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MEDIWORLD Middle East

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Editorial

Championing digital innovation in the healthcare industry

The global healthcare industry has seen a massive wave of investment, innovation and new entrants from the technology, telecom and consumer industries. In 2021 alone, $44 billion was raised globally in health innovation – twice as much as 2020 – and the acquisition of health and health tech companies rose 50% (World economic forum).

Moreover, the industry itself is experiencing disruption. Over the next five years, more than 80 percent of US healthcare providers plan to invest in technologies such as digital health, artificial intelligence (AI) and machine learning, as well as tools to help clinical staff and caregivers.

As part of this transformation, digitally-enabled care is at the center. AI can, for example, assist in clinical decision making, enhance care coordination and automate workflows. The digital transformation of healthcare presents an opportunity to shift more patients to remote care through telehealth. We can also improve behavioral health by coaching and gamifying populations.

This year the global health landscape will undergo a profound transformation. The COVID-19 pandemic has exposed long-standing weaknesses in our healthcare systems, which buckled under the weight of the health crisis.

Digital health solutions, for example, have taken a quantum leap as a result of the pandemic. It has been proven that remote care is timelier for patients, reduces hospitalizations and increases the effectiveness of the healthcare workforce.

New models of public-private partnerships will be necessary to ensure a healthier future for health, leveraging unprecedented collaboration during the pandemic. The approach to health investment must change, moving away from a short-term savings mindset to ensuring long-term economic and healthcare benefits.

Happy Summer everyone!

Sincerely,

Ayesha Rashid
Chief Editor, *MediWorld ME*

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PROTECTION
Feels Good

- WHO Recommended Formulation [2]
- kills 99.99% of bacteria [4]
- Effective against viruses [5]
- Quick Dry
- Non Sticky
- Soft On Hands [2]
- 80% Ethanol [1]
- Multipurpose [3,5]
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References: 1. Data on file – Hi-Care Alcohol Antiseptic 80% Topical Solution Composition Formula. 2. World Health Organization - Guide to Local Production: WHO-recommended Handrub Formulations. April 2010. 3. FDA Policy for Temporary Compounding of Certain Alcohol-Based Hand Sanitizer Products During the Public Health Emergency Immediately in Effect Guidance for Industry. March 2020. 4. Data on file – Dubai Central Laboratory Report No: CR-600076509, 01/07/2020. 5. Nina A. Gold ; Taaha M. Mirza ; Usha Avva, Alcohol Sanitizer, NCBI Bookshelf, StatPearls Publishing; January 2020.
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Kills 99.9% Germs without using water [4]

Soft on hands & Non-Sticky

Quick Dry

Active ingredient : Alcohol 80% (v/v)

Inactive ingredients : Glycerine, Hydrogen peroxide & Purified water.

Uses : Hand sanitizer to help reduce bacteria that potentially can cause disease. For use when soap and water are not available.

Warning : For external use only. Flammable. Keep away from heat or flame.

Do not use : In children less than 2 months of age. On open skin wounds. When using this product keep out of eyes, ears and mouth.

In case of contact with eyes, rinse eyes thoroughly with water. Stop use and ask a doctor if irritation or rash occurs. These may be signs of a serious condition.

Keep out of reach of children. If swallowed, get medical help.

Directions : Place enough product on hands to cover all surfaces. 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.

References:

1. Data on file – Hi-Care Alcohol Antiseptic 80% Topical Solution Composition Formula.
2. World Health Organization - Guide to Local Production: WHO-recommended Handrub Formulations. April 2010.
3. FDA Policy for Temporary Compounding of Certain Alcohol-Based Hand Sanitizer Products During the Public Health Emergency Immediately in Effect Guidance for Industry. March 2020.
4. Data on file – Dubai Central Laboratory Report No: CR-600076509, 01/07/2020

(HI-CARE/L01/0820)

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Amit Agrawal,
Senior Director of Operations, RCM

Revenue Cycle Management

– Ensuring financial stability of healthcare organizations

"RCM has a critical role, not just in a healthcare organization, but also at a macro level. At an organization level, RCM directly impacts the financial performance of a healthcare organization in many ways. From a strategic standpoint at individual hospital level, RCM function contributes to shaping the healthcare provider's market segmentation and positioning which in turn determines the addressable market size and revenue generation opportunity," says, Agrawal

Revenue cycle management (RCM) is the process healthcare providers use to track patient care, bill patients and third-party payers for services rendered and receive payment for services. The RCM process begins when the patient is seen by a healthcare provider and ends when the provider is paid for the services provided.

There are a number of steps in the RCM process, which can be categorized into three main areas: pre-billing, billing, and post-billing.

Pre-billing refers to the steps providers take before billing a patient or third-party payer for services rendered. This includes creating an accurate patient record, obtaining required authorizations for services, and ensuring that services are billed correctly.

Billing refers to the process of submitting a claim for payment to a patient or third-party payer. This includes submitting claims in a timely manner, correctly coding services, and submitting all required documentation.

Post-billing refers to the steps providers take after billing a patient or third-party payer for services rendered. This includes following up on unpaid claims, resolving billing disputes, and collecting on past-due bills.

Healthcare Revenue Cycle Management Market size exceeded $110 billion in 2021 and is expected to witness over 12.7% CAGR from 2022 to 2028. The HRCM market is anticipated to grow exponentially owing to the increasing patient admissions and growing healthcare expenditures. Also, technological advancements in HRCM solutions have surged the demand for revenue cycle management systems for efficient data management (Global Market Insights).

RCM is an important part of the healthcare industry, and healthcare providers rely on accurate and timely billing information to ensure that they are paid for the services they provide. However, the RCM process can be complex and time-consuming, and providers often need to rely on third-party vendors to help them manage their billing operations.

Amit Agrawal, Senior Director of Operations, Accumed discusses with Ayesha Rashid of ***Mediworldme***

What is revenue cycle management?

Revenue Cycle Management (RCM) is an extremely important function in hospitals and other healthcare service providers directly impacting revenue generation and cash flow management. RCM function encompasses all administrative and clinical processes from the time a patient schedules a visit to a healthcare provider until the latter receives payment for services rendered. The goal of the RCM process is multi-fold and includes: enhancing patient experience during the entire journey of clinical care, maximizing claims reimbursement and revenue, improving cash flow and ensuring regulatory compliance.

Why is RCM important in the healthcare organization?

RCM has a critical role, not just in a healthcare organization, but also at a macro level. At an organization level, RCM directly impacts the financial performance of a healthcare organization in many ways.

From a strategic standpoint at individual hospital level, RCM function contributes to shaping the healthcare provider's market segmentation and positioning which in turn determines the addressable market size and revenue generation opportunity.

Operationally, RCM helps in optimizing revenue generation by ensuring the hospital prices its services appropriately and instilling proper process management of billing and collections from payors of healthcare services. Additionally, an effective RCM function aids in shortening the cash cycle thereby lowering the organizations' cost of capital.

Lastly, RCM helps by providing insightful data and analysis allowing healthcare organizations to assess its financial performance, identify risks, make critical decisions, and take necessary corrective actions that aid right decision making. The data and insights are of importance not just at hospital level, but also at national healthcare system level as it enables stakeholders understand the healthcare needs of the population today and in future, and ensure readiness to meet these needs.

How does RCM unify business and clinical sides of healthcare?

RCM brings together numerous administrative data points, such as patient information, insurance provider details and financial aspects, regarding the type, quantity and cost of services availed by the patient, and financial settlement for rendered services.

RCM functions deploy effective set of processes and technology to enable coordination, flow, and collation of essential administrative data across a complex eco-system comprising of front desk operators, physicians, labs, nurses, pharmacists, billing, collections and so on. This ensures the patient receives the right service at the right time, insurance and other healthcare payors receive accurate and timely information for their administrative purposes, and healthcare organizations bill and receive appropriate and timely remuneration.

You mentioned that 'today's healthcare centers struggle with keeping operational costs down and thus it is vital to receive payments from patients and insurance companies in a timely manner to keep profits up? Tell us about this?

At present, the claims processing and settlement cycle for claims submitted by health care operators take anywhere from 3 months to as long as two years impacting the cash flow, and cost of capital of the hospital or clinic. Some healthcare providers incorporate the increased cost of capital in form or higher prices.

A robust RCM function aids in lowering capital cost by shortening collection cycles and reducing claim rejection rates as it ensures the information provided to the insurance company is accurate, relevant and on time, so the claim is processed without delays. Lower operating cost empowers healthcare providers lower prices benefitting payors of healthcare services and patients.

Moreover, establishing a robust RCM function requires healthcare providers to make significant investment in people, processes, and technology. These investments also contribute to the driving cost of healthcare services. ACCUMED has invested in creating such a platform that takes away the need for healthcare providers to make similar investments and they can therefore channel resources to provide better healthcare services.

Tell us in detail about ACCUMED?

Established in 2009, Accumed was the first company to provide specialist RCM solutions in the UAE and the GCC region at a time where the healthcare system in the UAE was embarking on a transformation driven by the country's visionary

leadership. Since then, ACCUMED has created a legacy of enabling healthcare providers to optimize financial performance. We are sensitive to the point healthcare is unique, so we listen and understand their challenge, and design custom solutions that are relevant, practical and scalable within the operating environment of the organization. We are the first, and to the best of my knowledge, the only RCM provider in the region with ISO 9001:2015 certification which is a testimony of our capabilities and approach.

ACCUMED has worked with both private and governmental healthcare providers in the UAE. Clients include Abu Dhabi Ambulance services, Saudi German Hospitals Group, Mediclinic Group, Medcare, Gulf International Cancer Center and the Cleveland Clinic Abu Dhabi, among others.

Originating in the UAE, we have quickly expanded into KSA, followed my international markets such as India and Australia. While Accumed is committed to supporting healthcare providers, they are also focused on guiding healthcare regulators transform healthcare systems at national levels.

How do you aim to standardize and improve quality of data at a macro level?

Every patient and their health conditions are unique. As a result, data related to each patient and their health is different to that of other patients. However, analyzing trends – types of ailments and diseases, frequency and severity, patient demographics etc. – to ensure healthcare system is prepared to address evolving needs of the community requires data to be structured and standardized.

As a specialist provider of RCM services, ACCUMED helps healthcare operators in providing this structure by leveraging its deep knowledge, systems and tools to apply international standards for classifying various types of data – patient demographics, diseases, services, medications and so on - starting at hospital level which gets aggregated at macro level.

Additionally, in KSA for example, ACCUMED has assisted The Ministry of Health in designing a unique framework for standardizing and coding healthcare services in the Kingdom. The framework is being implemented for provision of healthcare services in both the private and public healthcare service organizations.

Why is RCM a necessity in the Middle East?

In mature markets such as North America, RCM has become one of the most prominent functions for healthcare providers to outsource, mainly due to combination of complexity and critical importance. In the Middle East, RCM still remains at a nascent stage, however, its prospects are bright as the region's healthcare market holds untapped potential.

The Middle East healthcare market is also evolving with new regulations, laws, systems, processes, and financial dynamics, making RCM a cornerstone in the healthcare industry. UAE and KSA are leading the way. Rest of the GCC members are also embarking on transforming their healthcare systems. Bahrain, Oman and Qatar are expected to introduce mandatory health insurance in the near future, so are the northern emirates of UAE.

This is over and above the evolution taking place in more advanced healthcare systems such as Dubai, Abu-Dhabi and KSA.

These are very complex initiatives requiring substantial changes within operations of healthcare operators and insurers. Thus an effective and efficient RCM capability is a necessity.

How will RCM help UAE in the future?

The UAE healthcare sector is growing at an increasing rate where the overall healthcare spending was 4.27% of GDP in 2018 which is projected to rise to 4.6% by 2026 and 5.1% by 2029 respectively. The evolution of new systems, processes, laws and regulations and financial dynamics in the industry makes RCM a cornerstone in the UAE healthcare market.

Effective RCM can help hospitals potentially save millions of dirhams. It empowers health care providers to focus on their core competency, which is to provide quality healthcare to every patient, while the RCM process takes care of the other factors in a cost-effective manner. Systems such as those provided by Accumed, spare healthcare providers spending thousands on the required technology, training staff and process efficiency. It's all about economy of scale.

The industry-wide transition from free for service to value-based care reimbursement bring changes to traditional RCM. Your opinion?

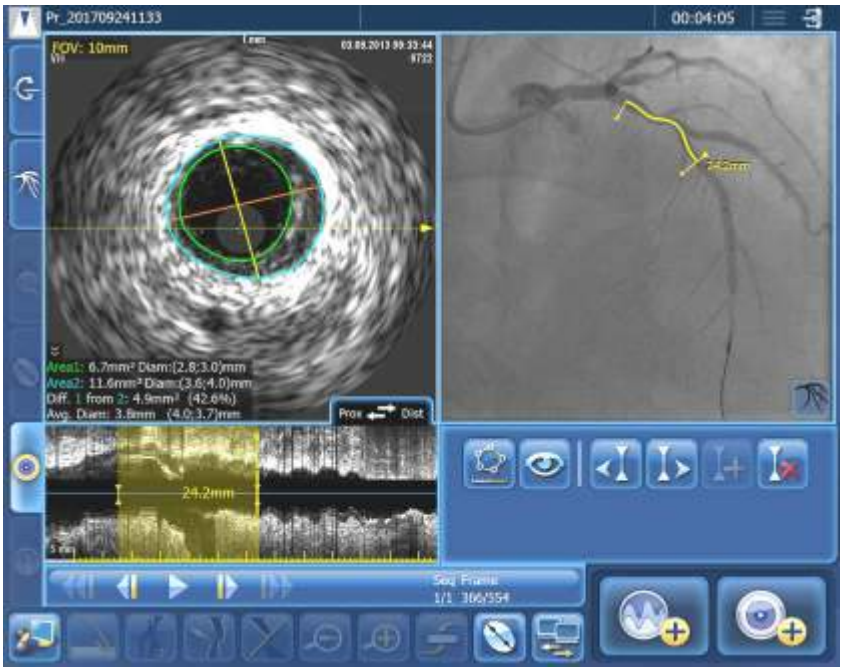
In my opinion transition to value-based care is still some years away as the healthcare systems are busy putting together the necessary building blocks. Establishing an effective and sustainable VBC framework requires extensive amounts of data and analysis. Hence RCM functions, and organizations like ACCUMED, are already playing a central and pivotal role in the transition journey – ranging from gathering and analyzing data on diseases/ailments, quality of care, cost of care (viz-a-viz quality), pricing services and so on.

Operationally, as previously mentioned, the present model in healthcare organizations is already very complex due to need for coordination across many stakeholders and touchpoints. VBC will further increase the number of stakeholders in managing a patient. This in turn will increase the challenge and expectations from RCM functions and service providers.

Philips showcases ultra-low contrast PCI solutions at EuroPCR 2022

The ability to perform PCI procedures using a very small amount of contrast media enables PCI to be offered to more patient groups, notably patients presenting with both coronary artery disease (CAD) and chronic kidney disease (CKD), who are at high risk of suffering contrast-induced nephropathy (CIN) - a life-threatening form of hospital-acquired acute kidney injury (AKI) caused by contrast media toxicity

Royal Philips, a global leader in health technology, recently showcased innovations at EuroPCR (May 17-20, Paris, France) that can enable interventionists to perform ultra-low contrast percutaneous coronary intervention (ULC-PCI) procedures with greater confidence and clarity. Philips' ULC-PCI solutions co-register instantaneous blood flow measurements and/or intravascular ultrasound (IVUS) images onto real-time fluoroscopy to help interventionists diagnose, decide, guide, treat and confirm the success of PCI, with the potential to limit the use of iodinated contrast media.



Seamlessly integrating into Philips' Image Guided Therapy System - Azurion - the company's unique ULC-PCI solutions provide physicians with tools to help reduce the use of contrast media throughout PCI procedures.

The ability to perform PCI procedures using a very small amount of contrast media enables PCI to be offered to more patient groups, notably patients presenting with both coronary artery disease (CAD) and chronic kidney disease (CKD), who are at high risk of suffering contrast-induced nephropathy (CIN) - a life-threatening form of hospital-acquired acute kidney injury (AKI) caused by contrast media toxicity. A 2020 study in the USA concluded that AKI after a PCI procedure resulted in an average increase in length of hospital stay of 3.6 days and an additional healthcare cost of 9,448 USD per patient.

"Innovation in catheter-based interventions to treat narrowed heart arteries – so-called percutaneous coronary interventions – continuous to contribute to improving the quality of life and prognosis for millions of patients around the world, said Javier Escaned, MD, PhD, Head of the Interventional Cardiology Section at Hospital Clinico San Carlos, Madrid, Spain.

"As a result, more complex patients can now undergo PCI, including those with advanced age and frailty, chronic renal failure, and associated heart conditions. In many of these patients, where the injection of radiological contrast used to guide the PCI can have deleterious effects, technologies developed by Philips that enable

physicians to dramatically decrease contrast administration during the procedure is contributing to both the safety and quality of PCI."

Dynamic Coronary Roadmap

During a conventional PCI procedure, contrast media is injected into the patient's coronary arteries to acquire an angiogram, with additional fluoroscopy used during the procedure to help interventionists navigate their guide wires and catheters. To maintain visibility of the arteries, this guidance typically requires repeated contrast media injections, increasing the toxic load on the patient's kidneys. Philips' Dynamic Coronary Roadmap software removes the need for additional contrast media injection by overlaying the preoperative angiogram onto real-time motion-compensated 2D fluoroscopic imaging to provide interventionists with continuous visual feedback on the positioning of guide wires and catheters. In many cases, no additional contrast media injection is required for wire navigation.

While Philips' Dynamic Coronary Roadmap software helps interventionists navigate guide wires and catheters to the site of a lesion, the company's IntraSight Series 7 precision guidance system streamlines lesion assessment, simplifies vessel sizing, and enables precise therapy delivery.

iFR Co-registration

As an alternative or adjunct to IVUS co-registration, spatially accurate instantaneous wave-free ratio (iFR) pullback measurements can be co-registered onto the angiogram, adding valuable physiological data to the anatomical imaging. Unlike fractional flow reserve (FFR) measurements, iFR measurements do not require the use of hyperemic drug injection and can be used to assess both the degree and length of vessel stenosis and the effectiveness of therapy using a simple pressure wire pullback technique.

IVUS Co-registration

IntraSight Series 7's IVUS co-registration facility merges real-time intravenous ultrasound and angiogram images, with information on the precise location of the ultrasound images derived during manual pull-back of the ultrasound catheter under continuous fluoroscopy. As a result, interventionists can simultaneously view reconstructed cross-sectional ultrasound images of the vessel lumen, including their precise position on the angiogram. This level of precision significantly reduces the risk of a 'geographic miss', which has been estimated to occur in over 60% of PCIs [3]. IntraSight Series 7's Angio+ quantitative coronary analysis software automatically calculates lumen dimensions and stenosis in real time, helping accurate assessment of the required stent size.

Tri-registration

IntraSight Series 7's Tri-registration function aids stent selection by co-registering IVUS and iFR information with the angiogram to help choose a stent that optimally supports meeting a procedure's objectives. Coupled with IntraSight Series 7's enhanced live stent visualization capabilities, which help to immediately verify correct stent positioning and deployment, the ability to enhance stent choice and size means more right-first-time procedures and better patient outcomes.

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SPAIN'S thriving healthcare sector

The main drivers of Spain's medical technology industry are its world-class infrastructure, strong R&D capabilities, and highly skilled workforce. The country also has a well-developed manufacturing sector, and is a leading exporter of medical devices

Spain is a country in southwestern Europe with parts of territory in the Atlantic Ocean and across the Mediterranean Sea. The largest part of Spain is situated on the Iberian Peninsula; its territory also includes the Canary Islands in the Atlantic Ocean, the Balearic Islands in the Mediterranean Sea, the autonomous cities of Ceuta and Melilla and several minor overseas territories also scattered along the Moroccan coast of the

Spanish Healthcare Sector

The Spanish National Healthcare System, founded on Spain's General Healthcare Act of 1986, guarantees universal coverage and free healthcare access to all Spanish nationals, regardless of economic situation or participation in the social security network.

Spain is a developed country with a well-functioning healthcare system. The Spanish healthcare sector is made up of both public and private institutions.

The Spanish healthcare system is principally funded through taxation. The country's total healthcare expenditure, amounts to 88,828 million euro, which accounts for 8.5 percent of the GDP. Public healthcare expenditure accounts for 6.1 percent of GDP and represents an expense per inhabitant of 1,421 euro. The central government provides financial support to each region based on population and demographic criteria.

The National Health System has 2,914 health centers and 10,202 local clinics providing basic healthcare services to the local population. In 2009 there were 804 hospitals operating in Spain. The National Health System has 315 hospitals, equipped with 105,505 beds, and four Ministry of Defence's hospitals contributing with 995 beds. The remainder 465 hospitals are privately run and have 53,013 beds, which totals to 160,981 beds installed in Spain's hospitals. Public hospitals are generally much larger than private hospitals and deal with a much higher number of patients.

The Spanish healthcare system is considered to be one of the best in the world. It is ranked as the seventh best healthcare system in the world by the World Health Organization. The Spanish healthcare system is made up of both public and private institutions.

Medical technology sector

Spain has a prosperous and thriving medical technology industry, and is a world leader in the production of medical devices. The country's medical devices sector is highly sophisticated, and is home to some of the world's leading medical device companies.

Spain's medical technology industry is worth an estimated €9.5 billion, and employs around 100,000 people. The sector is made up of more than 2,000 companies, most of which are small and medium-sized enterprises (SMEs). Spanish medical device

companies are among the most innovative in the world, and are at the forefront of new technological developments.

With a population of over 47 million, and the fourth largest economy in the EU, Spain is an important market for medical products. Public healthcare institutions currently represent 75-80 percent of the healthcare sector and are the main purchasers of medical equipment and supplies. These entities include public hospitals, health centers, and research institutes, etc. Comprehensive medical attention is available to all Spaniards. The weight of the private healthcare sector continues to increase, especially in healthcare insurance, which presently provides coverage to approximately 10 million and is anticipated to continue increasing, particularly given the need for greater public/private collaboration as a result of the current global pandemic. According to official figures, the private healthcare sector accounts for 2.7 percent of GDP, while the public sector accounts for 7.7 percent. The regions of Madrid and Catalonia account for over 80 percent of medical equipment sales.

The main drivers of Spain's medical technology industry are its world-class infrastructure, strong R&D capabilities, and highly skilled workforce. The country also has a well-developed manufacturing sector, and is a leading exporter of medical devices.

Some of the world's leading medical device companies are based in Spain, including Becton Dickinson, Medtronic, Philips, and Siemens. These companies have a significant presence in the Spanish market, and are responsible for the development and production of some of the world's most innovative medical devices.

The sector is currently undergoing a period of consolidation, with a number of small companies merging to create larger, more competitive businesses. This is expected to lead to further innovation and growth in the industry.

The Spanish medical technology industry is a key driver of the country's economy, and is forecast to grow at a rate of 4.5% per year over the next five years. The sector is currently undergoing a period of consolidation, with a number of small companies merging to create larger, more competitive businesses. This is expected to lead to further innovation and growth in the industry.

Pharmaceutical industry

The Spanish pharmaceutical industry is a key and strategic sector for Spain's economy, as was clearly demonstrated by the pandemic. In the past 25 years, the sector has become hugely significant and an important driver of Spanish exports and private R&D investment.

According to recent IQVIA and industry association reports, the Spanish pharma market, valued at EUR 21.6 billion per year, continues to grow at a relatively slow pace. Other key trends include the fact that generics penetration in Spain has remained at a

According to official figures, the private healthcare sector accounts for 2.7 percent of GDP, while the public sector accounts for 7.7 percent. The regions of Madrid and Catalonia account for over 80 percent of medical equipment sales.

constant level for almost seven years and private capital raised by biotech companies skyrocketed in 2020.

In 2019, the industry generated a revenue of almost 22 billion euros. Spain has, in fact, the fifth-largest pharmaceutical market in Europe in terms of revenue and the ninth-largest market worldwide. In 2020, the country exported 12.25 billion euros worth of pharmaceutical products, mainly to Switzerland, Germany, and France. The value of imported pharmaceuticals was 15.33 billion euros. Germany, the Netherlands and Belgium were the main exporters of pharmaceutical products to Spain.

Wireless device to illuminate and destroy residual tumor cells left after cancer resection

Researchers at Texas A&M University created a wireless device that aims to illuminate and destroy residual tumor cells left after cancer resection. The device can be used by surgeons to illuminate the tumor bed after resection. It works in combination with a photosensitizer drug that is administered before the procedure and accumulates in tumor cells, making them vulnerable to the lethal effects of the delivered light. The small device can also be implanted within the body, potentially to provide longer term photodynamic therapy and guard against cancer recurrence.

For many cancers, surgery is the primary treatment, followed by supplementary chemotherapy to kill any remaining cancer cells that were not removed by the surgeons. Chemotherapy entails pretty severe side-effects, and so a long-term goal for researchers involves finding gentler alternatives. Photodynamic therapy, where light in combination with a photosensitizer effectively kills cancer cells is one such option, but the technology has yet to gain significant traction.

Part of the problem lies in how little researchers know about the correct dose of light to use to appropriately affect cancer cells, and an inability to adjust the dose based on the tumor response. Moreover, wireless implantable technologies that allow for long-term therapy would be particularly beneficial in enhancing the clinical utility of the technique.

This technology aims to be a big step in the path towards enhancing the clinical potential of photodynamic therapy. "The biocompatible, miniaturized implantable LED device will enable light dosing and PDT that is tailored to the individual tumor response," said Sung IL Park, a researcher involved in the study. "The intracavity device will provide a minimally invasive, biocompatible platform for light detection of residual cancers and delivery to tumor cells located in any part of the body, suggesting it could make an impact in the areas of breast, kidney, lung, pancreatic, prostate, ovarian and rare cancers."

The device allows the researchers to tune the wavelength of light to precisely match the absorption spectrum of the photosensitizer drug, enhancing the efficacy of the technique. The small size and wireless nature of the technology allow it to be positioned optimally to affect residual cancer cells, and helps to avoid the poor tissue penetration issues of other photodynamic technologies.

The system also has low energy demands, making it efficient to run for extended periods. So far, the researchers have optimized the technology for use in experimental animals, so clinical translation will require further work.

US Researchers engineer heart chamber on a chip that can beat by itself

Researchers at Boston University engineered a heart chamber on a chip that can beat by itself. The technology relies on cardiomyocytes generated from induced pluripotent stem cells and small acrylic valves that allow the fluid pumped by the chamber to come and go.

The chamber is supported by a thin acrylic scaffold that aims to mimic the mechanical properties of a real heart chamber, and the cardiomyocytes can compress it while beating. The researchers hope that the platform will allow them to investigate treatments for heart disease. By obtaining and using cells from patients, the technology could also allow for unique forms of personalized cardiac medicine.

Studying the heart has always proved to be a challenge, and creating adequate mimics in the lab is a key part of this challenge. Addressing this is what drove this latest research, and the resulting technology may also pave the way for devices that allow researchers to study other organs in unprecedented detail.

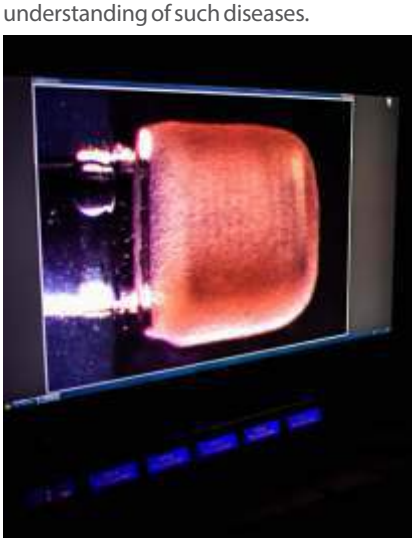
"We can study disease progression in a way that hasn't been possible before," said Alice White, a researcher involved in the study. "We chose to work on heart tissue because of its particularly complicated mechanics, but we showed that, when you take nanotechnology and marry it with tissue engineering, there's potential for replicating this for multiple organs."

The researchers have called their technology the "miniaturized Precision-enabled Unidirectional Microfluidic Pump" (miniPUMP). The device is small, about the size of a postage stamp, allowing the Boston University researchers to take advantage of the varied mechanical properties of materials at a small scale.

"The structural elements are so fine that things that would ordinarily be stiff are flexible," said White. "By analogy, think about optical fiber: a glass window is very stiff, but you can wrap a glass optical fiber around your finger. Acrylic can be very stiff, but at the scale involved in the miniPUMP, the acrylic scaffold is able to be compressed by the beating cardiomyocytes."

Creating the tiny components for the device required a technique called two-photon direct laser writing. This involves shining a tiny beam of light into a liquid resin. The illuminated area within the resin becomes solid, creating the structure.

The researchers hope that their technology will assist with drug screening to find new treatments for cardiac disease and also help to increase our understanding of such diseases.



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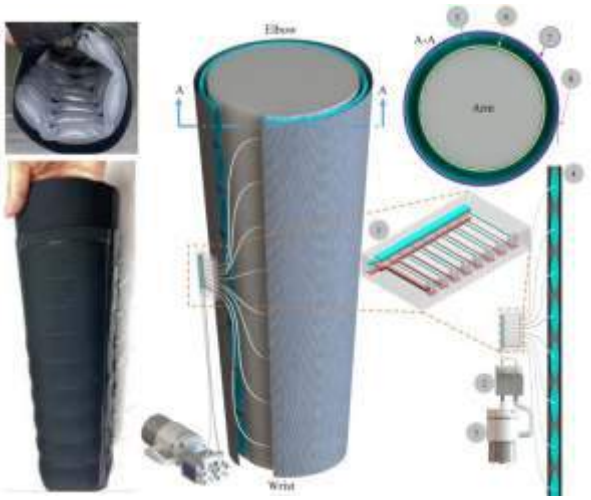
Canadian researchers create soft robotic sleeve for treating lymphedema

Researchers at the University of Waterloo in Canada created a soft robotic sleeve to treat lymphedema. Lymphedema involves fluid accumulation in tissues because of damage to the lymph system. This wearable sleeve combines a microfluidic controller and soft robotic components that apply compression to the arm to reduce and control fluid accumulation. The small components avoid the need for a stationary pump to inflate the sleeve and allow for tetherless use during regular activities.

Lymphedema often strikes breast cancer patients, who frequently require surgical removal of lymph nodes in the armpit. This can cause fluid buildup in the arm, which can swell significantly. At present, compression sleeves can be used to treat the condition, but current iterations of such devices typically require a stationary pump to inflate the sleeve. Such bulky and expensive equipment is impractical to use for extended periods as it requires a user to sit in one place during use.

"My definition of wearable is you can wear it and do whatever you want, and not be plugged into a wall," said Carolyn Ren, one of the developers of the new system. "Bringing in the microfluidics field, we wanted to make the system battery-powered but without compromising the performance."

The system employs a microfluidic device that contains a series of channels that offer different degrees of



resistance, meaning that air travels through them either quicker or slower. This system creates a time delay that controls the sequential inflation of different balloons within the sleeve so that the wearable sequentially pushes fluid in the tissue up and out of the arm.

The device contains miniaturized valves and a 3.7-volt lithium-ion battery within a small control unit. The small components means that the system should cost just hundreds of dollars to manufacture, compared with thousands for conventional equipment.

Interestingly, the technology may also have other applications, including as a component in prosthetics for lower leg amputees. If a prosthetic wearer's leg swells during activity, conventional prosthetic sockets cannot adjust, potentially leading to discomfort and friction. The researchers believe that soft robotics may assist in making the socket more adaptable and comfortable to wear.

Wearable electrochemical sweat sensor to detect chemokines in sweat

Researchers at the University of Texas at Dallas, in collaboration with a company called EnLiSense, developed a wearable electrochemical sweat sensor that can detect chemokines in sweat, alerting the wearer and clinicians to a viral or bacterial infection. The device also warns of an impending cytokine storm, where high levels of inflammatory molecules are released by the body all at once, often proving fatal. The wearable could be particularly useful in cases of severe COVID-19, in which a cytokine storm is a significant risk.

Sweat sensors are developing apace, and this latest offering has an interesting application – detecting inflammatory molecules associated with infections. In this specific case, the researchers tailored the electrochemical sensor to detect interferon-gamma-inducible protein (IP-10) and tumor necrosis factor-related apoptosis-inducing ligand (TRAIL), both of which are associated with a cytokine storm, a potentially fatal complication of certain infections, including COVID-19.

"Our work is pioneering since, until this date, it was unclear whether these molecules were present in sweat," said Shalini Prasad, a researcher involved in the study. "We established that our low-volume passive sweat technology is indeed able to measure these biomarkers."

Interestingly, the sensor allows clinicians to distinguish whether someone is likely to have a bacterial or viral infection, although a follow-up test would be required to determine the exact pathogen. The sensor can operate through passive sweat, and does not require the wearer to perform strenuous activity to generate enough sweat to perform a measurement. This is just as well, as the sensor is intended to be worn by those who are ill.

The new sensor can analyze sweat in real-time, although the device contains a removable strip that collects the sweat, and this must be replaced every day. The most valuable aspect of the device is its function as an early warning system for cytokine storms that can occur during various serious infections. If clinicians are forewarned of an impending cytokine storm, then they may have a greater chance of saving a patient's life.

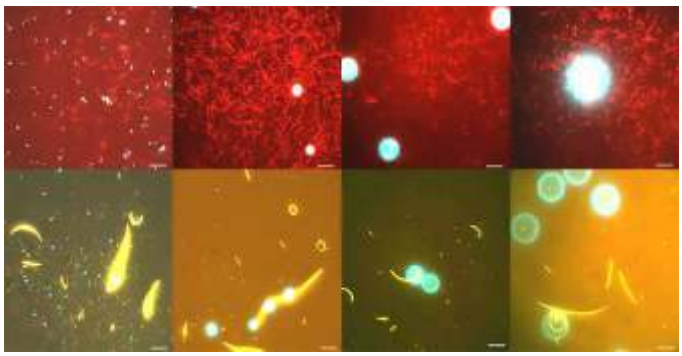
"We have built a technology to unlock and explore the latest frontier in sweat diagnostics," said Prasad. "This sweat-based, wearable technology from EnLiSense is truly transformational in that it can measure and report human host response messenger molecules associated with inflammation and infection in a real-time and continuous manner."

Molecular robots to move and release small cargoes

Researchers at Hokkaido University in Japan created molecular robots that can employ swarm behaviors to move and release small cargoes. The robots can be controlled using light, and they consist of biological components, including DNA, microtubules, which are a cytoskeletal component, and kinesin, which is a motor protein that interacts with microtubule filaments. The technology could have significant potential as a drug delivery mechanism, and may lead to a variety of future nanotechnological medical applications. While the technology is currently in its infancy, if the researchers can make the technique work inside the body, then microrobot swarms could conceivably accomplish a variety of tasks minimally invasively, from tackling tumors to delivering drugs.

A single bee is not particularly powerful, but a swarm of them can make the toughest of us start running. This is the philosophy behind this newest technology, which harnesses the power of microrobot swarms and is bioinspired by the behaviors of cooperative animals. Robot swarms are currently under investigation for a variety of tasks, including moving items or forming complex structures. A swarm can respond to evolving situations and perform complex tasks that are far beyond the capabilities of a single robot.

However, achieving these types of swarm behaviors on a micro level is a whole lot more challenging. These researchers have made an impressive first step using microrobots they have created with biological



components. These include DNA that is linked to microtubules, a component of cytoskeleton that gives cells their shape and structure. Cleverly, the researchers also incorporated kinesin, a motor protein that can act on and move microtubules, and in this context the protein provides a means of propulsion.

They also included azobenzene, a light-sensitive compound, as a means to control the swarming behavior. Illuminating the microrobots with visible light causes the azobenzene to change structure, resulting in the DNA forming double strands, which induces swarming. Conversely, this process can be halted by exposing the microrobots to ultraviolet light.

So far, the researchers have tested the microrobots in their ability to move a cargo, in this case small polystyrene beads, and they were able to induce the robots to transport the cargo in response to light. Swarms were capable of moving larger beads than individual robots.

"In the near future, we expect to see microrobot swarms used in drug delivery, contaminant collection, molecular power generation devices, and micro-detection devices," said Akira Kakugo, a researcher involved in the study.

Advanced organ-on-a-chip system linked with simulated vascular flows

Researchers at Columbia University School of Engineering and Applied Science developed an advanced organ-on-a-chip system that incorporates heart, bone, liver, and skin tissue in independent niches that are linked with simulated vascular flows. The system even includes immune cells that circulate within the simulated vasculature. The technology represents an advance in organ-on-a-chip systems as it allows scientists to study the effects of drugs or interventions on multiple organs simultaneously. Moreover, as the engineered tissues are all created using induced pluripotent stem cells derived from a blood sample, it could allow for personalized medicine.

A number of research institutions around the world have developed a variety of unique devices, but creating multi-organ systems remains challenging. After all, each organ in the body enjoys a unique environment that best suits it, despite being linked to other organs through circulation. Recreating these niches on a chip, while allowing communication between them is a formidable task, but these researchers appear to have cracked it after a lot of hard work.

"This is a huge achievement for us — we've spent ten years running hundreds of experiments, exploring innumerable great ideas, and building many prototypes, and now at last we've developed this platform that successfully captures the biology of organ interactions in the body," said Gordana Vunjak-Novakovic, one of the developers of the new platform.

The chip is the size of a microscope slide and contains bone, skin, heart and liver tissues, which the researchers chose as these tissues all experience significant side-effects during cancer therapy. The system therefore represents a method to test if a specific patient will tolerate a specific cancer therapy.

"Providing communication between tissues while preserving their individual phenotypes has been a major challenge," said Kacey Ronaldson-Bouchard, another researcher involved in the study. "Because we focus on using patient-derived tissue models we must individually mature each tissue so that it functions in a way that mimics responses you would see in the patient, and we don't want to sacrifice this advanced functionality when connecting multiple tissues."

"In the body, each organ maintains its own environment, while interacting with other organs by vascular flow carrying circulating cells and bioactive factors. So, we chose to connect the tissues by vascular circulation, while preserving each individual tissue niche that is necessary to maintain its biological fidelity, mimicking the way that our organs are connected within the body."

MEDIWORLD Middle East

5 Ways MENA's Future Doctors can Prepare for Medical School in 2022

There is no denying that the hard work undertaken by medical professionals throughout the Covid-19 pandemic has inspired many students to enter a career in medicine. But with heightened interest, also comes heightened competition. St. George's University (SGU) School of Medicine highlight how our future doctors' can embark on the journey before they even start in medical school.

1. Doctor Shadowing

One method to improve their knowledge is through doctor shadowing, where a student will 'shadow' the work of a practicing doctor to introduce themselves into day-to-day life as a medical professional. Not only is this vital for creating a network of contacts that could be useful in the future, but it is also a great way to gain exposure and show medical school admissions teams that the student is dedicated to the field.

2. Online Webinars

Although life is getting back to normality in this pandemic era, there may not be the opportunity to access doctor shadowing in person at some hospitals or clinics. Instead, students could explore virtual experience opportunities.

Today, there are many online webinars that include doctor shadowing and at St. George's University (SGU), we hold virtual doctor shadowing sessions for our students as an opportunity to interact with our diverse faculty and alumni and learn about different medical specialties such as anatomy, emergency medicine and psychology.

3. Volunteering

Community service is an achievable way for students to show their commitment to a group of people or service that aligns with the student's interest in medicine.

There are countless organizations that are dedicated to assisting disadvantaged individuals that students could reach out to. There are nonprofits that serve free meals, source amenities, and deliver supplies to families in need. While most opportunities in this arena fall firmly under the nonmedical category, they're fantastic ways to get involved in causes that the student is passionate about.

Whether the work experience placements are related to the medical field or not, the time spent is valuable to gaining exposure to real-life situations. Students can empathize and become strong communicators while being more confident to work as part of a team.

Volunteering activities will go a long way when becoming a doctor later in their life. Hence why some universities take extra-curricular activities into account along with academic achievements, references letters from professors.

4. Summer Programs

Researching summer programs available locally, that might include time spent with doctors as part of a health professions program, could also be a great time to obtain experience. They could even reach out to other students who are interested in medicine, to share experiences of local opportunities.

5. Connecting with Practicing Doctors

Many of our 19,000 alumni at SGU are volunteering in a program called 'Speak to a Graduate', which connects prospective students to SGU graduates over the phone, video call or email. These connections provide a great chance for aspiring medics to engage directly with a healthcare professional while hearing about their personal experiences with doctor shadowing.

This article has been provided by
St. George's University School of Medicine in Grenada, West Indies

Kena Health – An easy way to chat with a medical professional via your smartphone

Introducing Kena Health – an easy solution where anyone can chat to a nurse, doctor or mental-health professional directly from their smartphone. Kena Health is an app that connects users to a team of qualified healthcare practitioners for advice, diagnoses, prescriptions, sick notes, and even referrals to a specialist pathologist or other place of care, as needed.

Kena Health uses a team-based approach that allocates the most suitable healthcare practitioners to each patient's unique needs, based on a shared data view of that patient. Family-planning advice, gastritis, anaemia, allergies, UTIs and common colds can be treated by an experienced and qualified nurse. Perhaps an infection, hypertension or other chronic conditions need a prescription from a doctor.

Users download the app and register in under two minutes. From there they chat briefly to Linda, Kena's digital assistant, who collects general information about their condition that forms part of the secure patient record. This means patients do not have to repeat their medical Information and background throughout every step of the process.

Kena then connects the user directly to a nurse or mental-health professional to receive the medical care or advice they need at a fraction of what it would cost to visit a doctor – and for free at the outset. Consultations can be conducted by means of text, voice or video within the app, all tailored to keep data costs manageable. In instances where a doctor is required, the nurses can transfer the call for a seamless connection within the Kena team.

The key to Kena Health is not just the efficiency of information collection, but the ease for the user, and a great experience of quality and affordable care from the Kena team of professionals. By leveraging technology and a team-based approach, the app brings down the cost of care while improving the patient's health outcomes.

The app further leverages technology in service of a human solution by generating scripts, sick notes and even referral letters, all seamlessly provided within the app. As users get used to this new kind of healthcare, their first three consultations will be free, with subsequent consultations costing as little as R160 each.

"Our goal is to improve access to quality care by lowering cost," says Kena Health founder and chief executive officer, Saul Kornik. "By creating an app that focuses on team-based healthcare, we're able to do this, while actually improving the quality of health outcomes for each patient.

"Imagine, a whole team of nurses, doctors and mental-health professionals looking after you! This means that, no matter your income level or where you live, with Kena Health you are invited in to receive services that provide the care you need, all while making you feel cared for and reassured that you're going to be OK."

Dubai receives more than 600k international health tourists in 2021

Dubai received 630,000 international health tourists in 2021, according to a report released by the Dubai Health Authority (DHA) during Arab Travel Market in Dubai.

Spending by international patients reached nearly Dh730 million in the past year despite the global COVID-19 pandemic.

The report indicated that most health tourists who came to Dubai were from Asian countries, accounting for 38 percent of the total, whereas 24 percent were from Europe and 22 percent from Arab and GCC nations.

Fifty-five percent of the international health tourists were men and 45 percent were women. Almost 70 percent of treatment given to international health tourists was provided at multidisciplinary clinics, 16 percent at hospitals, and 14 percent at one-day surgery centers. The three medical specialties that attracted the most health tourists were dermatology (43 percent), dentistry (18 percent), and gynaecology (16 percent). Other medical specialties included orthopaedics, plastic surgery, ophthalmology, health and wellness, and fertility treatments.

The report presented extensive statistics regarding health tourists and medical specialties that saw high demand: The top three regions that attracted health tourists in dentistry included the Arab and Gulf Cooperation Council (GCC) region at 45 percent, Asia at 28 percent, and Europe at 15 percent.

The top three regions that attracted health tourists in dermatology were Asia (31 percent), Europe (27 percent) and Arab and GCC region (26 percent).

The top three regions in the field of gynaecology were Asia (57 percent), Europe (15 percent) and Arab and GCC region (13 percent).

The top three regions from which health tourists came for treatment in the field of orthopaedic surgery were Asia (36 percent), Europe (29 percent) and Arab and GCC region (17 percent).

The top three regions in the field of plastic surgery were Arab and GCC region (36 percent), Europe (31 percent), and Asia (14 percent).

The top three regions from which health tourists came for treatment in ophthalmology were Asia at 33 percent, Arab and GCC region at 23 percent, and Africa at 18 percent.

The top three regions in the field of fertility treatments were Asia (34 percent), Africa (24 percent) and Europe (19 percent).

The top three regions from which health tourists came for hospital treatments were Europe (45 percent), followed by the Arab and GCC region (25 percent) and Asia (12 percent).

Clemenceau Medical Center and Johns Hopkins sign MoU

Clemenceau Medical Center Hospital in Dubai recently signed a collaboration agreement with Johns Hopkins Medicine International, the leading healthcare provider in the USA in the presence of H.E. Sheikh Nahayan Mabarak Al Nahayan, Cabinet member, Minister of Tolerance and Coexistence.

World-renowned doctors from Johns Hopkins Medicine in the United States will travel to Dubai on a regular basis to provide advanced diagnostic and specialty care for patients in the region.

This collaboration comes in line with the directives of our wise leadership and the vision of H.E. Sheikh Mohammed bin Rashid Al Maktoum, Vice President, Prime Minister and Ruler of Dubai, to provide the highest level of care that complies with international standards for citizens and residents, and to make UAE a major destination for treatment in the region and the world.

"Since inception, Clemenceau Medical Center Hospital Dubai, has dedicated its mission to meet patients' needs in the UAE through the enhancement of the quality of healthcare and the management of complex medical conditions", said Mr. Abdulrahman Abdulaziz Khansaheb, Chairman of the Board of Directors at Clemenceau Medical Center Hospital Dubai.

Charles M. Wiener, M.D., President of Johns Hopkins Medicine International said, "We are honored to collaborate with Clemenceau Medicine International in their efforts to advance health care in the Middle East and to share our expertise and best practices with Clemenceau Medical Center Hospital Dubai, one of the region's premier health care institutions. We are deeply committed to expanding access to high-quality health care locally so as many people as possible can receive the best care close to home and family."

Mounes Kalaawi, M.D., F.R.C.S., M.B.A., Chairman and Chief Executive Officer of Clemenceau Medicine commented: "Clemenceau Medicine International and Johns Hopkins Medicine International have a long-standing collaboration, which has resulted in many achievements in the field of healthcare. There is no doubt that this cooperation is the first of its kind in the United Arab Emirates."

"This agreement gives a strong push in the field of health care, as it provides a unique program of its kind in the region, including surgical operations and clinical medicine from visiting physicians and surgeons from Johns Hopkins who are globally acclaimed for their expertise and cutting-edge research. They will work as an integrated team across all advanced medical specialties all year round in Dubai, providing the best treatment for difficult and complex medical cases."

Dr. Kalaawi added: "Our doctors in Dubai will benefit from this cooperation with world-renowned senior specialists from Johns Hopkins University and Hospital by working as a group and exchanging Experience, education and access to everything that is new and advanced. This is in the interest of patients to meet their needs throughout the country without the need to travel and get treatment abroad."

DHAMAN & GlobeMed partner to offer members wide network of primary healthcare centers

Health Assurance Hospitals Company (DHAMAN) and GlobeMed Kuwait, the leading healthcare benefits management company in Kuwait, have announced signing a collaboration agreement to offer insured members of the clients contracted with GlobeMed access to the wide network of DHAMAN'S primary Healthcare centers (PHC)

As part of the collaboration agreement, DHAMAN will provide integrated healthcare in family medicine, dentistry, pediatrics, radiology and laboratory services to insured members of the clients contracted with GlobeMed, through qualified medical staff with extensive experience and state-of-the-art technology in the medical field. The agreement is part of GlobeMed Kuwait's and DHAMAN's common mission and vision as patient centric organizations offering quality health care and health insurance services for insured members of the clients contracted with GlobeMed who are citizens and residents in Kuwait.

On this occasion, DHAMAN CEO Mr. Thamer Arab said, "This agreement with GlobeMed Kuwait is part of DHAMAN's overall efforts to deliver holistic prime and integrated healthcare services to all patients visiting our PHCs, which is part of offering them an excellent person-centered medical journey that includes consultation, diagnosis, prevention, treatment and follow-up in a number of specialties and supporting services." Mr. Arab added "Both insurance cardholders, as well as patients who do not have private health insurance can still benefit from services at DHAMAN as the PHCs welcome patients of all age groups to receive comprehensive healthcare.".

Mr. Salem Haidar, GlobeMed Kuwait General Manager, said "DHAMAN'S scale and range of healthcare services expands our medical network to deliver unmatched care to insured members of the clients contracted with GlobeMed. This partnership promises to accelerate our efforts to expand member's access to care through DHAMAN's state-of-the-art medical clinics and hospitals. We are proud of this partnership and committed to deliver exceptional patient experience to insured members of the clients contracted with GlobeMed through a wide network of healthcare providers."

DHAMAN PHCs in Hawalli, Farawaniya and Dhajeej are receiving patients to benefit from its integrated medical services with two additional PHCs scheduled to open in Fahaheel and Jahra during 2022.

Saudi moves all Healthcare services into National Health Holding Company and launches National Health Insurance Center

Minister of Health, Eng. Fahd Al-Jalajil explained that the decision embodies the leadership's interest in improving health care services provided to all citizens and residents. In pursuit of the Kingdom's Vision 2030 goals.

Saudi Cabinet decided recently, to establish the Health Holding Company, and to approve the charter of the National Health Insurance Center. The decision came in place to improve the overall performance of the Saudi healthcare system, in which the Ministry of Health will focus on regulating and supervising all public and private health institutions. While the Health Holding Company via its local health cluster subsidiaries will provide integrated healthcare services to beneficiaries all around the Kingdom.

The decision included approving the charter of the National Health Insurance Center, which will purchase health services provided by the Health Holding Company or any of its subsidiaries. As well as transferring all direct healthcare-related funds allocated in the national budget from the Ministry of Health to the Center, in accordance with the road map set by the supervisory committee for privatization of the health sector.

In the future, the Health Holding Company will establish health clusters in the form of independent companies known as Health Cluster Companies, to provide services. While the Ministry of Health, as a regulatory and supervisory body, prepares healthcare coverage regulations -considering the needs of beneficiaries- protects them from health risks, and ensures overall quality and fair distribution of services.

Minister of Health, Eng. Fahd Al-Jalajil explained that the decision embodies the leadership's interest in improving health care services provided to all citizens and residents. In pursuit of the Kingdom's Vision 2030 goals.

Al-Jalajil added that this decision lays the legal foundations for implementing the transformation strategy in the Ministry, which will take place in successive stages over the coming years. Where the local health clusters (subsidiaries of the Holding Company) will implement a set of programs aimed at enhancing community health through the prevention and early detection of diseases by means of developing primary health care services.

The new company will also provide specialized services such as: caring for patients with cancer and kidney failure, developing critical care services; Ensuring the speedy handling of heart attacks, strokes, and injuries, and expanding digital health programs and virtual medical care services.

Know your Doctor

MEDIWORLD Middle East

Dr. Syed Hasnain Haider Shah

Consultant Interventional Radiology
Westminster Ortho Med Clinic

Dr. Haider-Shah is Fellowship trained in Cardiovascular and Interventional Radiology, Pediatric Intervention and Neurointervention, Neuro Interventional Radiology and Interventional Pain Management.

He is also trained in Complementary and Alternative Medicine Techniques. He is a clinical Adjunct Professor at Wayne State University, Detroit Michigan, USA. He is involved in training of Physicians in International as well as in MENA region including UAE, Lebanon, Tunisia, Egypt, Saudi Arabia, Iraq, Bahrain and Qatar. He was also involved in Physician training and lectures in the USA, Canada, Indonesia, Pakistan, India, Malaysia, Philippines, Thailand, Cyprus, Turkey and Korea.

Dr. Haider-Shah has served as Director of Neurointervention and Interventional Pain Management, Oakwood Hospital and Henry Ford Wyandotte Hospital, Michigan, USA. He was Director of Neurointervention and Interventional Pain Clinic at Marquette General Hospital, Michigan, USA. He has worked as a Director of Neurointervention at SEHA; at SKMC, Tawam, Mafraq and Al-Ain Hospitals, UAE. He is the Chair of Radiology and Director of Interventional Radiology, NeuroIntervention and Pain Management at Universal Hospital in Abu Dhabi and Dubai. He is a member of the Society for Neurointerventional Surgery (SNIS), American Society Of Interventional Pain Physicians (ASIPP), Society for Cardiovascular and Interventional Radiology (SCVIR) , World Federation of Interventional Neuroradiology (WFITN) and Society for Pediatric Interventional Radiology (SPIR). He is a Fellow of the International College of Angiology (FICA).

Dr. Haider-Shah is well-known for his medical skills and very well known for his discretion – His patients have included multiple Heads of State, Royalty and other VVIP's, World Class Athletes, famous Bollywood/Hollywood Entertainers, and Senior Corporate Executive.

New global initiative 'Act4Biosimilars' launched

Sandoz recently announced the launch of a new global initiative called 'Act4Biosimilars' to help address health inequity and inequality worldwide. Act4Biosimilars aims to increase patient access to advanced medicines by facilitating greater approvability, accessibility, acceptability and affordability (the 4 A's) of biosimilars. The initiative is supported by a multidisciplinary Steering Committee of patient advocacy leaders, healthcare professionals, biosimilar experts and industry leaders from around the world, with a mission to increase global adoption of biosimilar medicines by at least 30% in 30+ countries by 2030.

A biosimilar is a successor to a biological medicine (also known as "reference medicine") for which the patent has expired and exclusivity has been lost. Biosimilars match their respective reference medicine in terms of quality, safety and efficacy. Hence, the biosimilar can be expected to behave in the same way as the reference medicine in all indications and patient populations that the reference medicines are approved in. Biosimilars are used in the treatment and prevention of many disabling and life-threatening diseases such as cancer, psoriasis, arthritis and diabetes.

"As a result of their affordability, biosimilars have opened up a new realm of possibility for patients by enabling biological medicines to become more widely available to those in need of these advanced, life-changing treatments," said Zorana Maravic, CEO, Digestive Cancers Europe. "However, until we address existing biosimilar access inequities, far too many patients will continue to miss out on treatment with the best possible medicines."

Act4Biosimilars.com outlines the 12 goals that have been identified under the 4As by the Steering Committee to achieve the mission. These include ensuring equitable pricing, involving patients in treatment decisions and streamlining biosimilar development.

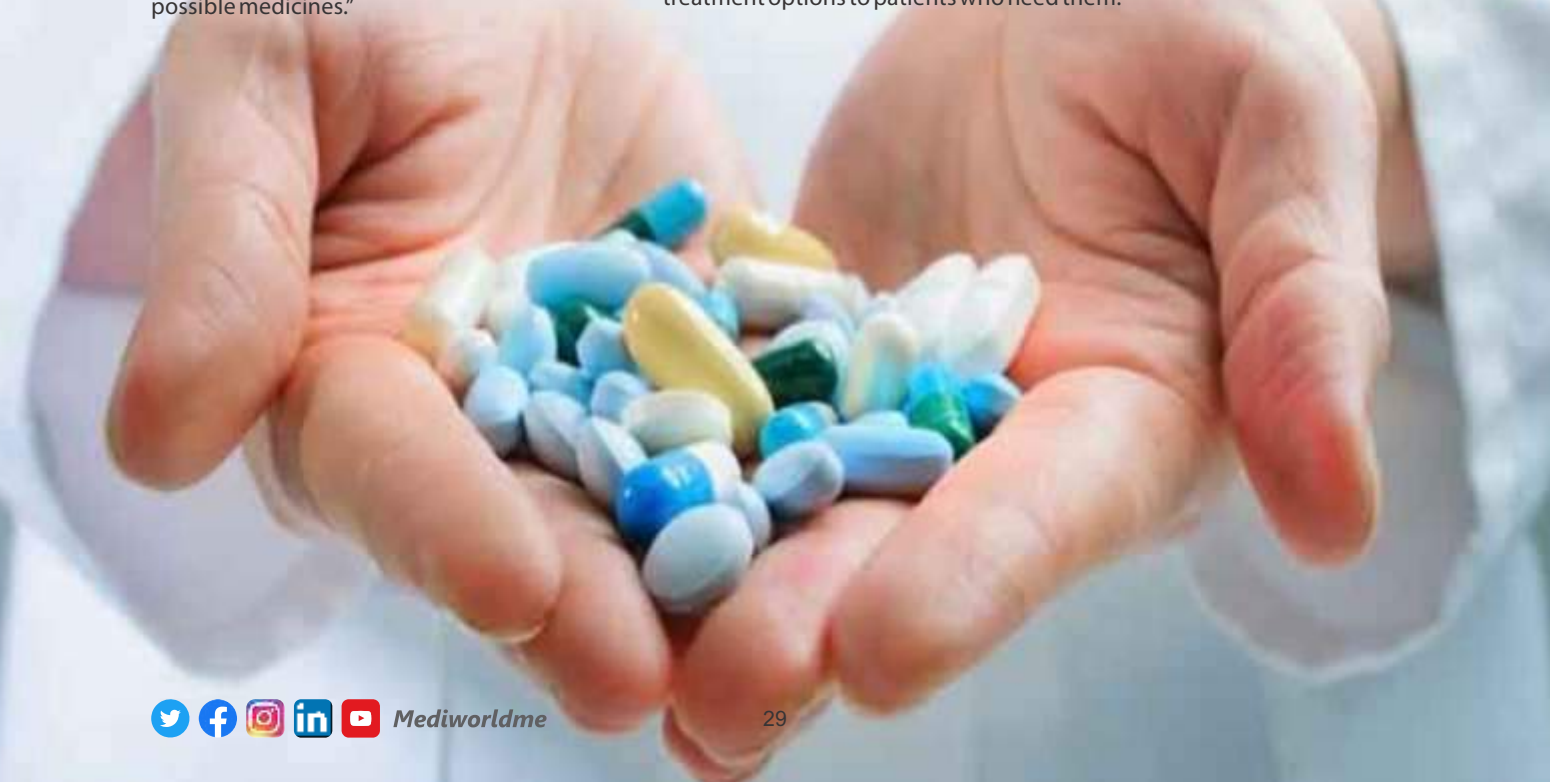
As an immediate next step, the Steering Committee is developing an Action Plan to provide the strategies, tools and activities needed to equip and empower stakeholders to realize these 12 goals, across the 30 countries and beyond. The Action Plan will be supported by Country Indicator Maps to track and measure the change that is being driven by groups, associations and organizations worldwide.

"While countries such as Norway are leading the way in biosimilar adoption and have successfully realized significant healthcare savings through increasing availability of biosimilars, there are other countries still progressing and aspiring to reach their full potential," said Professor emeritus Tore K Kvien, previous Head of Department of Rheumatology, Diakonhjemmet Hospital for 25 years. "Misinformation on the safety, efficacy and science of biosimilars continues to cause confusion and impede uptake. With the Act4Biosimilars Action Plan, we will prioritize the steps needed to help better educate, inform and create action across all countries and regions."

The Steering Committee will co-create the Action Plan with a group of biosimilar experts and key stakeholders, including patient organizations, healthcare professionals, trade associations, think tanks, government bodies and professional societies.

Act4Biosimilars is supported by founding sponsor Sandoz, a pioneer and global leader in biosimilars, who developed and brought the first biosimilar medicine to patients 16 years ago.

"Healthcare systems are facing more pressure than ever before, which can be attributed to the costs associated with a growing, aging population, more people being diagnosed with chronic diseases and, most recently, the pandemic," said Richard Saynor, Chief Executive Officer, Sandoz. "Biosimilars are part of the solution to support a more sustainable healthcare system for all and we are proud to be the founding sponsor of Act4Biosimilars, which will drive action to bring these more affordable treatment options to patients who need them."



MEDIWORLD Middle East

UPCOMING EVENTS

International Conferences on Medical and Health Science (ICMHS) (online)

02-03 June

Abu Dhabi

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

08 June

Dubai

Int'l Conference on Medical, Pharmaceutical & Health Sciences (ICMPH)

13-14 June

Dubai

TCAM Conference & Expo (TCAM Dubai UAE)

15-17 June

Dubai

International Summit on Neurology and Brain Disorders

16-18 June

Abh Dhabi

Annual Summit on Case Reports and Emergency Medicine

17-18 June

Abh Dhabi

Int'l Conference on Medical Ethics and Professionalism (ICMEP)

27 June

Dubai

2nd Conference on Pharmaceutical Sciences

29-30 June

Dubai

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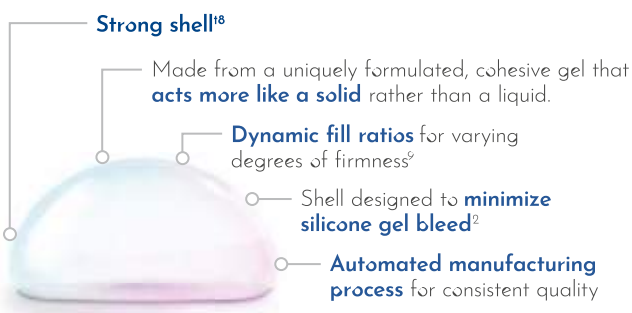
MENTOR® MemoryGel® Breast Implant 10 Year Core Study data demonstrates safety, efficacy, and high patient satisfaction.

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].



#1 GLOBAL BRAND[3]

USED IN OVER 115+ COUNTRIES

7 MILLION+ women have MENTOR® Silicone Gel Breast Implants[5]

Successfully used and trusted for more than **30 YEARS**[6]

Proven Performance

Mentor® MemoryGel® Breast Implants in Primary Augmentation Patients

What does The Mentor® Level 2 Core Study Say at 10 years?

97% Satisfied WOMEN[4]

1% Rotation RATE[4]

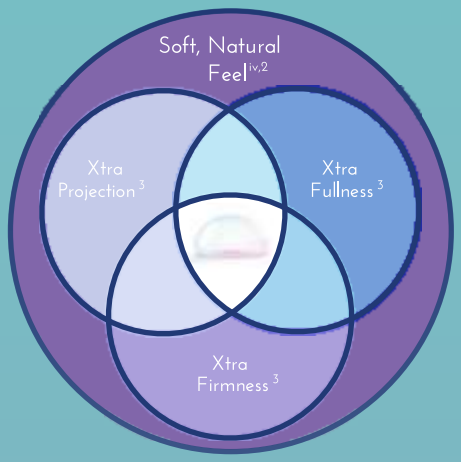
0% Double CAPSULES[4]

1.3% Wrinkling RATE[4]

LOW Capsular CONTRACTURE RATE[4]

** Based on patient survey at 10 years in the Mentor® MemoryGel™ Breast Implant 10-Year Core Gel Clincial Study Final Report.
[1] Head-to-head testing according to industry standard ASTM D412 test method for rubber properties in tension (v. 9901) between MemoryGel® (n=10) and Natrelle Inspira (n=10)

Why MemoryGel™ Xtra Breast Implants?[1]



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iv. Mentor Consumer Preference Market Research Report July 2017.

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