



Vol. 05, Issue 05, No. 29, September-October 2021

# MEDIWORLD

## Middle East



DEDICATED TO  
**FIGHT**  
BREAST  
**CANCER**

### News & Update

*Dubai Health Authority expands its COVID-19 home vaccination drive*

### Feature

*Wonder: One and Only aesthetic muscle building and fat burning technology*

### Technology

*Mentor: When medical devices give you a life with wings back*

### Healthcare destination

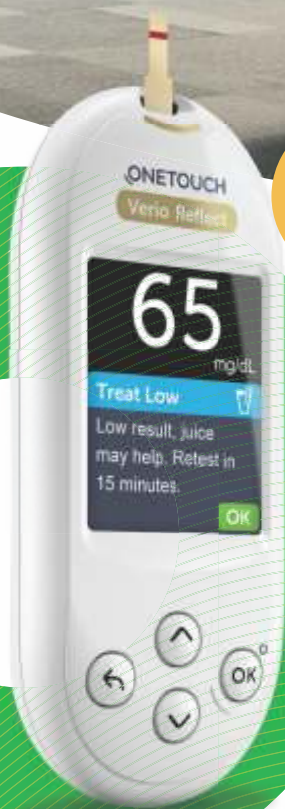
*Healthcare in Bulgaria*

### Medical Research

*New advanced bionic arm allows amputees to achieve similar level of function as non-amputees*



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MediWorld ME aims to create the ultimate platform to share the latest news, updates & developments from the healthcare & medical technology industry within & beyond the GCC countries

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PO Box: 9604, SAIF Zone, Sharjah - UAE  
Tel: +971 6 557 9579, Fax: +971 6 579569,  
info@7dimensionsmedia.com  
www.7dimensionsmedia.com

### Chief Editor

Ayesha Rashid  
ayesha@mediworldme.com

### Editor

Rustu Soyden  
rustu@mediworldme.com

### Contributors

Nirmala Rao

Vasujit Kalia  
Vasu@7dimensionsmedia.com

### Sales & Marketing

Israr Ahamed  
israr@7dimensionsmedia.com

### Head Operations

Mohammad Karimulla  
karimulla@7dimensionsmedia.com

### Creative Director

Mohammed Imran  
imran@7dimensionsmedia.com

### Photo Journalist

Wasim Ahmed  
wasim@7dimensionsmedia.com

### World wide Media Representatives

France, Belgium, Monaco, Spain: Aidmedia, Gerard Lecoeur;  
Tel: +33(0) 466 326 106; Fax: +33 (0) 466 327 073  
India: RMA Mesia, Fareedoon Kuka;  
Tel: +91 22 55 70 30 81; Fax: +91 22 5570 3082  
Taiwan: Advance Media Services Ltd, Keith Lee;  
Tel: (886) 2 2523 8268; Fax: (886) 2 2521 4456  
Thailand: Trade and Logistics Siam Ltd, Dwighr A chiavetta;  
Tel: +66 (0) 2650 8690; Fax: +66 (0) 2650 8696  
UK, Ireland, germany, Switzerland, Austria: Horseshoe Media,  
Peter Patterson; Tel : +44 208 6874 160

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## Editorial

### MoHAP's efforts to improve functionality between health facilities

The UAE healthcare sector is all set to adopt SNOMED CT in national health records. MoHAP says that the acquisition of the comprehensive clinical content database is part of the government's mission to "unify the process of collecting data content, and organize patients' healthcare records in the UAE by using single common terminologies within the Riayati platform." Riayati is the UAE's National Unified Medical Record (NUMR) system, connecting 3,000+ public and private sector healthcare providers. This adoption would improve functionality and coordination between health facilities, contributing to enhancing the exchange of organizational data, such as the eClaims Office of the Riayati platform; the Dubai Health Authority's Nabidh platform; and [the] Malaffi platform which links healthcare providers in the public and private sectors in Abu Dhabi.

The world of aesthetic treatments has seen massive changes in the last decade. In the 1990s, invasive cosmetic surgery was introduced, and it slowly gained popularity. Now non-invasive procedures are all the rage when it comes to aesthetic medicine trends. Thanks to lower costs & quickly visible results, people are opting more towards the non-invasive route.

People have been familiar with procedures such as Botox®, laser hair removal, fillers, etc. for a long time. But in the years 2019 and 2020, there was an increase in other non to minimal-invasive procedures like PRP, skin tightening, medical facials, body contouring, microneedling, and so on. Demand for both the new and the old aesthetic medicine trends are forecasted to continuously rise in 2021.

Wonder is the first and only aesthetic equipment that combines Focused Electromagnetic emission and Selective High Intensity Neurostimulation. This groundbreaking innovation allows building muscles and removing excess fat in just a few sessions. Alexander Pérez Roldan, Founder and CEO of Lexter Microelectronic, tells us in detail about the features of their new aesthetic muscle building technology Wonder.

Bulgaria is growing in popularity as an expat destination thanks to its low cost of living, scenic countryside and proximity to the rest of Europe. There are a large number of private practices, however, with many practitioners drawn to the more lucrative opportunities in the private sector. For those working in Bulgaria, including foreign residents, payments towards the country's national health insurance fund are compulsory. We explore Bulgaria in our medical destination.

We are always open for your feedback, and if you would like to be featured in our magazine, you can get in touch with me at ayesha@mediworldme.com. Don't forget to Like and Subscribe to all our social media channels (Facebook, Twitter, Linkedin and Instagram).

Sincerely,

**Ayesha Rashid**  
Chief Editor, MediWorld ME

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2  
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5  
Effective against  
viruses



Quick Dry



Non Sticky



2  
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1  
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Rub hands together until dry. Supervise children under 6 years of age when using this product to avoid swallowing.

**Other information :** Do not store above 30°C

Avoid freezing and excessive heat above 40°C.

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2. World Health Organization - Guide to Local Production: WHO-recommended Handrub Formulations. April 2010.
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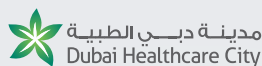


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# DEDICATED TO FIGHT BREAST CANCER

In the heart of Dubai Healthcare City lies Mediclinic City Hospital's Comprehensive Cancer Center which boasts to be Dubai's most advanced facility for the diagnosis & treatment of cancer. Established in collaboration with the facility's sister platform Hirslanden, it brings forth a wealth of knowledge and experience shared between the leading experts in Oncology to provide the best therapeutic programs for their patients.



I was privileged to have the opportunity to interview one of their leading Oncologists who is a pioneer in the field and has been responsible for the evolution of cancer care in the United Arab Emirates. He is the Vice President of Emirates Oncology Society and his imprint on the lives of patients and the healthcare marketplace is phenomenal. His name is Dr. Falah Al Khatib and this is a description of my informative encounter with him.

As I walked into the corridor and through the waiting room I could not help but imagine the kind of emotional storm the patients harbored within their breasts. I hesitated for a moment as I was ushered in by the nurse, anxious about this gallant personality I was about to meet, for this was war and he was the general. There he sat, attentive, his blue eyes piercing, determined and focused. I introduced myself as concisely as I could for I knew his battles were ongoing and he was far too familiar with the tug of war between hope and sorrow, between cancer and remission.

His smile brought a warmth to our conversation and my first question escaped my lips before I could suppress it. I was embarrassed as the question was rather selfish. I wanted to know whether my work at MPC, a distributor of medical equipment and pharmacological treatments was having a positive impact on the lives of patients or was I merely floating in a sea of business, politics and profit margins. The discourse that followed is described below.

## "What is Radiotherapy?"

A linear accelerator is used to shoot particles into the targeted tissue site which emit ionizing radiation that controls or kills malignant cells.

"What role does radiotherapy play in oncology?"

Dr. Falah explained that Radiotherapy played a pivotal role in the management of patients with cancer. It is the only treatment for more than 75% of all cancer cases, either on its own or in conjunction with chemotherapy or surgical intervention. It is used in 60% to 80% of cases where palliative care is provided to patients suffering from fractures, metastasis and other secondary complications associated with cancer. Using radiotherapy as a treatment modality can be quite rewarding as it can eliminate the suffering caused by pain when no other treatment provides relief.

"What role does radiotherapy play in the treatment of breast cancer specifically?"

It is important to understand that breast cancer consists of two components. The disease local to the breast and that which has metastasized. It is therefore, of paramount importance that we stage the disease correctly using the tools available for accurate investigation. This will allow us to decide on the best possible treatment protocols to use. In the past the most effective method was considered to be radical surgery which involved complete excision of the breasts and the stripping away of the lymph node chains. Since then, we have come to realize that around 30% of cases have existing metastasis which is an alarming fact. Therefore, with the availability of modalities such as radiotherapy we can now excise the lump in the breast and provide radiotherapy which in therapeutic terms would be equivalent to mastectomy.

## Psychological impact of breast cancer

A diagnosis of cancer for most is a death sentence. There is a small percentage of people who understand the strides that cancer therapies have made and the impact that has on the quality of life of patients and survival rates, but unfortunately most people perceive it as an announcement of their funeral. It is quite common to find patients staggering in four of the five stages of grief, compounded with anxiety and depression that constantly reminds them of impending doom.

Dr. Falah further highlighted the psychological impact of breast cancer by tapping into his own experience of dealing with patients and described how on a daily basis, every patient he has treated had an elemental form of anxiety and depression clawing to the surface in different forms. Unfortunately, some patients are perpetually fixed in place on a stage of grief that they can't seem to get past leading to detrimental consequences for their psychological health which naturally affects the physical health.

## Risk Factors

The case of Bilateral mastectomy performed on Angelina Jolie upon the discovery of genetic markers

known to be grave risk factors for developing breast cancer has led a lot of women to demand the procedure despite not having the risk factors necessitating this radical approach.

A research conducted by the Emirates Cancer Society of which Dr. Falah is the Vice President concluded under the Presidency of Dr. Humaid Al-Shamsi that the demographic of patients in the UAE was considerably different to other countries. Dr. Falah emphasized that the patient demographic was that of a much younger population compared to the statistical data globally. Therefore, recommendations were made to decrease the screening age in the UAE to allow for better preventative measures to be adopted in the fight against breast cancer, specifically when a positive family history for genetic markers exists.

Furthermore, another research into whether consanguineous marriages led to an increase in the incidence of breast cancer revealed little to no conclusive evidence of

consanguineous marriages being a risk factor for breast cancer. It is important to understand that the population of the UAE is a heterogeneous community comprising of locals and expatriates in a pool requiring considerations that factor in the high incidences of breast cancer internationally. In the USA 1 in every 7 women has breast cancer, similarly in Europe 1 in every 8 women is suffering from the disease.

## Tumor registry

Dr. Falah was in charge of the Tumor registry from 1986 to 2007 in Tawam Hospital which gave him holistic insight into the trends in oncology. He explained that breast cancer is the largest cancer affecting the population in the UAE accounting for 25% of cancers in both genders and 40% in females only. In his time at Tawam Hospital he was primarily responsible for establishing the institution as a center of excellence for the treatment of cancer.



## Important phases in the management of cancer

### Prevention

30% of cancers can be prevented by adopting simple measures like lifestyle modifications and eliminating modifiable risk factors such as smoking and alcohol consumption.

### Early detection

Education and creating awareness in the society by creating programs that drive change and are informative. Screening is an important pillar in early detection as you can detect 60% to 70% of disease in the precancerous stages allowing for better treatment and management of patients leading to far better prognosis.

### Managing disease with metastasis

Advancements in oncology management both pharmacological and radiotherapy provides us with the tools to provide better survival rates and overall prognosis. This has led to many success stories where people who would in the past have a prognosis of 1 year survival, now relish in far better quality of life with longer survival rates.

### Management of advanced disease

Palliative care has developed considerably too in terms of pain management, psychotherapy and occupational therapy allowing patients with advanced disease to experience a level of care that was previously nonexistent. Furthermore, multidisciplinary teams allow the patient's disease to be managed comprehensively addressing all areas of concern and symptomatology and establishing a treatment program that works synergistically in improving the patient's quality of life.





## Dr. Falah Al-Khatib

As I concluded my questions, I felt my heart sink a bit as the wealth of knowledge I had received was better than any lecture I had attended. I wanted to know what he envisioned for the future and the answer encompassed vision and passion. Dr. Falah stated that his focus is to pass the



experience and knowledge to the next generation of physicians. Moreover, he expanded on the need for a comprehensive cancer registry to be established which is currently being developed by the Ministry of Health to allow for research, prevention and better allocation

of resources in this war against cancer. His message to doctors was to stand with the patients against the disease, to fight their fears and comfort them in their time of need. This was his war, a lifetime dedicated to fighting battles against cancer and he was emerging victorious.

// Article provided by MPC // Editor: Dr. Ali Akbar Khan // [www.mpchealthcare.com](http://www.mpchealthcare.com)

### UAE and cancer

The UAE has many centers of excellence that provide cancer care and this is primarily due to the emphasis the governmental institutions have placed in addressing the need for excellence in cancer management. They have spared no effort in making all forms of resources available to physicians and healthcare institutions seeking to bring the highest level of care to the patient population in the UAE.

A testament to this is that the form of management that exist currently for patients with cancer, fulfills the highest global standards in cancer care and places the UAE as a leader globally in the management of cancer.



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# Wonder:

## One and Only aesthetic muscle building and fat burning technology

“Our muscle increase and fat burning technology has been used in elite sports in more than 60 countries. Several world champions, national teams, and prestigious athletes use this technique to burn off unnecessary fat and build muscles in record time. Wonder works at the same time on the six most important muscle groups and increases strength, endurance and balance throughout the body” says, Alexander Pérez Roldan (CEO of Lexter Microelectronic)



The global medical aesthetic devices market was valued at \$11,945.23 million in 2020, and it is estimated to reach a revenue of \$23,168.32 million in 2026, with a CAGR of 11.08% over the forecast

period, according to Mordor Intelligence.

**The cosmetic and aesthetic devices manufacturers had to shut down the production and supply units due to the lockdown that was imposed in the beginning of COVID-19 outbreak, globally. According to a survey by Hamilton Fraser Cosmetic Insurance, conducted in March 2020, with 1,360 cosmetic practitioners in the United Kingdom to assess the impact of the pandemic on cosmetic procedures, stated that 99.78% of practitioners revealed that their practice had been affected during the current pandemic.**

As per the research article published in Journal of Cutaneous and Aesthetic Surgery (September 2020), airborne contaminants are associated with certain lasers, such as ablative fractional lasers and high-peak-power ultrashort-pulsed lasers, such as nano- and picosecond lasers. Also, devices, such as excimer lamp and skin-tightening devices, have probes that come in close contact with the skin, and the risk of transmission of SARS-CoV2 virus is high. Thus, COVID-19 has highly impacted the medical aesthetic devices market worldwide. However, the situation is gradually improving.

Certain factors that are driving the market growth include increasing obese population, increasing awareness regarding aesthetic procedures, rising adoption of minimally invasive devices, and technological advancement in devices.



Wonder is the first and only aesthetic equipment that combines Focused Electromagnetic emission and Selective High Intensity Neurostimulation. This groundbreaking innovation allows building muscles and removing excess fat in just a few sessions. A treatment session with the Wonder powerful technology is equivalent to several hours of physical training.

Alexander Pérez Roldan, senior Industrial engineer, creator of devices for aesthetic market. Founder and CEO of Lexter Microelectronic, manufacturer of Wonder technology devices for fast muscle creation and fat burning procedures tells us in detail about the features of their new aesthetic muscle-building technology Wonder.

### ***Can you tell us in detail about your aesthetic muscle building technology?***

Wonder is the first and only aesthetic equipment that combines Focused Electromagnetic emission and Selective High Intensity Neurostimulation. It was launched in the fall of 2019 and is already present in 34 countries, where numerous prestigious professionals have chosen it to respond to the growing need for Body re-shaping treatments without surgery or pain.

Our muscle increase and fat burning technology has been used in elite sports in more than 60 countries. Thousands of world champions, national teams, and prestigious athletes use this technique to burn off unnecessary fat and build muscles in record time. Wonder works at the same time on the buttocks, abdomen and legs and increases strength, endurance and balance throughout the body.

All scientific studies claim muscle mass as a marker of health at the level of blood pressure and heart rate. It is important to keep our muscles at 100% if we want to lead a full and active life, how we will live our best years depends on us. With Wonder Technology it is already possible to develop our muscles without having to spend long hours in the gym or subject ourselves to exhaustive fitness sessions.

### ***Describe its electromagnetic emission and selective High Intensity Neurostimulation effect?***

We are the creators of the 'Aesthetic Bodybuilding' concept, as well as the 'Wonder Clinic Workout' that are based on offering an alternative to physical exercise. It is no longer mandatory to visit the gym every day if we want to be muscular. With our innovative technology, in a closed, hygienic and discreet



environment we can obtain the same results.

Aesthetic Bodybuilding is the new aesthetic treatment that has revolutionized the aesthetic world. We no longer waste time and money trying to eliminate localized fat. Finally we have understood that fat is simply energy, and it is enough to burn it, using it to create what really makes us healthier and more beautiful: muscle.

Wonder bases its operation on the combination of two proven technologies: electromagnetic waves and neuromuscular emissions.

The Electromagnetic and Electrical Muscle Stimulation treatment with Wonder is based on the imitation of the signals that our brain sends to the muscles. During traditional physical exercise, the brain sends impulses, stimulating muscles that are already able to contract. However, muscles with a less developed connection to the brain do not contract or develop as quickly.

### ***What made you come up with a device like this?***

Our company is run by engineers specialized in technologies for the elite department.

For many years we have helped national teams, world champions and top athletes to get rid of unwanted fat and improve their physical abilities.

Suddenly, in the summer of 2019, while we were working in collaboration with the prestigious UFC, a demand arose for a version of our equipment for the aesthetic sector, and we got down to work to offer the beauty market a solution to the problems of overweight, tissue sagging, flaccidity, cellulite, etc ... in this way we launched Wonder, which is the aesthetic version of elite sports technologies.

***We have brought our elite sport technology to the aesthetic world, and called it "Aesthetic Bodybuilding". One session is equivalent to several hours of conventional training, rapidly producing the following results:***



- ***Buttock lift.***
- ***Arm toning.***
- ***Leg reinforcement***
- ***Burns fat in the abdomen.***
- ***Skin improvement.***
- ***Immediate increase in strength and endurance.***

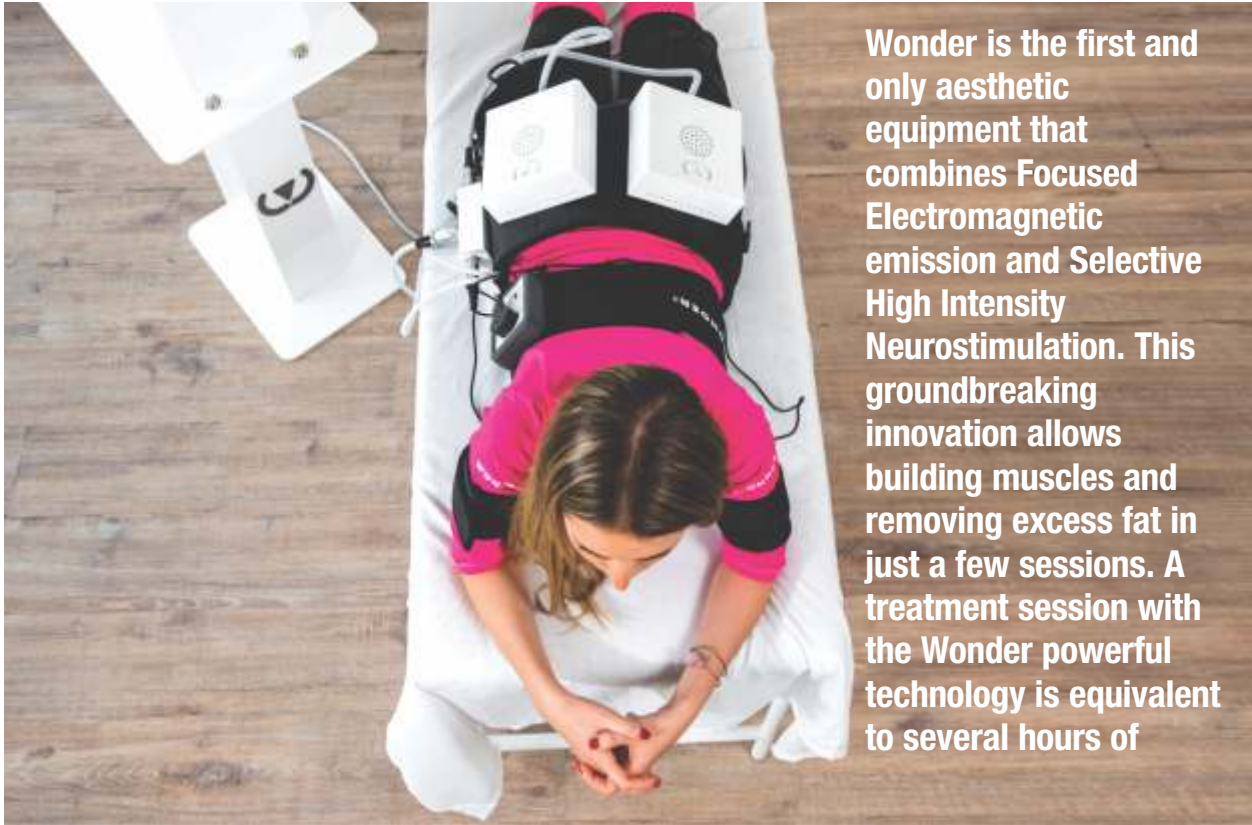
It is considered that a session with Wonder Medical is equivalent to 3 hours of intense physical training and not only does it retract the tissue, it also gains strength, endurance, balance and in general, health. In addition, it generates a combined energy field: electromagnetic (it makes muscle fibers vibrate) and neuromuscular (it makes muscle contract) since muscle fibers contract up to 52,000 times during a typical 25-minute session, all easily, quickly and completely safely.

### ***How does Wonder work?***

Wonder causes thousands of strong and deep muscle contractions using electromagnetic and neuromuscular impulses. Sounds complicated? It's very simple.

Our Spanish-made device is characterized by safety, efficacy and ease of use. It is





**Wonder is the first and only aesthetic equipment that combines Focused Electromagnetic emission and Selective High Intensity Neurostimulation. This groundbreaking innovation allows building muscles and removing excess fat in just a few sessions. A treatment session with the Wonder powerful technology is equivalent to several hours of**

manufactured according to the latest advances in microelectronics and computertechnology.

The impulses are generated by the device and conducted through electromagnetic panels and sensors to the surface of the skin above the muscles to be stimulated. The impulses cause the muscles to contract, so the result is similar to actual movement and regular muscle contractions.

Wonder has the power resulting from the novel combination of localized electromagnetic and neuromuscular emissions that produce thousands of powerful and deep muscular contractions, tightening the skin in a mechanical and natural way. The treatment is fast and acts at multiple depths of the tissue to achieve superior clinical results and have been scientifically proven in terms of their regenerative properties of the muscular system. This process of radical creation of muscle mass also creates new blood capillaries and thanks to this, both elastin and collagen are regenerated. The result? A rejuvenated and attractive musculature, a firmer, fresher-looking skin with a considerable reduction of sagging appearance and wrinkles. These changes are normally visible from the second week.

### ***Do you have any plans for expanding in the UAE?***

The Emirati market is of vital importance for all European companies in the beauty sector. We consider Dubai one of the world capital of the aesthetic medicine industry. It is a convergence point where image professionals from all over the world meet.

In Dubai we have recently opened our delegation, made up of specialists with years of experience in the sector and who are in charge of making deliveries, giving training courses, which in our case have no time limit or participants, and always offer an excellent after sales service.

We have the enormous privilege of having collaborators of enormous value at the head of our team in Dubai: Mr. Sanjeev Setia and Mrs. Julia Belianskaia, professionals of great prestige in the sector.

Our goal is that all prestigious aesthetic clinics in the UAE can offer the revolutionary Wonder procedure to increase muscle mass.

### ***What makes wonder different from other muscle toning devices in the market?***



Most of the rest of the technologies still continue trying to eliminate fat by cooling it, heating it, mobilizing it, and making it react with different products. We do not believe in the elimination of fat, we burn it!

Wonder is the most powerful cosmetic device for building muscle and burning fat. The double action of magnetic and neuromuscular stimulation stimulates the CORE muscles (abdomen, adductors, buttocks, obliques and legs) and develops connections with the motor nerves.

#### ***Any plans on releasing more devices in the future?***

Now that we are coming out of the period of isolation due to COVID-19, and we are faced with an unusual demand for body treatments, the need to move to another level is imposed: the time for Aesthetic Bodybuilding has come.

The aesthetic sector has become the safety valve in an age of travel restrictions and widespread fear.

The visit to the aesthetic center is no longer a mandatory step to solve problems (unwanted hair, localized fat, tired legs, etc.). Now the visit to the aesthetic center is a substitute for physical exercise thanks to the revolutionary Aesthetic Bodybuilding treatments.

#### ***Your website claims that you 'Stand out from your competitors with a revolutionary technology'.***

##### ***Can you elaborate on this?***

Our technology really has no competitors. Most of the existing equipment on the market continues to focus on eliminating only small accumulations of fat in certain areas of the body.

Wonder does the opposite: it burns whole body fat at the same time, turning it into new and better muscle fibers.

Wonder also aids in skin tightening. Cellulite, stretch marks or sagging skin are visibly reduced due to the large increase in vascularization of the connective tissue. It makes you lose accumulated fat by radically building muscle. Boosts calorie consumption and promotes rapid fat loss. Unlike regular exercise, you start to see results in 2 to 4 weeks.

#### ***With technology like this in the market, what do you think could the future hold for aesthetic muscle building industry?***

We are at war. In war against atrophy, against the loss of muscle that attacks the vast majority of humans. We are in war against the lack of physical exercise, against the excess of fat mass that affects our organism and causes us health complications, both physical and mental.

Having a muscular body is not just about being an attractive person. It is to demonstrate discipline and neatness. Having a muscular body demonstrates self-confidence and security. It means being a successful person.

Our exclusive aesthetic body building technology is undoubtedly going to become a must-have routine for anyone who doesn't have the time or the will to play sports. Wonder is the alternative to physical exercise in the modern world.

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Conference to **be held LIVE AND IN PERSON from 16<sup>th</sup>-18<sup>th</sup> December  
2021**, in Sofitel Dubai The Obelisk Hotel, Dubai, United Arab Emirates

### IMPORTANT DATES:

✓ 15 <sup>th</sup>	September 2021	Abstracts Notification
✓ 01 <sup>st</sup>	October 2021	Abstracts Presenters Registration Deadline
✓ 14 <sup>th</sup>	September 2021	Early Bird Registration Deadline

### CONFERENCE SESSIONS 17-18 DEC 2021

- Breast pathology
- Neuropathology
- Genitourinary (GU) Pathology
- Cytopathology

- Gynecologic Pathology
- Keynote Lectures
- Abstracts Presentations

### PRE-CONFERENCE WORKSHOPS

**16 DEC 2021**

- Molecular Pathology
- GI and Digital Pathology

### WHO SHOULD ATTEND

- Pathologists
- Cytopathologists
- Molecular Pathologists
- Gastroenterologists
- Oncologists
- Surgeons

- Haematologists
- ENT Surgeons
- Neurosurgeons
- Gynaecologists
- Laboratory Managers  
And Directors

- Pathologists in Training
- General Practitioners
- Laboratory Professionals
- Healthcare Professionals
- Medical Students





# Oral health critical to Overall health and wellbeing



**Early in our lives, we're taught the importance of maintaining good oral hygiene by brushing our teeth. This is one of the first moments we become personally accountable for our own health, an important milestone on a journey of health prevention**



he connection has never been clearer: Oral health is critical to overall health and wellbeing. Bacteria in the mouth

contributes to tooth decay and periodontal disease and there is broad acceptance of links with other health problems. From diabetes and heart conditions to Alzheimer's and neo-natal health – oral healthcare is a starting point for detection and ultimately an important aspect of prevention across the health continuum. This shared belief is also the cornerstone of Australia's National Oral Health Plan 2015-2024 – Healthy Mouths, Healthy Lives – which in addition to recognizing the impact on an individual's health, also underscores the impact poor oral health outcomes has on the broader health system and economy.

"Keep your smile for life" is the theme of this year's Dental Health Week in Australia, which focuses on educating consumers on the importance of maintaining good oral health through

preventative health measures, behaviors and lifestyle choices.

As a leading health innovation technology company, we are committed to contributing to the understanding of the connections between oral health and overall health, and helping to educate consumers and support dental professionals in their own efforts to provide patients with the tools and knowledge they need.

### ***Informed consumers are empowered consumers***

Today's modern consumer is more attentive and aware of the role preventative care has on their overall health – evolving from passive healthcare recipients into active health consumers. With this comes a greater responsibility for oral healthcare practitioners, industry leaders and researchers to meet consumers' needs and support their health goals.

A consistent and regular approach to care focused on prevention can help to minimize chances of developing a number of dental conditions, and the education that takes place at a young age plays an important role in creating effective habits. The pandemic has fueled people's focus on health and wellbeing, and Australians have begun to invest more actively in personal wellness solutions that deliver better long-term health outcomes.

As personal care products continue to advance, bridging the gap between at-home and clinical care, dental practitioners have long worked to educate their patients on disease prevention and mitigate the prevalence of chronic conditions through proper dental health practices.

### ***Prevention is key***

According to the Australian Dental Association, roughly 2 in 3 adults usually visit a dentist for a problem rather than a regular check-up. When our oral health is not managed effectively, it can produce a wide range of long-term health consequences.

Prevention is the key to achieving more optimal health outcomes for Australians



According to the Australian Dental Association, roughly 2 in 3 adults usually visit a dentist for a problem rather than a regular check-up. When our oral health is not managed effectively, it can produce a wide range of long-term health consequences.



and would also help to alleviate pressure on the health system. The Australian Institute of Health and Welfare reports that between 2017–18, about 72,000 hospitalizations for dental conditions may have been prevented with earlier treatment. These evolve into acute and chronic conditions and annually, these conditions result in an estimated \$27 billion in healthcare costs, meaning more than one-third of the national health budget is consumed by delivering critical treatment.

To help people stay healthy and enjoy the best possible quality of life, we envision a new health paradigm – one that values health promotion and prevention just as much as treatment, recognizing the needs and expectations of the modern health consumer.

### ***The opportunity for change***

Among its many impacts, COVID-19 also has brought new attention to the need for preventative oral health care as patients missed visits during stay-at-home periods, elevating trends in teledentistry and underscoring the importance of consistent home hygiene. We've seen the Australian dental sector adapt to this challenge, with the Dental Board of Australia moving to modernize policies around telehealth consultations, and the Australian Dental Foundation launching an entirely new teledentistry platform.

Finally, innovative and personalized health technology can also empower consumers with solutions that are tailored and adaptive to their unique needs, motivations, and characteristics. People today want to be more in control of their own health and are more attuned to getting the

support and information they need online, from apps, and from connected products.

One such example is the new Philips Sonicare 9900 Prestige\*, which together with the AI powered Sonicare app, offers enhanced real-time guidance and personalized recommendations to improve brushing habits. This connected system brings the advice of a dental professional into patients' lives more regularly through app-based feedback loops and teledentistry that takes the guesswork out of oral care for patients by connecting to a smartphone.

Paving the way for these technological advancements will further empower dental professionals to support patients in their habits and behavior change. By empowering people to take care of their own health, we will be better able to prevent lifestyle-related diseases, achieve better health outcomes, and ease the burden on the health system.





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# HEBANY GROUP

– Key drivers of growth within the UAE healthcare sector



**Mabel HoyosGuijarro**  
Director, Hebany Group

**Fitch Solutions estimates that the UAE's medical device market will reach Dh5.6 billion by 2025, with an annual compound growth rate (CAGR) of 4.4 percent from 2020-2025**



**T**he UAE is known to be the most economically developed and diversified markets in the Middle East with a strong healthcare infrastructure. The creation of a world-class healthcare sector is a top priority for the UAE and the sector has advanced and expanded significantly in recent years.

The UAE's health expenditure reached a value of \$15.5 billion (Dh57.0 billion) in 2019. This includes healthcare expenditure from the seven emirates in addition to their contribution to the federal budget. There is an expectation for this figure to reach \$16.2 billion (Dh59.4 billion) in 2020, a 4.2% yearly increase. The forecast is for spending is to rise to \$20.5 billion (Dh75.3 billion) by 2024, which is a compound annual growth rate of 5.7%. A 10-year forecast to 2029 has health expenditure expected to rise to \$29.2 billion (Dh107.1 billion). Overall healthcare spending is expected to account for 5.1% of the country's GDP by 2029, gradually increasing from 3.7% in 2019, according to Business Monitor International (BMI).

The government commitment to the healthcare sector is one of the key drivers of growth within the UAE's healthcare market, particularly given that public spending accounts for over two thirds of overall healthcare expenditure. In the 2020 federal budget, a total of Dh61 billion was approved for public spending, up only 1.2% from Dh60.3 billion from the 2019 budget. While this does not constitute total government expenditure in the UAE, which derives from overall spending at the respective Emirate level, it is, nonetheless, a solid indicator of the UAE's fiscal stance. As such, the federal government has made fiscal consolidation a priority over the past two years, in part a result of slumping oil prices.

The government has also highlighted plans to build national capacities to fight future pandemics, which includes efforts to develop vaccines and medicines, digital immunization ID, and a new strategy focusing on supply chains. The Ministry of Health aims to develop the sector by focusing more on Health IT, including telemedicine and digital medicine.

### **Overview of the medical device market**

Fitch Solutions, the content partners of Arab Health 2021, has estimated that the UAE's medical device market will reach Dh5.6 billion by 2025, with an annual compound growth rate (CAGR) of 4.4 percent from 2020-2025.

According to the Q2 2021 Fitch Solutions United Arab Emirates Medical Device report, the market will benefit from an overall strong economic performance over the next five years. Key market drivers, including population growth, changing epidemiology, a growing medical tourism industry, healthcare infrastructure developments, expanding health insurance, digital transformation, and new technologies, will underpin growth.

The medical device market includes any product used in healthcare for the diagnosis, prevention, monitoring or treatment of illness or handicap, other than drugs such as consumables, diagnostic imaging, dental products, orthopedic & prosthetic products, and patient aids.





Mabel HoyosGuijarro, Director, Hebany Group, gives us some more insight in the UAE medical technology/device market.

***You have traversed a long way can you throw some light on this illustrious journey, how difficult the journey was and what challenges you faced?***

We specialize in medical equipment and also are producers and distributors of syringes, laboratory tubes, disposables and surgical instruments. We reached this world of medicine especially through vaccines, starting with the distribution of the sinovac vaccine to Chile, our company in China for more than 10 years in the medical sector achieved this distribution. We subsequently entered into a contract, joined forces and signed a prominent joint venture agreement with the private office of Her Royal Highness Sheikh Hend Al Qassemi to provide the Russian coronavirus vaccine, Sputnik, together with Aurugulf (royal Group) for distribution in Latin American countries.

***You have been instrumental in***

***your fight against Covid-19 can you throw some light on your association with HIPRA?***

Argentina has set its sights on the Covid 19 vaccines produced in Europe. It was made clear in the course of the visit that the President of the Government of Spain, Pedro Sánchez, has carried out to the South American country. Sánchez proposed that Argentina acquire what will be the first Spanish vaccine against the coronavirus, manufactured by the pharmaceutical company Hipra. The vaccine in question, which is under development and does not yet have the corresponding authorization, is Hipra SARS-CoV-2, based on recombinant protein technology, designed to induce a "powerful neutralizing immune response", as they leave out, and that it is kept at reasonable temperatures between 2-5 degrees centigrade.

Hipra can reach Argentina through a solvent channel that has already demonstrated in other countries in the region its agility when it comes to providing immunizers. This option opens the door for the Hipra vaccine to reach Argentina through a solvent channel that it has already demonstrated in other countries in the region its agility when it comes to providing immunizers and other medical supplies that are now essential to fight the coronavirus. The manager in Argentina of Hebany Group, Victoria Aravales, is the professional who today is in charge of coordinating the development of phase 3 in direct contact with the Medicines Regulatory Body in the South American country (ANMAT). Eduardo Holgado, who from Spain is in charge of the relations between Hipra and Hebany Group, also plays a determining role when it comes to achieving the results sought.

The President of the Government of Spain, before starting his trip to Argentina, visited the facilities of the Hipra vaccine project in Catalonia and defined it as 'one of the most hopeful'. The Hipra project has the support of the Spanish Agency for Medicines and Health Products (AEMPS), as well as the Ministries of Health, Industry and Science and Innovation of Spain. At the moment, Hipra is also carrying out a line of research in collaboration with the Hospital Clínic de Barcelona for the development of a vaccine against Covid-19 based on the mRNA of the virus.

***Describe your active role in the development of phase 3 of Hipra***

Hebany Group, which will actively participate in the development of phase 3 of Hipra, is very committed to finding solutions for the crisis caused by the pandemic from its offices both in the East and in the West, from where it provides medical equipment and sanitary material to governments, entities and groups. In fact, the Spanish company had distributed 18 million doses of the Sinovac vaccine against Covid-19 at the end of January, managed from its center in Dubai.

We are evaluating the possibility of presenting it ready to be dispensed in individual pre-filled syringes, so that special vaccination centers would not be necessary, and it would speed up mass vaccinations especially in countries with difficult access.

***You have been known for your CSR initiatives can you tell us about your foundation in India?***

We are making a foundation in Indian state of Kerala. We will be help in education of these children and also help them in getting vaccinated. The profit from the sale of our latex gloves will go towards this foundation.



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# MENTOR

WHEN MEDICAL DEVICES GIVE YOU  
A LIFE WITH WINGS BACK

The sweetness of happiness is not experienced except after suffering, for one does not truly cherish a cold sip of water except when the throat is parched, on a hot summer's day in a desert and the lips quiver at the mere thought of a drop. One does not truly appreciate basking in the sunlight on a warm spring afternoon except after being deprived of light, locked away in a windowless room with walls painted with gloom. The mere thought of a glimmer brings a profound smile across the face as one imagines lying in fields lushly green, sunlight warm and comforting.



In spirit of this dear reader, how does one describe the pain of loss and suffering when one loses a part of their body?

## An execution of the soul?



## Asphyxiation of the personality?

It is a trauma beyond comprehension, for anxiety spreads across the plains of one's heart like a vast desert and depression paints the walls of the heart with the color of despair. Breast cancer is a disease that extinguishes the femininity of a woman. Her breasts are removed to save her life, leaving her like a bird with its wings clipped. But what is life for a bird without wings one must wonder. Her femininity extinguished by a scalpel and her life, left in a flurry of chaos.

Understanding this sorrow and pain led to the birth of Mentor, which addresses the very issues that women with breast cancer experience. Mentor allows women to take back control by providing them with the opportunity of breast reconstruction. It is part of the Johnson & Johnson family of companies that produces breast implants with science based innovation while maintaining the highest standards of design, testing & safety.

## What is breast reconstruction?

Breast reconstruction is a procedure which is performed in stages to rebuild the shape and feel of the breast. The decision is uniquely personal for every woman and therefore there is an availability of options, taking into consideration the sensitive nature of this decision. The procedure is designed and planned with the patient as the fulcrum, as it has to be tailored according to the needs, physiology and status of the patient. Usually patients return to normal activities within 6 to 8 weeks of the procedure.

## What are the options?

### Immediate Breast Reconstruction (IBR)

This procedure takes place in tandem with the procedure that removes the breast tissue during mastectomy. As the general surgeon removes the breast, the plastic surgeon begins the reconstructive procedure and this is the preferred option for women with cancer in the early stage, that do not warrant additional therapies such as chemotherapy and radiotherapy.

### Delayed Breast Reconstruction (DBR)

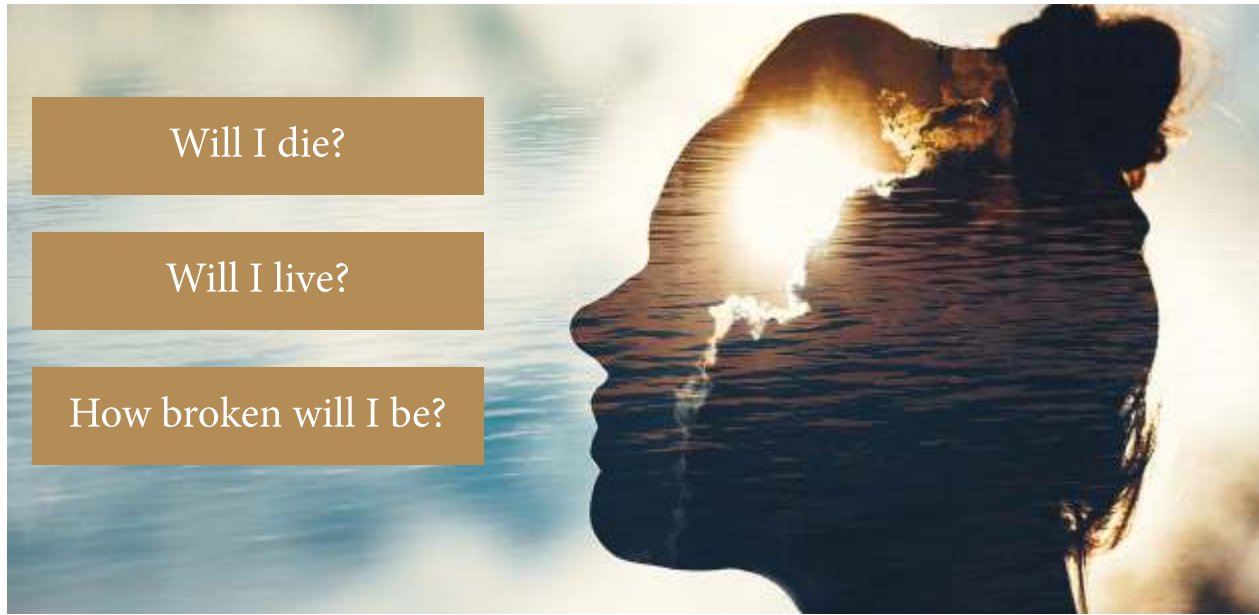
This procedure begins after complete recovery from the mastectomy. It allows for the treating physicians to provide you with optimal care before beginning the process of reconstructive surgery.

## Conclusion

Mentor provides relief to patients who suffer an array of symptoms, both physical and psychological after a diagnosis of breast cancer. This relief comes in the form of a dawn of happiness that casts its rays upon the patient and the sweetness fills one's breast with an overwhelming brightness. The fire that left scorched flesh and emotion is extinguished and a fertile mound now takes its place. Cold water for a parched throat, a sunrise for a prisoner in a dark dungeon.

Once more, spread your wings and soar.

# PSYCHOLOGY & BREAST CANCER



**T**he impact of a diagnosis of breast cancer can perhaps be best described as being hit with a truck. Floating in the air before hitting the pavement, one imagines the possible scenarios.

These questions open doors to corridors in one's mind. Exploring these corridors can lead a person through dark and twisted pathways that change the very fabric of a person's being. It is due to this reality that psychology has become an area of particular focus especially in the breast cancer patient population.

There are various themes that emerge when one considers the psychology of the afflicted patient, ranging from disbelief and overwhelming sadness upon diagnosis, to relentless anxiety about the future and the society. Treatment itself comes with a unique set of challenges as a patient starts to bid farewell to the familiar image in the mirror. The decisions made

due to the changes in the patient's life can have dramatic detrimental consequences to the psychological well-being of the patient and on the prognosis of their condition.

It is paramount, therefore to have a safety net in place that addresses these issues. Most healthcare providers now have multidisciplinary teams that involve psychologists and psychiatrists when designing the treatment plan for a patient. This system allows for patients to experience a better level of care and prepares them for their journey in the battle against cancer.

In light of this, society must understand and be aware of the dangers of not addressing the psychological constraints faced by patients. They must exercise support and understanding when dealing with a patient and provide outlets for them to experience normality once more. Understanding the role psychology plays in the treatment of a patient can turn the tables in this struggle and having a therapeutic environment provides the perfect nest for the patient to recover in.

In conclusion, psychological counselling remains a cornerstone of the therapeutic process for a patient suffering from breast cancer. It is in the interest of the patient and the family to accept this reality and understand the need for this form of therapy. A person's psychological well-being influences the physiology, and a mind that is tranquil will more likely be able to overcome the challenges posed by a diagnosis of breast cancer and allow the patient to embark on the path to cure.

# Healthcare in Bulgaria

**The South Eastern European country of Bulgaria spans over 111, 000 km<sup>2</sup> and has a population of 7.6 million. Bulgaria is well behind EU averages in terms of mortality and morbidity indicators. In 2009, the main three causes of death in Bulgaria were diseases of the circulatory system, malignant neoplasms and diseases of the respiratory system.**

**B**ulgaria is a country in Southeast Europe. It lies on the eastern flank of the Balkans, and is bordered by Romania to the north, Serbia and North Macedonia to the west, Greece and Turkey to the south, and the Black Sea to the east. Bulgaria covers a territory of 110,994 square kilometers (42,855 sq mi), and is the sixteenth-largest country in Europe. Sofia is the nation's capital and largest city; other major cities are Plovdiv, Varna and Burgas.

One of the earliest societies in the lands of modern-day Bulgaria was the Neolithic Karanovo culture, which dates back to 6,500 BC. In the 6th to 3rd century BC the region was a battleground for ancient Thracians, Persians, Celts and Macedonians; stability came when the Roman Empire conquered the region in AD 45. After the Roman state splintered, tribal invasions in the region resumed. Around the 6th century, these territories were settled by the early Slavs. Bulgars, a semi-nomadic people, invaded the Balkans in the late 7th century and founded the First Bulgarian Empire in AD 681. It dominated most of the Balkans and significantly influenced Slavic cultures by developing the Cyrillic script. The First Bulgarian Empire lasted until the early 11th century, when Byzantine emperor Basil II conquered and dismantled it. A successful Bulgarian revolt in 1185 established a Second Bulgarian Empire, which reached its apex under Ivan

Asen II (1218–1241). After numerous exhausting wars and feudal strife, the empire disintegrated in 1396 and fell under Ottoman rule for nearly five centuries.

## Healthcare in Bulgaria

Bulgaria's main challenge is to catch up with the more developed Member States in terms of healthcare services. The reform process that began in the 1990s and continues today has yet to achieve its objectives. The major goal, and indeed challenge, is to improve population health. Success depends on improving competitiveness and structural reforms, particularly in the health system, to stimulate growth. This requires strong political support.

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The Ministry of Health is responsible for national health policy and the overall organization and functioning of the health system. The Bulgarian health system was reformed under the



Health Insurance Act of 1998 into a health insurance system with compulsory and voluntary health insurance. The key players in the insurance system are the insured individuals, the healthcare providers and the third-party payers: the National Health Insurance Fund, the single payer in the social health insurance (SHI) system, and voluntary health insurance companies (VHICs).

The health insurance system covers diagnostic, treatment and rehabilitation services as well as medications for insured individuals and the Ministry of Health is responsible for public health services, emergency care, transplantations, transfusion haematology, tuberculosis treatment and inpatient mental healthcare.

Healthcare providers are autonomous self-governing organizations. The private sector includes all primary medical, dental and pharmaceutical care, most of the specialized outpatient care and some hospitals whereas the university hospitals and national centers, national specialized hospitals are run by the state. The state is also in charge of centers for emergency medical care, psychiatric hospitals, centers for transfusion haematology and dialysis, as well as 51% of the capital of regional hospitals.

### **Public–private financing system**

Bulgaria has a mixed public–private healthcare financing system. Healthcare is financed from compulsory health insurance contributions, taxes, out-of-pocket (OOP) payments, voluntary health insurance premiums, corporate payments, donations, and external funding. Total health expenditure as a share of gross domestic product (GDP) increased from 5.3% in 1995 to 7.3% in 2008. The structure of total health expenditure has been changing over time, with private expenditure increasing at the expense of public financing. In 2008, public expenditure on health as a share of total health expenditure was 57.8% while private expenditure accounted for 42.2%.

The main purchaser of health services is the National Health Insurance Fund (NHIF). Social health insurance contributions are calculated at 8% of monthly income, paid by the insured individuals, their employers, or the state. Relations between the NHIF and healthcare providers are based on the contract model. The Fund and the professional associations of physicians and dentists sign the National Framework Contract (NFC), which regulates the format and operational procedures of the compulsory health insurance system. Based on the NFC, providers sign individual contracts with the regional branches of the Fund. Providers are mainly paid prospectively for the services they will provide to the population on a fee-for-service and per capita basis.

Voluntary health insurance is provided by for-profit, joint-stock companies intended for voluntary health insurance only. Beyond the package covered by the NHIF all citizens are free to purchase different insurance packages. Voluntary health insurance companies can also cover the cost of services included in the basic benefit package guaranteed by the NHIF budget. Less than 3% of the population purchased some form of voluntary health insurance in 2010.



### **Medical services and organization**

Outpatient services are organized according to territories. Investment for state and municipal health establishments is financed from the state or municipal share in the establishment's capital. For local hospitals, municipality funding for new investment and maintenance costs has shown a downward trend. There are various programs offered by the Ministry of Health for investment in medical infrastructure that healthcare establishments can apply for. On the primary care level, there is an uneven distribution of GPs regionally and a lack of incentives for primary and specialized medical practices have led to increased use of specialized care and increased hospitalization rates. The number of acute beds per population in Bulgaria is above the EU27 average while the average length of stay is slightly below the EU27 and EU15 averages. Both indicators show a decreasing trend.

Health services are delivered by a network of various public and private healthcare providers. Public health services are provided by the state and organized and supervised by the Ministry of Health. The Health Care Establishment Act stipulates the distinction between outpatient and inpatient care.

The GP is the key figure in primary care and acts as a gatekeeper for specialized ambulatory and hospital care. The number of general practitioners in Bulgaria has been declining slowly and their geographical distribution does not reflect the needs of the population. Ambulatory care is also provided by specialized outpatient facilities, including individual and group practices, medical and medico-dental centers, diagnostic/consultative centers and stand-alone medico-diagnostic or medico-technical laboratories. They are autonomous healthcare establishments, most of them with a contractual relationship with the National Health Insurance Fund. All primary, and the majority of specialized, outpatient facilities are privately owned. Inpatient care is delivered mainly through a network of public and private hospitals, divided into multi-profile and specialized hospitals.

High rates of hospitalization indicate the underuse of ambulatory care and a lack of integration at the different levels of care. Healthcare reforms after 1989 focused predominantly on ambulatory care and the restructuring of the hospital sector is still pending on the government agenda. Thus, both an oversupply of acute care beds and an undersupply of long term care and rehabilitation services remain. Long-term care is generally underdeveloped regarding both community-based services and inpatient care provided by specialized hospitals. Regional centers for emergency care and hospitals' emergency wards are the key units in the organization of emergency care. Urgent care is also provided by GPs. The main challenges faced in



this field are the shortage of medical professionals and the lack of medical equipment.

### **Healthcare Workforce**

In 2009 health workers accounted for 4.9% of the total workforce. While the number of physicians and dentists is high in Bulgaria, the number of nurses is well below the EU15, EU12 and EU27 averages. Healthcare professional mobility is a growing concern in Bulgaria, mainly due to the development of technology, accessible transport and communications. The migration of medical specialists has become a serious challenge: during the first nine months of 2010, more than 340 physicians and 500 nurses left the country.

In terms of education and training, medical education is provided by four medical universities and two medical faculties in other universities. The Council of Ministers determines the requirements for obtaining both higher education degrees and specializations. Professional specialties in health provision are determined by the Ministry of Health and require a state examination by the State Examination Commission in Sofia. Continuous medical education is organised and credited by the Professional Associations in accordance with the Health Act.

### **Major Reforms**

There have been three stages of reform of the healthcare system in Bulgaria since 1989. The first stage of reform (1989–1996) saw the abolishment of the state monopoly in the health system and the building a

decentralized healthcare administration. During this period the idea of a health insurance system also emerged. The second stage (1997–2001) saw the introduction of the new health insurance system with new laws on health insurance, healthcare establishments and the professional organizations of physicians and dentists. In the third stage (2002–present), the legislative foundation of the healthcare reform was completed. This third stage focuses on decreasing the number of citizens without SHI coverage and securing the financial stability of the system (mainly by raising the health insurance contribution from 6% to 8%).

At the present moment, these reforms have yet to achieve their main objectives: improved population health and a democratic healthcare system that meets the health needs of the population.

### **Current Market Trends Pharmaceuticals**

In 2018 the Bulgarian pharmaceutical market grew by 5.9% (compared to 11% in 2017), reaching \$2.0 billion and outpacing other fast-growing markets in the Central and Eastern Europe region. Nevertheless, this was the first registered decrease in growth, which has been in double digits for the last ten years. In 2018, approximately 3% of Bulgaria's GDP was spent on pharmaceuticals, well above the historical average. A boost to hospital spending on innovative drugs was a key driver of market growth, but this was primarily due to a backlog of demand for innovative medicines.

### **Medical devices**

Bulgaria represents one of the smallest medical device markets in the EU, which will register a mid-single-digit local currency compound annual growth rate over the 2018–2023 period. The market is largely reliant upon imports, which are primarily sourced from other EU member states and the US. Market growth will be dependent upon increasing healthcare funding and the success of efforts to develop the private sector.

### **Health IT**

There is a strong US presence providing healthcare solutions for the med-tech industry. Excellent mobile and internet networks are available in the country, with high penetration rates, which makes the market very friendly and open to innovation and digital technologies. There is, however, intense competition, mainly from German and Chinese providers competing on price and delivery. The National Health Insurance Fund (NHIF) administers the resources collected from the mandatory health insurance contributions. Bulgaria's e-health sector reform strategy encourages modernization and upgrades in a wide range of areas including the demand for telemedicine and introduction of a national healthcare portal.

### **R&D and Clinical Trials**

Bulgaria ranks among the top 20 in the world in clinical trials performed, a field valued at \$150 million. Bulgaria offers great potential for Contract Research Organizations (CROs). US enterprises have approximately 50% market share and are continuing to support operations in Bulgaria. The main competitors are German, Swiss and French CROs.



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## New advanced bionic arm allows amputees to achieve similar level of function as non-amputees

Researchers at the Cleveland Clinic have developed an advanced bionic arm that allows users with upper limb amputations to achieve a similar level of function as non-amputees. The system incorporates a sense of touch and movement and allows for intuitive motor control. The device is intended for users who have undergone targeted sensory and motor reinnervation procedures in which motor and sensory neurons are redirected to the skin and muscles in the residual limb, allowing them to communicate with the bionic limb.



Bionic prostheses are advancing apace. This latest device is complex, but boasts impressive functionality. "We modified a standard-of-care prosthetic with this

complex bionic system which enables wearers to move their prosthetic arm more intuitively and feel sensations of touch and movement at the same time," said Paul Marasco, a researcher involved in the study. "These findings are an important step towards providing people with amputation with complete restoration of natural arm function."

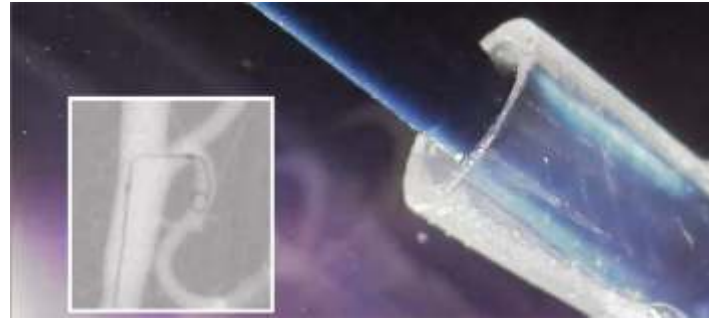
While robotic prostheses that feature a sense of touch have been created before, this newest device also includes a sense of movement, so users can feel the sensation of their arm moving through space. This is achieved by small robots that vibrate, activating kinesthetic sensory receptors in the muscles of the residual limb. Becoming more aware of their limb appears to greatly enhance a wearer's ability to use it. For instance, users were able to perform tasks with their new bionic limb without watching it, just like they would with a regular arm, something that has been difficult for upper-limb prosthetic users before now.

"Over the last decade or two, advancements in prosthetics have helped wearers to achieve better functionality and manage daily living on their own," said Marasco. "For the first time, people with upper limb amputations are now able to again 'think' like an able-bodied person, which stands to offer prosthesis wearers new levels of seamless reintegration back into daily life."

The technology is not for everyone, as users must have undergone targeted sensory and motor reinnervation, where a surgical procedure reroutes sensory and motor neurons to the skin and muscles of the residual limb, allowing better communication between the limb and the prosthetic. So far, the device has been tested in two such patients, and their performance with the limb has been impressive.

"Perhaps what we were most excited to learn was that they made judgments, decisions and calculated and corrected for their mistakes like a person without an amputation," said Marasco. "With the new bionic limb, people behaved like they had a natural hand. Normally, these brain behaviors are very different between people with and without upper limb prosthetics."

## Steerable catheters to navigate tortuous vasculature in brain



A team at University of California San Diego invented a way to make steerable catheters that can more precisely navigate the tortuous architecture of the brain vasculature. The device was bioinspired by delicate structures found in nature, including flagella and insect legs, and uses principles from soft robotics to create a hydraulic steering system, which is encased within a tiny silicone rubber catheter. The UCSD researchers hope that the technology could allow clinicians to treat areas of vasculature that are currently out of reach.

Intracranial aneurysms can pose a tricky problem to treat. In approximately 25% of cases, they can be inoperable because of their inaccessible location within the tortuous vasculature of the brain. "As a neurosurgeon, one of the challenges that we have is directing catheters to the delicate, deep recesses of the brain," said Dr. Alexander Khaled, a researcher involved in the study. "Today's results demonstrate proof of concept for a soft, easily steerable catheter that would significantly improve our ability to treat brain aneurysms and many other neurological conditions, and I look forward to advancing this innovation toward patient care."

At present, clinicians use a curved tip guide wire to advance a catheter through the vasculature, all the way from the femoral artery to the cerebral artery where the aneurysm resides. However, this technology is not always optimal, even for aneurysms that are theoretically accessible. Unfortunately, when the guidewire is removed to allow treatment to begin, problems can arise. "Once the guidewire is retrieved the catheter will return to its native shape, often straight, resulting in loss of access to the pathology," said Dr. Jessica Wen, another researcher involved in the study.

In a change of approach, this latest technology allows the surgeon to steer the tip through a handheld controller that is compressed to manipulate a hydraulic system within the device. The hydraulic fluid is simple saline, which is a safety measure that ensures any leakage is not harmful.

The catheter design is inspired by structures found in nature. "We were inspired by flagella and insect legs, as well as beetles mating, where microscale hydraulics and large aspect deformation are involved," said Gopesh Tilvawala, another researcher involved in the study. "This led us to developing [a] hydraulically actuated soft robotic microcatheter."

## Flexible carbon nanotube fibers to be used as wearable health monitors on clothing



Researchers at Rice University managed to create flexible carbon nanotube fibers that can be incorporated into clothing to function as wearable health monitors. The new thread is highly conductive, but it is washable and strong, allowing it to function as an unobtrusive component of clothing. So far, the researchers have incorporated the fibers into a sports shirt that can monitor heart rate and obtain a continual electrocardiogram. The technology could act as a replacement for uncomfortable or impractical wearables, such as chest straps.

Wearables promise unobtrusive health monitoring, but

how unobtrusive is a chest strap? This latest research promises smart clothes, which can monitor your health truly unobtrusively as you wear them. The technology is based on highly conductive carbon nanotubes that have been woven together to form a strong and flexible thread that can be machine washed, allowing for long-term incorporation into fabrics.

The new thread is robust and flexible enough to be machine sewn into fabrics, allowing the researchers to position it where they want, including where it makes maximal skin contact or in an area of interest, such as the chest for heart monitoring. The Rice University team incorporate the threads using zig-zag shapes to let the material to elongate without breaking, as the fabric flexes and stretches during activity.

"The shirt has to be snug against the chest," said Lauren Taylor, a researcher involved in the study, in a Rice announcement. "In future studies, we will focus on using denser patches of carbon nanotube threads so there's more surface area to contact the skin."

As well as functioning as sensors that obtain data from a wearer's skin, the fibers act as electrodes that can be attached to a device, such as a Bluetooth transmitter, allowing for wireless data transfer to a smartphone.

The nanotubes themselves are tiny, at 22 microns in diameter, and so the researchers had to develop specialized equipment to bundle them together into a robust thread. "We worked with somebody who sells little machines designed to make ropes for model ships," said Taylor. "He was able to make us a medium-scale device that does the same."

The Rice researchers hope that the threads could be useful in a wide array of wearables. "We see that, after two decades of development in labs worldwide, this material works in more and more applications," said Matteo Pasquali, another of the developers of the new thread. "Because of the combination of conductivity, good contact with the skin, biocompatibility and softness, carbon nanotube threads are a natural component for wearables."

Researchers at Brown University have developed wireless micro-implants that can function as a network of neural sensors and stimulators in the brain. The research team has dubbed their creation "neurograins," which are intended to be implanted in the brain in large numbers. When inside, they can transmit data to an external communication hub, in the form of a patch attached to the scalp. The researchers hope that the neurograins will be able to record brain activity from a large number of neurons in the brain, allowing for advanced functionality when using brain-computer interfaces.

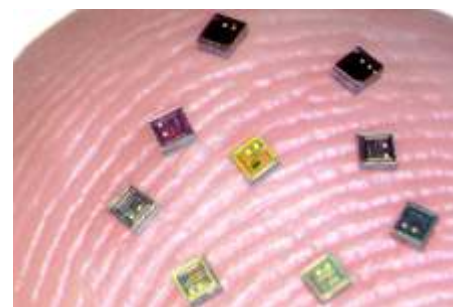
Brain-computer interfaces hold enormous promise as life-changing technologies for people with a variety of conditions. However, the technique is still in its infancy, and designing sensors that can effectively and safely monitor brain activity is a work in progress. Part of the issue is the complexity of the brain, and capturing this using a single sensor or affixing enough sensors in place is difficult. These researchers turned to miniaturization as a way to create a multitude of tiny sensors that can measure brain activity in numerous locations, all at once.

"One of the big challenges in the field of brain-computer interfaces is engineering ways of probing as many points in the brain as possible," said Arto Nurmikko, a researcher involved in the study, in a Brown University announcement. "Up to now, most brain-computer interfaces have been monolithic devices – a bit like little beds of needles. Our team's idea was to break up that monolith into tiny sensors that could be distributed across the cerebral cortex. That's what we've been able to demonstrate here."

The neurograins are tiny silicon chips about the size of a grain of salt. Getting them to this size was a challenge, requiring multiple iterations of computer-aided design. The neurograins transmit data to a thumbprint-sized patch affixed to the skull and they also are powered wirelessly by the patch. The patch acts as a communication hub, coordinating the signals from each neurograin.

"This work was a true multidisciplinary challenge," said Jihun Lee, another researcher involved in the study. "We had to bring together expertise in

## Wireless micro-implants to function as a network of neural sensors and stimulators in the brain



electromagnetics, radio frequency communication, circuit design, fabrication and neuroscience to design and operate the neurograin system."

"It was a challenging endeavor, as the system demands simultaneous wireless power transfer and networking at the mega-bit-per-second rate, and this has to be accomplished under extremely tight silicon area and power constraints," said Vincent Leung, another researcher involved in the study. "Our team pushed the envelope for distributed neural implants."



## Inexpensive robotic hand with a sense of touch for use by upper limb amputees



Researchers at MIT and Shanghai Jiao Tong University created an inexpensive robotic hand intended for use by upper limb amputees. The device is more like a soft robot than previous robotic prostheses, and includes inflatable components and pneumatics, making it lightweight and inexpensive. Excitingly, the hand is equipped with sensors and provides some tactile feedback as users interact with objects. The researchers hope that the technology could lead to affordable and viable neuroprosthetic devices, particularly for amputees in low-income regions of the world.

Neuroprostheses are rapidly expanding what is possible for amputees. Such devices can detect the intention of a user based on their muscle or neural activity at the interface between the residual limb and the device. Using this data, the mechanical prostheses can respond accordingly, allowing a wide range of movements and activities, such as grasping objects.

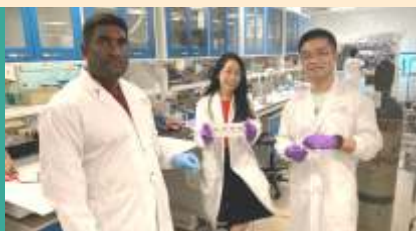
However, to date, such devices come with a massive cost, putting them out of reach for many people. They can also be pretty heavy as a result of their metal components and the motors that power them. This new technology is intended to be a lightweight and inexpensive alternative to such devices. The components for this new robotic hand cost approximately \$500, making it much more affordable, and the entire device weighs just half a pound.

"This is not a product yet, but the performance is already similar or superior to existing neuroprosthetics, which we're excited about," said Xuanhe Zhao, a researcher involved in the study, in an MIT press release. "There's huge potential to make this soft prosthetic very low cost, for low-income families who have suffered from amputation."

The prosthetic hand consists of a 3D printed palm and five inflatable fingers. The fingers contain fiber segments that act as 'bones' and a pneumatic system allows the fingers to flex and bend quite precisely. The device can make a range of predetermined movements, including pinching and making a fist, and uses electromyography sensors to connect the user's residual limb to the prosthetic and ensure that the movements are based on the user's intention.

Strikingly, the system also incorporates tactile feedback. This occurs through pressure sensors on each fingertip of the prosthetic, which connect with the residual limb, allowing the user to feel where and how much pressure is being exerted on each finger. At present, the system incorporates four predetermined grasp types, but the researchers hope to expand this repertoire.

## Flexible battery powered by sweat to detect or monitor disease



Researchers at Nanyang Technological University in Singapore created a flexible battery that is powered by sweat. The device could provide a new way to energize medical wearables, some of which already use sweat to detect or monitor disease. The stretchable device incorporates silver flakes that clump together and generate a small electrical current in the presence of sweat.

Medical wearables are becoming increasingly ubiquitous. The ability to monitor vital signs or disease progression using such an unobtrusive and convenient technology has obvious advantages. However, in the interests of the environment, moving away from traditional battery technologies would be advantageous, and what could be better than allowing your body to power your wearable?

"Conventional batteries are cheaper and more common than ever, but they are often built using unsustainable materials which are harmful to the environment," said Lyu Jian, a researcher involved in the study, in a press release. "They are also potentially harmful in wearable devices, where a broken battery could spill toxic fluids onto human skin. Our device could provide a real opportunity to do away with those toxic materials entirely."

The new battery uses sweat as a power source. Sweat is rich in chloride ions, and it is this property that the battery exploits. It consists of a stretchable fabric onto which the researchers deposited ink containing silver flakes, to act as electrodes. The acidity and chloride ions in sweat cause the flakes to clump, resulting in an electrical charge. Because it can store absorbed sweat for long periods, the battery can generate power even when someone isn't exercising and actively sweating.

"Our technology heralds a previously unreachable milestone in the design of wearable devices," said Lee Pooi See, another of the developers of the new battery. "By capitalizing on a ubiquitous product, perspiration, we could be looking at a more environmentally friendly way of powering wearable devices that does not rely on conventional batteries. It is a near-guaranteed source of energy produced by our bodies. We expect the battery to be capable of powering all sorts of wearable devices."

So far, the team tested the battery in a few volunteers. One volunteer cycled a bike for 30 minutes, and during this time the battery successfully powered a temperature sensor that was communicating with a smartphone through Bluetooth.

"Our device could be more durable than current technology, as we showed it could withstand strain from a wearer's daily activities, and repeated exposure to stress or sweat," said Lee Pooi See. "The slim size of our battery also solves two problems in wearable tech: traditional button batteries are a problem for achieving the sort of sleek aesthetics that are attractive to consumers, while thinner batteries reduce the item's ability to carry enough charge to last throughout the day."

## DoKaSch Temperature Solutions opens new service station in India



**DoKaSch Temperature Solutions has opened a new service station in India. It is located at GMR Hyderabad Air Cargo terminal. Strategically, the Hyderabad Airport location is a very important network station for the global supply of lifesaving medicines given Hyderabad's status as a major pharma production and export hub. With the new location in India, DoKaSch strengthens its network in the region and globally. In turn, the solution provider contributes to a reliable cool chain for highly sensitive pharmaceutical products, especially during the pandemic.**

Hyderabad was chosen because of its outstanding importance for the global pharmaceutical industry. The city's Genome Valley business district is a hub for research and development as well as manufacturing for pharma and lifesaving medicines. Furthermore, a vast amount of generic medicine and bulk active pharmaceutical ingredients (API) are also produced on-site. Some of the largest and most important vaccine producers have facilities in Hyderabad, which gives it additional relevance during the ongoing pandemic.

Several key pharmaceutical companies are located here and export their products to the USA, EU, Japan and other major countries across the globe. The upcoming Pharma City, an extensive industrial park for pharmaceuticals, will further increase the city's importance.

Furthermore, Hyderabad's airport is an international hub with global connections. The new station is part of the GMR Hyderabad Air Cargo Terminal complex, located within the airport premises, which is highly beneficial for forwarders and airlines. With its dedicated pharma export terminal named 'Pharma Zone', the GMR facility at Hyderabad is well established as the preferred hub for pharma exports in South Central India and positioning containers at the Hyderabad network station gives the local pharmaceutical manufacturers, forwarders and airlines easy access to solutions for the global transport of high-value lifesaving medications.

The staff at the station make sure the required capacities are available and prepare the necessary number of containers for each flight. The station in Hyderabad has a capacity to equip up to 100 containers and can easily accommodate requests of up to 20 containers per day.

Andreas Seitz, Managing Director at DoKaSch Temperature Solutions, stresses the importance of the new station: "India is a highly relevant location for pharmaceuticals, biosimilars and biotech and especially Hyderabad is of outstanding importance. In turn, we decided to open our new service station to complement our extensive network and contribute to a capable cool chain for these products. Not only is the station located at a globally relevant industry hub, but the airport is also used by many of our partner airlines and is well connected to destinations worldwide. We are certain that our new location will play an important role for the global supply with lifesaving pharmaceutical products like vaccines, especially during the ongoing pandemic."

Mr. Pradeep Panicker, CEO-GMR Hyderabad International Airport commented, "Hyderabad Air Cargo terminal is the preferred gateway for pharmaceuticals and vaccine movements in the South Asia region and we are very pleased to partner with DoKaSch Temperature Solutions to establish a service station at our Cargo Terminal. The new facility will make the world class DoKaSch Opticooler containers readily and easily accessible to our shared customers who will be assured of ready availability and fast turnaround with our new on-airport container station. With the addition of this facility, GMR Hyderabad Air Cargo will be the biggest hub for temperature-controlled air cargo containers in the region."

India is a key location for the global pharmaceutical supply. In turn, a capable and reliable cool chain infrastructure is highly relevant for the research and manufacturing locations in the country. Currently, many of the vaccines used to fight the ongoing pandemic are being produced in India. Accordingly, DoKaSch's new station plays an important role for the global supply with products from Hyderabad.

# IoT based solution for monitoring temperature-controlled cargo enabled at KIAB/ BLR Airport

An Internet of Things (IoT) based solution to monitor temperature-controlled cargo is enabling real-time supply chain visibility at the Kempegowda International Airport, Bengaluru (KIAB/ BLR Airport).

Currently available at Menzies Aviation Bobba Bangalore (MABB), one of the Cargo Terminals at BLR Airport, the technology will enable live monitoring of temperature-sensitive products such as pharmaceutical and perishables, including fruits, vegetables, meat, sea food, dairy products, cut flowers etc.

The solution will not only benefit the pharmaceutical & perishable food industry in Bengaluru, but also play a part in strengthening BLR Airport's reputation as South India's preferred Cargo Gateway.

The TAGBOX-developed technology will provide shippers and agents real-time temperature data of the shipment from the time it leaves the warehouse to the point it is loaded onto an aircraft at BLR Airport. The battery-powered Tag360 sensor, attached to each small SKU, box, or pallet tracks the product's temperature, at every step of the journey. Shippers and agents can monitor the end-to-end health of their products through a central monitoring dashboard via a web or mobile interface.

The temperature data gathered from the sensors can be used to create valuable insights on efficient operations and resource management leading to improved customer service. IoT-based sensors capture other critical product parameters and instantly send SMS and / or e-mail alerts. With this, the shipper will be able to take corrective actions, instantly. Remote temperature monitoring also allows companies to enhance visibility of the product and meet regulatory compliance.

"At BIAL, we firmly believe in digitalizing processes to create transparency and real-time visibility, while improving overall efficiency. End-to-end visibility has become a prerequisite for any supply chain. We are pleased to collaborate with our partners to enable this at BLR Airport," said Mr. Satyaki Raghunath, Chief Strategy & Development Officer, BIAL.

"In order to maintain end-to-end transparency of the shipments processed through our Cold Zone, MABB, in association with BIAL, had conducted a POCs on few Pharma shipments by using the TagBox solution. It turned to be a perfect solution, providing us the satisfactory result. The implementation of this solution has added value to our cold chain supply process and more importantly for the pharma shipments at our Cold Zone," said Mr. Anil Kumar, Chief Executive officer, Menzies Aviation Bobba (Bangalore) Pvt Ltd.

BLR Airport is one of the few airports globally to have such technology for efficient handling of cold-chain cargo.



## How it works

The pallets at shipper locations are fitted with Tag360 sensors that measure temperature.

The sensor starts recording temperature throughout the journey from warehouse to the airport terminal.

When the shipment arrives at the terminal, the TagHub-FX, Gateway installed at the entry dock syncs the recorded temperature data from incoming sensors.

The temperature data is synced live from inside the terminal via TagHub-FX Gateways installed in various areas or by cargo handlers using TagLink mobile app.

Shippers are able to see real-time location and temperature data of their respective shipment from inside the cargo facility.

Excursion alerts will be generated and monitored live by Terminal staff and the shipper. They can work together for appropriate interventions

In the event of any excursions, terminal staff and shippers can work together for appropriate interventions.

Temperature and location visibility will be provided until take off.

To further improve its cold-chain processing efficiency, BIAL had launched Envirotainer, a technology that enables pharmaceutical companies and their logistics partners to move temperature-sensitive cargo across the world, while maintaining the integrity and quality of products throughout journey.



## HAAD announces comprehensive plan to combat tobacco use

The Health Authority - Abu Dhabi (HAAD), the regulatory body of health care sector in the Emirate of Abu Dhabi, announced today a comprehensive plan to combat tobacco use in the Emirate of Abu Dhabi. The program slogan is "Abu Dhabi Says No to Smoking".

The program aims to prevent youth (males and females) from using all tobacco forms (Shisha, Medwakh, Cigarettes and all other forms), help smokers to quit smoking through creating a smoke free environment as per the Federal Law on Tobacco Control number 15/2009.

To meet the objectives of the program, a Task Force consisting of General Authority of Islamic Affairs and Endowments, Abu Dhabi Media, Abu Dhabi Educational Council, Abu Dhabi Sports Council, Abu Dhabi City Municipality, Abu Dhabi Food Control Authority, Department of Economic Development, Takatuf Voluntary Social program, community Police, and the Environment Agency was formed.

Eng. Zaid Al Siksek, CEO of HAAD: "Smoking in its different forms is responsible for major public health illnesses worldwide; it is responsible for Cardio Vascular diseases, and many cancer cases. Due to its increasing danger on individuals and community, the Government of the UAE have issued the Federal Law on Tobacco Control number 15/ 2009." "Based on this law, the joint task force will work together, each according to their specialty, to implement and enforce the law, by controlling and monitoring tobacco use, protecting people from tobacco smoke, helping smokers to quit, issue warnings on tobacco risks, and implementing a ban on tobacco advertisement and promotion." According to HAAD statistics the smoking rate within the Emirate of Abu Dhabi ranges between 24-35%. According to Environment Agency - Abu Dhabi about 55% of smokers smoke cigarettes, 38% smoke Medwakh, 29% smoke shisha and 14% smoke cigars. In addition, the Global School Health Survey for 2010 found that 80% of students' had already tried smoking.

The Federal Law on Tobacco Control number 15/ 2009 forbids smoking in private cars when there is a child passenger who does not exceed the age of 12 years, forbids smoking in all places of worship and educational institutions such as universities and schools, health and sports facilities. It also forbids the sale of candy products which resemble tobacco products, forbids automatic vending equipment and devices for tobacco distribution inside the country.

It also enforces a fine on tobacco advertisement ranges from AED 100,000



to 1,000,000 and a fine for smoking in public places and selling tobacco products to individuals below 18 years ranges from AED 500 to 10,000.

"Abu Dhabi says No Smoking" is the fruit of mutual cooperation between Health Authority-Abu Dhabi and "In House Hospital" website [www.inhousehospital.com](http://www.inhousehospital.com). The website will provide health news, articles, advice and subjects relevant to smoking in Arabic and English. Such material includes rich scientific contents and various pictures that may help smokers quit. The website also organizes various discussions about smoking through health forums to make people aware of smoking risks.

The website is intended to present medicine in a social healthy perspective thus opening new health horizons in the health medical information available on the internet. It also helps people share their health experience so that everybody can make use of others' experience without a commercial or financial goal thus allowing visitors to share ideas transparently in the forums which in turn will be useful for all society classes. The website also has a full guide of doctors, hospitals and private clinics all over world.

## Al Qassimi Women's & Children's Hospital performs 415 neonatal surgeries



### Al Qasimi Women's and Children's Hospital

The Emirates Health Services (EHS) has revealed that Al Qassimi Women's & Children's Hospital, since the COVID-19 outbreak, has successfully performed more than 415 pediatric surgeries, most of which for newborns with congenital anomalies, with a success rate of up to 100 percent.

This achievement comes as part of the EHS's plans to provide integrated health care according to the best excellence and professional standards. This also stems

from the EHS's keenness to provide its hospitals and health facilities with the latest diagnostic devices and high-tech equipment according to the highest international quality standards.

Such procedures contribute to enhancing local and international confidence in the efficiency of health services and consolidating the status and gains of the health sector in the country.

"This achievement cements the institution's efficiency in applying the standards of the continuation of services and business and achieving the goals of national resilience in adapting to challenges and turning them into success," Youssef Mohammed Al Serkal, Director-General of EHS, said.

Using endoscopes in about 50 percent of pediatric surgeries has led to the reduction of the number of hours dedicated to surgeries, noted Dr. Safia Al Khaja, Director of the hospital, while the sophisticated equipment has greatly contributed to preparing an ideal work environment for pediatric consultants and surgeons.

Also, using endoscopes contributes to reducing the hospital length of stay by 50 percent, in addition to achieving a high success rate with 30 percent fewer side effects, especially in newborns whose cases require rapid surgical intervention, Al Khaja added.- **WAM**

## Dubai Health Authority expands its COVID-19 home vaccination drive



The Dubai Health Authority (DHA), in collaboration with Dubai Ambulance and the Mohammed Bin Rashid University of Medicine and Health Sciences, has announced the expansion of its home vaccination drive to include more social segments that are unable to visit vaccination centers.

The move is part of Dubai's ongoing efforts to restore full normalcy and ensure high levels of protection for the community from COVID-19.

The categories eligible for the service include people of determination, Emiratis aged 50 and above and elderly Dubai residents aged 60 and older. DHA said it will begin administering the Pfizer-BioNTech vaccine to eligible community members in collaboration with its strategic partners.

Dr. Farida Al Khaja, CEO of DHA's Clinical Support Services and Nursing Sector and Chairperson of the COVID-19 Vaccination Steering Committee, said that expanding the vaccination drive is aimed at helping seniors unable to visit medical centers take the vaccine from the comfort of their homes.

The campaign will support DHA's mission of safeguarding the community and ensuring the highest standards of health and safety, she added.

Dr. Al Khaja said the Authority, together with its strategic partners, has made several arrangements for reaching the groups targeted in the drive.

Mobile buses and a dedicated team of health professionals have been allocated for the home vaccination service in accordance with international protocols and prevention and safety guidelines.

Community members can book the service by calling DHA's toll-free number 800 342. Those who provide proof of residence in Dubai, regardless of the Emirate in which their residency visa was issued, will be able to receive the vaccine under this initiative. The vaccination will be provided within 48 hours of requesting the service.

Dr. Al Khaja encouraged elderly members of the community to benefit from the home vaccination service, which will be available every day from 8:00 to 20:00.

She added that providing easy access to the COVID-19 vaccine by increasing vaccination centres and introducing the home service support DHA's goal of vaccinating 100 percent of the eligible population in Dubai by the end of 2021.

## MBRU scientists play key role in shaping Dubai's COVID-19 response

A team of scientists from the Mohammed Bin Rashid University of Medicine and Health Sciences (MBRU) played a notable role in supporting Dubai's response to COVID-19 through crucial viral genomic surveillance research.

Scientists from the MBRU collaborated with scientists from the Dubai Health Authority (DHA) and the Genomic Centre in Al Jalila Children's Specialty Hospital (Al Jalila Children's) to understand how the virus mutates when passed from person to person over weeks and months and examined its genomic "fingerprint" to track the origin, spread, and possible mutations of the virus within a population. The studies contributed to shaping Dubai's data-driven approach to managing the pandemic.

The team developed a scalable, cost-effective method for large-scale genomic surveillance of the virus, which demonstrated high accuracy in identifying the origin and distinguishing modes of transmission in Dubai and the UAE. The team also mapped the origin and timing of introductions of COVID-19 during the early stage of the pandemic, including early geographical clusters.

The study also shed light on how host factors such as age, gender, and underlying health conditions, combined with specific mutations of the virus might affect disease severity.

Additionally, the research team also identified how cells function in patients with severe COVID-19 that can be used to predict disease outcomes in those patients and allow healthcare professionals to tailor the intensity of medical treatment.

The results of multiple studies that together made up the viral genomic surveillance research program have now been published in several international peer-reviewed journals, providing the academic and medical community with valuable reference material.

Full genome sequences of the virus from Dubai were shared with the global scientific community, delivering critical insights to assist the world's battle with the disease, providing particularly crucial information on the spread of the virus globally and specifically in Europe.

Professor Alawi Alsheikh-Ali, Deputy Director-General, Dubai Health Authority, Chair of the Scientific Advisory Group for the Dubai COVID-19 Command and Control Centre, and Member of the MBRU's Board of Trustees, said, "Scientific research is a highly prized resource that has informed and guided Dubai's measured and balanced response to the pandemic. Collaboration with leading academic and medical institutions in Dubai was the key, highlighting the value of an integrated academic health system."

Dr. Ahmad Abou Tayoun, Director of the Genomics Centre, Al Jalila Children's Specialty Hospital, and Associate Professor of Genetics, MBRU, said, "This research was instrumental in tracing the origins of the virus early on in the UAE, identifying problem areas, and providing vital inputs on the scale, intensity, and scope of the response to the pandemic. Given Dubai's geographic position and role as a bridge between the East and the West, the findings of our research have also helped calibrate and tweak frontline strategies in the global response to the pandemic."

## MENA's 1st congress that explores opportunities & challenges of disruptive healthcare technologies



The congress brought together the perfect combination of healthcare professionals who were well versed and invested in technological advancements that exist in the healthcare marketplace today.

It provided the perfect platform for healthcare executives to understand the dynamics behind the avalanche of digital transformations we are witnessing in healthcare providing facilities globally, and ask relevant questions to the experts in the field.

**His Excellency, Dr. Amin Hussain Al Amiri, the assistant undersecretary for Public health policy & Licensing in the UAE's Ministry of Health & Prevention (MOHAP) provided deep insights into the global and local healthcare marketplace. He also delved into the outlook for the future by providing insights into the activities of MOHAP and organizational structural innovations curated to serve the interest of digital transformation within healthcare. In his keynote address he highlighted how the UAE's healthcare market size had been growing exponentially reaching \$20.8 billion from \$18.4 billion in 2019.**

Furthermore, it was expected to grow to \$26.8 billion by 2025 at a CAGR of 6.5% which is a clear indicator of the commitment and focus the healthcare industry is receiving from stakeholders. It is also important to note that the

number of medical professionals licensed by MOHAP were increasing dramatically and a clear example is the 15% increase in the number of doctors licensed from 2017 to 2020.

### ***The UAE the most advanced digital society in the world***

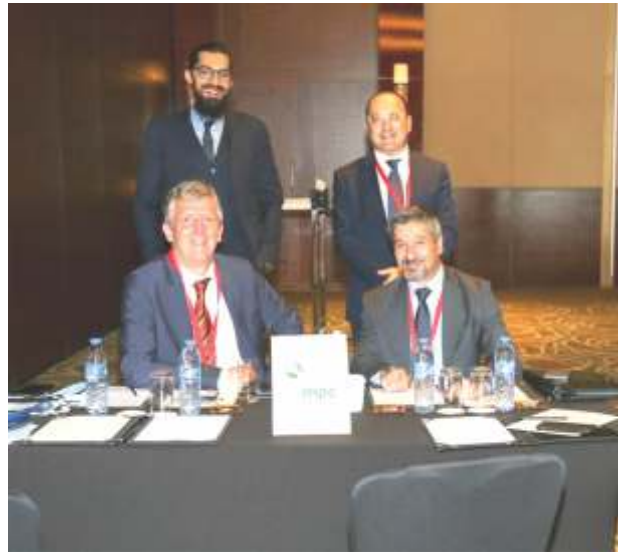
Another address that was noteworthy was by Anett Numa, a Digital Transformation advisor at e-Estonia's briefing center and she brought to light the success Estonia had achieved in digitalization. Named 'the most advanced digital society in the world', Estonia has created an efficient, transparent and secure digital ecosystem where 99% of governmental services are online. The e-Health program provides comprehensive coverage of the healthcare marketplace with particular focus on hospital information systems, e-prescription, digital vaccine certification and telemedicine.

Panel discussions followed bringing to light the very topics that are of immense discussion in the current environment of digitalization. A discussion on the needs and opportunities in the UAE and GCC for healthcare investments focused on the adoption of



technology creating a contrast between the pre and post COVID era. The overlying theme of this discussion was to increase the familiarity of emerging healthcare technologies allowing leaders and decision makers to be ahead of the game when strategizing for the future.

Another important area of discourse concentrated on how physicians of the future should be shaped. What challenges are faced and how gaps may be bridged to have an inclusive medical society that will allow physicians to integrate within a digitally transforming marketplace. This can only be made possible if the opportunities, challenges and strategies for digital transformation are clearly outlined and that was also an area of interest the panel discussed. The rapidly evolving governmental regulations, technological innovations and patient expectations have created a new environment and adapting to it requires diligence and unwavering commitment by all relevant stakeholders.



## AI & Blockchain have started to drive precision medicine

AI and Blockchain have started to drive precision medicine and these transformations in technology are bringing about a tremendous change globally. Therefore, comprehending the demand for personalized healthcare and understanding how healthcare systems can improve the value and access to services to the entire population brings the tools into the light. The tools are AI, Blockchain, robotics, big data, 3D printing and many more and the use of these tools comes with a unique set of challenges, which if addressed can lead us to the creation of a utopian healthcare marketplace.

## Digital Health Initiative – MDIC

The Medical Device Innovation Consortium (MDIC) recently announced the launch of its Digital Health initiative. The scope of digital health-related efforts crosses over several existing programs at MDIC, including Data Science and Technology, Clinical Science, Health Economics and Patient Value, and NESTcc. This launch of the new Digital Health initiative recognizes the convergence of connectivity, information, and software of these active programs and provides an opportunity to focus additional efforts in Software as a Medical Device, Software in a Medical Device, Mobile Medical Application, Interoperability, Wireless Medical Devices, Patient-Generated Health Data, and In-silico validation/modeling.

Earlier this year, MDIC hosted a webinar with



experts from FDA, a consumer electronics and fitness firm, a medical device manufacturer as well as patient advocates to discuss the existing regulatory framework for digital health, key considerations for patients and healthcare providers, and implications for the future of digital health innovation. The Digital Health working group has identified five initial workstreams to complement FDA's efforts to develop an innovative regulatory pathway for software that is tailored to its unique and iterative nature, including leveraging the learnings from the FDA pre-cert pilot program.



## Value Health Care– BSP Health

**2 - Costs related to consultations, tests and admission is covered.**

**3 - Overseas evacuation if treatment is not available in Fiji. Cost of visas, airfares, an accompanying person (if medically necessary), transport, tests, treatment, pharmaceutical drugs, accommodation and a daily allowance, are covered.**

BSP Health, a subsidiary of BSP Life, and a market leader in private health insurance, launched a new product, Value Health Care.

Managing director, Michael Nacola said insurance coverage in Fiji was still low, which reinforced the need for continued innovation in products and services.

### Value Health Care offers:

**1 - Direct access to a private medical facility like Oceania Hospitals in Suva, or Zen's Medical Center in Nadi, amongst others, for specialist care and treatment.**

All conditions (except for standard exclusions in the Policy Terms and Conditions), including cancer, and recurring treatment costs, are covered to the full policy limit, without extra contributions from customers.

BSP Health's claims trends highlight that the age bracket 40-



44 years is now the highest claiming bracket for medical treatment, with growing numbers of deaths in the 45-54 range.

From January to July this year, BSP Health paid \$6 million for medical treatments.

Around 96 percent of claims received were approved with only four percent declined as they were outside policy terms.



# UPCOMING EVENTS



**2ND International  
Conference on  
Nursing &  
Health Care**

07-08 October  
**Dubai**



**Int'l Conference on  
Health Care Reform,  
Health Economics &  
Health Policy  
(ICHRHEHP)**

08 October  
**Dubai**



**Annual  
International  
Paediatric  
Dermatology  
Congress**

14-16 October  
**Dubai**



**International  
Conference on  
Research in  
Life-Sciences &  
Healthcare (ICRLSH)**

26-27 October  
**Dubai**



**International  
Conference on  
Medical Ethics &  
Professionalism  
(ICMEP)**

08 November  
**Dubai**



**Abu Dhabi  
International  
Mental Health  
Conference**

09-11 November  
**Abu Dhabi**



**Global Congress  
for Consensus in  
Paediatrics and  
Child Health**

10-13 November  
**Dubai**



**Annual Summit  
on Digital Health  
and Telemedicine  
Expo (DHTE)**

15-16 November  
**Dubai**







# Not all Round Breast Implants are the Same

PROVEN

## Performance

MENTOR® MemoryGel® Breast Implant 10 Year Core Study data demonstrates safety, efficacy, and high patient satisfaction.

## Design

Each profile in the MENTOR® MemoryGel® and MemoryGel® Xtra Breast Implant family contains proprietary and dynamic fill ratios developed from surgeon feedback.

## Peace of Mind

As one of the world's leading maker of high quality breast implants for over 30 years, our experience results in quality products that you can rely on and are backed by a comprehensive warranty.



#1 GLOBAL BRAND³

USED OVER 115+ COUNTRIES

7 MILLION+ women have MENTOR® Silicone Gel Breast Implants⁵

Successfully used and trusted for more than

30 YEARS⁶

## Proven Performance

Mentor® MemoryGel® Breast Implants in Primary Augmentation Patients  
What does The Mentor® Level 2 Core Study Say at 10 years?

97%  
Satisfied  
WOMEN⁴

1%  
Rotation  
RATE⁴

0%  
Double  
CAPSULES⁴

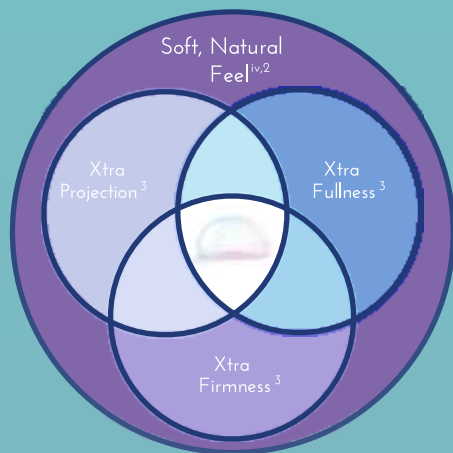
1.3%  
Wrinkling  
RATE⁴

LOW  
Capsular  
CONTRACTURE  
RATE⁴

\*\* Based on patient survey at 10 years in the Mentor® MemoryGel™ Breast Implant 10-Year Core Gel Clinical Study Final Report.

¹ Head-to-head testing according to industry standard ASTM D412 test method for rubber properties in tension (v. Q9Q1) between MemoryGel® (n=19) and Natrelle Inspira (n=19)

# Why MemoryGel™ Xtra Breast Implants?¹



iv. Mentor Consumer Preference Market Research Report July 2017.

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