall healthcare quality. The private sector is estimated to grow by 15-20% during coming years. The new private hospitals are expected to add 1,800 beds in next years. Also, the new Public-Private Partnership law will encourage investors to invest in the private market. The private sector is going to grow through building new hospitals and expansion plan of some hospitals such as ALSEEF

hospital is opening a new branch in the center of Al Slamiya area. DAR ALSHI-FA and TIBA hospitals are working on building extension buildings to double their capacity, and ROYAL HAYAT hospital is opening a new big hospital as well in addition to some new polyclinics in the pipeline. Kuwait Health Assurance Company (KHAC) is budgeted USD 765 million to build private hospitals for expatriates as one of the leading PPP projects in Kuwait. The project includes building the building of 3 hospitals with (~750 beds), 10 primary care clinics, and one-day surgery center. They are targeting the expatriates as its growing market and Kuwait citizens will also be able to enroll. The private healthcare investment must be following specific rules as 50% will be offered to the public, 26% will be offered to a private partner, and 19% will be owned by Kuwait Investment Authority (KIA) and 5% will be owned by Public Institute for Social Security (PIFSS).

Also, they are working on completing the necessary procedures of the health insurance for expatriates' hospitals in collaboration with the winners of the project after the company obtained the approval of the Fatwa and Legislation Department, pointing out that this project will carry about 2 million patients to health insurance hospitals. The new Public-Private Partnership (PPP) law will facilitate the investment process front of the Kuwaiti PPPs by providing the foundation for more investor-friendly landscape, and the implementation of the new PPP law regulations are resolving some challenges. The Kuwait Authority for Partnership Projects (KAPP) has replaced the Partnership Technical Bureau (PTB) to have greater autonomy and authority than its predecessor and it will be supervised by MOF and overseen by PPP higher committee.



### The Health Insurance Coverage:

The Kuwait government is taking a great steps toward establishing a strong universal health insurance that is covering all peoples in the country. The Kuwait MOH has launched a new project "AFIA" with USD 340 million budget by cooperation with Gulf Insurance Group for the treatment of 105,000 citizens. And the Kuwait Health Assurance Company (KHAC) is planning to refinance the healthcare costs of the expatriates and private health insurance for Kuwaiti retirees to address the finance needs of the healthcare of national population.

The expats in Kuwait faced increased healthcare services cost during Oct 2017, and in some cases the cost increase is more than ten-folds for certain tests.

The health authorities announced that the medical cover is required for expatriates to renew their residence visas in the country, and they are in the process of establishing a mandatory health insurance system for expatriates with a strong provider network. The new insurer will provide health coverage for the 3 million expats to shift from public health services to expats hospitals that are expected to be fully operated by 2020. In addition to that, the Health Committee of the parliament has approved a draft bill that is requiring foreigners who are visiting Kuwait to obtain health insurance prior to receiving an entry visa.

The mandatory health insurance coverage is potentially leading to improving the productivity of workforce by reducing their sick leaves and turnover due to poor health of employees. The competitiveness within the insurance providers has been risen up because of the increased the customers' buying power that pushed insurers to invest in the transformation of core processes by modernizing the legacy systems, simplifying the policy administration and claims systems, and digitization of the workflow. Actually, the state-owned insurance providers are still dominating the market because of their existing relationships and history that added competitive advantage for them while their schemes are rolled out around the region.





# TELEMEDICINE

## TO REVOLUTIONIZE OUTPATIENT-BASED HEALTHCARE

**T**elemedicine or virtual healthcare is defined as the delivery of healthcare at a distance, typically embracing diagnosis, health education and research.

The healthcare sector is under pressure to reduce spending and increase efficiency. With the passage of time, the relationship between the physician and the patient has

also changed, as more and more information is available at the click of the button and the patients have become more informed and can make better choices in their healthcare.

In the health sector, ICT is a cornerstone of efficient and effective services. In many countries, the use of ICT within the sector continues to grow, and the Internet in particular is driving notable change. For example, in middle- and high-income countries, the Internet is dramatically changing the way in which consumers interact

with health services, including access to health information and the ability to purchase pharmaceuticals and other health products. The Internet also plays a key role in expanding the reach of health services to remote areas. The spread of broadband networks and the development of new e-health applications, defined as the use of ICT for health, have a mutually stimulating effect on further developments. (Ref: "Telehealth in the Developing world", by Richard Wootton ET la).

Healthcare information technology has emerged as a promising development to transform the paper-based healthcare system into a digitized one. Quoting Forbes: "74% of patients stated that they would use a telemedicine service if available. This means the demand is there. Now it's up to doctors, hospitals, and other healthcare providers to work on the supply side. According to a recent survey by the American Academy of Family

Physicians, 78% believed the use of telemedicine improved both access to and quality of healthcare".

*The process of making a diagnosis or reaching a safe range of diagnosis depends upon three basic elements:*

- History taking
- Medical Examination
- Review of Medical Records including Investigations

***History taking.*** A very valuable part of the interaction is the medical history taking upon which an experienced clinician can reach include or exclude several medical conditions in the differential diagnosis. The process of taking medical history involves asking questions relating to the presenting complaint, events around it, relevant past medical history of illnesses and surgical operations, the current medications etc.



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**Medical Examination:** Many of our health problems have nothing to show except for the pain and discomfort felt by us which help determine the cause of the complaint. Other issues may present as a manifestation on the patient's visible skin and mucosa or several physically apparent findings such as muscle wasting, bony deformities, swelling of body parts etc.

Several of these problems can be more closely examined by the patient uploading images before appointment or instantly using a mobile phone camera. The relevant lesion such as a painful mole, a skin rash or pigmentation, a swelling or deformity of a limb can be shown to the examining doctor over live webcam which helps to reach a safe range of diagnosis.

In every speciality, particularly Psychiatry and Dermatology, visual examination can replace a physical examination without compromise of understanding of the medical illness. Other specialties like Orthopaedics for instance; the joint movements can be checked visually to get an impression of the range of motion. The modern digital gadgets have replaced use of traditional stethoscope and thermometers with connected smart gadgets such as shown below:

**Smart Thermometer** which sends readings via Bluetooth connection to a mobile app cloud which can be set to automatically update the patient's



medical file merged in our Web Clinic system, which a clinician can view during live Video Consultation.

### Smart Wireless Blood Pressure

Measuring gadget would monitor valuable readings and update the findings instantly on the patient's records on our system of Web Clinic. The readings from the gadgets (an entire range including Foetal Heart rate monitoring device) can be set to trigger alarm at "Critical Low or High Values" on the system where the doctor gets an alert to prompt a video consultation for urgent advice.

**Review of Medical Investigations:** Increasing scientific development has resulted in high degree of accuracy available on medical investigations like MRI scan, nerve conduction studies, echocardiogram etc. These investigations are non-invasive, and they assist in diagnosing a medical condition but also to confirm the findings of clinical examination.

The evolving trends in the medical investigation sector have forced several classifications of injuries taught in medical schools to be abolished as



they meant no value due to presence of the medical investigations.

One such example is Pott's classification for ankle fractures which is no more applicable due to the presence of X-rays facility. Similar scenario applies for Waddle's signs for assessment of low back pain (for people absent from work with alleged symptoms of low back pain) as MRI scan now provides detailed review of the any pathology causing spinal symptoms.

Evolving medico-legal industry has also influenced clinical decision-making as most surgeons would require objective confirmation of physical findings before deciding to operate. One such example is operating for Anterior Cruciate Ligament damage (Common Sports Knee Injury). It is now mandatory to have an MRI scan before operating as reliance on physical examination findings alone for deciding to operate is poorly defended if the surgeon's diagnosis proves to be wrong.

**So in summary, the three elements form the basis of Telemedicine or Web Medical Consultations:**

- History taking (over live 2-way video)
- Medical Examination (visual examination over live 2-way video)
- Review of Medical Records



including Investigations (via simple uploading facility).

Consultations over Live Video in our system of Web Clinics would provide sufficient information required by an experienced clinician to reach a safe range of diagnosis. Should it not be possible for certain conditions, a physical examination at a local hospital or a visit to the clinician wherever feasible is advised. Such is an excellent way to deal with most problems seen by the general population as there is simply no need for the patient to come to the hospital if he/she can be managed over the internet. It saves time, efforts and keeps the patient at ease as well as opens the door for the doctors to widen their scope of practice beyond the confines of their physical clinic premises.

The online availability of physicians has revolutionised the healthcare system and has made life easy for not only patients but doctors themselves, who would now be able to work from home. In the UK, where the NHS faces ongoing pressure from budget cuts, staff shortages and strike action; virtual services like Push Doctor, Healthcare Express and Doctor Call are providing an alternative that offers clear benefits – up to a point.

**The benefits for patients are several, such as:**

- Reduced travel costs
- Faster appointment times
- Potential for earlier diagnosis and treatment

The above would relieve pressure on government resources (such as NHS in the UK) who can give more focus to the treatment of the patient as staff resources will be less stretched from what they currently are.

It is estimated that the adoption of virtual healthcare could save the medical profession and the developed countries in which they operate over \$100 billion every year.

Virtual healthcare trials have been undertaken in two clinical settings – diabetes and cancer, and the results so far have been extremely promising. Patients have reported feeling more connected to the service, which has had a positive effect on their engagement with self-care. Utilising virtual technology has also resulted in a significant reduction in DNA, or 'did not attend' rates too.

### Virtual Healthcare Improves Quality and Safety

At its heart, telemedicine platform is all about connecting the patient to the doctor for primary care services. That's where it all began: a virtual connection to treat a patient that would otherwise take a chunk of valuable time away from work for a visit to the doctor's office or hospital. But with digital health technology, that task can be handled quickly and efficiently online, in a fraction of the time and at much less cost to both patient and provider.

Virtual healthcare has the potential to impact quality, access, cost, and patient and clinician perceptions and satisfaction. Depending on the

application and clinical problem, the setting and patient population, the objectives of the program, and other factors, evaluations will differ in the outcomes of greatest interest and relevance. These factors are inter-related: The timeliness of care—an element of access as defined here—may have important consequences for quality through earlier detection and better management of clinical problems. Similarly, economic analyses of telemedicine do not simply examine costs but attempt to relate the costs of an application to its benefits and to suggest bases for judging whether the benefits are worth the costs in comparison to other alternatives.

Judgments are typically based on a balancing of objectives that is contingent on a given evaluation's mix of effects on quality, access, and cost. Enhancing quality of care, through more timely delivery care, care coordination and patient engagement is a key advantage to telemedicine. Telehealth has continued to grow as a unique way of delivering care to patients, while greatly improving access, reducing cost and positively impacting quality. The number of patients using telehealth services is expected to jump to about seven million by 2018. Telehealth is now a recognized part of healthcare delivery.

### The Benefits of Virtual Healthcare

Telehealth benefits can be outlined as below:

- Extend reach and expand service to patients such as patients who live in smaller cities or towns away from Specialist Hospitals.
- More effective use of clinician's outpatient slots in physical clinics by sharing slots with online virtual clinics, in particular the re-examination ones.





- Help to monitor and manage long-term and post-hospital patient care while a patient rests and recuperates at home, reducing the level of hospital visits and costs to both patients and hospitals.
- Figures shown that most money spent in the healthcare industry (in the region of 75%) is spent on the treatment of chronic diseases. In the United States, The National Health Council notes that approximately 133 million Americans currently have a chronic disease, and the number continues to increase year by year. Virtual care provides physicians an easier way to continue monitoring and engaging with chronic care patients while reducing these costs. In some instances, virtual care programs can provide patients with instant access to a doctor or physician—no waiting involved.
- Increase the number of patients who can be seen and treated during a given period using the non-office time of available clinicians, thus saving costs to hospitals and increasing revenue.
- Provide new streams of revenue to both contracted hospitals and doctors in the form of virtual consultations and assessments. Other programs will be able to connect patients with physicians who opt in by choice to work during their non-regular office hours, giving patients immediate access without having to go to the emergency room.
- Preventing delay of diagnosis for certain deadly conditions such as skin cancer where an early appointment and review can be arranged over a virtual clinic for a patient who would need to travel to a specialist centre from a smaller city or town.
- Virtual consultations prevent spread of airborne infection. The medical research shows that a noticeable proportion of respiratory airborne infections are caught at the waiting rooms of GP surgeries which are unavoidable otherwise.
- Virtual care also provides care professionals with a method of treating routine healthcare concerns, such as the common cold, seasonal allergies, and sinus infections. For patients, these options mean that minor health concerns can be addressed faster and typically while still at home over a virtual clinic.

Co Located:



Medic East Africa 2017 exhibition was successful for us as we generated a lot of new contacts. This also gave us an opportunity to meet with existing customers and discuss mutual business.

Robert Parry, Managing Director, Precision UK Ltd, UK

**54% OF THE EXHIBITION SPACE WAS REBOOKED ON-SITE!**

Medic East Africa was a great platform for us to gain a foothold in Kenya's healthcare market; and allowed us to engage with visitors from all over the East African community.

Anil Sugnani, Managing Director, Sidak Lifecare Pvt. Ltd, India

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# SMART HOSPITALS

*to Invest over \$11 billion in Cloud Computing & Data Analytics, Says Frost & Sullivan*

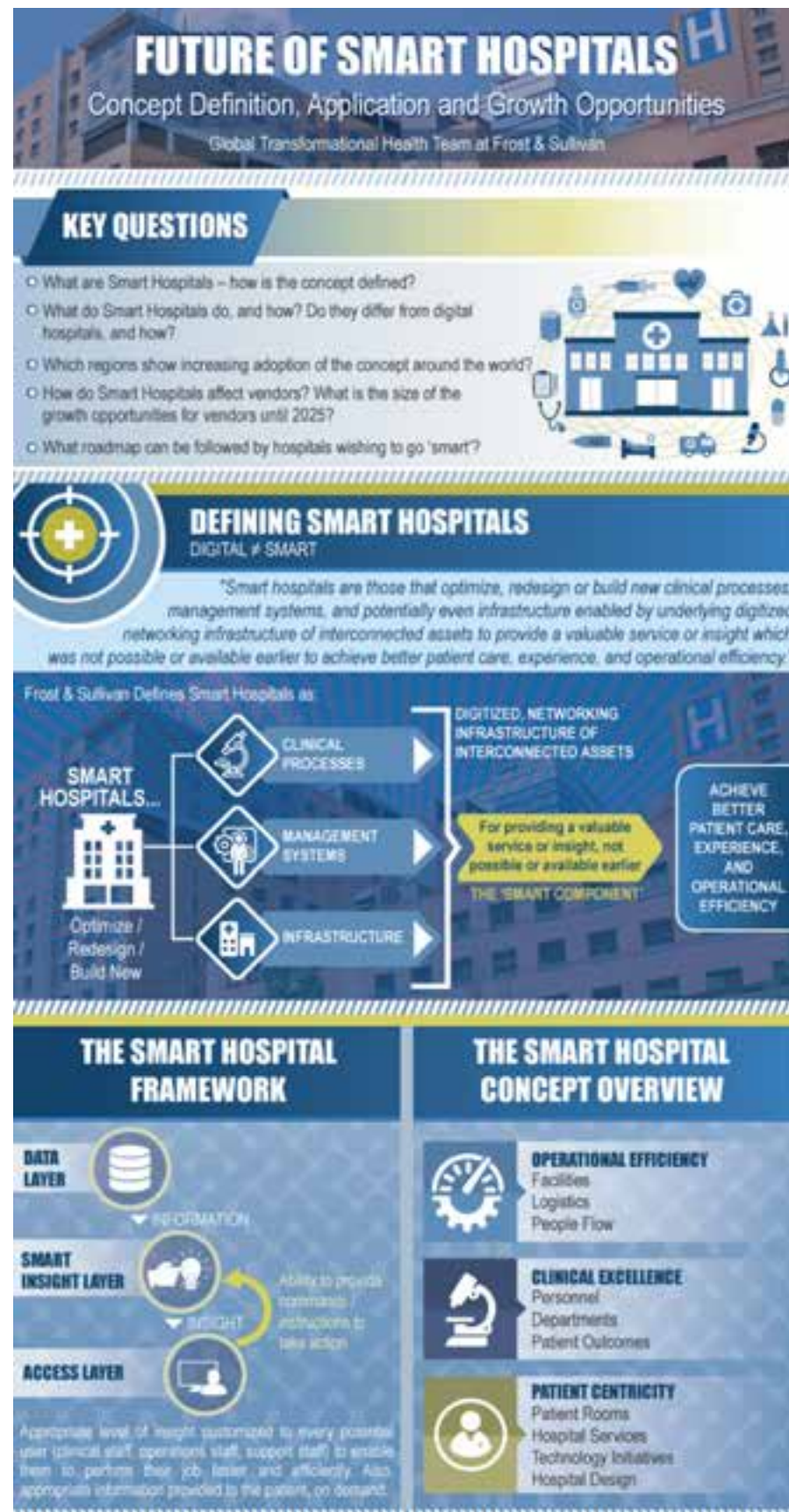
By 2025, 10 percent of hospitals across the globe will become or will have started implementations to become smart hospitals. Frost & Sullivan's market research, "Future of Smart Hospitals," projects significant market growth and billions of dollars in revenues for four key segments, including:

- Pharmacy automation
- Mobile asset tracking
- Data analytics

Cloud computing Frost & Sullivan's "Future of Smart Hospitals" research analyzes how smart hospitals operate, how they differ from digital hospitals, their regional growth, and roadmaps for hospitals wishing to transition.

**DEMAND FOR PHARMACY AUTOMATION & MOBILE ASSET TRACKING ARE SET FOR SIGNIFICANT MARKET GROWTH**

Case studies and current market dynamics are also discussed. Frost & Sullivan forecasts the market opportunity totals approximately \$11 billion, with the data analytics market for smart hospitals reaching revenues of \$5.9 billion in 2018. The cloud comput-



ing market is expected to hit revenues of \$5.1 billion.

There is currently ambiguity around the term "smart". Transfor-

mational Health Industry Analyst **Siddharth Shah** says a true smart hospital acknowledges digitization as only the first step, and focuses on three major areas—operational

efficiency, clinical excellence, and patient-centricity—with technological advances leveraged for these three areas to derive smart insights.

"Not every hospital needs to become smart in a single step. Instead, the approach they need to take is to implement smart solutions, one by one, and then allow newer solutions to integrate with existing ones in the journey toward becoming smart," said Shah. "This allows hospitals to implement solutions with limited financial investments, reap rewards and ROI, and then implement the next solution."

As for companies, some of the most advanced solution sets are being developed by GE Healthcare for patient flow, including its "Command Center" solution for the Johns Hopkins Hospital. Also noteworthy is the ThoughtWire Ambient platform, which has customized features, such as the Code Blue events reduction solution developed for Hamilton Health Sciences in Canada.

IBM is developing, and now marketing, the "SmartRoom" concept along with the University of Pittsburgh Medical Center. Omnicell has developed pharmacy automation solutions in use by thousands of hospitals and health systems around the world.

In terms of regional readiness for the adoption of the smart hospital concept, North America leads, followed by Europe and Asia Pacific regarding technological sophistication, regulatory landscape, spending power, and end-user readiness.

However, the hotspots for current smart hospitals are concentrated in the Asia Pacific region, including Dubai, South Korea, Singapore and Australia, some of which cater to the medical tourism industry as well. Cana-





da and Finland are also hotspots.

"The two largest challenges obstructing hospitals from achieving the smart hospital vision are interoperability and cybersecurity. To truly achieve a 'smart' status by deriving intelligent insights, various devices, systems and networks in the hospital must 'talk' to one another in ways that are coherent and complete for a holistic analysis," observed Shah. "Digitization brings in additional vulnerabilities in a hospital for hackers to target, making cybersecurity a challenge."

Future of Smart Hospitals is part of Frost & Sullivan's Advanced Medical Technologies Growth Partnership Service program.



F R O S T & S U L L I V A N

## ADVANCED MEDICAL TECHNOLOGIES

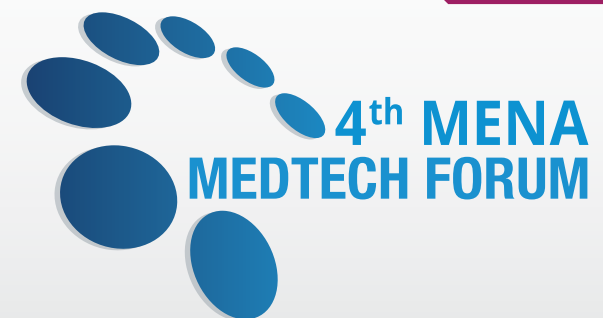
**Changing Face of the Customer:** As innovative solutions (therapies and interventions) are developed, the addressable population increases. The ability to care for more customers and the changing decision-making structure poses some tactical market access questions for medical OEM's.

**Solution Centric Approaches:** Medical solutions today are more than just treating the clinical conditions. The same medical OEM's are offering solutions that solve a business challenge at the same time as fulfil a clinical need.

**Market Disruptors on the Horizon:** The entry of new players with innovative business models, keeps incumbent medical OEM's awake at night. New pricing structure, service solutions, digital approaches and partnership models along with disruptive therapeutic applications is changing the market dynamics around the globe.

**Nurturing Long Term Partnerships:** Medical OEM's are increasingly feeling the need to partner with their care provider customers, as the latter struggle with the mandates of accountable care and outcomes / value based re-imbursement models. OEM's strive to partner over a longer period of time as the days of tactical sales are numbered.

# Healthcare in MENA is going digital - how ready are you?

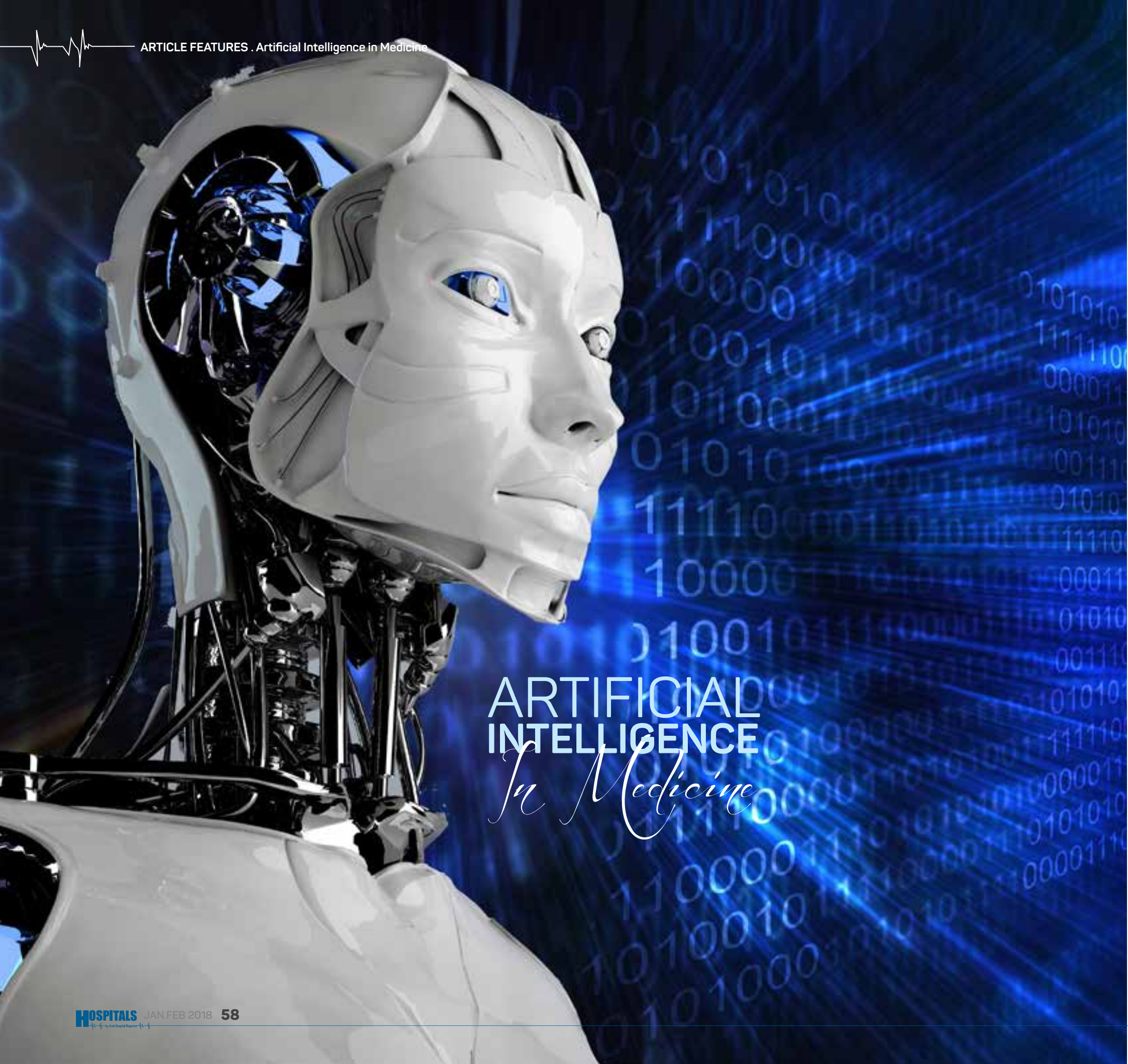


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# ARTIFICIAL INTELLIGENCE *In Medicine*

The radical changes and successive developments have managed to change the face of medicine in the modern world, and recent years have witnessed this by relying significantly on medical technology; then it started gradually increasing until the emergence of a new term “artificial intelligence in medicine” which aims to explore the human body and finding successful ways to overcome diseases that are still killing people.

Artificial intelligence in medicine is a modern concept in the diagnosis and treatment of diseases in a smart manner according to the highest technical standards and the latest technological practices, and is like a revolution in the health sector aiming to serve patients in the health sector according to the highest technological standards in the field of artificial intelligence. Artificial intelligence techniques have been integrated in many medical aspects to achieve major steps through the great demand of medical companies to invest in this field, after it was found that it will reduce the cost of health-care on the long run and will improve the performance and efficiency of hospitals and clinics as well as reduce the risk of death due to wrong diagnosis and misuse of drugs.

The recently designed technologies can diagnose diseases early and reduce health expenditure. This progress in artificial intelligence has opened new possibilities for “personal medicine” and has also allowed for accelerated research. Artificial intelligence can also play a role in the prevention of several diseases by providing medical file analysis and test results.

## Doctors are very important

Of course, doctors are very important because the device cannot

provide the psychological support and sympathy provided by the doctor through his ability to relieve tension and anxiety; the machine is also unable to introduce new ideas for a new disease that has suddenly emerged, or suggest new medicines.

In this context, we must stress that the medical profession is constantly evolving and doctors must keep abreast of this development through training and following up on the latest technologies in order to know how to deal with them, artificial intelligence is one of them, but the doctor’s skill remains the most important.

## Robots

The medical sector can significantly benefit from artificial intelligence that simulates the human mind. A robot, for instance, is a machine that acts like a human, responds to some of the sound effects and stores information. Robots are also used during surgery, called “robotic surgery”. It is an advanced form of minimally invasive or laparoscopic (small incision) surgery where surgeons use a computer-controlled robot to assist them in certain surgical procedures. The robot’s “hands” have a high degree of dexterity, allowing surgeons the ability to operate in very tight spaces in the body that would otherwise only be accessible through open (long incision) surgery.

Remote surgery (also known as telesurgery) is the ability for a doctor to perform surgery on a patient even though they are not physically in the same location. It is a form of telepresence. Remote surgery requires the availability of the latest communication technology and the effective exchange of management information systems. Other future applications include the implementation of micro-processors or secondary treatments



in the body to perform medical and surgical functions, as well as the use of biological sensors that can read and convert responses to natural and chemical changes for patients with chronic diseases.

### Telemedicine

Information and communications technology in the field of health and telemedicine aims to increase access to quality health services for people in rural areas in order to reduce treatment and travel expenses while helping the patient avoid the difficult access to treatment centers in the cities. Hospitals can be linked to each other through a communications network that enables doctors to diagnose diseases by sharing photos and reports as well as providing medical advice in complicated cases.

On a related note, artificial intelligence can diagnose diseases from telltale groups of symptoms, strange patterns in blood tests, and the subtle abnormalities that cells display as a disease begins to take hold. Time and again, AI systems are found to pick up signs of illness that are unknown to doctors, making the AIs more accurate as a result. Earlier this year, researchers at Nottingham University trained several AIs to spot people at risk of heart attack and found that all of them performed better than doctors. Another AI built at Stanford University in California has learned to spot breast cancer in biopsy tissues.

### Improving management and collecting information

The management of hospitals and the establishment of systems, rules and data within the hospital have greatly benefited from the organization of work and improvement of management by providing the possibility of collecting information about



patients and their medical condition, which helps in obtaining medical statistics, as well as the opportunity to have an accurate diagnosis thanks to the doctor's full access to the patient's file in details for optimal diagnosis. These state-of-the-art systems in hospitals have contributed to enhancing the ability to have an accurate diagnosis and avoid the random drug prescription as well as avoid adverse reactions that may occur.

### Smart Capsule

Ingestible capsules have the potential to revolutionize the prevention and diagnosis of gut disorders and diseases. Capsule endoscopy is a medical procedure which allows your physician to visualize parts of your gastrointestinal tract. The GI tract is a part of the digestive system and extends from the mouth to the anus.

Small bowel capsule endoscopy enables your doctor to examine the three portions of your small intestine. Your doctor will use a vitamin-sized pill video capsule as an endoscope, which has its own camera and light source. While the video capsule travels through your body, images are

sent to a data recorder you will wear on a waist belt. Most patients consider the test comfortable. Afterwards, your doctor will view the images on a video monitor.

This helps your doctor determine the cause for recurrent or persistent symptoms such as abdominal pain, diarrhea, bleeding or anemia, in most cases where other diagnostic procedures failed to determine the reason for your symptoms. In certain chronic gastrointestinal diseases, the method can help to evaluate the extent to which your small intestine is involved or to monitor the effect of therapeutics.

The smart capsule is ingested and passes naturally through your digestive tract while transmitting video images to a data recorder worn on a belt for approximately eight to twelve hours as directed by your provider. You will be able to eat four hours after swallowing the capsule ingestion unless your doctor instructs you otherwise. The capsule is disposable and passes naturally with your bowel movement. You should not feel any pain or discomfort during capsule excretion.

## ARTIFICIAL INTELLIGENCE IN THE UAE

### *A global hub for artificial intelligence and telemedicine*

The UAE was one of the first countries in the Arab world to adopt the strategy of artificial intelligence in the health sector through the adoption of UAE's artificial intelligence strategy in several vital sectors in the country, namely, the health sector by reducing serious and chronic diseases. The UAE is one of the most prepared countries in the region to adopt AI technology because the government has already built a thorough technology infrastructure over the past two decades. The UAE was the first country in the region to adopt e-government services which quickly transformed into a Smart Government system in 2013. This was also a first in the region and was part of Sheikh Mohammed's vision to provide the country with the highest and most efficient services and quality of life.

Most of the radiology departments in UAE hospitals will rely on artificial

intelligence in 2025, which will open wider fields of diagnosis and reduce the error rate.

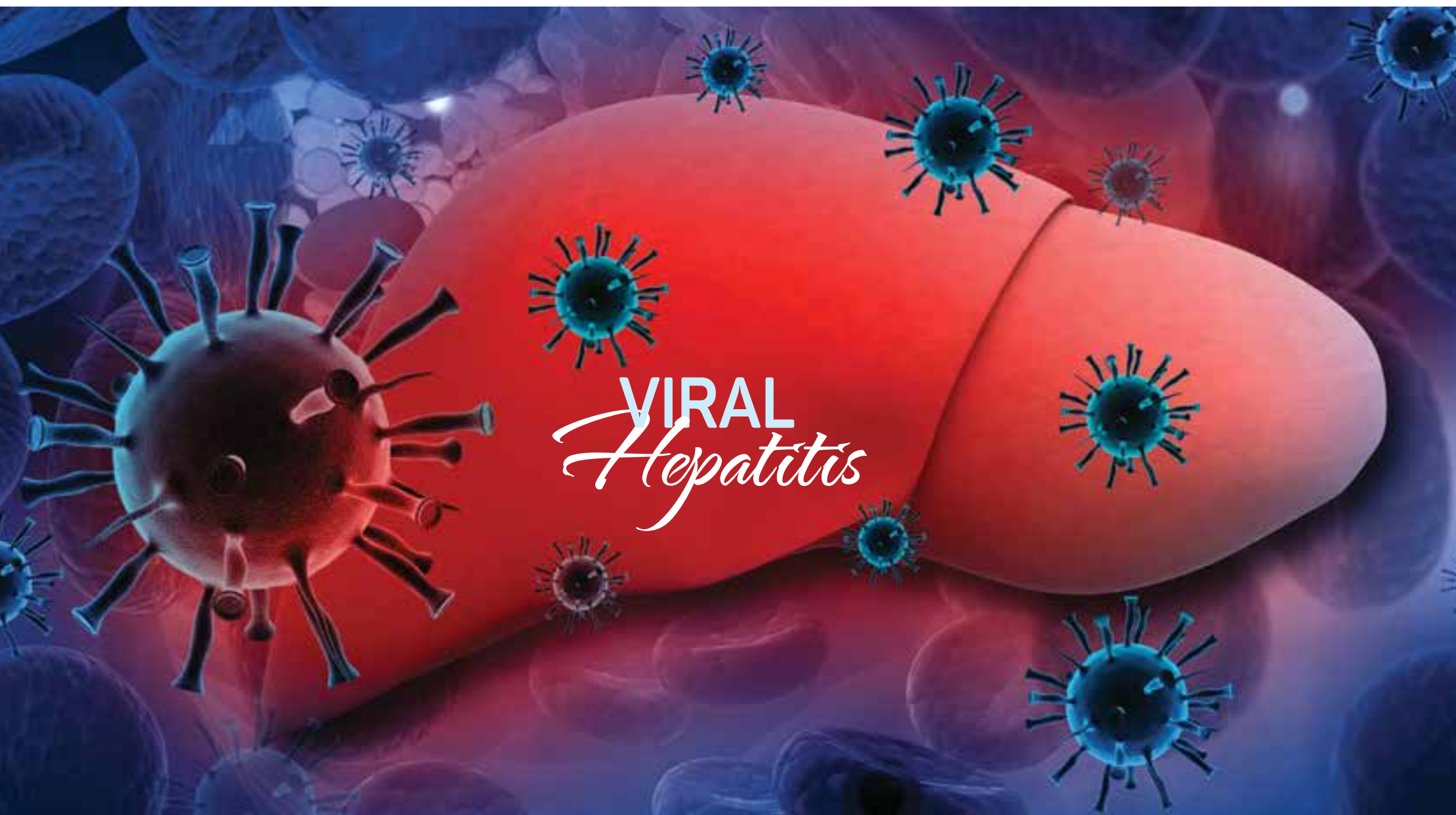
The UAE Ministry of Health and Community Protection has started using Tele-ICU in its affiliated hospitals. The Tele-ICU program is a quantum leap in the ICU departments by providing remote intensive care consultations and telemedicine, an innovative means of clinical communication between reference and public hospitals, in order to overcome the obstacle of distance, from the adoption of the principle of creativity and innovation to raise the level of its various services.

Abu Dhabi Health Services Company (SEHA) plans to apply artificial intelligence to the UAE and the region, and has begun developing future strategies for artificial intelligence and launch of global products in this field, making Abu Dhabi a global hub for

artificial intelligence and telemedicine. It is currently in the process of preparing for the application of artificial intelligence and its uses in a holistic manner in all medical fields at all levels in its facilities by simulating the human mind and harnessing technology in the accomplishment of medical tasks, developing diagnosis, remote patient monitoring, micro-surgeries, early detection of diseases in general and cancer in particular, in addition to analyzing medical information and giving advice to decision-makers to help them improve and develop services and draw future expectations in different fields. Artificial intelligence can be used to make a record that helps the staff by facilitating and speeding up registration, monitoring vital signs, communicating with the patient directly by asking them questions, learning from their answers and developing unique products.







**The liver is the body's second largest organ; it performs many essential functions related to digestion, metabolism, immunity and the storage of nutrients within the body. These functions make the liver a vital organ without which the tissues of the body would quickly die from lack of energy and nutrients.**

The liver provides storage of many essential nutrients, vitamins, and minerals obtained from blood

passing through the hepatic portal system. Glucose is transported into hepatocytes under the influence of the hormone insulin and stored as the polysaccharide glycogen. Hepatocytes also absorb and store fatty acids from digested triglycerides allowing the liver to maintain the homeostasis of blood glucose. Our liver also stores vitamins and minerals in order to provide a constant supply of these essential substances to the tissues of the body.

The liver plays an active role in the process of digestion through the production of bile. Bile travels through the bile ducts and is released into the duodenum where it emulsifies large masses of fat. The emulsification of fats by bile turns the large clumps of fat into smaller pieces that have more surface area and are therefore easier for the body to digest.

Hepatitis is an inflammation of the liver. The condition can be self-limiting or can progress to fibro-

sis (scarring), cirrhosis or liver cancer. Hepatitis viruses are the most common cause of hepatitis in the world. There are 5 main hepatitis viruses, referred to as types A, B, C, D and E. In particular, types A, B and C are the most common viral hepatitis.

Prevention of viral hepatitis is possible through vaccination for children or adults, following good personal hygiene with regular hand-washing, and avoiding the consumption of contaminated food and water.

Extramarital affairs and the use of drugs should be avoided. You should never share personal items such as toothbrushes, razor blades, nail clippers, towels and soaps.

### Hepatitis A

*Good personal hygiene practices are keys to preventing infection*

Hepatitis A is a viral liver disease that can cause mild to severe illness. The hepatitis A virus (HAV) is transmitted through ingestion of contaminated food and water or through direct contact with an infectious person. A safe and effective vaccine is available to prevent hepatitis A. The disease is closely associated with unsafe water or food, inadequate sanitation and poor personal hygiene.

Unlike hepatitis B and C, hepatitis A infection does not cause chronic liver disease and is rarely fatal, but it can cause debilitating symptoms and fulminant hepatitis (acute liver failure), which is often fatal.

Almost everyone recovers fully from hepatitis A with a lifelong immunity. However, a very small proportion of people infected with hepatitis A could die from fulminant hepatitis. 15% of people affected by hepatitis A can have symptoms that last for weeks or months until they recover from the illness and return to work, school, or daily life.

Symptoms of hepatitis A range from mild to severe, and can include fever, malaise, loss of appetite, diarrhea, nausea, abdominal discomfort, dark-colored urine and jaundice (a yellowing of the skin and whites of the eyes). Not everyone who is infected will have all of the symptoms.

*Hepatitis A signs and symptoms, which typically don't appear until you've had the virus for a few weeks, may include:*

- Yellowing of the skin and eyes

(jaundice)

- Dark urine and clay-colored bowel movements
- Abdominal pain or discomfort, especially in the area of your liver on your right side beneath your lower ribs
- Itching and rash

Anyone who has not been vaccinated or previously infected can get infected with hepatitis A virus. In areas where the virus is widespread, most hepatitis A infections occur during early childhood.

Risk factors in intermediate and high endemicity areas include poor sanitation, lack of safe water, use of recreational drugs, living in a household with an infected person, being a sexual partner of someone with acute hepatitis A infection and travelling to areas of high endemicity without being immunized. There is no specific treatment for hepatitis A. Recovery from symptoms following infection may be slow and may take several weeks or months. Hospitalization is unnecessary in the absence of acute liver failure. Therapy is aimed at maintaining comfort and adequate nutritional balance, including replacement of fluids that are lost from vomiting and diarrhea.

Several injectable inactivated hepatitis A vaccines are available internationally. All are similar in terms of how well they protect people from the virus and their side-effects. If you're traveling in regions where hepatitis A outbreaks occur, peel and wash all fresh fruits and vegetables yourself and avoid raw or undercooked meat and fish. Drink bottled water and use it when brushing your teeth. Don't drink beverages of unknown purity, with or without ice. If bottled water isn't available, boil tap water before drinking it.



## Hepatitis B

*Vaccination is the most important preventive measure*

Hepatitis B is a potentially life-threatening liver infection caused by the hepatitis B virus. It is a major global health problem and the most

serious type of viral hepatitis. It can cause chronic liver disease, chronic infection and puts people at high risk of death from cirrhosis of the liver and liver cancer. It is not possible, on clinical grounds, to differentiate hepatitis B from hepatitis caused by other viral

agents and, hence, laboratory confirmation of the diagnosis is essential. A number of blood tests are available to diagnose and monitor people with hepatitis B. They can be used to distinguish acute and chronic infections.

In highly endemic areas, hepati-

tis B is most commonly spread from mother to child at birth, or through horizontal transmission (exposure to infected blood), especially from an infected child to an uninfected child during the first 5 years of life. The development of chronic infection is very common in infants infected from their mothers or before the age of 5 years. It is also spread by percutaneous or mucosal exposure to infected blood and various body fluids, as well as through saliva, menstrual, vaginal, and seminal fluids. Sexual transmission of hepatitis B may occur, particularly in

unvaccinated men who have sex with men and heterosexual persons with multiple sex partners or contact with sex workers. Infection in adulthood leads to chronic hepatitis in less than 5% of cases. Transmission of the virus may also occur through the reuse of needles and syringes either in health-care settings or among persons who inject drugs. In addition, infection can occur during medical, surgical and dental procedures, through tattooing, or through the use of razors and similar objects that are contaminated with infected blood. Most people do not experience any symptoms during the acute infection phase. However, some people have acute illness with symptoms that last several weeks, including yellowing of the skin and eyes (jaundice), dark urine, extreme fatigue, nausea, vomiting and abdominal pain. A small subset of persons with acute hepatitis can develop acute liver failure, which can lead to death. In some people, the hepatitis B virus can also cause a chronic liver infection that can later develop into cirrhosis (a scarring of the liver) or liver cancer.

There is no specific treatment for acute hepatitis B. Therefore, care is aimed at maintaining comfort

and adequate nutritional balance, including replacement of fluids lost from vomiting and diarrhea. Chronic hepatitis B infection can be treated with medicines, including oral antiviral agents. Treatment can slow the progression of cirrhosis, reduce incidence of liver cancer and improve long term survival. WHO recommends the use of oral treatments - tenofovir or entecavir, because these are the most potent drugs to suppress hepatitis B virus. They rarely lead to drug resistance as compared with other drugs, are simple to take (1 pill a day), and have few side effects so require only limited monitoring. The hepatitis B vaccine is the mainstay of hepatitis B prevention. WHO recommends that all infants receive the hepatitis B vaccine as soon as possible after birth, preferably within 24 hours. A 3-dose schedule of hepatitis B vaccine, with the first dose being given at birth and the second and third given at the same time as the first and third doses of diphtheria, pertussis (whooping cough), and tetanus – (DTP) vaccine; or a 4-dose schedule, where a monovalent birth dose is followed by three monovalent or combined vaccine doses, usually given with other routine infant vaccines.

## Vaccination

Hepatitis A vaccine provides protection against infection, and can be given to a person aged 2 years or older. This vaccine is not routinely given to children but is recommended for people at risk of infection or for people who are expected to have serious complications if they are infected. In general, this vaccine does not cause any side effects or serious complications but it may cause pain, swelling and redness at the injection site, you may also have fever, headache or abdominal pain and general weakness.

Hepatitis A vaccine is an inactivated (killed) vaccine. You will need 2 doses for long-lasting protection. These doses should be given at least 6 months apart. Children are routinely vaccinated between their first and second birthdays (12 through 23 months of age). Older children and adolescents can get the vaccine after 23 months. Adults who have not been vaccinated previously and want to be protected against hepatitis A can also get the vaccine.

# Hepatitis B virus



## Hepatitis C

### Promising Treatments

Hepatitis C is a liver disease caused by the hepatitis C virus; the virus can cause both acute and chronic hepatitis, ranging in severity from a mild illness lasting a few weeks to a serious, lifelong illness. The hepatitis C virus is a bloodborne virus and the most common modes of infection are through exposure to small quantities of blood. This may happen through injection drug use, unsafe injection practices, unsafe healthcare, and the transfusion of unscreened blood and blood products. Hepatitis C virus (HCV) causes both acute and chronic infection. About 15–45% of infected persons spontaneously clear the virus within 6 months of infection without any treatment. The hepatitis C virus is a bloodborne virus. It is most commonly transmitted through injecting drug use through the sharing of injection equipment, the reuse or inadequate sterilization of medical equipment, especially syringes and needles in healthcare settings and the transfusion of unscreened blood and blood products. HCV can also be transmitted sexually and can be passed from an infected mother to her baby; however these modes of transmission are much less common.

The incubation period for hepatitis C is 2 weeks to 6 months. Following initial infection, approximately 80% of people do not exhibit any symptoms. Those who are acutely symptomatic may exhibit fever, fatigue, decreased appetite, nausea, vomiting, abdominal pain, dark urine, grey-coloured faeces, joint pain and jaundice (yellowing of skin and the whites of the eyes).

Due to the fact that acute HCV infection is usually asymptomatic, few people are diagnosed during the acute phase. In those people who go

on to develop chronic HCV infection, the infection is also often undiagnosed because the infection remains asymptomatic until decades after infection when symptoms develop secondary to serious liver damage.

As the pressure increases in the blood vessels of the liver, it may lead to fluid buildup in the abdominal cavity, and the esophageal varices are prone to rupture easily and can suddenly bleed. Also, hypertension can cause renal failure or enlarged spleen, thus causing lower blood cells and anemia, or a decrease in the number of platelets which may lead to easy bleeding anywhere in the body.

Hepatitis C virus can make the body produce antibodies that may cause vasculitis, which in turn can damage the skin, joints and kidneys. It can also lead to joint pain, arthritis and a purple rash around the legs, and the Raynaud's phenomenon in the fingers and toes that become painful in cold temperatures.

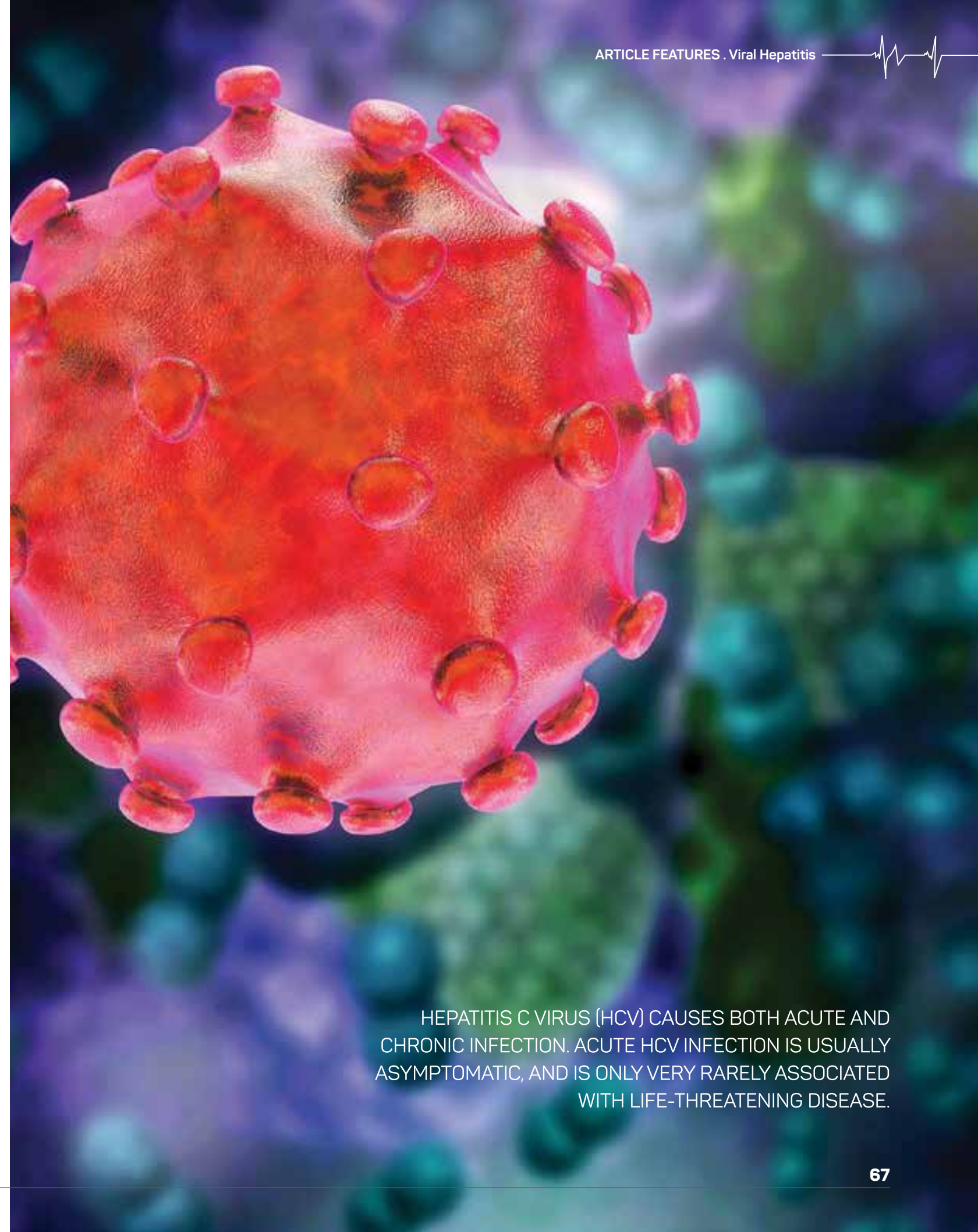
### The most common symptoms are:

- Exhaustion and tiredness
- Nausea or vomiting
- Loss of appetite
- Fever
- Dark urine
- Joint or muscle pain
- Unspecified pain or complaints in the abdomen or liver area

- Pale stools
- Jaundice at an advanced stage of hepatitis, and in most cases, jaundice is the result of liver cirrhosis.

The treatment of hepatitis C virus is primarily through antiviral medications to clear the virus from the body at least 12 weeks after completion of treatment. Researchers have reached some therapeutic developments in the past years and found new antiviral drugs that target viruses directly.

In some cases, hepatitis C causes liver cancer or severe damage to the liver, resulting in end-stage liver disease and ultimately liver failure. The only effective treatment for end-stage liver disease is a liver transplant. Liver transplantation is not a cure for HCV. The virus is still in the blood, so HCV returns after the surgery, requiring treatment with antiviral drugs to prevent damage to the implanted liver. Many studies have shown that new antiviral drugs are effective in treating hepatitis after transplantation. This process has seen tangible developments that gave hope to patients. It is now possible to donate liver tissue from a living relative and split the liver into two parts so it can be implanted in two persons instead of one, thus more patients will be able to benefit from it.



HEPATITIS C VIRUS (HCV) CAUSES BOTH ACUTE AND CHRONIC INFECTION. ACUTE HCV INFECTION IS USUALLY ASYMPTOMATIC, AND IS ONLY VERY RARELY ASSOCIATED WITH LIFE-THREATENING DISEASE.





## Weight Management

An integrated system to treat obesity and overweight

**W**eight management and maintaining a healthy weight is the trend of modern medicine in order to preserve public health after knowing the negative effects of obesity on all body organs and their functions. Today, weight loss is not only an aesthetic issue, but is also a health trend given its association with the body's ability to properly maintain its vital functions.

Obesity is a serious, chronic disease that can have a negative effect on many systems in your body. People who are overweight or obese have a much greater risk of developing serious conditions, including heart disease, type 2 diabetes, bone and joint disease. Respiratory problems associ-

ated with obesity occur when added weight of the chest wall squeezes the lungs and causes restricted breathing.

Sleep apnea is also associated with high blood pressure. Obesity can cause resistance to insulin, the hormone that regulates blood sugar. When obesity causes insulin resistance, the blood sugar becomes elevated. Even moderate obesity dramatically increases the risk of diabetes. Extra weight can raise the heart rate and reduce the body's ability to transport blood through the vessels.

"Weight management" is a relatively modern and popular medical concept. Doctors specialized in the treatment of obesity study the medical condition of obesity and then develop an integrated system that includes the reasons leading to

gaining the extra weight and what is the right treatment to the condition. Certainly, each patient has their own treatment system.

### Roadmap

Your doctor may review your weight history, weight-loss efforts, exercise habits, eating patterns, what other conditions you've had, medications, stress levels and other issues about your health. Your doctor may also review your family's health history to see if you may be predisposed to certain conditions.

The doctor starts with determining the weight that the patient should lose through calculating the body mass index (BMI) by dividing the weight in kilograms by the height (in meters) squared. The WHO designa-

tions include the following: Grade 1 overweight (commonly called overweight), Grade 2 overweight (commonly called obesity), Grade 3 overweight (commonly called severe or morbid obesity). Although there are genetic, behavioral and hormonal influences on body weight, obesity occurs when you take in more calories than you burn through exercise and normal daily activities. Your body stores these excess calories as fat. The main causes of obesity include inactivity and unhealthy diet and eating habits. Leptin and ghrelin seem to be the big players in regulating appetite, which consequently influences body weight/fat. One of the many hormones produced by your fat cells is leptin, which plays a role in appetite control. Research has found that excess body fat can cause a condition known as leptin resistance, which means your brain isn't affected by leptin even though your body contains higher levels of it.

After a comprehensive study of the patient's condition suffering from obesity, the doctor sets up a treatment plan that is similar to a roadmap that should be followed by the patient through regular visits until they reach the desired weight.

Treatment may include following a special diet and the consumption of some medications to treat the imbalance that led to gaining weight, or the doctor may resort to weight loss surgery which is determined according to the patient's weight and general health condition. It is very important that the medical procedure suits the patient's condition in order to ensure the best results and reach the ideal weight; the more accurate the procedure, the greater the body's ability to get rid of excess weight.

Therefore, the type of obesity

should be determined so that the patient is placed on the right track towards achieving the desired goal, which is losing excess weight then teaching him how to manage the weight so he doesn't put the pounds back on.

### Obesity: Types and treatments

The treatment starts by determining the type of obesity because it shows the doctor the treatment plan that should be followed.

- **Simple weight gain:** The patient is not overweight or suffer from obesity. It is one of the most common types of obesity in the world, and is the least dangerous to the health, as the person in this case only needs to lose a few kilograms to make them look better. In this case, the patient should follow a diet suitable for their general condition after determining their body mass index and knowing their body fat, muscle mass and water percentage. Hence, the nutritionist will set up a balanced diet that the patient can follow while adding some exercises that increase the fat burning process accumulated in the cells so they return to normal size. The most important thing is to follow up regularly with a doctor or nutritionist not only to reach the ideal weight, but to maintain it and not put the pounds back on, therefore, this diet must become a lifestyle.

- **Obese Class I (Moderately obese):** When the extra pounds affect the physical appearance and it becomes obvious that the person is suffering from body deformities, hence, the person suffers from moderate obesity.

This type of obesity is caused by an imbalance in the distribution of body fat in general, and we find fat deposited in the same place as the buttocks and thighs in women and stomach in men. This type of obesity is mainly caused by genetic factors. It is true that it is difficult to get rid of it permanently. However, losing excess weight reduces the appearance of fat, allowing the patient to feel much better. This type of obesity is dangerous because, if neglected, it will lead to weight gain thus the person becomes severely obese. First, this condition can be treated with a special diet to break down the concentrated fats; in addition to following some special exercises under a coach supervision who will determine the right exercises to burn fat. After shedding some pounds, you can undergo mesotherapy sessions that dissolve the concentrated fat.

- **Obese Class II (Severely obese):** The risk of diseases caused by obesity begins at this stage and doctors treat this condition as a high-risk disease that can lead to problems in the knees, bones or cause sleep apnea, heart disease, diabetes, high blood pressure, cholesterol or stroke. The patient may also suffer from a weak immune system and become prone to many bacterial and viral diseases. This condition requires medical supervision as the patient may need to undergo surgery because diet alone is not enough, and the doctor is able to conduct a thorough assessment of the patient's condition to set up the right treatment plan.





## Vitamin C

Several benefits outweighing the protection from flu

**A**t this time of the year, many people reach for Vitamin C, whether in supplements, juices, cough drops, tea, or other forms to prevent colds and flu that often spread in the fall season. Vitamin C, also known as ascorbic acid, is key

to the production of collagen, a protein that aids in the growth of cells and blood vessels and gives skin its firmness and strength. Vitamin C also helps create scar tissue and ligaments, and it helps your skin repair itself.

Vitamin C is an antioxidant that slows the rate of free-radical damage - free radicals are unstable molecules that damage collagen and cause skin dryness, fine lines and wrinkles. New research shows that ascorbic acid 2-phosphate, a derivative of vitamin

C, not only neutralizes free radicals, but also reverses DNA damage.

### So what are the health benefits of Vitamin C?

- A healthy dose of Vitamin C protects our body from infections and maintains healthy bones and teeth. It also improves our body's ability to repair wounds and keeps us immune from bacteria, viruses and infection.
- Vitamin C reduces the severity of cold symptoms and acts as an effective antihistamine that lessens the unpleasant effects of common cold, including inflammation, runny nose and aches.
- Obtaining an adequate amount of Vitamin C contributes to fat loss and maintaining a healthy weight. It has been shown that eating fruits and juices containing Vitamin C contributes to the reduction of insulin, so instead of storing sugar and converting
- it to fat, it is used as the fuel that leads to weight loss.
- Vitamin C helps the body to deal with stress by reducing the elevated levels of stress, hormone and cortisol.
- It contributes to the balance of the body's internal systems, and helps in the production of dopamine in the nervous system.
- Helps regulate blood sugar levels in reducing the risk of diabetes and improves the symptoms of existing conditions.
- Vitamin C bolsters the immune system and prevents some forms of cancer that may develop in the lungs, mouth, throat, colon, stomach and esophagus.
- Vitamin C is a powerful and effective antioxidant that protects our body from free radicals that cause oxidative stress, or "cellular rust" that can lead to a host of severe medical conditions such as atherosclerosis that can cause both heart disease

and stroke.

- Vitamin C also ensures proper dilation of blood vessels which helps to protect us against certain diseases like atherosclerosis, high cholesterol, heart congestion and severe chest pains.
- It can increase your HDL cholesterol while reducing your LDL cholesterol (high levels of LDL associates with cardiovascular disease).
- Vitamin C helps to lower the level of lead in our blood dramatically. Lead toxicity can lead to various behavioral and developmental problems, especially in children living in urban areas. This leads to learning disabilities, lowered IQ and stunted growth in children. Adults may suffer from kidney damage and high blood pressure owing to lead toxicity.
- Our eye pupils require Vitamin C to function properly. Vitamin C deficiency can lead to cataracts, where the lens becomes increasing opaque, causing blurry vision and leads to blindness in adults. High intake of Vitamin C fights against cataracts and increases the amount of blood flow to the eye. 1000 mg Vitamin C per day stops cataracts in their tracks and improve vision.

The symptoms of Vitamin C deficiency include anemia, bleeding gums or nose, inability to fight infection and healing wounds, dry and split hair, dry and rough skin, gingivitis, weakened tooth enamel, overweight due to slow metabolism, joint pain and swelling, dry red spots on the skin, weak immune system, digestive disorders such as intestinal leakage and autoimmune diseases.





## Amazing benefits for hair and skin

Vitamin C is the most important ingredient used in skin care treatments. Its ability to provide effective shield against the sun has made it an indispensable ingredient used in the cosmetic industry. Vitamin C protects our skin from free radicals which we develop due to excess exposure to the sun, environmental pollution and regular smoking. The antioxidants in Vitamin C protect the skin from ultraviolet radiation and the effect of sunlight exposure.

Vitamin C helps to reduce sunburn caused by exposure to ultraviolet radiation to a great extent. It not only reduces sunburn but also prevents the consequences of long term sun exposure, which can lead to skin cancer. It is a required component for the production of hydroxyproline and hydroxylysine, both of which are needed to bind the molecules that produce collagen. This in turn gives the skin firmness and tones the skin. Collagen deficiency makes the skin dull and lifeless. Collagen rejuvenates the skin from the roots and reduces wrinkles and symptoms of ageing. Collagen also provides structure for blood vessels so the body needs Vitamin C for a healthy vascular system. The tiny blood vessels under the skin carry oxygen and nutrients that keep the skin healthy. Without enough nutrients, the skin will become rough and dry.

In order to get a healthy mane, we need to eat healthy food. Healthy diet reflects on our skin and hair. Vitamin C is much more than an antioxidant and plays an important role in improving the health of our skin and hair. Low intake of Vitamin C may be a root cause for a number of

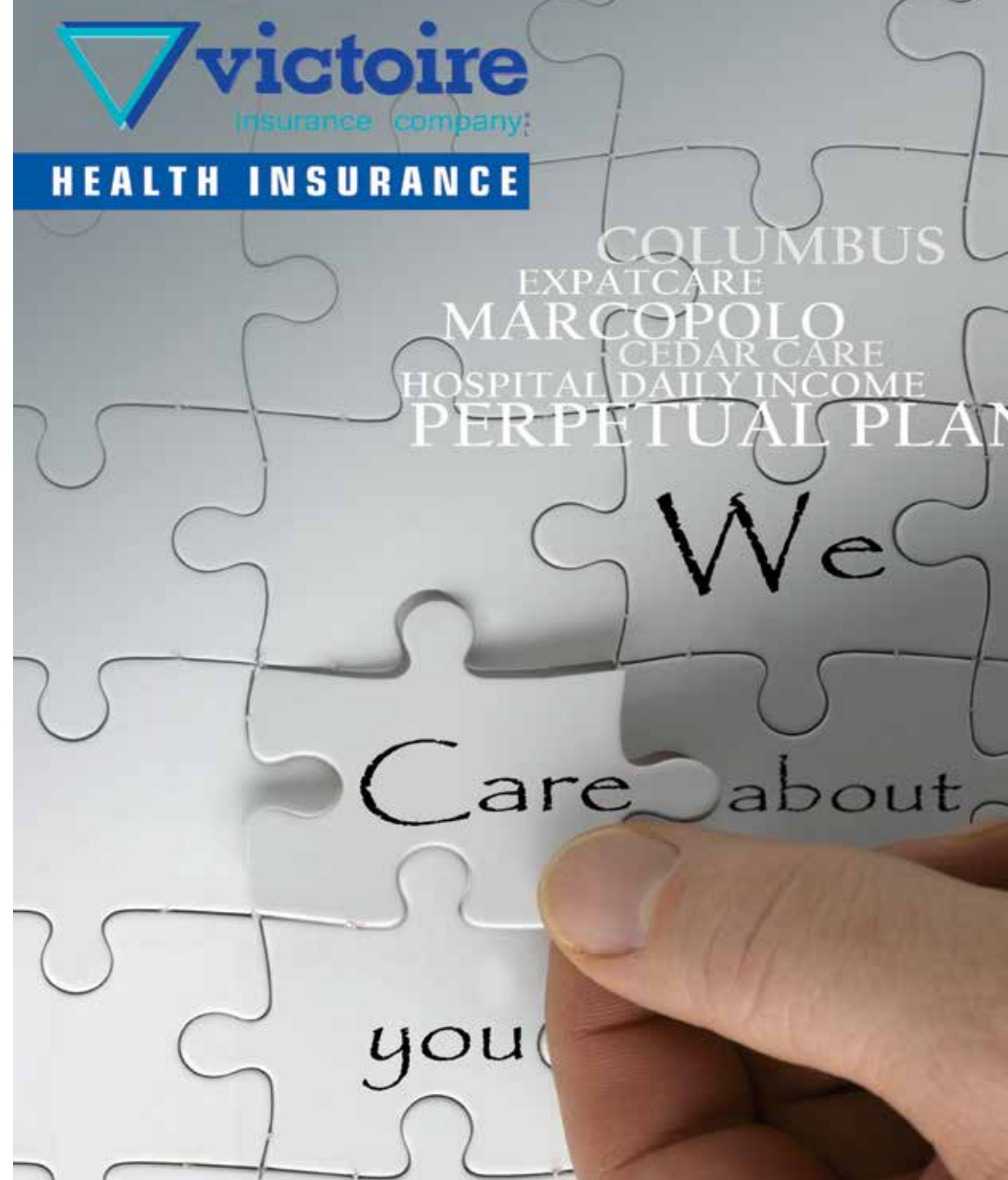
hair related problems that affect our hair growth. Vitamin C deficiency may result in dry hair and split ends. These conditions are not favorable for hair to grow regularly.

Free radicals naturally form when our body turns food that we consume into glucose for energy production. These free radicals damage our hair by making it weak, brittle and thin. These conditions interrupt hair growth. The antioxidant properties of Vitamin C reduce the formation of free radicals and minimize its effect on our body. Having an adequate supply of Vitamin C in our diet is essential for antioxidant protection against free radicals.

People who take huge amount of Vitamin C have healthy, strong and thick hair. Our hair follicles often get clogged due to dandruff and dry flaky skin. This can damage the hair follicles if not treated and also inhibit hair growth. Vitamin C helps to fight the bacteria on the scalp. It wards off

dandruff and helps to get rid the follicles debris and encourage new hair to grow. It also helps with dry and itchy scalps because of its anti-viral properties. It is used to reverse Adrenal gland fatigue.

This is crucial for stopping hair loss and encourages more hair growth since adrenal glands are a key to maintain proper hormonal balance. It also helps to improve blood circulation and strengthens and repairs capillaries too. This is particularly important for getting stronger, thicker hair. Vitamin C is an essential nutrient for damaged hair and in the treatment and prevention of a variety of hair disorders, which can damage the hair follicles and effect the normal growth of hair. A diet containing significant levels of Vitamin C can help to combat alopecia, and baldness in men. Vitamin C not only helps to combat hair loss but also helps to retain the natural color by preventing premature ageing of the hair.





# Osteoporosis

Risk of the disease peaks after age fifty

**D**uring childhood and adolescence bones are sculpted by a process called modeling, which allows for the formation of new bone at one site and the removal of old bone from another site within the same bone. This process allows individual bones to grow in size and to shift in space.

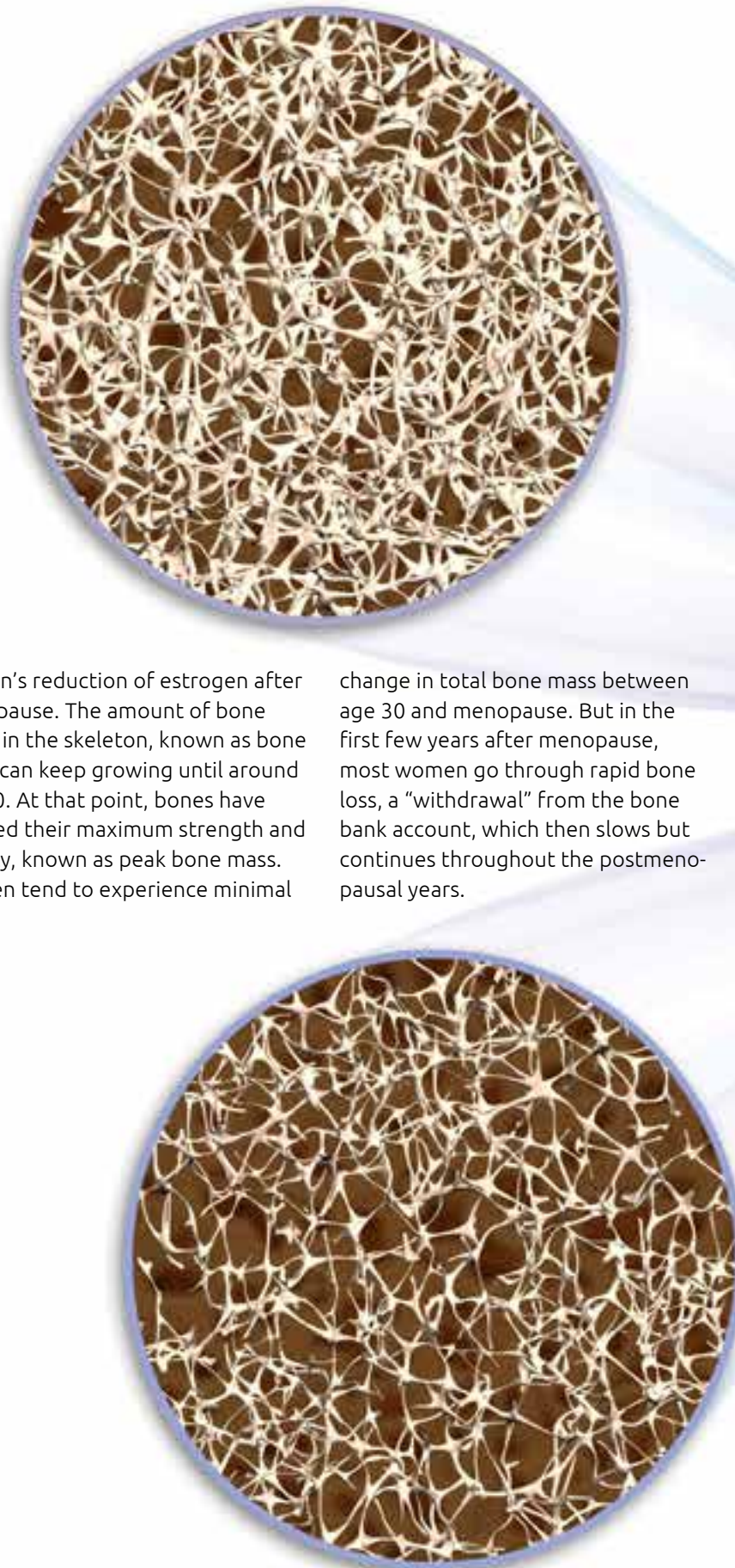
Much of the cellular activity in a bone consists of removal and replacement at the same site, a process called remodeling. The remodeling process occurs throughout life and becomes dominant by the time that bone reaches its peak mass (typically by the early 20s). Remodeling continues throughout life so that most of the adult skeleton is replaced about every 10 years.

Estrogen acts on both osteoclasts and osteoblasts to inhibit bone breakdown at all stages in life. It may also stimulate bone formation. The marked decrease in estrogen at menopause is associated with rapid bone loss. Hormone therapy was widely used to prevent this, but this practice is now controversial because of the risks of increased breast cancer, strokes, blood clots, and cardiovascular disease with hormone therapy.

Testosterone is important for skeletal growth both because of its direct effects on bone and its ability to stimulate muscle growth, which puts greater stress on the bone and thus increases bone formation. Men generally have greater bone mass than women, and in males, bone loss begins later and advances more slowly. But men do have a hormonal drop-off in testosterone similar to

women's reduction of estrogen after menopause. The amount of bone tissue in the skeleton, known as bone mass, can keep growing until around age 30. At that point, bones have reached their maximum strength and density, known as peak bone mass. Women tend to experience minimal

change in total bone mass between age 30 and menopause. But in the first few years after menopause, most women go through rapid bone loss, a "withdrawal" from the bone bank account, which then slows but continues throughout the postmenopausal years.







This loss of bone mass can lead to osteoporosis. Since prevention is always better than cure, building strong bones is the best solution for the advanced stages of life, protecting us from glides and fractures that may lead to prolonged bed stasis. Good nutrition and regular exercise are essential for keeping your bones healthy throughout your life.

### Bone health during every stage of your life

Every woman has to take care of

her bones at every stage of her life. Strong and healthy bones depend on a balance diet that is rich in two essential nutrients, calcium and vitamin D which facilitate the absorption of calcium in the body. And thus, both should be a part of your daily diet.

During the growing period and teenage phase, your bones are built during this period, so enrich your diet with calcium and vitamin D to build healthy and strong bones now and in the future. During the adult phase, you achieve peak bone mass; you

have to protect your bones from osteoporosis in the future by maintaining good nutritional habits. During pregnancy: You need a diet rich in calcium in order to meet your needs as well as provide for your baby.

During breastfeeding, your baby derives all his nutrients from your body, so you need to compensate for this and build up your nutrient stores. 30 years and above, your bones start to lose the calcium stored during the growing period. You have to follow a healthy diet, rich in calcium and

vitamin D in order to avoid bone loss and to maintain a healthy and strong skeleton. During menopause, because of hormonal changes, bone loss increase, which makes calcium and vitamin D more essential to protect your bones from osteoporosis.

### Bone Mineral Density

Bone density scanning, also called dual-energy x-ray absorptiometry (DXA) is an enhanced form of x-ray technology that is used to measure bone loss. DXA is today's established standard for measuring bone mineral density (BMD).

Ultrasound uses sound waves to measure bone mineral density (BMD) at the heel, shin, or finger. The process is quite simple. For example, to measure BMD at the heel, you will be asked to place your bare foot in a device (known as a sonometer) that emits high-frequency sound waves.

A computer determines the bone density by calculating how fast the sound waves pass through your heel. The machine can provide an estimate of your bone density in less than a minute. In addition to the standard scan, a CT bone density scan uses computed tomography to measure bone density.

These scans provide detailed, 3-D images and can measure the effects of aging and diseases other than osteoporosis on your bones. For a CT test, you lie on a table that moves into a large tube-like area where images are taken. It typically takes about 10 minutes.

According to the WHO, a T score below -2.5 is defined as osteoporosis. The T score is used to estimate your risk of developing a fracture. A score above -1 is considered normal. A score between -1 and -2.5 is classified as osteopenia (low bone mass).

### Vitamin D test

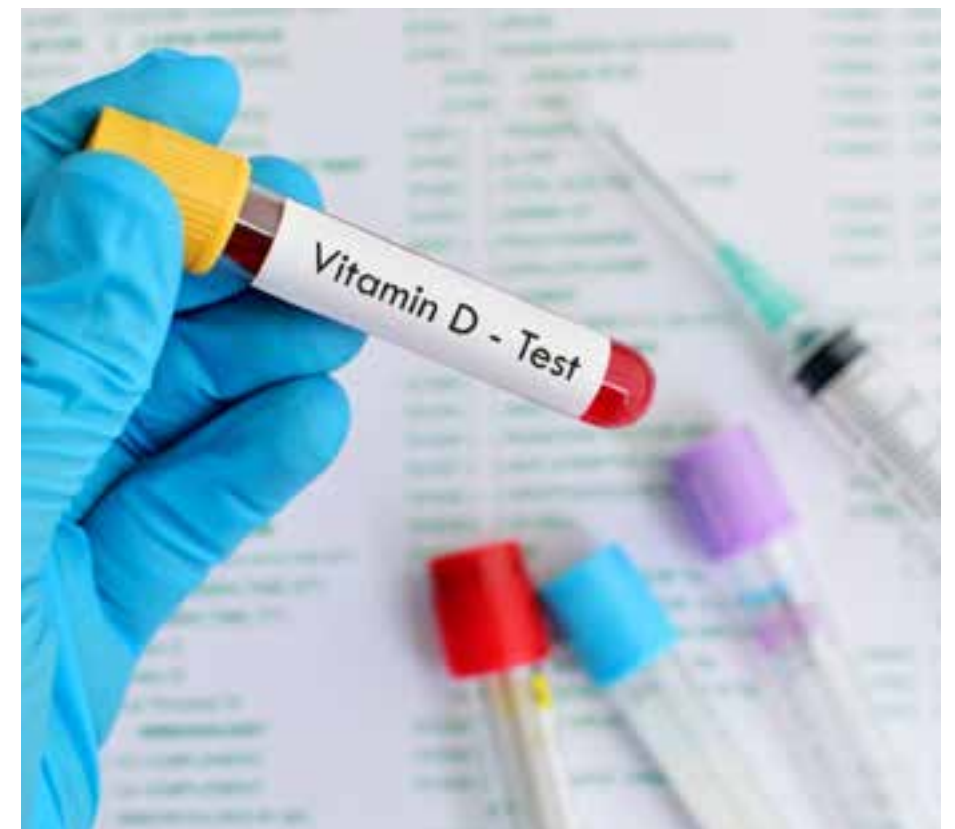
An adequate intake of calcium and vitamin D are important foundations for maintaining bone density and strength. However, calcium and vitamin D alone are not sufficient to treat osteoporosis and should be given in conjunction with other treatments.

Vitamin D is important in several respects; it helps the absorption of dietary calcium from the intestines. Vitamin D deficiency impairs bone mineralization, leading to bone softening diseases as rickets in children and osteomalacia and osteoporosis in adults.

Vitamin D, along with adequate calcium (1,200 mg of elemental calcium), has been shown in some studies to increase bone density and decrease fractures in postmenopausal women but not in premenopausal or perimenopausal women.

The Food and Nutrition Board of the Institute of Medicine has recommended the following as an adequate vitamin D intake: 800 IU/day for men and women over the age of 71, 600 IU/day for women in other age groups, men, and children, 400 IU/day for infants under 12 months.

Treatment for vitamin D deficiency involves obtaining more of this vitamin through supplements, diet, or exposure to sunlight before 11 am and after 4 pm. Consumption of food rich in Vitamin D is necessary including low-fat milk, dairy products in addition to the flesh of fatty fish (such as salmon, tuna, and mackerel) and fish liver oils which are among the best sources.





# Complete Blood Count (CBC)

The first step towards detecting a wide range of conditions

**A** complete blood count is a commonly performed blood test that is often included as part of a routine checkup. Complete blood counts can be used to help detect a variety of disorders including infections, anemia, diseases of the immune system, and blood cancers.

The complete blood count (CBC) is a test that evaluates the cells that circulate in blood. Blood consists of three types of cells suspended in fluid called plasma: white blood cells (WBCs), red blood cells (RBCs), and platelets (PLTs). They are produced and mature primarily in the bone marrow and, under normal circumstances, are released into the bloodstream as needed. This examination contributes to the detection of many major problems in the body and can help doctors in the diagnosis of various diseases such as:

- Anemia
- Leukemia

- Hemorrhagic Diseases
- Failure in the main function of the bone marrow
- Inflammations in the body such as appendicitis, by evaluating white blood cells
- Doctors often use this blood test to monitor the patient's health condition and detect diseases early so they can be treated promptly, or if the patient is suffering from specific symptoms so the physician can determine the causes and the type of disease.

## Components of Complete Blood Count

Complete Blood Count test measures several components and features of your blood, including:

### White Blood Cells (WBC):

It is the number of white blood cells in a volume of blood. Normal

range varies slightly between laboratories but is generally between 4,300 and 10,800 cells per cubic millimeter (cmm). This can also be referred to as the leukocyte count and can be expressed in international units as 4.3 to 10.8 x 10<sup>9</sup> cells per liter. If your white blood cell count is higher than normal, you may have an infection or inflammation. Or, it could indicate that you have an immune system disorder or a bone marrow disease. A high white blood cell count can also be a reaction to medication.

### A high white blood cell count usually indicates:

- Pregnancy and childbirth, which is normal
- Bacterial or viral infection
- Parasitic and fungal infections
- Skin allergies
- Appendicitis
- Kidney infection
- Tuberculosis

- Cancerous tumors and leukemia

### A low white blood cell count usually is caused by:

- Viral infections that temporarily disrupt the work of bone marrow
- Lupus
- Liver or spleen disease
- Typhoid and paratyphoid
- Bone marrow failure
- Radiation

White blood count is comprised of several different types that are differentiated, or distinguished, based on their size and shape. White blood cells are an important part of your body's immune system. They're responsible for protecting your body against infections and invading organisms. **You have five types of white blood cells:**

- Neutrophils: Normal range 40-75%
- Lymphocytes: Normal range 20-45%
- Monocytes: Normal range 2-10%
- Eosinophils: Normal range 1-6%
- Basophils: Normal range 1%

High white blood cell count indicates the presence of an infection in the body or a malignant tumor (in case of a significant increase), while low white blood cell count indicates a problem in the bone marrow or is due to the use of some drugs, such as chemotherapy.

### Red Blood Cells (RBC):

It signifies the number of red blood cells in a volume of blood. Normal range varies slightly between laboratories but is generally from 4.2 to 5.9 million cells/cmm. This can also be referred to as the erythrocyte count and can be expressed in international units as 4.2 to 5.9 x 10<sup>12</sup> cells per li-

ter. Red blood cells carry oxygen from your lungs to the rest of your body.

High red blood cell count may be caused by low oxygen levels, kidney disease, heart disease or other problems. Your body may increase red blood cell production to compensate for any condition causing low oxygen levels. While low red blood cell count indicates a disease such as kidney disease, autoimmune disease and collagen disease, which causes severe damage to the spinal cord.

### Causes of high red blood cell count include:

- Smoking
- Lack of oxygen
- Congenital heart disease in adults
- Severe diarrhea
- Lung disease
- Kidney disease
- Certain hemoglobin abnormalities

Causes of low red blood cell count include:

- Severe bleeding
- Iron deficiency
- Folic acid and Vitamin B12 deficiency
- Bone marrow failure
- Leukemia

### Platelet Count:

The number of platelets in a specified volume of blood. Since platelets are so small, they make up just a tiny fraction of the blood volume. The main function of platelets is to prevent bleeding; they play a vital role in blood clotting. Normal range varies slightly between laboratories but is in the range of 150,000 to 400,000/cmm (150 to 400 x 10<sup>9</sup>/liter).

### Hemoglobin:

Hemoglobin is a protein in the red blood cells that carries oxygen and gives blood its red color. The normal range for hemoglobin may

differ between the sexes and is approximately 13 to 18 grams per deciliter for men and 12 to 16 grams per deciliter for women.

### Hematocrit:

This is the ratio of the volume of red cells to the volume of whole blood. Normal range for hematocrit is different between the sexes and is approximately 45% to 52% for men and 37% to 48% for women. A low hemoglobin level is referred to as anemia or low red blood count. A lower than normal number of red blood cells is referred to as anemia and hemoglobin levels reflect this number. There are many causes for anemia including heart or liver disease in addition to smoking.

### Mean corpuscular volume (MCV):

It is the average volume of red cells. The reference range for MCV is 80-100 fL/red cell in adult.

### Preparation for CBC

There are some measures to be followed before undergoing a CBC. Usually, the patient should fast for accurate results, especially blood glucose levels. Eating before the test increases blood sugar levels and gives a false result. There are also some factors that can affect the results, such as taking some drugs that cause low platelet counts such as cortisone, antibiotics, diuretics and chemotherapy. High triglycerides level or a significant increase in white blood cells may cause a false increase of hemoglobin. An enlarged spleen can cause a decrease in platelet counts or white blood cells. Pregnancy naturally leads to a decrease in the number of red blood cells and an increase in the number of white blood cells.





## Make your New Year 20/20 - Open your eyes to a healthy new year

# 10 smart ways to protect your eyes

**A**s you make your New Year resolutions for a new and healthier lifestyle this 2018, remember your eyes and eye health. Lifestyle habits influence the health of the body generally, including the eyes, so your dietary and other choices will affect your overall health including your eye health. For people with a particular need to take care of their eyes – for example people with diabetes – regular and frequent eye screening is essential because of the greater risk of potentially serious eye complications. However, everyone should have a regular eye examination with a qualified ophthalmologist to maintain good eye health.

Five Consultants at Moorfields Eye Hospital Dubai share their tips for healthy eyes in 2018:

**Dr. Avinash Gurbaxani**, Consultant Ophthalmic Surgeon in Uveitis, Medical Retinal Diseases and Cataract Surgery tips:

- **Stop smoking:** According to the Royal National Institute of Blind People, smoking causes harm to the tissues of the eye. Research has confirmed the harmful effects of smoking on eyesight, particularly in the development of age-related macular degeneration (AMD) – a leading cause of

sight loss. Smokers double their risk of developing AMD, and tend to develop it earlier than non-smokers. Treatment options for AMD are limited but stopping smoking can reduce the risk of developing macular degeneration.

Smoking is also linked to the development of cataracts, and although they are treatable and therefore do not lead to blindness, they remain a major cause of sight loss worldwide. Smoking can make diabetes-related sight problems worse. Passive smoking is almost as harmful as first-hand smoking. In short, smoking is one of

the most harmful lifestyle habits for the health of your eyes, so quitting (or even better - not starting) is probably the most effective way of protecting your eyes.

If you've tried to quit smoking before and started smoking again, keep trying. The more times you try to quit smoking, the more likely you are to succeed.

- **Take symptoms seriously:** If you are experiencing unusual symptoms such as cloudy vision, blurred images, floating spots and loss of vision, head straight to an ophthalmologist to get them checked. You could be saving your sight.

**Dr. Paola Salvetti**, Consultant Ophthalmologist, Specialist in Medical Retina tips:

- **Hydration:** Try to stay hydrated and drink around 2 litres of water each day or more depending on your activity. Remember that air conditioning dehydrates and both AC and dehydration could lead to or exacerbate dryness of the eyes.
- **Exercise:** A healthy lifestyle with plenty of exercise protects some people against diabetes and other diseases which can damage sight. For people with diabetes, regular eye screening is essential because of the greater risk of potentially serious eye complications.

**Dr. Mohammed Sohaib Mustafa**, Consultant Ophthalmic Surgeon, Specialist in Glaucoma and Cataract Surgery tips:

- **Older eyes need more care:** We take our eyes for granted



ed but in our forties, a lot of us start to need glasses while they did not need ones before. Most people do not know that there is an increasing risk of eye disorders with age and for the over 40s, we recommend annual eye check-ups.

- **Healthy diet:** Diet influences the health of the body generally, including the eyes, and a vitamin-rich diet including fruit and vegetables is a positive lifestyle choice.

Protecting your eyes starts with a balanced diet with extra emphasis on nutrients such as omega-3 fatty acids, lutein, zinc, and vitamins C and E. These nutrients are good for the eyes and might help ward off age-related vision problems such as macular degeneration and delay cataracts, studies show.

Try to balance your diet and regularly eating some of these foods can help lead to good eye health:

- Green, leafy vegetables such as spinach, kale, and collards
- Salmon, tuna, and other oily fish
- Eggs, nuts, beans, and other non-meat protein sources
- Oranges and other citrus fruits or juices

**Dr. Osama Giledi**, Consultant Ophthalmologist, Specialist in Cataract, Cornea and Refractive Correction Surgery tips:

- **Sunglasses:** In a hot and dusty climate, protecting the eyes with good quality sunglasses with polarised lenses and a hat with a brim, is a sensible precaution.
- **Rest your eyes:** If you spend

a lot of time at the computer or any other electronic device or reading, try to take a break every 20-30 minutes to reduce eyestrain and dryness of the eyes.

**Dr. Igor Kozak**, Consultant Ophthalmologist, Specialist in Vitreoretinal Surgery, Medical Retina and Uveitis tips:

- **Children need eye tests too:** Some eye problems run in families – if anyone in your family has a squint or lazy eye you should arrange an eye test by three years of age. If you see or suspect an eye problem you should get an assessment right away rather than wait till the child is 3. Most causes of poor vision in children are easily correctable if they are picked up and treated in time, from birth until about 7 1/2 years of age so checking the eyes during this period is important.
- **Eye checks:** Everyone should have a regular eye examination with a qualified ophthalmologist to maintain good eye health – not just the quality of the vision but to check the overall health of the eye (did you know that the eye can also reveal health issues in other parts of the body?). Most adults should have a sight test every two years and one year for people with diabetes. Many people with diabetes have no symptoms until the eye disease is advanced; this is why screening is so important and why I strongly advise the community to have regular eye checks.



## UK MedTech Harnes Arab Health's Global Platform



**T**he Association of British Healthcare Industries (ABHI) is taking over 150 companies to Arab Health 2018. The UK's leading MedTech association believes this strong contingency highlights a desire for British companies to forge deeper, more sustainable trading re-

lationships as the country navigates its departure from the EU.

Arab Health 2018 offers a global platform for the world's leading manufacturers, wholesalers and distributors to meet with the scientific community in the Middle East and

subcontinent to discuss business and develop new partnerships.

**Paul Benton**, Managing Director of International at ABHI, said: "We are actively seeking new commercial options across the key global markets that we have identified. When we consider the substantial investment in public health from the Government of the UAE, and wider Middle East, opportunities for UK companies providing value-based healthcare solutions are significant. This strong delegation of companies shows that the UK is open for business and is keen to forge global healthcare links in the region. Arab Health is the best trade show to drive this and the UK pavilion promises to be a hub of activity."

With the UK Government recently launching its Industrial Strategy, which provides a framework to boost UK productivity and earning power, the MedTech sector, and broader Life Sciences industry has been identified

as having a critical role in its success.

UK MedTech is now worth £17 billion to the economy, and as well as supporting the UK to export globally, ABHI is also keen to speak to international companies wanting to do business in the UK. ABHI's international membership has been set up to make it more accessible for global companies wishing to partner with their British counterparts.

Below are a few examples of UK innovation being showcased at Arab Health 2018

### CHAPPER healthcare

A pioneering food supplement that protects the eye from damage caused by diabetes will be showcased in the Middle East for the first time at Arab Health 2018.

Being unveiled by British pharmaceutical wholesaler and distributor, CHAPPER healthcare (formerly Philip Chapper & Company Ltd), RetiCap® provides preventative support for patients with diabetic retinopathy. Easy to swallow, the capsule offers a natural protection and concentrates on the increased need for nutrients for the eye caused by diabetes. RetiCap® contains vitamin B1, the flavonoid Rutin, as well as Alpha-lipoic acid. The micronutrients help to stabilize and disrupt any damage caused to the eye by diabetes. Philip Chapper & Company Ltd was established over 40 years

ago and has a worldwide reputation for successfully sourcing and distributing pharmaceutical products globally. The company has recently rebranded as CHAPPER healthcare, a change of name that reflects the wider changes taking place across the organization. CEO Jonathan Chapper, explains: "The Middle East is one of our key markets and we invest a lot of time and resource into building relationships here. It's so important for us to come to Arab Health to showcase new products and highlight the developments that have taken place within our company over the last year. Our new image reflects our heritage, but enables us to look to the future. We are a modern company who is focused on improving healthcare and access to medicines in the Middle East."

### Rober Ltd

A pioneering 'zero pressure' mattress that prevents pressure injuries from occurring in intensive care patients will be showcased at Arab Health 2018. The WIZARD® is an innovative mattress that offers protection to bedridden and critically ill immobile patients. It combines Rober's signature alternating pressure cell design with an impressive tilt facility. This action gently turns the patient onto their side, comfortably and correctly, thus reducing the requirement for manual handling. The technology used in the WIZARD mimics the body's natural movements to prevent pressure



CHAPPER healthcare



### Rober Ltd pressure ulcer mattress

ulcers from forming. Moving up and down in a wave-like motion, it provides regular and complete pressure relief to all potential contact points. The dynamic system also offers therapeutic properties to promote the healing of established ulcers. The mattress is easy to use and operate and has been designed with patient and carer safety in mind. It also includes a range of additional nursing support and includes patient safety measures, such as integrated sides and an in-built Cardio Pulmonary Resuscitation (CPR) valve to provide quick deflation in the case of an emergency.

### Paxman

A pioneering treatment that prevents patients from losing their hair whilst undergoing chemotherapy is now available in the Middle East. The Paxman Scalp Cooling System has been developed by a British family who understands what it is like to lose hair due to cancer treatment. The concept behind the technology came when the mother of four, Sue Paxman, experienced first-hand the trauma of chemotherapy-induced hair loss. The company has since been on a personal journey to ensure Sue's legacy lives on by helping women around the globe minimise chemotherapy-induced hair loss and contribute to their quality of life. Chemotherapy works by targeting all rapidly dividing cells in the body. Hair is the second fastest dividing cell, and this is the reason why many chemotherapy drugs cause alopecia. The hair follicles in the growth phase are attacked,





Paxman

resulting in hair loss approximately two weeks after the commencement of chemotherapy treatment. The damage that chemotherapy causes to the hair follicle can be alleviated by using the scalp cooling treatment; also known as the 'cold cap'. It works by reducing the temperature of the scalp by a few degrees immediately before, during and after the administration of chemotherapy. The Paxman Cooling Cap molds to all head shapes and sizes. The liquid coolant passes through the cap, extracting heat from the patient's scalp, ensuring an even, constant temperature is maintained to minimise hair loss. Richard Paxman, CEO at Paxman said: "Chemotherapy-induced hair loss is consistently ranked in the top five most distressing cancer chemotherapy side effects and we are working hard to ensure that breast cancer patients have a choice against hair loss. We are delighted to be able to offer scalp cooling to Middle Eastern patients."

### Edgbaston Medical Quarter (EMQ)

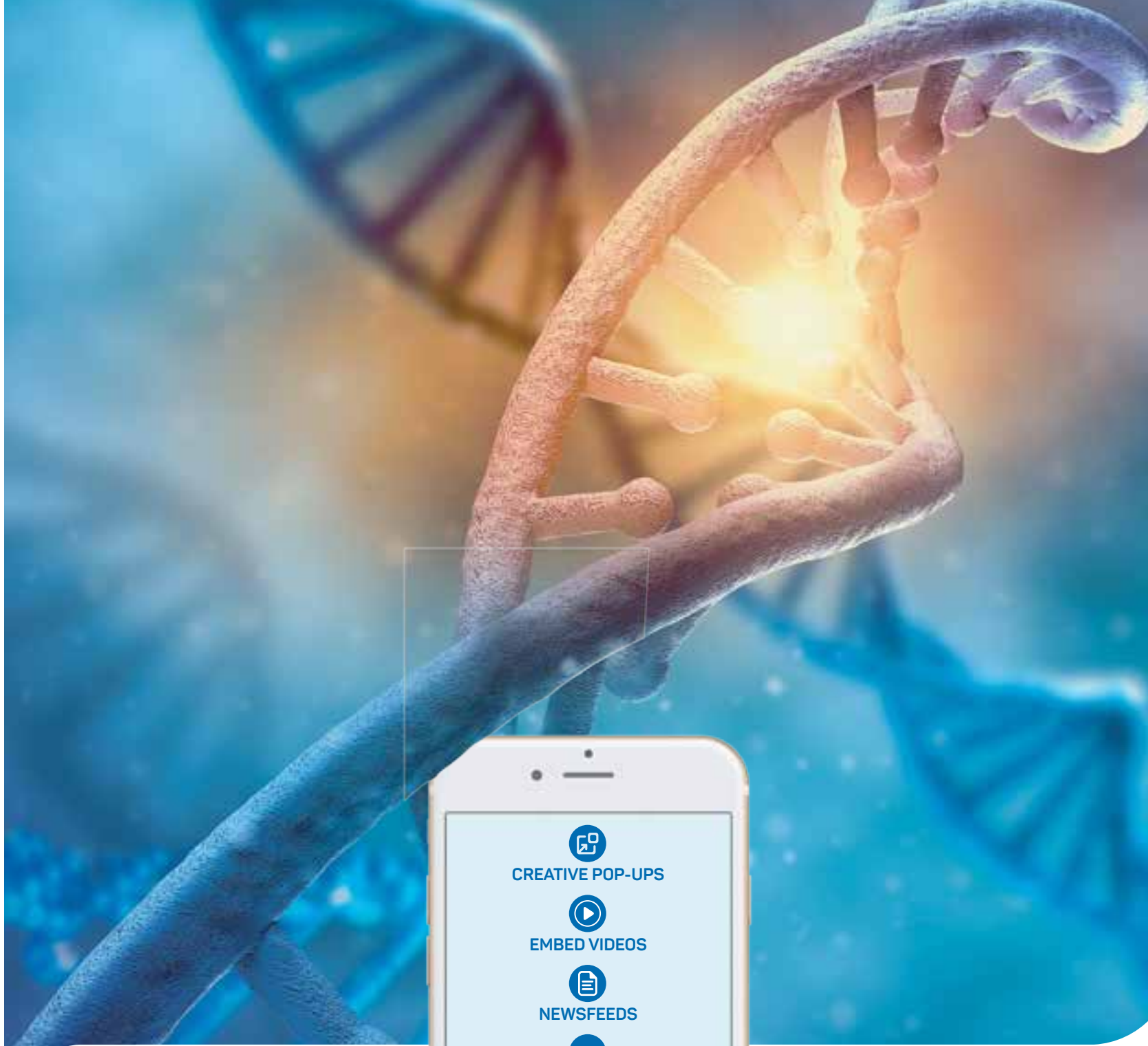
Edgbaston Medical Quarter (EMQ)

is once again returning to Arab Health 2018 to showcase the vast range of pioneering healthcare and life sciences companies that are located in Birmingham. Managed by the Calthorpe Estate, EMQ is attracting a rapidly growing healthcare and life sciences community with leading clinics such as Circle Health, Care Fertility, and Re:cognition choosing to have a base within the medical hub. Located in the heart of the UK, the area has an excellent cluster of medical research and healthcare facilities with specialist care centers, many of which are within

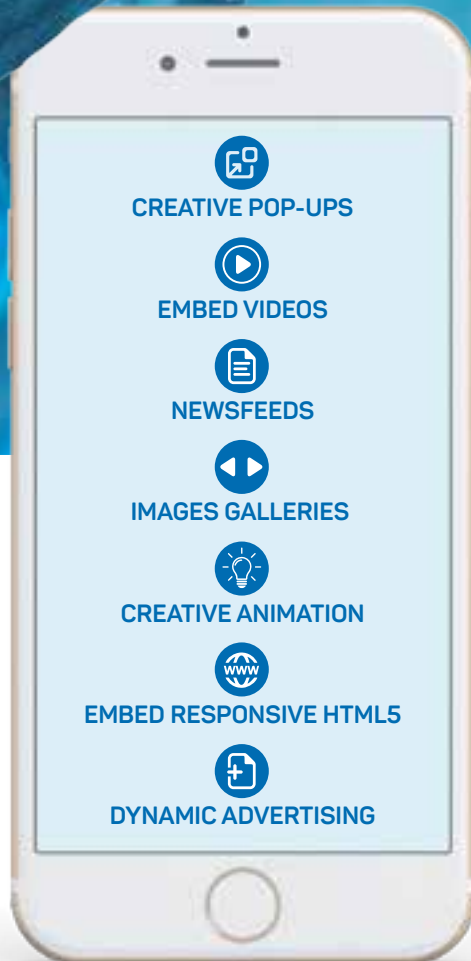


Edgbaston Medical Quarter

walking distance of one another. It is directly accessible from the UAE via Birmingham International Airport and has strong transport links to London. The area also boasts a powerful group of healthcare institutions, advanced research, and academic hubs and is a center of excellence for both trauma and leukemia. It is supported by internationally renowned training and educational facilities and is fast becoming a 'go to' center for clinical trials. Within EMQ there are over 180 medical organizations, 80 hospitals and specialist care centers and 44 GP clinics and routine care facilities, along with 23 training facilities. Mark Lee, Chief Executive, Calthorpe Estates, said: "It's great to be at Arab Health to showcase Birmingham's Edgbaston Medical Quarter. EMQ is an optimum investment destination for healthcare and life sciences organizations and we are delighted that growing number of new clinics and life science companies are moving to the area. As well offering healthcare expertise, it has the capacity to grow with a range of accommodation from new build to period properties offering hospital, clinical or consulting room space. It's an exciting area and we are proud to be attracting eminently qualified and experienced clinicians through to internationally renowned operators."



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## Promoting Healthcare Partnerships Over Politics

National pavilions at Arab Health 2018 are an invitation to international cooperation

By Tom Kallman, President and CEO, Kallman Worldwide, Inc., [kallman.com](http://kallman.com)



In a gesture of partnership on behalf of U.S. exhibitors, Tom Kallman (right) presents a historic copy of the medical journal *The Lancet* to Princess Haya bint Al Hussein, wife of Sheikh Mohammed bin Rashid al Maktoum, for the collection of the Al Maktoum Medical Library during Arab Health 2015.

### It's been a year since the last Arab Health. What's new in your country?

Depending on where you're from and where you stand, it's easy to mistake that question for a political statement. Since the last show, more than 60 heads of state (presidents or prime ministers) have taken office around the world. Add parliamentary or legislative contests, appointed posts and related staff turnover, and there's a lot of "what's new" happening politically in most of our countries.

Considering the nature and outcomes of the elections that put some of those in office — notably in the United Kingdom, France, South Korea, the Philippines and the United

States — you could even be forgiven for hearing a tinge of exhaustion in this question. For some, the pace of change has been non-stop. From Kallman Worldwide's perspective (we've

been organizing U.S. exhibitors at international events since 1963, and at Arab Health since 1993), the coincidence of this show with political shifts in one direction or another is some-

what déjà vu. Over the past 25 years, the U.K. has had five prime ministers. France, the United States and the Philippines each have had five presidents; South Korea's had seven. The six Gulf Cooperation Council member countries have tallied 16 heads of government or state since 1993.

### Shifts happen — but politics is the least of it!

Consider the virtually tectonic shift we've witnessed in the healthcare landscape of the UAE over its short history.

- In 1971, the Federation had just seven hospitals and 12 health centers serving a population of 280,000. Today, there are more than 115 public and private hospitals and by some estimates 1,000-plus centers or clinics delivering primary and specialized care for a population nearing nine-and-a-half million.
- Prosperity has spawned a corresponding spike in chronic lifestyle illnesses such as cardiovascular disease, diabetes, obesity, tobacco-related conditions and cancers.
- A priority on wellness and prevention in the country's "Vision 2021" national agenda is being met with increased investment in infrastructure and the recruitment, education and training of medical professionals.
- Active pursuit of international partners — from hospital and clinic operators to treatment specialists, equipment and device manufacturers, suppliers and even medical tourists — is accelerating progress to build a model healthcare system in a market that some

estimate could be worth as much as \$28 billion by 2021.

In other words, Arab Health doesn't care about politics; it cares about results. Thus my question — and even more so, the answer — is precisely why America and more than 40 other countries are presenting national pavilions at this year's show.

National pavilions are a patriotic expression of collective industry pride, presented in the spirit of global partnership. From nation to nation, they're an invitation: "Come see our country's new technologies, equipment and services. Let's work together."

National pavilions are also practical. They give participating exhibitors — especially first-time small and medium-sized enterprises (SMEs) — instant equity and scale. I think that's why, as emerging economies flex their professional muscles in global markets, we're seeing an increase in the number of national pavilions and exhibitors participating in trade shows around the world.

Of the 4,200-plus exhibitors from 68 countries expected at Arab Health 2018, organizers report nearly 65% will exhibit in a pavilion.

Among the largest national contingents from outside of the UAE, the United States is represented by some 340 exhibitors, 270-plus exhibiting in the new USA Partnership Pavilion in Halls 1, 2, 5 and Za'abeel 6.

Organized by our company in coordination with numerous official government agencies, including the Departments of Commerce and State, the USA Partnership Pavilion is a full-service business destination: an efficient location for buyers to meet more U.S. suppliers, an on-site operations center for American exhibitors to maximize their exposure and impact at the show and a forum for all

to share ideas and insights.

USA Partnership Pavilion exhibitors represent 34 states, including 12 dedicated state pavilions from Florida, Georgia, Illinois, Maryland, Michigan, Minnesota, Missouri, North Carolina, Pennsylvania, Tennessee, Utah and Washington. More than 65% are SMEs, 83 are first-time Arab Health exhibitors, and all are working to initiate or strengthen connections that will create new jobs back home, either by growing exports, expanding in-region operations and/or recruiting overseas partners to establish or participate in US-based work.

This is Kallman's 25<sup>th</sup> consecutive Arab Health, and the first organizing under the "USA Partnership Pavilion" banner. We chose this new name to communicate that, now more than ever, we all share in each other's successes. Beyond the dollar value of buy-sell transactions, collaboration and teamwork are the currencies of the global healthcare marketplace.

From OEMs to SMEs, Americans at Arab Health share these values with the UAE and beyond. Our collective presence at the show affirms our nation's commitment to health and medical partnerships that further common business interests and strengthen professional relationships to improve patient outcomes and overall quality of life.

### Tom Kallman

Tom Kallman is President and CEO of Kallman Worldwide, Inc., official representative and organizer of U.S. exhibitors at Arab Health since 1993, this year supporting 270-plus American companies in the new USA Partnership Pavilion in Halls 1, 2, 5 and Za'abeel 6 at Dubai International Convention and Exhibition Centre. For information, visit [kallman.com/arab-health-2018](http://kallman.com/arab-health-2018)



# Arab Health USA partnership pavilion

## Exhibitor highlights

### BOOTH H1.E51 — U.S. SANITIZERS, LLC

*FDA Announces Concerns About the Long-Term Effects on Body with the Frequent Use of Alcohol Hand Sanitizers*

The FDA has reacted to a study performed at the highly respected University of Florida Research Center which found the presence of alarming amounts of alcohol-based hand sanitizers in the bloodstream of nurses using the product frequently throughout the day. The study was a reaction to nurses, who were recovering alcoholics complaining about false positive tests for alcohol. The result is some markets banning alcohol hand sanitizers.

**TARGET SECTORS:** Schools/Day Care, Hospitals and Consumers

**CONTACT:** Antoine Abi Younes, CEO, U.S. Sanitizers, LLC, Dunwoody, GA, +1-404-247-1924; tabiyounes@gmail.com



### BOOTH H1.B03 — CORVUS

*Corvus Health Designs New Oncology Care Team for India*

Corvus Health and Tata Trusts have redesigned the oncology care team for India. India has a shortage of oncologists resulting in most cancers

being diagnosed in late stages. By introducing "Cancer GPs", an innovative mid-level provider, Corvus enables oncologists to focus on the most complex activities, such as making definitive cancer diagnoses and designing treatment plans, while Cancer GPs will implement the plans, giving more patients access to cost-effective, life-saving cancer care.

**TARGET SECTORS:** Human Resources, Health Workforce, Service Delivery

**CONTACT:** Kate Tulenko, CEO, Corvus Health, Alexandria, VA, +1-202-460-9919; ktulenko@corvushealth.com

*Corvus Health to Introduce Locums Services in Kenya*

Corvus Health has received initial approval to offer locums services to health facilities in Kenya. When hospitals experience staff shortages they can contact Corvus for temporary staffing of nurses, physicians, and pharmacists. Locums staffing will help prevent service interruptions due to sick leave, vacation, maternity leave, and seasonal demand surges. Corvus is the first company in Kenya offering locums and it is anticipated that locums will help lessen the impact of the health worker shortage.

**TARGET SECTORS:** Human Resources, Health Workforce, Service Delivery

**CONTACT:** Kate Tulenko, CEO, Corvus Health, Alexandria, VA, +1-202-460-9919; ktulenko@corvushealth.com



Corvus Kenya Medical Practitioners Board



### BOOTH H1.F33 — VICTORIA WORLD WIDE

*Dr. T Glucosamine, Chondroitin, MSM With Collagen Cream Pain Reliever*



Helps to regenerate and rebuild cartilage tissue. Has nutrient derived from seashell and has beneficial effect on articulation pathologies.

Furthermore, it promotes lubricating fluids in the joints and increases articular mobility. It helps to maintain articulatory elasticity and to regenerate connective tissue and collagen.

**TARGET SECTORS:** Health & Dietary Products, Herbal Products & Supplements, Cosmetics

**CONTACT:** Luis Alvarez, VP Finance and Operations, Victoria World Wide Business Connections, Miami, FL, +1-305-895-7077; luisf@vwwbc.com



### BOOTH H1.E38 — AIRSEP

*Introducing AirSep Nitrogen Generators*

Economical, Low-Maintenance, Uninterrupted Nitrogen Gas Supply Solutions for the Medical Industry. Eliminate the Need for Handling Nitrogen Bottles at High Pressure While Improving Safety.

AirSep has served customer oxygen needs globally for over 30 years and has expanded its existing portfolio to include new Membrane and PSA Nitrogen Systems. These systems produce nitrogen on-demand from an independent compressed air source. Nitrogen gas is used to power pneumatically controlled tools for surgery/operations, leak testing in pipelines, as well as Modified Atmosphere Packaging for medical instruments/pharmaceuticals. An AirSep Nitrogen System is cost-effective, easy to install, and capable of long-term unattended operation.

**TARGET SECTORS:** Gas Equipment, Surgical, Pharmaceuticals

**CONTACT:** Julie Liberti, Mar-



AirSep Nitrogen System

keting Coordinator, AirSep (A Chart Industries Company), Buffalo, NY, +1-716-691-0202 x6441; julie.liberti@chartindustries.com



ScottCare novi+ Holter monitoring patch

### BOOTH H1.E35 — SCOTTCARE

*New ECG Patch Holter*

ScottCare offers new novi+ Holter monitoring patch. ScottCare (USA) introduces novi+, our newest patch Holter monitor that provides up to 3 channels of ECG in a discreet, water-resistant, single-patch hook-up; automated recording start and shutdown; double-tap event marking; and a rechargeable built-in battery. Available with HolterCare™ diagnostic software and EHR integration.

**TARGET SECTORS:** Non-Invasive

Monitoring and Testing, Diagnostic Cardiology Equipment, ECG Equipment

**CONTACT:** Daryl Lehman, International Product Specialist, ScottCare Cardiovascular Solutions, Cleveland, OH, +1-216-362-0550 x179



### BOOTH H2.A30 — AIR FORCE, INC.

*Cardiovascular Implications for Mitigation of Streptococcal Mutans*

Keeping Heart Valves Healthy. Streptococcal mutans bacteria have been implicated in 70% of diseased heart valves. Dental Air Force has recently been shown to mitigate the quantitative population of this organism and other cardiovascular pathogens as well as the inflammatory marker CRP. A pathological bacterial reduction of 500% over and above current periodontal treatment was observed by using Dental Air Force.

**TARGET SECTORS:** Diabetes, Cardiovascular, Inflammation

**CONTACT:** Piero Policicchio, CEO, Air Force Inc., Holland, MI, +1-616-218-7318; piero@dentalairforce.com



### BOOTH H1.B56 — LITECURE

*LightForce Therapy Lasers Announces NEW Portable Therapy Laser, The LightForce FXi*

LightForce is proud to unveil the newly designed LightForce FXi. This popular laser therapy system comes equipped with industry-leading influence® technology and long-life battery operation. influence Technology is the newest innovation from the leaders in laser therapy. Harnessing software and hardware advancements, LightForce brings this "next



level” technology to new heights and delivers outcomes like never before. The new i-series provides utility where and when you need it.

**TARGET SECTORS:** Rehabilitation, Pain Management, Post-Surgical

**CONTACT:** Amanda Hoffmeyer, Director of Marketing, LightForce Therapy Lasers, Newark, DE, +1-302-709-0408; amandah@litecure.com



#### BOOTH H1.H30 – ORICARE, INC.

*ORICARE® A9800 XL Anesthesia Workstation & V7600 Emergency Transport Ventilator*  
New Innovations of 2018.

ORICARE® is proud to announce the launch of two new innovations. After one year of intensive research and development, we are happy to welcome the new A9800 XL Anesthesia Workstation and the V7600 Emergency Transport Ventilator into our product family. Our new devices host a myriad of new features and technologies that we are confident will revolutionize traditional methods of anesthesia delivery and ventilation. All are welcome to visit booth 1H30 to learn more.

**TARGET SECTORS:** Surgical, Intensive Care, Anesthesia



ORICARE Workstations

**CONTACT:** William Mason, Global Marketing & Sales Manager, ORICARE Inc., Quakertown, PA, +1-215-538-2470; william@oricaremed.com



Kopp Development FerrAlert™ for MRI safety

#### BOOTH H1.B30 – KOPP DEVELOPMENT

*Innovation in MRI Safety*

Kopp Development Inc. is the world’s leading manufacturer of ferromagnetic detectors for MRI Safety. Its FerrAlert™ systems are recognized to be the most accurate ferromagnetic detectors for MRI, due to their unique, patented technology to detect and precisely locate the offending ferrous objects. This locational feature allows MRI technologists to locate and mitigate ferromagnetic threat without need of handheld detectors and uncomfortable pat-down of the patients.

**TARGET SECTORS:** MRI Systems  
**CONTACT:** Anna Srb, Director, Marketing and Sales, Kopp Development Inc., Jensen Beach, FL, +1-772-225-6932; annasrb@koppdevelopment.com



#### BOOTH Z6.E40-A – SHIPPERT MEDICAL / SUMMIT MEDICAL

*Shippert Medical and Summit Medical Have United to Offer You More!*

ENT, Plastic Surgery, Cosmetic Surgery, Instrument Sterilization, and Jaw Stabilization Products.

We have combined the 74-year legacies, experience and expertise of Shippert Medical and Summit Medical to help our medical professional partners elevate the delivery of care to improve patient outcomes. Our trusted products still include the Rhino Rocket®, the Denver Splint®, Thermoplast, Liposuction cannulas, the Tissu-Trans® for fat grafting, the EarPopper®, InstruSafe for instrument sterilization protection, and the new MinneTies for Jaw Stabilization.

**TARGET SECTORS:** Ear, Nose and Throat Surgeons, Plastic and Cosmetic Surgeons, Trauma Surgeons

**CONTACT:** Allison Therwhanger, President, Shippert Medical / Summit Medical, Centennial, CO, +1-303-754-0044; alt@innoviamedical.com



#### BOOTH H1.H51 – CURECOMPANION

*CureCompanion Announces “Ready to Use” Telemedicine Kit in the Form of a Carry Bag and Cart*

CureCompanion is happy to announce “Ready to Use” telemedicine platform with integrated medical devices, a unique global healthcare solution, that brings revolution in healthcare to create unique remote health care facilities anywhere. The platform enables doctors to hear heart/lung sounds, review images of throat, skin, ears & eyes, measure temperature, SpO2, Blood Pressure, Spirometry and glucometer parameters from remote patients in real time



CureCompanion “Ready to Use” Platform

with video communication.

**TARGET SECTORS:** Community Health Centers, Hospitals, Nursing Homes

**CONTACT:** BA Majmudar, Director, CureCompanion, North Brunswick, NJ, +1-732-261-4077; ba@curecompanion.com



#### BOOTH H2.A30 – HENRY FORD HEALTH SYSTEM

*Henry Ford Health System Announces the Construction of a New 6 Story, 187,00 Square Feet of Space State of the Art Cancer Treatment Pavilion*

Our cancer program is one of the largest in Michigan. We treat nearly 5,000 new cancer patients each year. And that number continues to grow. Nationally, cancer cases are expected to increase 20 percent by 2025 - and 40 percent by 2035, according to the Institute of Medicine. To address this growing need, the Brigitte Harris Cancer Pavilion is being built just across

from our flagship Henry Ford Hospital.

**TARGET SECTORS:** Ambulatory Cancer Treatment, Precision Medicine, Clinical Trials and Research

**CONTACT:** Morris Blake, Director, International Initiatives, Henry Ford Health System, Detroit, MI, +1-313-874-4090; mblake1@hfhs.org



Henry Ford Health Systems is building the Brigitte Harris Cancer Pavilion



#### BOOTH H1.D10 – ATTUNE MEDICAL

*New Data Show Esophageal Cooling Saves Almost \$700 Per Patient*

Due to Lower Rate of Shivering

Study out of the University of Maryland found esophageal cooling achieved normothermia in patients with subarachnoid and intracranial hemorrhage and was associated with less shivering and significantly lower pharmaceutical costs than other devices. The mean daily cost with esophageal cooling was \$124 and with controls was \$233, and mean total cost was \$497 for esophageal cooling and \$1,157 for controls, resulting in a cost savings of almost \$700 over the course of treatment.

**TARGET SECTORS:** Critical and Intensive Care, Neurocritical Care Neurology

**CONTACT:** Erik Kulstad, CEO, Attune Medical, Chicago, IL, +1-708-651-0736; ekulstad@attune.medical.com



*Clinical Study Published in Resuscitation Demonstrates Efficacy and Safety of Attune Medical’s EnsoETM for Cooling and Rewarming Patients*

The COOL Study is largest prospective study evaluating esophageal temperature management to date.

A clinical study published in the journal Resuscitation has demonstrated the efficacy and safety of Attune Medical’s EnsoETM in cooling and rewarming patients after out-of-hospital cardiac arrest (OHCA). The article, “Targeted Temperature Management Using The Esophageal Cooling Device After Cardiac Arrest (The COOL Study)”, assessed the performance and safety of the EnsoETM (previously named the Esophageal Cooling Device, or ECD) during a Targeted Temperature Management (TTM) protocol.

**TARGET SECTORS:** Critical Care, Intensive Care, Resuscitation



**CONTACT:** Erik Kulstad, CEO, Attune Medical, Chicago, IL, +1- 708-651-0736; ekulstad@attune.medical.com



Attune Medical EnsoETM



### *Esophageal Heat Transfer for Patient Temperature Control and Targeted Temperature Management*

This study presents a novel method to provide efficient patient temperature control for cooling or warming patients. A single use, triple lumen device is placed into the esophagus, analogous to a standard orogastric tube, and connects to existing heat exchange units to perform automatic patient temperature management.

**TARGET SECTORS:** Critical Care, Intensive Care, Surgery

**CONTACT:** Erik Kulstad, CEO, Attune Medical, Chicago, IL, +1- 708-651-0736; ekulstad@attune.medical.com



**BOOTH H1.D54 – CLINICAL CHOICE**  
*New SafeCap™ Trays and Dis-*

### *posable Liners Provide Additional Staff and Patient Safety*

SafeCap™ Endoscope Transport liners and trays are simple to use and designed for efficient cleaning and safe ergonomic transport

Clinical Choice is introducing SafeCap™, a patented Endoscope Transport System with liners that are easy to install and cover the tray top and sides and connect at the bottom of the tray. SafeCap™ Transport Trays are designed for easy and efficient cleaning with an ergonomic shelf for safe transport.



### *OneTAB™ Replaces Bottled Liquid Enzymatic Detergents Used to Clean Endoscopes and Surgical Instruments*

OneTAB™ triple enzymatic detergent eliminates manual dispensing of enzymatic detergents.

Clinical Choice is introducing OneTAB™, a pre-measured triple enzymatic detergent that replaces bottled liquid detergents. A single OneTAB™ container with 200 small pouches (5 lbs.) replaces 8 gallons (64 lbs.) of liquid enzymatic detergent. OneTAB™ increases compliance and saves valuable working and storage space.

**TARGET SECTORS:** Endoscopy, Central Sterile Services Department,

Outpatient Clinics

**CONTACT:** David Mount, Business Development, Clinical Choice, LLC, Greensboro, NC, +1-336-841-0919; sales@clinicalchoice.com



### **BOOTH H1.C56 – CHEMBIO DIAGNOSTICS SYSTEMS, INC**

#### *Chembio Diagnostics Awarded UNICEF Contract to Supply Point-of-Care DPP® Zika Assays and DPP® Micro Readers*

Chembio Diagnostics, Inc. (NASDAQ:CEMI), a leader in point-of-care (POC) diagnostic tests for infectious diseases, announced that it has been awarded a conditional Long Term Arrangement (LTA) from UNICEF for purchases of the Company's DPP@ Zika System, which is subject to Chembio satisfying certain conditions.

**TARGET SECTORS:** Diagnostics  
**CONTACT:** Max Fayans, Sales Specialist, Chembio Diagnostic Systems, Inc., Holbrook, NY, +1-631-924-1135; mfayans@chembio.com



Chembio DPP@ Zika System



### **BOOTH H1.B36 – MEDAN MEDICAL INC.**

#### *A New Video Laryngoscope and GMA*

Medan Medical Inc. has introduced a new video laryngoscope featuring a 3" HD screen which rotates, a battery with a four-hour continuous use life, an anti-fog feature, video recording, and IP64 waterproof. It also utilizes our competitively priced disposable blades featuring the Nishikawa blade. Additionally, we have a new GMA (Not LMA) which is a new revolutionary product with many great features.

**TARGET SECTORS:** Anesthesia, Emergency Personnel, Respiratory

**CONTACT:** Ebi Masalehdan, Director, Medan Medical Inc., Tyngsboro, MA, +1- 978-649-1970; Ebi@transmed-usa.com



Medan Medical Video Laryngoscope and GMA



### **BOOTH H1.F34 – SCAR HEAL/REJUVASKIN**

#### *USA Skin Healing Products Now Available Across the MENA/ GCC Region*

Scar Heal / Rejuvaskin Co. Proud to be First-Time Exhibitors at Arab Health!

Scar Heal is proud to offer products in over 65 countries including the MENA/GCC regions. Scar Heal / Rejuvaskin, a US manufacturer founded in 1988, utilizes the most innovative technology in our products that are proven to improve the appearance of scars and aged skin. Our medical products are FDA and CE approved and the cosmetic products are FDA and CE registered.

**TARGET SECTORS:** Scar Management, Skin Care, Cosmetics

**CONTACT:** Darwin Salls, Jr., General Manager, Scar Heal/Rejuvaskin, Tampa, FL, +1-727-535-0022; internationalsales@scarheal.com



### **BOOTH H1.D54 – IMMUNOREAGENTS** *ImmunoReagents Increases Manufacturing Capabilities for Bulk Immunoglobulins in 2018*

With the increase in global demand for quality immunoglobulins, ImmunoReagents increases their manufacturing capabilities with lab expansion and equipment investments.

ImmunoReagents has been recognized as a leader in immunoglobulin manufacturing. They have recently increased their manufacturing facilities, as well as invested in process automation and large-scale production equipment. ImmunoReagents now has the

ability to manufacture multi-kilogram scale batches of purified immunoglobulins for the IVD industry. They manufacture Mouse, Rat, Human, Goat, Sheep IgG's along with 1500 purified secondary antibodies.

**TARGET SECTORS:** IVD, Diagnostics, Biologics

**CONTACT:** Brad Heidinger, COO, ImmunoReagents, Inc., Raleigh, NC, +1- 919-831-2240; brad@immunoreagents.com



### **BOOTH H1.G56 – GREENSLEEVE SURGICAL**

#### *Reduce Costs of Laproscopic Surgery*

In the current economic climate hospitals everywhere are keen to save costs. GreenSleeve Surgical manufactures premium quality reusable trocars providing significant cost reduction per procedure, with over 80% reduction in contaminated waste disposal. 100% US manufactured, GreenSleeve ensures hospitals can reduce costs and ecological footprint with no compromise of quality.

**TARGET SECTORS:** Surgical, Laparoscopy, Purchasing

**CONTACT:** Peter McMahon, President, GreenSleeve Surgical, Leander, TX, +1-202-365-0775; pmcmahon@greensleevesurgical.com





## Role of Machine Learning and AI in Healthcare Cybersecurity

**S**ecurity threats are major concerns to healthcare organizations due to the value and vulnerability of clinical data that is being recorded and distributed.

The value of the data comes from the fact that it is historical in nature, it directly affects our ability to safely treat patients, it takes a long time to rebuild, and it contains more than just clinical data, such as personal, financial, and demographic data which

allow it to be used for wider identity theft. It is persistent, whereas you can change credit cards and their passwords, PINs and account numbers in the event of a breach, you cannot change your mother's maiden name. The vulnerability comes from the fact that there has been a revolution in healthcare with the interconnection of systems, cloud computing, IOHT and mobile devices and the changes in working practices of clinicians, such as remote monitoring, telemedicine, and working from home.

This revolution has not always been matched with the security awareness, policies, practices, and budgets of healthcare organizations.

There has been an increasing sophistication of attacks using social engineering techniques (e.g. Phishing) that can overcome "traditional" defenses such as anti-virus, rule, and signature-based detection systems. But before looking at what new AI-based tools can do for organizations, I would like to suggest that these are only more sophisticated tools, and without the basics, in place, they will fail to deliver on their promises.

Good systems management is important, keeping not just the central servers up to date with security patches but also connected devices, and to do this, assessments of suppliers' security policies and procedures should be a key part of your procurement department's process for selecting devices which may be attached to the system. Information Governance is key, defining critical data, knowing how the data is man-



aged both in transit and at rest, and having defined, usable policies and processes is much more important than adding more technology to a fractured system. Similarly, education and awareness are necessary so that everyone on the system is regularly made aware of these policies, not just on induction day. As threats are evolving, staff should be kept aware of the people side of security with on-going campaigns such as anti-phishing behavior management. However, all this is just guesswork if you do not know how effective it all is and there should be regular penetration testing of the systems to ensure that you know your defenses are up-to-date and effective.

Doing all of this means there is a shortage of security experts to help ensure your custody of your patients' data remains as effective as time moves on, this is where AI and Machine Learning may be able to help healthcare cybersecurity. However merely purchasing new tools does not improve defenses, they need to be deployed, maintained and monitored to provide an effective defense.

Security Information and Event Management (SIEM) software products and services provide real-time analysis of security alerts generated by network hardware and applications and are also used to log security data and generate reports for compliance purposes. By combining this real-time data gathering with Threat Intelligence, extending the storage of this data over time and applying the enhanced analytics capabilities that



**Jim Massey**

Executive Director, Innovator at Cerner Middle East

come with Machine Learning and AI techniques, it improves the detection of attacks around the clock with less skilled staff. By looking at past performance, it becomes possible to analyze user and device behaviors to detect activity that is out with the expected patterns from the devices or users much quicker and more accurately than human observers can. This use of AI in healthcare cybersecurity is becoming more and more important for the protection of on-site systems and as health care networks expand and data and processing get pushed out into the "cloud".

AI and Machine Learning offer healthcare organizations a way of securing their patients' data as health care evolves, without relying on scarce high-cost skills, but will only meet its promise if the basics of information governance, awareness and education are in place first.



## Primary care specialists urge GCC

residents to consult general practitioners and avoid self-diagnosis

A recent survey commissioned by Arab Health 2018 – the largest exhibition for health-care and trade professionals in the MENA region – reveals that 41% of GCC residents go directly to a specialist when they fall ill, as opposed to visiting a general practitioner (GP) or family doctor.

A GP is a medical doctor who treats acute and chronic illnesses, provides preventive care and health education to patients, and refers patients with serious conditions to a specialist. Arab Health 2018 will welcome the first CME accredited Family Medicine conference for primary care practitioners interested in learning about the challenges and evidence-based medical interventions available.

In countries with a long-standing healthcare system compared to the continuously developing industry in the GCC, patients tend to consult general practitioners as an initial touch point when feeling unwell and can visit the same family doctor over a long period of time for primary care. The survey revealed that there is a lack of awareness of the benefits of visiting a GP in the GCC, with only 34% of survey respondents visiting a general practitioner (GP).

“The GCC, particularly the UAE, has a large expat population. This can make it challenging for patients to create and maintain long-standing relationships with a primary healthcare provider where one doctor or clinic has visibility over the patient’s medical history and care. However, we recommend that residents find a trusted Family Physician who can then coordinate their medical care includ-



**Dr. Rahul Goyal**

Consultant Family Medicine

ing offering a referral to a specialist when necessary,” commented **Dr. Rahul Goyal**, Consultant Family Medicine & Physician Clinical Informatics Lead, Mediclinic, Dubai, UAE.

When looking at the UAE results, the survey shows a clear distinction between healthcare habits of nationals and expats. Namely, 50% of Emirati nationals that were surveyed stated that they do not go directly to a specialist without consulting with a GP, while 33% opt to visit a specialist when they are ill. In comparison to this, an average of 36% of expat respondents residing in the UAE stated that they do not visit a GP when sick, and 28% go directly to a specialist. This suggests that the local population is more likely to visit a primary healthcare provider and have a family

doctor than the expat population, highlighting a lack of awareness on the importance of establishing a relationship with a GP outside of their native countries.

“Family physicians possess unique attitudes, skills and knowledge, which qualify them to provide ongoing, comprehensive medical care to each member of the family. In addition to diagnosing and treating acute and chronic illnesses, family physicians provide routine health screenings and counseling on lifestyle changes in an effort to prevent illnesses before they develop. The cornerstone of family medicine is an ongoing, personal patient-physician relationship focused on integrated care that provides optimal medical care by looking at the whole person, rather than focusing on just one organ system. The family



**Dr. Nahed Monsef**

Director Health Affairs

physician does every effort needed to communicate clearly with consulting specialists to coordinate care and minimize inconvenience to patients. Our goal is to provide the right care by the right physician at the right time,” commented **Dr. Nahed Monsef**, Director Health Affairs Department, Primary Health Care Services Sector, Dubai Health Authority (DHA).

Commenting on the Family Medicine conference, **Katie Briggs**, Executive Director, Arab Health 2018



**Katie Briggs**

Executive Director, Arab Health 2018

said: “The 43<sup>rd</sup> edition of Arab Health introduces a range of new conferences that focus on topics in the healthcare sector that are relevant for today’s practitioners and patients. The Family Medicine conference will welcome an active panel of notable local and international experts in a wide range of medical areas, and will offer attendees a unique opportunity to engage in stimulating discussions and an opportunity to exchange experiences and expertise in this important field.

## The change in weather cooler temperatures has doubled the flu cases in UAE

Doctors are urging patients to take flu vaccinations after a man died in Dubai due to pneumonia caused by influenza.

**Dr. Mohammed Ashraf**, specialist in Internal Medicine, Universal Hospital, said that the 35-year-old Pakistani man was healthy but his condition deteriorated rapidly. “He was a very healthy, active and robust young man, but he suddenly died from pneumonia caused by influenza.”

The patient had become unconscious on the second day in hospital, and the illness even affected his brain. “The virus can affect the lower airways and can progress into pneumonia.”

A rapid spread of flu cases is being seen this season worldwide, including in the UAE, where influenza type A and B are topping the doctors’ charts. Dr. Ashraf said he is receiving about 10 patients a day, and there are five doctors on the floor, thus totaling to around 50 patients admitted per day with the flu. Influenza has resulted in hundreds of deaths around the world last month alone. “The number of cas-

es is increasing everyday and some of the patients develop complications, including pneumonia.” Prevention is the key, Dr. Ashraf noted and taking the flu vaccination before the fall season is crucial. “The number of cases would have decreased if people had taken their vaccinations at the right time.” Doctors claim the UAE’s rapid change in weather and cooler temperatures have seen a rise in the number of flu cases to double the usual number, in just the last month.

**Dr. Trilok Chand**, Specialist in Respiratory Medicine, Burjeel Hospital, said children, pregnant women and chronic lung and heart disease patients are most vulnerable during the UAE’s season of cooler weather.

“From December until today, the number patients have increased dramatically, and in my experience, the number of flu patients has doubled from last year,” Dr. Chand told Khaleej Times. “The main reasons for the increase in patients are the changing weather conditions and the cooler

temperatures right now.” Bacteria and viruses multiply faster in colder weather. “The body’s immunity also decreases in the colder season,” he added. Poor ventilation and air-conditioning units have a lot to do with the rising flu cases. “People tend to stay indoor during the cold season, but the ventilation units are poor in many homes, schools and buses and it’s causing the virus to spread,” Dr. Chand added.

He is receiving between 40-45 patients each week, half with chronic lung diseases and needing urgent hospital care. Dr. Chand advises anyone with flu-like symptoms, including fever and body pain, to increase their liquid intake and eat healthy nutritious meals, besides taking proper rest and avoid going outside. “If your symptoms are more severe, see a doctor immediately.”

Anyone over above the age of six months to take the yearly flu vaccine, particularly children, pregnant women and those suffering from chronic lung diseases, as they are at high risk.





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