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MEDiWORLD Middle East

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Unique Group

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Mediworldme

Editorial

Expanding presence worldwide

With the outbreak of Covid-19 pandemic in Africa, governments across the continent took very stringent measures aimed at containing the spread. Among others, these measures included ban on all public gatherings, the indefinite closure of public institutions, suspension of air travel, etc. Thus restricting the movement of the African population. Cape Town-based subsea engineering expert MMO, a Unique Group Company have recently announced the successful completion of beta testing its Covid-19 pressure (CPAP) ventilation system from Africa. We feature Marcus Reuter, Project Sales Engineer with Unique Group's Diving and Life Support division in Cape Town on our cover who tells us how the new Uni-Life 100 supports African authorities in providing mass treatment to patients across the continent who are affected by covid-19 related symptoms.

Face Masks are recommended as a simple barrier to help prevent respiratory droplets from traveling into the air and onto other people when the person wearing the mask coughs, sneezes, talks, or raises their voice. This recommendation is based on what we know about the role respiratory droplets play in the spread of the virus that causes COVID-19, paired with emerging evidence from clinical and laboratory studies that shows masks reduce the spray of droplets when worn over the nose and mouth. COVID-19 spreads mainly among people who are in close contact with one another (within about 6 feet), so the use of masks is particularly important in settings where people are close to each other or where social distancing is difficult to maintain. 'C-FACE' is the world's first 'smart mask that works with smartphones' developed by applying robot technology.

It delivers your voice to other person's smartphone and realizes 'to convert speech voice into text', 'to translate in 8 languages', and 'to make minutes'. Taisuke Ono, CEO of Donut Robotics tells us in detail how their 'C-Face' is the world's first 'smart mask that works with smartphones'.

Healthcare is increasingly talked up as The Next Big Thing to bolster tourism in Croatia. Rising costs of private care and over-stretched national health services in the EU countries are galvanizing travelers to look abroad for treatment. Croatia enjoys a high level of medical services, offering everything from swish cosmetic dentistry to cutting-edge cancer treatments, often with a luxury holiday on the side. We explore Croatia under our medical destination section.

As always do subscribe to our newsletter which highlights the latest breakthrough in the industry and also give us a thumb's up on all our social media channels. If you would like to be featured as our cover story, do get in touch with me at ayesha@7dimensionsmedia.com for further details.

Sincerely,

Ayesha Rashid
Editor, *MediWorld ME*

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Unique Group

Supporting African authorities in fight against Covid-19 with new CPAP ventilator system

The global CPAP devices market is valued at $2797.1 million in 2020 and is expected to reach 4697.3 million by the end of 2026, growing at a CAGR of 7.6% during 2021-2026, according to marketwatch.com

A continuous positive airway pressure therapy (CPAP), is a treatment method for patients who have sleep apnea (a potential serious sleep disorder in which breathing repeatedly stops and starts). CPAP machines use mild air pressure to keep the airways open, and are typically used by patients who have breathing problems during sleep. More specifically, what CPAP therapy helps accomplish is making sure that your airway does not collapse when you breathe while asleep.

The global CPAP devices market is valued at $2797.1 million in 2020 and is expected to reach 4697.3 million by the end of 2026, growing at a CAGR of 7.6% during 2021-2026, according to marketwatch.com.

Cape Town-based subsea engineering expert, MMO, a Unique Group Company, has announced the successful completion of beta testing its in-house-designed Uni-Life 100, a Non-Invasive Positive Pressure Ventilation System.

Developed in conjunction with the technical expertise and production support of Unique Group, the system has been specifically created to aid African authorities in their efforts to provide mass treatment to patients across the continent who are displaying COVID-19-related symptoms.

The global CPAP devices market is valued at $2797.1 million in 2020 and is expected to reach 4697.3 million by the end of 2026, growing at a CAGR of 7.6% during 2021-2026, according to marketwatch.com.

The system utilizes Continuous Positive Airway Pressure (CPAP) architecture, incorporating a compact gas blending and supply system which provides a therapeutic mixture of air and enriched oxygen, adjusted to a patient's requirements. The system includes an inflatable, transparent vinyl hood which is placed over the patient's head, thereby allowing them to comfortably breathe the therapeutic air.

Marcus Reuter, Project sales Engineer with Unique Group's Diving and Life Support division in Cape Town explains to Ayesha Rashid at Mediworldme how the new Uni-Life 100 supports African authorities in providing mass treatment to patients across the continent who are affected by Covid-19 related symptoms.

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Marcus Reuter, Project sales Engineer with Unique Group's Diving and Life Support division in Cape Town explains to Ayesha Rashid at Mediworldme how the new Uni-Life 100 supports African authorities in providing mass treatment to patients across the continent who are affected by Covid-19 related

Can you tell us in detail about your covid-19 CPAP ventilator system?

Uni-Life 100, the Non-Invasive Positive Pressure Ventilator System has been specifically developed by Unique Group's Cape Town based B-BBEE (Broad-Based Black Economic Empowerment) entity called Medical Marine Offshore [MMO], to support African authorities in their efforts to provide mass treatment to patients across the continent who are affected by COVID-19-related symptoms.

It utilizes Continuous Positive Airway Pressure (CPAP) architecture, incorporating a compact, simple to operate gas blending and supply system which provides a therapeutic mixture of air and enriched oxygen, adjusted to a patient's requirements. The system includes an inflatable, transparent vinyl hood which is placed over the patient's head, thereby allowing them to comfortably breathe the therapeutic air, while ensuring that cross contamination between the patient and health-care professional is reduced to a minimum via the integrated viral filter.

The system is compact, modular and offers ease of operation. It can be easily set up and maintained.

Why did you choose Africa?

The primary reason to choose Africa was to offer a robust, reliable solution that would address the shortage of ventilators in the region during a period where-in the continent was preparing in the face of a likely spike in COVID-19 cases similar to the patterns observed in South East Asia and Europe at that time. It was also in response to the South African government's efforts to better prepare the nation with readily available and affordable CPAP solutions which is generally an acute concern, particularly within developing countries.

How is this device a step forward for you in terms of fighting COVID 19?

As the continent continues to see a surge in the number of positive cases, it has become critical that national health facilities are fully equipped to handle a growing number of COVID-19 patients, particularly those with severe respiratory side-effects. In order to effectively prepare, governments will look towards a cost-effective solution which can be mass produced in a very quick span of time and is a lightweight and modular system. The Uni-Life 100 is able to address the shortage of ventilators in the continent by allowing rapid distribution to meet the emergency requirements of COVID-19 patients, and in doing so, saving lives.

How is the device an alternative to other ventilator systems available?

Uni-Life100 is a turn-key, patient friendly device which is simple to operate and ensures that cross-contamination

Marcus Reuter
Project sales Engineer
Unique Group

within facilities treating many patients in confined spaces is adequately managed due to the ability of the system to contain and filter exhaust air. From a logistics perspective, the Uni-Life 100 provides a readily available, cost effective solution which is simple to operate, and easy to distribute locally and regionally.

Describe its working?

Uni-Life 100 utilizes CPAP architecture, incorporating a compact gas blending and supply system which provides a therapeutic mixture of air and oxygen, adjusted to a patient's requirements. The system comprises a pole mounted gas blending unit and a transparent vinyl hood, with latex or silicon neck seal, which is placed over the patient's head. The hood makes it possible to comfortably administer an oxygen enriched gas mixture to the patient at elevated pressures and so increasing oxygen absorption by the patient. Patient hood pressure is easily monitored and adjusted at the hood fittings and an anti-asphyxiation valve is incorporated to prevent patient asphyxiation in case of gas supply failure.

The design of the Air Oxygen gas blender unit incorporates two easily adjusted air and oxygen flowmeters. The required FiO2 (Oxygen %) is easily set by adjusting the two flowmeters to a Flow Meter Settings Card provided. The system facilitates stoppages in treatment with the provision of a hood supply isolation valve and the top of the hood is easily detached and removed without needing to remove the neck seal and neck ring.

In hospitals or field hospitals, the product is designed to

integrate to standard SANS 1409 air and oxygen wall plug sockets or through regulated breathing air and oxygen supplies. No electrical power is needed as the optional oxygen analyzer is battery powered. The system is supplied with 2 meters antistatic medical air and oxygen gas supply hoses and the Gas blending unit supplies the patient hood via 6 ft supply hose.

Does it have therapeutic properties?

Certainly, the architecture of the system is specifically designed to allow the patient to inhale a higher percentage of oxygen, which allows the patient's airway and lungs to absorb greater amounts of oxygen which has a direct and positive therapeutic effect on the patient's breathing and cardiovascular system, allowing more oxygen to be transported through the body, bolstering the immune system while relieving swelling of the airway system often associated with COVID ARDS (Acute Respiratory Distress Syndrome).

Do you plan on launching more devices to fight covid-19 symptoms in countries like Africa?

Our products and solutions are aimed at helping communities at large when there is a need. In the present COVID-19 pandemic crisis, the Uni-Life 100 is one such product that is helping patients in Africa with severe respiratory symptoms to fight the disease. Although a product developed to meet the global pandemic demand, it will be used in the long run to treat any patient who is demonstrating symptoms of ARDS.

Our Cape Town team is continuously monitoring the conditions in the region and as the need arises, we will work to produce new devices to help battle the pandemic. Our strong engineering expertise and technical know-how of commercial diving, life support and hyperbaric oxygen treatment systems gives us an edge over our competitors in building new devices to address immediate concerns globally.

Any expansion plans in the GCC especially UAE?

One of the main advantages of the Uni-Life 100 ventilator system is that it can be mass produced in a very quick span of time. The system has garnered interest globally with a few inquiries arising from other regions including the Middle East. Our manufacturing team is fully equipped and ready to produce and supply units as soon as the need arises in the GCC or anywhere else in the world. As Unique Group has a global presence, we are well located and equipped to be able to serve and support beyond the Africa region.

Any other medical devices launching soon after this?

Our Design and Manufacturing teams are always working to develop innovative products and solutions in line with the global requirements. The development of our state-of-the-art Hyperbaric Oxygen Treatment Chambers (HBOT), and now, the non-invasive CPAP Ventilator is testament to our capabilities in adapting to global demands in the manufacturing of world-class medical equipment. Depending on new requirements, we will continue to strive towards developing new medical devices and provide them in regions where there is a need.

Epson

fostering Middle East's smart robotics future

The global medical robotic systems market size was valued at $2257.8 million in 2018 and is projected to reach $10710.6 million by 2026, exhibiting a CAGR of 21.5% during the forecast period, according to fortune business insights

The idea of robots in improving healthcare is not new. It started as early as 1985 when there was a plan to transform industrial robots into precision machines for surgery and beyond.

But no matter how impressive, robotics in healthcare, it is still a system controlled by humans. The real magic of the 21st-century robo-doctor will come from artificial intelligence systems that can learn so much that it will outperform the best doctors by combining all the available knowledge in all medical repositories. However, most experts agree that AI will not replace trained medical staff, just make them more efficient in several areas in healthcare.

The global medical robotic systems market size was valued at $2257.8 million in 2018 and is projected to reach $10710.6 million by 2026, exhibiting a CAGR of 21.5% during the forecast period, according to fortune business insights.

The UAE's government-led visions are positioning the country as a global leader in smart technology, and especially in robotics. For example, the UAE government recently announced a Ministry of Industry and Advanced Technology.

This new government ministry complements the UAE's existing nationwide innovation agendas. For example, the UAE has the Ministry of State for Artificial Intelligence with its Strategy for AI to boost government performance, the Strategy for the Fourth Industrial Revolution, and the National innovation Strategy to make the UAE one of the world's most innovative countries including in healthcare.

Ayesha Rashid from ***Mediworldme*** spoke to Neil Colquhoun, Vice President - CISMEA and Professional Displays, Epson via an email interview about the role automated robotics play in the healthcare industry.

What role do automated robotics play in supporting and reshoring local manufacturing in the medical industry? How can they enable enhanced production of medicines and personal protective gear?

When global supply chains were affected as a result of the current situation, the need for countries to consider reshoring has become an important topic of conversation. The medical industry in particular has been highlighted because, if personal protective equipment and medication were produced locally, the supply chain could be controlled domestically with production and delivery adapted more easily.

As existing factories expand and new factories are constructed, owners should look to automated robotics to enhance efficiency, productivity and costs. This is especially the case for medication and personal protective equipment – which need rapid and repetitive production.

Automated robotics can do these kinds of repetitive tasks faster and more effectively than people, and in turn open up new jobs, upskilling existing factory workers in programing and other advanced job roles.

Productions in the pharma-ceutical industry, in particular, are often charact-erized by being dynamic & agile. In-house transports are constantly taking place: semi-finished goods move from warehouse to production lines; finished goods from production lines to warehouse, and items between departments. Skilled workers spend much of their day just moving parts from A to B, and usually they must interrupt their actual work to do it. This leads to unnecessary standstill on their machines, which means a great loss of efficiency. Where do robots come in this?

We agree that the 'dynamic' method as described above where goods or parts have to be moved can often lead to interruptions in production resulting in costly downtime. Instead manufacturers can optimize their businesses by setting up automated production lines and well-managed transportation and logistics. For example, the medical and pharmaceuticals industry can take learnings from the automotive sector, which fully automated its production lines decades ago. Now, the automotive industry can deliver 'just in time' components and parts. Local production of 'just in time' medical supplies can help manufacturers and customers to reduce the amount of goods stored and to optimize costs.

Manufacturers can deliver continuous and more effective work by using more integrated automation in assembly lines and processes, and having specialized people or equipment take on supplying parts and shipping goods. Manufacturers can also automate and optimize how they manage the specialized logistics process.

One of the additional business benefits of flexible production is in producing 'on demand' or small batches of products, whenever they are needed. Instead of large quantities of goods sitting in warehouses for long periods of time, Middle East manufacturers can optimize the amount of medical equipment or medication that they store in warehouses, and ship out only when they are needed --saving warehouse space and costs, and optimizing transportation time.

To succeed, manufacturers need to use their resources efficiently and design reliable operational processes that support their production. Autonomous mobile robots (AMRs) are frequently used precisely for this purpose, as the dynamic and flexible technology enables companies to automate their internal material transportation in an efficient and cost-effective way. Your opinion on this?

In the near future, the Middle East is set to adopt smaller and localized production facilities connected through the Internet of Things. Companies can be better positioned to react to short-term demands of specific products, and in turn share production slots across different factories. The Internet of Things and Industry 4.0 can also enable more sophisticated production and logistics.

Companies should separate tasks like production, parts feeding, product movements,

etc. and use the best specialized 'force' for each task. Manufacturers can take a three-pronged approach: 1) Highly-flexible robots and automated production, 2) Well-managed logistics systems using Autonomous Mobile Robots (AMRs) and Automated Guided Vehicles (AGVs) for the parts and product movements and warehousing, and 3) Production planning with a capacity to react to short-term changes and demands.

Epson today supports production innovation with a wide portfolio of high-speed and high precision robotics. For example, we recently launched our first DC version of a Six-axis robot (VT6-L DC), which can be directly mounted on a mobile robot platform driven by the DC power supply of typical AMRs. This Six-axis robot can help companies to save space and weight by eliminating normally needed power converters. For the logistics part, Epson is currently developing special compact kinematics.

Is it possible that humans and robots will be working side by side in the future? Or will robots take over the pharma production industry completely?

Industry experts and futurists predict that workplaces will exist where robots and people work in cohesion in what some call 'co-working robots' or 'co-bots'.

While robotic skills have advanced greatly, robotic solutions cannot do everything for a manufacturer that a person could do. By introducing robots into production lines, robots can take on repetitive or dangerous tasks, freeing up valuable human resources. This means that workforces can be upskilled and retrained to take on potentially higher paid and higher skilled roles.

How does Epson foster the Middle East's smart robotics future?

We are investing in the Middle East as a growth market, aligned with national transformation agendas, increasing our local head count, and supporting the workforce. We are partnering with Middlesex University Dubai on its Robotics Laboratory and supporting its MS in Robotics.

Epson brings more than 35 years of experience as one of the world's leading robotics companies, with a total portfolio of more than 400 different types of robot in the Middle East, including the Epson T3 SCARA Robots, the VT6-L 6 axis highly compact production robot, the Epson Parts Feeder series, and the flexible and compact C4 6-Axis that can be used for blood sample handling to medical instruments.

We also offer Wearable and Industrial products that can support remote servicing and increased production. For example, in Augmented Reality, our Moverio BT-300 smart glasses provide superior transparency and a high-resolution camera for seamless digital content integration with the outside world.

Can you tell us in detail about your T3 SCARA Robots?

Epson's T3-Series is the compact and versatile entry-level model in our comprehensive SCARA product range. The T3-Series has affordable and easy-to-set-up automation, with a USD 8,500 starting point.

Our T3 SCARA robots are ideal for simple pick-and-place applications and in areas where linear systems were previously used. Key features include:

- Affordability with great value for money without compromising on performance
- Excellent accuracy with repeatability of 0.02mm that is ideal for pick-and-place tasks
- High customizability that supports image-processing, external software, and custom user interface
- Fully integrated with complete Epson solutions including robot controller and software
- Versatility and flexibility that makes them an ideal solution for applications from automotive to pharmaceutical.

What makes them so unique in the industry?

Epson's T3-Series industry-leading features include:

- Compact high performance -- A powerful four-axis robot with integrated controller and diverse connection possibilities, capable of payloads up to 3kg and a standard cycle time of 0.54 seconds. The Epson T3 series also supports image-processing, integration of external software and the option to design a custom user interface.
- Outstanding versatility -- SCARA T3-Series robots are used in a huge range of industries, from assembling automotive components, mobile phones and computer parts, to creating medical equipment and packaging medications, not to mention lab automation and scientific analysis.
- Accuracy to can count on -- T3-Series robots offer a repeatability of just 0.02 mm, making them ideal for simple pick-and-place applications, part feeding, positioning and inspection tasks, assembly tasks, including those supported by the Epson Vision System, as well as material coating at moderate speed.

Why now is the best time for the region's manufacturers to adopt advanced robotics to drive innovation and support business continuity in the pharma industry?

While the current situation presents unique challenges to many Middle East countries, there are also many opportunities for the public and private sectors to advance digital transformation and investment in innovation, especially in the robotics and pharmaceutical manufacturing sectors.

Organizations that can embrace digital transformation and automation could emerge more resilient and more competitive in the 'new normal' era. Robotics automation is especially vital in the pharmaceuticals industry, where medication is required to be produced in mass quantities in short periods of time.

What do you think could be the future of pharma engineering in the age of robots?

With some of the tightest tolerance requirements, government testing requirements, and medical system certifications, the medical and pharmaceutical industry has high manufacturing standards.

Robots have been very popular with leading medical manufacturers, and are used to build products such as contact lenses, dental instruments, hearing aids, and pacemakers. Epson Robots have helped many world-class medical, pharmaceutical, and lab automation companies to build top level automation systems for a wide range of applications. From dental instruments to pacemaker assembly to blood handling, robotics can be involved in a broad range of mission critical high-performance applications.

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World's first 'smart mask that works with smartphones'

The white plastic 'c-mask' fits over standard face masks and connects via Bluetooth to a smartphone and tablet application that can transcribe speech into text messages, make calls, or amplify the mask wearer's voice

The covid-19 pandemic has brought numerous shifts in our daily lives as we know it. Many of us are either self-quarantining at our homes or avoiding going outside in fear of catching the virus. School teachings have gone online and in ways we never imagined. Gone are the days when we could freely move around and meet and greet people with any restrictions.

However, to avoid the spread of the virus, face masks have become mandatory as they can act as a barrier to help prevent respiratory droplets from traveling into the air and onto other people when the person wearing the mask coughs, sneezes, talks, or raises their voice.

The global disposable face mask market size exceeded a value of $74.90 billion in Q1 of 2020 and is expected to grow at a CAGR of 53.0% from 2020 to 2027. The unprecedented spread of coronavirus worldwide, most notably in Europe and North America, is driving the demand for disposable face masks. Disposable face covers are extensively used in the healthcare sector.

Japanese startup Donut Robotics has developed an internet-connected 'smart mask' that can transmit messages and translate from Japanese into eight other languages. Named 'C-FACE' is the world's first 'smart mask that works with smartphones' developed by applying robot technology and at the same time redefining the 'mask' that has been protecting human health for a long time.

The white plastic 'c-mask' fits over standard face masks and connects via Bluetooth to a smartphone and tablet application that can transcribe speech into text messages, make calls, or amplify the mask wearer's voice.

Taisuke Ono, CEO of Donut Robotics tells us in detail how their 'C-Face' is the world's first 'smart mask that works with smartphones'.

Tell us in detail about your new covid-19 mask with Bluetooth technology?

We have been developing a smart mask called 'C-FACE'. With the product, you can send your speech voice to smartphone of other people. In addition, the mask converts speech voice into text, translates in 8 languages, and make minutes of the meeting.

'C-FACE' is the world's first "smart mask that works with smartphones" developed by applying robot technology. You have redefined the 'mask' that has been protecting human health for a long time with the latest technology? Tell us in detail about this?

When you wear the mask, you can transmit your voice into others' smartphone. So that, you can practice social distancing under situations such as diagnosis at hospital and meeting at office, and so on. Online services are getting more and more widely-used, however we still have many situations to meet in person.

What made you come up with a mask with such a sophisticated technology?

The seed of the idea comes from an extracurricular project which was held by an internship student several years ago. The project tried to "read voice" with face muscular sensor. C-FACE does not adopt the muscular sensor technology, however, the concept of transmitting voice in the distance is the same.

How does it deliver our voice to the smart phone?

Inside C-FACE, mic and Bluetooth module are equipped. So that, when connecting the mask with smartphone, the speech data is transmitted to the phone.

What kind of robot technology did you use and why?

- **Idea;** the combination of mask and "technology" comes from our R&D experience of robot.
- **Hardware;** sound collection technology of the mic is derived from robot.
- **Software;** speech-to-text and translation function are technically derived from cinnamon.
- **App;** smart robot "cinnamon" has a dedicated app for video call and movement control.

You have developed another technology called cinnamon? Tell us in detail about that?

We had developed smart robot "cinnamon" before working on C-FACE. The robot is a service robot which can watch out for/communicate with other people. 'cinnamon' can be used at hospital, reception at office and other situation.

How are both your new technology different from each other?

C-FACE and cinnamon are different in terms of wearable or not. Both products can transmit voice to remote places.

Japan is known to be a technology and innovation frontrunner, however some solutions are only produced outside its borders? Your opinion on this?

As a technology company, I think it would be wonderful for humankind to work together across borders in manufacturing to create a more convenient and prosperous world. Macroscopically, each company should wrap up the technology what the company should protect. And for the convenience of outsourcing to other companies, I think it is necessary to form a partnership.

In order to stay competitive in the global marketplace, many Japanese corporates have set up open innovation departments, which are specifically tasked with finding cutting-edge technologies and facilitating collaborations with innovative companies. This opens the door for European companies with novel products, materials and solutions to seek partnerships with top Japanese brands? Can you tell us in detail about this?

In general, each country or region has regional characteristics of strong/weak point. For example, Japanese companies have the characteristic of thoroughly developing one technology and material. Demand for each region is different because of different lifestyle and culture. I think it is wonderful to be encouraged to cooperate across nations.

What are your other novel products, materials and solutions that are likely to enter Japan and reach fast market-wide adoption?

We have been and are doing our best to research and develop novel products/technology.

APCCN

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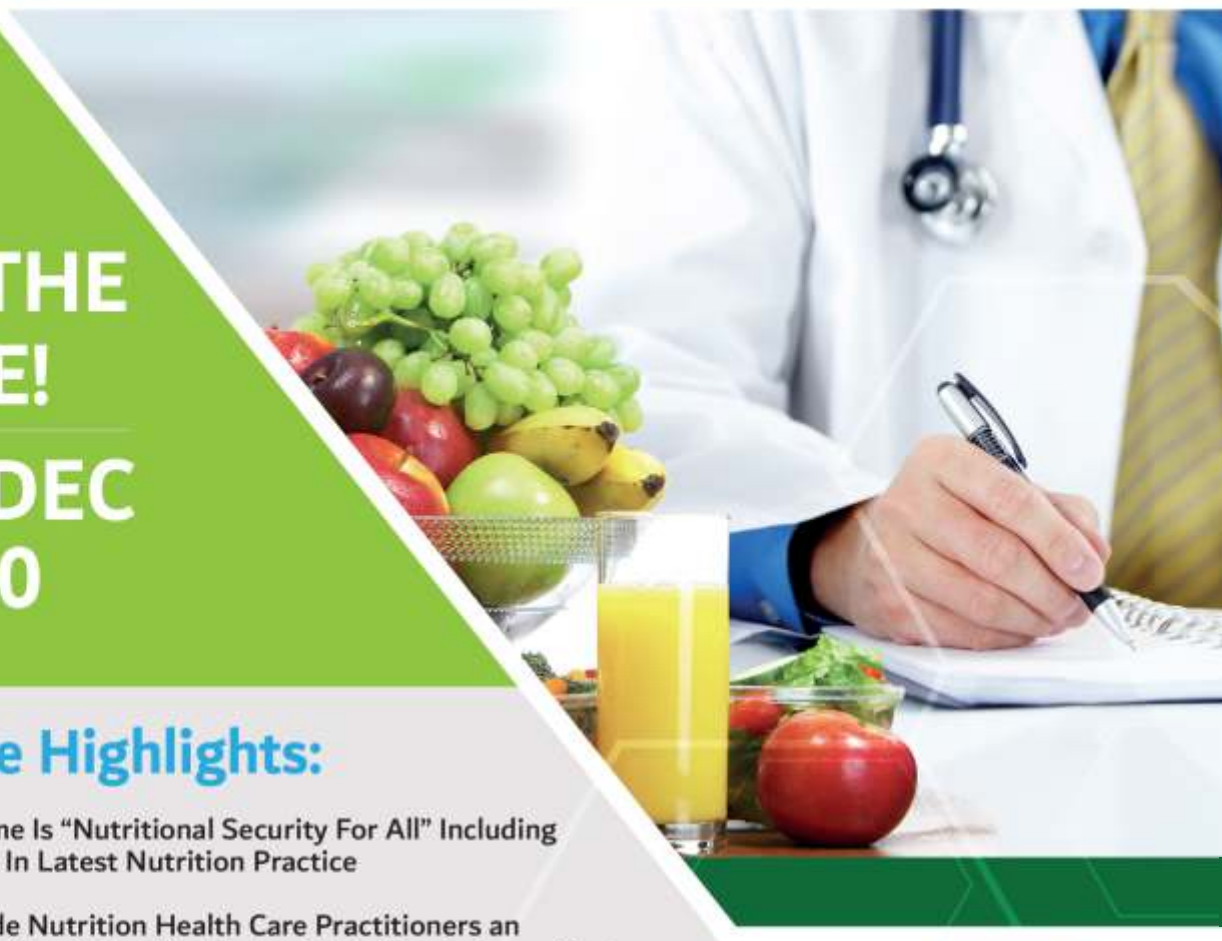

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Croatia's robust healthcare sector

The Croatian government is currently undertaking an extensive reform of the healthcare sector to increase its efficiency and limit spending to more affordable levels. Business Monitor International forecasts healthcare expenditures to grow by 1.9% in US dollar terms, reaching $4.74 billion by 2022. Private sector expenditure is expected to grow at a rate of 3.1% by 2021


Zagreb's Sisters of Mercy Hospital Croatia

Croatia is a country in Southeast Europe. It borders Slovenia to the northwest, Hungary to the northeast, Serbia to the east, Bosnia and Herzegovina, and Montenegro to the southeast, sharing a maritime border with Italy. Its capital, Zagreb, forms one of the country's primary subdivisions, along with twenty counties. Croatia has an area of 56,594 square kilometers (21,851 square miles) and a population of 4.07 million, most of whom are Catholics.

Croatia is classified by the World Bank as a high-income economy and ranks very high on the Human Development Index. The economy is dominated by service, industrial sectors and agriculture. Tourism is a significant source of revenue, with Croatia ranked among the top 20 most popular tourist destinations in the world. The state controls a part of the economy, with substantial government expenditure. The European Union is Croatia's most important trading partner. Croatia provides social security, universal health care system, and a tuition-free primary and secondary education, while supporting culture through numerous public institutions and corporate investments in media and publishing.

Healthcare sector

Funding for healthcare in Croatia is done principally through the compulsory health insurance system, which is operated by the Croatian Health Insurance Fund (HZZO). The HZZO collects contributions from the working population and the government makes payments on behalf of those exempt, such as the elderly, the unemployed and dependents.

The $4.31 billion budget of the HZZO provides treatment for approximately 4.1 million insured persons annually. An aging population, with 20.1% of its people older than 65 years of age, presents challenges for the limited healthcare budget. EU funds are often used for modernization and upgrades of hospital equipment. An estimated $268.5 million in EU funds will be invested in healthcare over the 2014-2020 period.

Upcoming healthcare projects include upgrades of emergency medical services, the introduction of mobile clinics, and delivery of a national cancer prevention plan. Also, a national children's hospital worth around $120 million will be built in the next several years.

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In 2018, the Croatian market for medical equipment and supplies was estimated at $359.8 million, or $86.4 per capita, primarily government-funded. It is expected that the market will expand at a rate of 7.9% per annum, reaching $496.4 million by 2022. The largest product area within the market was consumables, accounting for 22.1% of the overall total market, followed by patient aids, dental products, and orthopedics. Consumables are also a fast-growing area with 21.7% of the overall total market.

Healthcare expenditure

Croatia's imports of medical devices grew by 72.3% to $491.1 million in 2017, following growth of 16.3% in 2016. Most of the imports come from Germany, Belgium, China, the Netherlands, Italy and Slovenia, while the US ranks 12th. Croatia has a small domestic production sector, supplying both the domestic market and other countries of the former Yugoslavia. Exports grew by 157.6% to $169.5 million in 2017, following growth of 76.3% in 2016. This growth is mainly due to the re-exporting of mechano-therapy apparatus.

Pharmaceutical expenditures in Croatia accounted for 32.3% of healthcare expenditure or 2.35% of GDP in 2017. Total drug expenditures in Croatia in 2017 were around $1.3 billion, which represented a 9.1% increase after sharp decline in 2014 and 2015. Croatia's pharmaceutical expenditure per capita is $311, the seventh highest per capita expenditure in the Central and Eastern Europe (CEE) Region. Prescription drugs accounted for 93% of all pharmaceutical sales.

The Croatian pharmaceutical market is highly competitive, with market share distributed among a large group of multinational and domestic companies. The domestic drug industry currently meets 35% of local demand in terms of value and 50% in terms of volume. The value of imported pharmaceuticals reached $1.34 billion in 2017, with marginal projected growth. Croatia exported $1.13 billion worth of pharmaceuticals in the same year.

Croatia spent an estimated 7% of GDP on healthcare in 2018, equal to $4.3 billion, or $1,031 per capita. This is high compared to the neighboring countries but remains considerably below Western European countries. 77% of this spending was in the public sector ($3.11 billion) and 23% in the private sector ($986 million).

Medical device market

Croatia has a small domestic production sector, and there is very little multinational manufacturing activity.

Around 95% of the medical device market is supplied by imports. Market leaders are European and US manufacturers, namely General Electric, Johnson & Johnson, 3M, Bauerfeind, Astra, Drager, etc. Some of these companies have established their own local subsidiaries, while most companies will use third party distributors to supply the market.

The Croatian government is currently undertaking an extensive reform of the healthcare sector to increase its efficiency and limit spending to more affordable levels. Nevertheless, Business Monitor International forecasts healthcare expenditures to grow by 1.9% in US dollar terms, reaching $4.74 billion by 2022. Private sector expenditure is expected to grow at a rate of 3.1% by 2021.


General Hospital Zabok and Hospital of Croatian Veterans

Croatia is a popular medial tourism destination for dental services, rehabilitation, orthopedics, dermatology and aesthetic surgery, with a high potential for further growth. Medical tourism already drives a demand for high-quality medical, dental, and pharmaceutical products, and the demand should grow exponentially over the next three years. Additionally, medical tourism creates a demand for hospitality services in the healthcare sector, healthcare software, telemedicine, and accreditation institutions. An overview of medical tourism in Croatia is available in the Croatia Country Commercial Guide.

Croatia is a member of the European Union, and it has fully implemented the new EU Medical Device Regulation.

Current demand

The National Healthcare Development Strategy 2012-2020, developed by the Croatian Ministry of Health, will expand health-related IT systems in the country and restructure the hospital sector.

Improving the quality of healthcare and the efficiency of public health services in Croatia has been a government priority for the past three years. In February 2017, the European Regional Development Fund allocated $77.3 million to upgrade infrastructure and the procurement of medical devices at 12 Croatian hospitals. In March 2018, the Ministry of Regional Development signed three EU Fund healthcare grant agreements totaling $28 million. In April 2018, the Ministry of Health announced its goal to implement new clinical trial guidelines that will hasten approval and contracting procedures to increase the volume and improve access to innovative therapies.

In 2018, Croatia had 90 hospitals and most of them are in the public sector. The size of the private healthcare sector is expanding in Croatia, but the greatest increases have occurred in the number of general practitioners' offices, which do not require as much high-tech equipment as large hospitals. Private clinics and medical practitioners account for approximately 10% of the total services provided in the health sector.

The health and dental tourism sectors are growing in Croatia, presenting high potential to boost high-quality medical equipment and pharmaceutical sales.

The Croatian pharmaceuticals market is dominated by generic products, more so than most other markets in the CEE region, due to the relatively small number of patented products available for reimbursement. As Croatia's laws and regulations align with the EU norms, the over-the-counter (OTC) medicine sector is being liberalized, which will contribute to a rebalancing of the domestic pharmaceutical market and the switching of categories from prescription-status to OTC.

Approximately 25% of all drug expenditures are attributed to various groups of cardiovascular drugs. The second highest ranked group is nervous system drugs, followed by immune system/cancer treatment drugs and gastro-intestinal drugs.

Croatian pharmaceuticals distributors are interested in the possibility of representing additional US principals and/or using the manufacturing capacities of US private label manufacturers. Food supplements and OTC pharmaceuticals represent other areas where Croatian distributors are looking for new brands.

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RMIT scientists to develop electronic skin for pain, temperature and pressure sensing

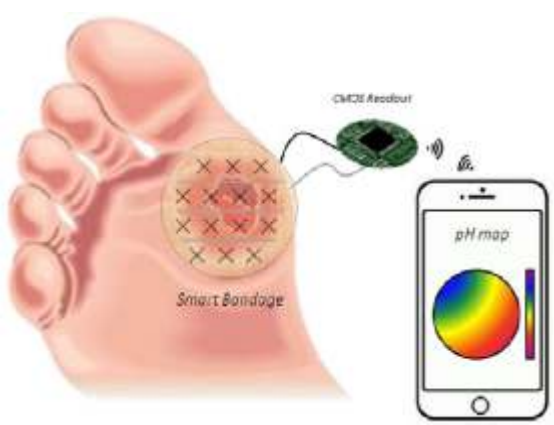
Scientists at the RMIT University in Melbourne, Australia have announced the development of an artificial skin material that can sense pain, temperature, and pressure. It's remarkable because it replicates how real skin responds to stimuli, which sends appropriate electric signals through neural pathways to the brain. The technology is slated to allow for life-like transmission of tactile sensations through prosthetic arms and legs, and may even help replace skin grafts with artificial solutions.

According to RMIT, the electronic skin 'replicates' how our native skin detects pain, sending out signals just as fast as healthy nerves. According to Madhu Bhaskaran, a corresponding author of a study describing the technology in journal Advanced Intelligent Systems, "We're sensing things all the time through the skin but our pain response only kicks in at a certain point, like when we touch something too hot or too sharp. No electronic technologies have been able to realistically mimic that very human feeling of pain – until now. Our artificial skin reacts instantly when pressure, heat or cold reach a painful threshold."

The researchers made three separate devices, including one that senses pressure, one temperature, and one pain, though it should be possible to combine them into one. This required a new approach to stretchable electronics, using oxide materials combined with silicone to make something that can be bent and flexed and not break. A special temperature sensitive coating was developed that can quickly transform itself, something that is immediately measurable using electronics. The last necessary component was brain-like memory cells that are used to decide how to process the sensory data and send the right signals when limits are reached.

"We've essentially created the first electronic somatosensors – replicating the key features of the body's complex system of neurons, neural pathways and receptors that drive our perception of sensory stimuli," said Md. Ataur Rahman, one of the study co-authors. "While some existing technologies have used electrical signals to mimic different levels of pain, these new devices can react to real mechanical pressure, temperature and pain, and deliver the right electronic response. It means our artificial skin knows the difference between gently touching a pin with your finger and accidentally stabbing yourself with it – a critical distinction that has never been achieved before electronically."

Researchers develop wearable device to help disinfect chronic wounds



Researchers at Purdue University have developed a wearable device that can administer antibacterial ozone gas to chronic wounds to help disinfect them. The technology could allow people to disinfect chronic wounds at home, and would be helpful in cases where wounds have been colonized by drug-resistant bacteria and aren't responding to antibiotic therapy.

Approximately 6 million patients in the US have a chronic wound. This includes many patients with diabetes who develop foot ulcers. These wounds can have a significant impact on quality of life, mobility, and the ability to work. In many cases, chronic wounds can't heal because they are infested with drug-resistant bacteria that can't be eradicated using antibiotics.

To make matters worse, these bacteria can form a biofilm, which is a slimy collection of millions of individual bacteria and a secreted matrix, on the surface of such wounds. The biofilms protect the bacteria, making them even more difficult to eradicate.

One option is to use ozone gas to disinfect the surface of such wounds, giving them a better chance of healing. However, at present such treatment must be performed using specialized equipment, meaning that patients have to travel to a hospital or clinic every time they want to avail of it.

To address this, the Purdue team developed a wearable ozone generating device that patients can apply to their wound for disinfection at home. "We created a revolutionary type of treatment to kill the bacteria on the surface of the wound or diabetic ulcer and accelerate the healing process," said Rahim Rahimi, a researcher involved in the study. "We created a low-cost wearable patch and accompanying components to deliver ozone therapy."

The system includes a flexible patch which allows ozone gas to diffuse onto the wound bed. The patch is connected to a tube that links to an ozone generator, which is powered by a battery. Once turned on, the device provides a steady stream of ozone, which kills bacteria present on the wound by oxidizing the bacterial cells and rupturing them. The entire system is small and affordable.

Laser-induced face Mask could kill bacteria & 'deactivate' coronavirus

Researchers at the City University of Hong Kong have developed a face mask containing laser-induced graphene that can kill bacteria and has demonstrated potential in deactivating coronaviruses. The graphene layer has antibacterial properties and can generate heat when exposed to sunlight, which may underlie its ability to deactivate coronaviruses. The researchers hope that such masks could help to reduce viral transmission and infection during the current COVID-19 pandemic.

Face masks are an important part of our arsenal in the fight against COVID-19, but if used incorrectly, they can pose an infection risk. Viral particles can settle on the mask and, if touched or disposed of inappropriately, could potentially infect someone. A mask that can deactivate viral particles or other pathogens on its surface would be very useful right now. Moreover, the sheer volume of masks currently being used, and the fact that many are not reusable, is an environmental issue. Reusable masks could help to make mask wearing a more sustainable activity.

To address these issues, the Hong Kong researchers have developed a mask made using laser-induced graphene. They produced the material by passing an infrared laser over a carbon-containing polyimide film, which results in a porous graphene layer. Graphene has antibacterial properties, which are not completely understood, but it can also generate heat when exposed to light, helping with decontamination.

So far, the researchers have made and tested masks that contain a layer of the laser-induced graphene, and have found that they demonstrate significant anti-bacterial effects, and may have potential against coronaviruses. In tests with two types of human coronavirus, the masks inactivated 90% of viral particles in sunlight within just 5 minutes, and 100% within 10 minutes.

The technique is also more environmentally friendly, as the masks are reusable if decontaminated correctly. Numerous carbon-containing materials, such as existing biodegradable biomaterials, can be converted to graphene using this technique.

"Laser-induced graphene masks are reusable. If biomaterials are used for producing graphene, it can help to resolve the problem of sourcing raw material for masks," said Ye Ruquan, a researcher involved in the study. "And it can lessen the environmental impact caused by the non-biodegradable disposable masks."

Artificial iris to automatically set pupil size for optimal focus and depth of field

The pupil of the eye allows light to reach the retina, and a number of vision disorders are related to irregularities in the iris that surrounds the pupil. People with aniridia, for example, have some or all of the iris missing, exhibiting a large pupil that results in unfocused vision.

Now, a collaboration between Imec, a Belgian research institution, Ghent University, Spain's Instituto de Investigación Sanitaria Fundación Jiménez Díaz, and Holst Center in The Netherlands, has led to the development of an artificial iris integrated inside a contact lens that can automatically set the proper pupil size to achieve optimal focus and depth of field.

The artificial iris sports a liquid crystal display (LCD) that's composed of concentric circles that can be made transparent or opaque, depending on the desired pupil size. It's a very low power prototype, allowing it to work for an entire day on a tiny battery.

"By combining our expertise on miniaturized flexible electronics, low-power ASIC design and hybrid integration, we have demonstrated the capacity to develop a solution for people who suffer from iris deficiencies, higher order aberrations and photophobia, a common yet debilitating symptom seen in many neuro-ophthalmic disorders," said Andrés Vásquez Quintero from imec/UGent, in an announcement. "Our smart contact lens can control the level of incoming light mimicking a human iris and offering a potential solution to vision correction – by expanding depth-of-field with automatic control of pupil size. This way, our approach can surpass current solutions to combat human eye iris deficiencies. Its beneficial optical effects will be further clinically validated and developed into a medical device."

A spin-off company has already been formed, called Azalea Vision, to validate and translate the technology into a real medical device.

Soft exosuit a game changer for patients with mobility issue

Soft exosuits that provide assistive force during movement could be a game changer for patients with mobility issues. Such devices can help enhance rehabilitation and assist patients while they perform everyday tasks. The idea with such technology is that the soft suit feels almost like a piece of clothing and applies force gently and evenly to affect natural movement.

This latest suit, the ReStore exosuit from ReWalk Robotics, has been FDA cleared for use in patients who have experienced a stroke and now have a mobility issue. A recent trial has assessed the ReStore exosuit in terms of safety, feasibility and reliability in post-stroke patients with weakness of the ankle.

Ankle weakness, known as hemiplegia, can occur after a stroke, and it can make walking difficult. With each step we use our ankle to allow our foot to clear the ground, but a weak ankle can make this challenging and result in stumbles and falls. Those with hemiplegia may have to walk differently to compensate and to avoid falls, which is often difficult and can place extra stress on joints and muscles.

The ReStore exosuit is intended to improve ankle movement by assisting with ankle plantarflexion and dorsiflexion during physical therapy. The system consists of a waist belt that houses motors connected to cables, which are in turn linked to a sleeve on the patient's calf and insole.

The cables can apply a force to the insole or calf to assist with ankle movement. The system also incorporates sensors that relay information to a smartphone, which a physical therapist can use to modulate the amount of force applied, depending on the user's progress.

In this latest trial of the system, 44 volunteers who had suffered a stroke and were currently experiencing hemiplegia tested the system during five 20-minute physical therapy sessions. "We found that the ReStore provided targeted assistance for plantarflexion and dorsiflexion of the paretic ankle, improving the gait pattern," said Karen Nolan, a researcher involved in the study. "This is an important first step toward expanding options for rehabilitative care for the millions of individuals with mobility impairments caused by ischemic and hemorrhagic stroke."

At least a third of the volunteers were able to increase their unassisted walking speed, suggesting that the system has great potential. Further tests will be needed to evaluate the efficacy of the system more completely for post-stroke mobility issues, but the current results are certainly very promising.

Robotic surgical assistants for routinely laparoscopic procedures

Robotic surgical assistants, such as the da Vinci systems from Intuitive Surgical, are now routinely used during laparoscopic procedures to improve operative precision, flexibility, and to manipulate multiple tools at once. Such devices can be quite complex inside and so they tend to be quite large, often taking up much of the space of an operating room. Moreover, they are still too cumbersome to operate on particularly fragile tissues and smaller anatomical structures.

Now, a pair of researchers from Harvard's Wyss Institute and Sony Corporation have come up with a tiny robotic surgical assistant that's as light as a coin, but that can be used to perform very precise surgical tasks.

Made using a technique called Pop-Up MEMS, which involves bonding layers of materials so that they can open up from their flat starting shape into more complex structures, and piezoelectric materials, the miniature remote center of motion manipulator (the 'mini-RCM') can move with impressive precision. Because the manufacturing technique is rather simple and doesn't involve bringing together tiny parts, the mini-RCM can be mass produced much cheaper than conventional micromechanical devices. Being small, only about the size of a tennis ball, the new device is also easy to install and remove.

Harvard's Wyss Institute and Sony Corporation have come up with a tiny robotic surgical assistant that's as light as a coin, but that can be used to perform very precise surgical tasks.

The researchers tested the new robotic surgical manipulator by connecting it to a Phantom Omni, a haptic controller made by Sensable Technologies, and had people perform a tracing task with and without its help. When using the mini-RCM, volunteers had 68% fewer errors when tracing out a tiny square on paper. Subsequently, the researchers also used their device to perform mock retinal vein cannulations on synthetic vessels that are about twice the thickness of human hair. They were able to accurately puncture these vessels consistently without causing damage outside the target area, something that eye surgeons will find quite impressive.

The precision is possible because of optical sensors that constantly monitor the motion of the robot and adjust it to maintain consistency, even compensating for random hand tremors that can throw off an otherwise steady hand.

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Philips presents new approach to healthcare to help people maintain healthy lifestyle at home

Royal Philips, a global leader in health technology, recently presented new approaches to health and healthcare, and the shift to health-at-home, at its virtual consumer health press event. Against the backdrop of COVID-19, the need for consumers to stay as healthy as possible is more relevant than ever. At a recent virtual event, coinciding with IFA 2020, Philips announced expansion of its consumer health portfolio with a range of innovations to help people maintain health-enhancing lifestyle routines, and digital opportunities that allow them to stay in touch with their healthcare professionals virtually now that physical doctors' visits are limited.

"Confronted by the vulnerability of their health, people are increasingly focused on what's most important to them – keeping themselves and their loved ones healthy and safe," said Deeptha Khanna, Chief Business Leader Personal Health. "We are in the middle of a paradigm shift, both in terms of people's mind-set and in terms of the way healthcare systems are digitalizing and adding telehealth services to their portfolios. With people being at home most of the time and prioritizing their health, health-at-home is key. Philips uses the latest technologies to bring intelligent, personalized solutions that allow people to manage their health in any situation."

Meeting the needs of fast growing trends in health and healthcare, Philips is focusing on connected consumer health propositions that help people take care of their health at home, including tracking their own health, being in control of their data, and being able to share their data with caregivers remotely. With people increasingly worried about their health and the health of their loved ones, and some feeling afraid or anxious about visiting a doctor, dentist or hospital due to COVID-19, telehealth has gained more traction than ever before. More and more people are now actively looking for virtual ways of doing things.

In today's oral care industry, teledentistry is playing an increasingly important role. Due to COVID-19, many people have been unable to visit their dentist and dental hygienist for quite a while, yet they know that regular checkups are important to maintaining a healthy mouth and detecting potential problems at an early stage. Philips Sonicare teledentistry is now available to dentists across the United States. By enabling dental professionals to engage with their patients virtually, dental practices can provide continuity of service with oral care advice and hygiene checks to assess common oral health issues such as gum disease, cavities, inflammation and more.

A healthy mouth not only means brushing properly as part of a daily routine, but also cleaning between the teeth (about 40% of our teeth's surface area) and cleaning the tongue.

Apple's new watch monitors blood oxygen levels

Apple Inc recently introduced a new Apple Watch that monitors blood oxygen, kicking off a fall product line-up for a holiday shopping season that will be unlike any other due to Covid-19.

Apple was expected to update several products including iPads and headphones at an event recently broadcast from its Cupertino, California, headquarters. Its biggest seller – the iPhone – is expected to be announced next month after executives have said its launch will be delayed by several weeks because of pandemic-related disruptions.

Apple shares have soared this year even as the virus has crippled economies around the world, thanks in large part to booming sales of work-from-home items.

Apple shares were up 2 percent after climbing more than 50 percent for the year, well ahead of the 23 percent gain for the Nasdaq. Even though Apple stock has fallen from a record high earlier this month, it remains near its $2 trillion (Dh7.35 trillion) stock market valuation.

How the new products sell during the holiday shopping season in many markets will largely define how well Apple performs for its entire fiscal year, which started this month.

Apple said the watch's new ability to monitor blood oxygen using infrared light should be used for fitness and wellness purposes.

Doctors in India and other countries have used pulse oximeters to remotely check on Covid-19 patients and ensure their oxygen saturation level does not fall too low.

A level between 95 percent and 97 percent is considered normal by the American Lung Association. Patients below 95 percent should call their doctor and those under 90 percent should go to the emergency room, health experts advise.

Low oxygen levels are usually not the sole indicator of having Covid-19, the association said.

GCC hailed 'medical tourism capital of the world'

The GCC has been hailed the 'medical tourism capital of the world' as all its member countries ranked on a new global index of leading destinations to seek treatment.

The UAE placed first among GCC countries, according to the Medical Tourism Association, while Oman ranked second and Bahrain came in at third. Saudi Arabia and Kuwait placed fourth and sixth respectively.

Saudi Arabia currently boasts 2.2 hospital beds for every 1000 people and continual improvements to the national healthcare system in both the public and private sector are key to Vision 2030.

Bahrain's high number of annual visitors and connection to neighboring Saudi Arabia via the 25-kilometer King Fahd Causeway were highlighted as key factors in its ranking as a medical tourism destination. Last year Bahrain received 11 million visitors with 88 per cent (8.7 million) arriving in the country via the King Fahd Causeway. Saudi investment in Bahrain includes Al Hokail Medical Group and the recently announced $30 million Bahrain Pharma.

Bahrain is becoming a regional leader in specialized healthcare with a particular strength in cardiology and oncology. A focus on medical technology is driven by strong technical infrastructure, which also helps to provide more research data to enhance medical practices.

The value of the medical tourism market was about $15.5 billion in 2017, and it is expected to grow to 28 billion dollars by the end of 2024, with a compound annual growth rate of about 8.8 percent between 2018 and 2024.

Medcare and InterSystems partner to unify healthcare information system across Dubai and Sharjah

Medcare Hospitals & Medical Centers, has signed an agreement with InterSystems, a creative data technology provider dedicated to helping customers solve the most critical scalability, interoperability, and speed problems, to implement InterSystems TrakCare unified healthcare information system across all its four hospitals and 15 medical centers in Dubai and Sharjah.

The implementation reinforces Medcare's commitment to providing the most advanced healthcare services in the region. Investing in TrakCare offers the solution of a secure, electronic medical record that will give easy, quick and unified access to information about any of its patients to authorized clinicians. Deployed in the cloud, the TrakCare Electronic Medical Record System (EMR) will allow the clinical and administrative teams immediate access to a seamless integrated electronic patient information from departments and laboratories in the facilities, in addition to streamlining all aspects of patients' admissions and discharges.

Medcare is set to deploy TrakCare Managed Solution which is a private cloud-hosted EMR service that follows a Pay-Per-Usage model and enables hospitals and clinics to achieve their clinical and financial objectives without making major upfront capital expenditures.

The EMR system will also support Medcare's medical staff in their decision-making, while creating more opportunities to offer the patients an enhanced experience and seamless care journey as they spend less time waiting and avoid unnecessary tests.

Andre Daoud, Group CEO of Medcare Hospitals and Medical Centres, said: "Our partnership with InterSystems is proof that Medcare is committed to making every effort to pave the way for technologically-advanced healthcare services that are outstanding by all standards, ensuring we have strategic investments and the best available resources to provide clinical excellence and a seamless patient experience to our patients; all the while maintaining the efficiency of our operations."

Daoud added, "It is in line with Medcare's strategic approach that we implement the latest technologies for efficient patient care process, and TrakCare will further improve service by efficiently automating and streamlining hospital operations like results reporting, order entry and access to diagnostic images. This, in turn, also leads to improved communication between members of staff within a hospital."

"Medcare also wants to benefit from all of the TrakCare's tried and tested capabilities and we will work collaboratively to ensure successful deployment of TrakCare across Medcare hospitals and medical centers."

The advanced interoperability that TrakCare provides will enable Medcare to align with the UAE Health authorities' plans for Health Information Exchange (HIE) that connects public and private systems, so patient records could be easily accessible by authorized individuals.

Body Sculpting goes up a notch with NuEra Tight with FocalRF technology

Lumenis Ltd., the world's largest energy-based medical device company for aesthetic, surgical and ophthalmic applications, is proud to announce the revolutionary NuEra Tight with FocalRF technology, now available in Europe and the Middle East. Body Sculpting takes on a whole new meaning with NuEra Tight offering a personalized solution for Fat Reduction, Skin Tightening, Cellulite and Wrinkle Reduction, all in one device.

NuEra Tight with FocalRF technology was developed to provide tailored body sculpting treatments to a patient's distinctive needs. The new technology gives treatment providers advanced tools for today's aesthetic patients, accounting for clinical indications and specific body areas.

"One size doesn't fit all. That's why we revolutionized the NuEra Tight," said Tzipi Ozer-Armon, CEO of Lumenis. "We recognized the need for the next level solution in non-invasive body sculpting treatments, which led us to develop this advanced product. NuEra Tight with FocalRF technology tailors treatments to a clinical indication and body area, accurately targeting various skin and tissue conditions throughout the procedure, resulting in a treatment that is as unique as your patients."

"More and more of my patients are looking to eliminate fat in stubborn areas and tighten their skin to sculpt their body and address skin texture issues such as cellulite and wrinkles," said Freeda Tannous M.D., Dermatologist, Amman, Jordan. "Thanks to FocalRF technology I am now able to tailor the treatment specifically for each patient needs achieving the desired improved appearance."

The system's easy to use interface features NuAPIC (Automatic Personalized Intelligent Control) which ensures the therapeutic temperature throughout the procedure, as well as the innovative NuLogic advanced protocol customization tool, that enhances further personalization for optimal treatment.

Daman, Microsoft to deploy AI-powered Daman Health bot

Daman, the UAE's leading national health insurance company has collaborated with Microsoft to deploy the Daman Health Bot, an AI powered tool that will assist patients to conduct self-assessment on COVID-19 symptoms and guide them to the appropriate level of care. The Daman Health Bot is bilingual and able to provide expertise including patient assessment for the disease, triage and symptom checking, offering general medical information, and making medical recommendations.

The health bot will ask patients a defined set of questions and follow specific protocols, and accordingly advise them to connect with Abu Dhabi Department of Health (DoH), UAE Ministry of Health & Prevention (MOHAP) and the Dubai Health Authority for further assistance.

"We have a very important social responsibility to play during the pandemic crisis and protect the health and safety of people. The Daman Health Bot speaks to that effort by addressing queries and reducing person to person engagement," says Hamad Al Mehyas, Daman's CEO. "Partners such as Microsoft are empowering us with the right technology to better engage the public and provide the right level of guidance. The Daman Health Bot will reduce patient visits to hospitals, lessen the workload on call centers, enhance patient experience and encourage them to proactively manage their health condition."

"Technology is playing a key role in helping patients assess their situation quickly and conveniently," said Sayed Hashish, General Manager, Microsoft UAE. "Our Healthcare Bot service empowers organizations like Daman to build and deploy AI-powered conversational healthcare experience at scale. With our mission to empower every person and organization to achieve more, Microsoft is committed to bringing its tools and innovations to support healthcare organizations provide the best possible care."

Daman has long been investing in digitalization and already uses artificial intelligence for its claims handling as well as robotic process automation for a variety of administrative tasks. Microsoft and Daman are also planning to integrate the health bot to other customer services such as digital consultations and lifestyle-related advice.

The Daman Health Bot is available on the company's website and mobile application with the aim to reach its network of over 2.5 million members.

MEDIWORLD Middle East

UPCOMING EVENTS

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

15-16 October
Dubai

ISPAD Annual Conference

14-17 October
Abu Dhabi

Medical Tourism Expo

20-22 October
Dubai

Medication Safety Conference

06-08 November
Abu Dhabi

World Dental Education Future Dentistry Conferences

13-14 November
Dubai

World Conference on Pharmaceutical Science and Drug Manufacturing (WCPSDM)

25-26 November
Dubai

Middle East Int'l Dermatology Aesthetic Medicine Conference & Exhibition (MEIDAM)

10-12 December
Dubai

Evolving Practice of Ophthalmology Middle East Conference (EPOMEC)

10-12 December
Dubai

Global Congress on Biotechnology

14-15 December
Dubai

Arab Health

01-04 February 2021
Dubai

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