**Cover Story**
# Coding:
### transforming healthcare diagnosis into universal medical alphanumeric codes

**News & Update**
**GCC to continue investing in healthcare sector to maintain fiscal and monetary policies**

**www.mediworldme.com**

mediworldme

**Feature**
**The next generation Electronic Document Management system for healthcare in the UAE**

## Healthcare destination

**French medical device market valued at EUR 15.5b by 2021**

*Mediworldme*

# *Editorial*

## What's revolutionizing the med tech sector?

Technological advances are revolutionizing the medical device industry, not only increasing the number of connected medical devices available to market but strengthening their role in healthcare. Since the Covid-19 pandemic first emerged. Sales alone are estimated to be $475 billion in the US, increasing to $595 billion by 2024. The medical device industry is expected to grow at an expected rate of 5.6% CAGR until 2024.

Medical coding, closely tied in with the process of medical billing, is known to be an important facet to the health care industry. Medical coding takes the descriptions of diseases, injuries and health care procedures from physicians or health care providers and transforms them into numeric or alphanumeric codes to accurately describe the diagnosis and the procedures performed.

This system was developed because, as we all know, medicine is not always exact, and there are many paths to take in preventing, diagnosing and treating different ailments, all of which must be recorded and accounted for. In our this month's cover story we feature Dr. Ayham Refaat, Founder and CEO, ACCUMED who tells us in detail about medical coding and how it is used in the UAE? AccuMed has a team of coding experts who are certified by some of the world's most respected agencies, including the American Health Information Management Association (AHIMA) and the American Academy of Professional Coders (AAPC).

Nobody likes dealing with paperwork. That's especially true when you are in the healthcare sector where you have a hundred and one things to do. Having a good electronic records management system will improve both internal efficiency and your overall business competiveness. There's nothing more distracting or frustrating than having piles of physical documents and files lying around. And not being able to find what you need could ultimately risk in loss of important medical data. An Electronic Document Management System (EDMS) will ensure records aren't lost, and help you get any information or data you need quickly and reliably. Raed Hmoud, Head of Xerox Emirates Services, explains how MediViewer is the best best solution for clinical engagement with its intuitive user interface.

France is diverse in beauty, culture and natural wonders. Of course, how can we forget that it is the home to one of the iconic wonders of the world the Eiffel Tower, home to delicious bakery items such as croissants, macaroons and so on? Not only these specialties, the country has the second largest medical device market in Europe and the fifth largest in the world. We explore the French healthcare industry in our medical destination.

So far the year 2020 has been very stressful year on all of us in terms of covid-19, businesses going down, salary cuts, minimal traveling and so on. Let's just hope that the year 2021 is not same as its predecessor and filled more with happiness and positivity and every one of us going back to our normal lives or the new 'normal' whatever you want to call it. Advance Happy New Year to all our readers!

Sincerely,

**Ayesha Rashid**
**Editor,** *MediWorld ME*

# CONTENTS

*Mediworldme*

**Dr Batra's**

HOMEOPATHY

LONDON • DUBAI • INDIA

# TASTE THE SWEET PILLS OF SUCCESS?

Your key is a
Dr Batra's™ franchise
and success is all yours !

## WHAT YOU NEED:

**Low Initial Investment**

**Exclusive Floor Space**

## WHAT YOU GET:

**Easy Break-Even Model + High ROI**

**Round-The-Clock Support**

Wish to foray into healthcare sector? This could be your golden opportunity.

By owning a **Dr Batra's™ franchise**, you not only become a part of a leading homeopathy brand with over 240 clinics in India & abroad, but also a global homeopathy market growing at a rising rate of 30% annually.

**Grab the opportunity & taste the sweet pills of success !**

*Looking out for investors*
**Bahrain | Canada | France | Hong Kong | Malaysia | Qatar | Singapore | Switzerland | USA** and others

*Call*
**Mr. Kartik Bhatt**
**+971 52 655 9837**

*Email*
international.franchise@drbatras.com

![MEDIWORLD Middle East]

# CODING:

## transforming healthcare diagnosis, procedures & equipment into universal medical alphanumeric codes

**The global medical coding market size is expected to reach $25.4 billion by 2025, according to a new report by Grand View Research, Inc., registering a 10.0% CAGR during the forecast period. Rising need for a universal language to reduce fraud and misinterpretations associated with insurance claims is driving the market growth**

**Medical coding is the transformation of healthcare diagnosis, procedures, medical services and equipment into universal medical alphanumeric codes. The diagnoses and procedure codes are taken from medical record documentation, such as transcription of physician's notes, laboratory and radiologic results, etc. Medical coding professionals help ensure the codes are applied correctly during the medical billing process, which includes abstracting the information from documentation, assigning the appropriate codes, and creating a claim to be paid by insurance carriers.**

**Medical coding happens every time you see a healthcare provider. The healthcare provider reviews your complaint and medical history, makes an expert assessment of what's wrong and how to treat you, and documents your visit. That documentation is not only the patient's ongoing record, it's how the healthcare provider gets paid.**

The healthcare revenue stream is based on the documentation of what was learned, decided, and performed.

A patient's diagnosis, test results, and treatment must be documented, not only for reimbursement but to guarantee high quality care in future visits. A patient's personal health information follows them through subsequent complaints and treatments, and they must be easily understood. This is especially important considering the hundreds of millions of visits, procedures, and hospitalizations annually in the United States.

The global medical coding market size is expected to reach $25.4 billion by 2025, according to a new report by Grand View Research, Inc., registering a 10.0% CAGR during the forecast period. Rising need for a universal language to reduce fraud and misinterpretations associated with insurance claims is driving the market growth.

Presently, medical coding is in its initial phase with frequent introduction of advanced versions of classification systems. In addition, the number of coders is constantly rising as a result of career opportunities in this field. Escalating demand for coding services, coupled with the aforementioned factors, is driving the market growth.

Constant revisions in classification systems and their global acceptance are expected to result in lucrative growth during the forecast years. Rising demand for world-class healthcare services in developing regions is also anticipated to boost the adoption of medical coding procedures.

In the UAE, both the Governments of Dubai and Abu Dhabi have mandated the use of standardized medical codes as part of providers' e-claim transactions. Medical coding is not only important in as far as regulatory compliance is concerned. It is also crucial in accurately capturing the medical services extended by the practice and in translating these services into billable items. Inaccurate coding due to untrained staff increases the chances of claims being rejected by payers.

AccuMed has a team of coding experts who are certified by some of the world's most respected agencies, including the American Health Information Management Association (AHIMA) and the American Academy of Professional Coders (AAPC).

**Dr. Ayham Refaat**
Founder and CEO, ACCUMED

Dr. Ayham Refaat, Founder and CEO, ACCUMED tells the editor of Mediworldme, Ayesha Rashid, what is medical coding in detail and how it is used in the UAE?

## Tell us in detail what is medical coding?

Medical coding is the process of transforming medical data which includes healthcare diagnosis, procedures, medical services, and equipment into universal medical alphanumeric codes. In the healthcare industry there are standardized and internationally recognized numerical codes that describe diseases, injuries, and medical procedures.

The choice of the correct medical code is dependent on a detailed documentation of the patient's medical history and current episode of care, supported by a deep knowledge of the medical coding, anatomy and physiology by certified medical coders.

## How do coders take medical reports from doctors and turn them into a set of codes?

Medical coders must understand what each of the codes represent, and there are three types of coding: Diagnosis classifications which all follow the International Classification of Diseases, or ICD codes, developed by WHO. These are diagnostic codes that create a uniform vocabulary for describing the causes of injury, illness and death. Classifications for Procedures which are used to document the majority of the medical procedures performed in a physician's office. Example of those would be the Current Procedure

Terminology (CPT) developed by the American Medical Association, or the Australian Classification of Health Interventions (ACHI) developed by the University of Sydney, or more recently the Saudi Billing System for Private Health Insurance (SBSPHI) developed by ACCUMED. Last type would be those classifications that are used to represent not only procedures like above, but also medical devices, consumables, supplies, medications and transportation services. Example of which would be the Healthcare Common Procedure Coding System (HCPCS), developed by Centers for Medicare and Medicaid (CMS) in the USA.

## Why do we need to code medical reports?

Medical coding helps to uniform and collect accurate medical data from healthcare providers about episodes of care., Such data allows for governments and agencies to track health trends more efficiently which can help them understand their healthcare system needs better, set policies, understand the effectiveness of a treatment or the prevalence of a certain disease, and take informed data-backed decisions for the betterment of the health of their citizens

It also allows the use of modern technologies and big-data analytics to leverage automation and artificial intelligence to improve the clinical outcomes while reducing cost of healthcare services, thus leading to the transformation towards a value-based healthcare system in a country.

Accurate medical documentation is a critical aspect of billing within the revenue cycle process in the healthcare industry.

Providers use these detailed medical records to validate their reimbursements to payers when a conflict with a claim has been issued. If a procedure or treatment is not properly documented in the medical record by a provider or their hospital staff, the health organization could face a denied claim. When records contain inaccurate information or are incomplete, an immense amount of time and money must go into correcting the flaws within the document. When this issue is happening on a grand scale, the stress put on the revenue cycle process can have major consequences for the provider's bottom line.

By ensuring that documentation is correct before it is sent to the payer, the flow of the revenue cycle can go uninterrupted and healthcare administration costs can be kept at a minimum.

### How it is closely tied to medical billing?

The main purpose of medical coding is the collection of accurate, meaningful and actionable clinical data. Using Classification systems for billing by assigning a financial value (price) to a service code is a proven method to ensure the availability and accuracy of coded clinical data. Tying medical coding to medical billing ensures physicians will be incentivized to document a patient's visit to the highest detailing, and ensures coders assigning codes to the highest accuracy, so to guarantee the payment. Both outcomes being of extreme value to any healthcare system

Moreover, it facilitates the use of technology and the exchange of data between the healthcare providers, payers and regulating bodies electronically.

Tell us in detail about the billing process and how does it represent the 'heart' of the entire revenue cycle management?

Medical billing is an extremely complex process that accompanies a patient's journey in a healthcare facility from beginning to end and is comprised of many steps at each level of the care delivery process. Registering patients is the first step of the process during which a patient will need to share their personal and insurance details for the healthcare facility to establish eligibility of required treatment under the patient's insurance policy.

Once eligibility is established, a patient will be seen by the physician who might require further diagnostic procedures to diagnose the case. This will trigger a multi-steps authorization process whereby clinical information about the case has to be coded and sent to the insurance company for their review and decision.

If approval is granted and after the service is provided, the final medical report is sent again to the medical coder to transform the data into codes, the report which is translated into codes and contains personal information about the patient and their medical history is called the 'superbill', once the medical coder is done, he would then send the 'superbill' to the medical biller, the medical biller would then put it either into a paper claim form, or into the proper practice management or billing software, and transmit claims. One the claim is received by the payer (Insurance company) it goes under the adjudication process where the payer evaluates the medical claim and decide if the claim is approved or denied and how much of the claim will be reimbursed. The payer would then send a report to the biller who has to create a statement for the patient.

Denied claims will then have to be reviewed by the healthcare facility specialized team to understand reasons for rejection and resubmit the case with proper justifications.

Further processes related to collection of payment from payer, collection of co-payments from patients, and final reconciliation has to be performed as well to avoid revenue leakage and ensure the billing cycle is closed efficiently.

Depending on the country, it takes a healthcare provider any time between 90 – 180 days from the day the patient visited the facility, till the time the payment against that visit is received. If claims are denied and has to be resubmitted, this could take the timeframe up to 300 days.

How do you safeguard patient information in terms of coding and billing? Please provide us with details about measures taken to safeguard patient's data.

Data confidentiality should be a top priority for healthcare providers, as well as Revenue Cycle Management companies who are using these data for coding and billing purposes. In ACCUMED, our systems automatically block all personal information of a patient and anonymize the claim. Staffs working on the case can only see age and gender (both required for accurate coding) but do not know who the patient is. The system then at the end of the process inserts the patient data before transmitting to the payer in an automated format. All computers are blocked for any print, download or use of external hardware. Moreover, staffs are requested to leave their mobiles in safety boxes when arrived at the office before they start their work to avoid taking photos of the screen.

**In the UAE, both the Governments of Dubai & Abu Dhabi have mandated the use of standardized medical codes as part of providers' e-claim transactions.**

Paper claims pose more challenge in data confidentiality which is why we always advice healthcare providers to use Electronic Medical Records. Still, in the absence of EMR, we have a dedicated department that receives the paper medical records and anonymize the patient's data using markers. The department is fully secured to avoid any leakage. The information is then entered to our system to create and electronic claim and the process is continued digitally as explained above.

### In the UAE, why is medical coding mandatory? How does it help the government?

In the UAE, both the Governments of Dubai and Abu Dhabi have mandated the use of standardized medical codes as part of providers' e-claim transactions.

Medical coding is crucial as it helps uniform and collect accurate medical data from healthcare providers, and it provides governments with data that helps them make better informed decisions and track medical trends and have a better control over medical costs and manage the health care industry in general. The medical reports also allow governments and healthcare institutions track medicines and how affective they are.

### Kinds of technology used in medical billing and coding?

We at ACCUMED have an RCM focused billing platform which is designed specifically for the GCC healthcare market and based on best global practices and aims to achieve operational and financial excellence. The platform is able to integrate with any existing hospital management system or RCM software. The platform can find and remove any operational issues and bridge billing gaps. And the billing system compiles with

regulation policies, payer policies, medical Rules and ICD/CPT Crosswalks, provider Business Rules

Automation is key to us as it helps us minimize errors and reduce costs. We have also developed artificial-intelligence based claims scrubbing tools used to ensure accuracy of coding nd compliance with regulators and payers requirements. We also provide dedicated technology solution to small size clinics and medical centers to aid them in transforming into paperless environment. This solution is comprised of a cloud-based Electronic Medical Record, Practice Management Software and a our Billing platform; all integrated into one solution that can be availed on prescription basis at nominal cost with zero upfront investment (both time and money) in hardware and software complicated setups.

In your opinion why is proper medical coding important for ensuring accurate payment and patient care history?

As mentioned, every symptom or patient status has a special medical code created to reflect it. The main purpose of having a medical coding is to collect accurate clinical data that is meaningful and actionable. The medical codes are used to record and track the medical history of the patient as well as collecting claims. If there are any errors made while coding, then the medical history of the patient is compromised directly impacting the future health of any individual. In addition to patient's health, errors in medical codes also impacts medical billing leading to possible delays or rejections in payments or claims resulting in loss of revenue.

# The next generation Electronic Document Management system for healthcare in the UAE

**Specifically designed for patient records to deliver a paperless healthcare environment, MediViewer provides clinicians and relevant hospital staff with a powerful, intuitive and user-friendly solution to view a patient's digitized paper and electronic records. This simple yet sophisticated platform facilitates rapid access to clinical content providing a 360º view of a patient's record at the point of care.**

A document management system (DMS) is a system used to receive, track, manage and store documents and reduce paper. Most are capable of keeping a record of the various versions created and modified by different users (history tracking). In the case of the management of digital documents such systems are based on computer programs. The term has some overlap with the concepts of content management systems. It is often viewed as a component of enterprise content management (ECM) systems and related to digital asset management, document imaging, workflow systems and records management systems.

Electronic Document Management System (EDMS) Market size was estimated at over $2 billion in 2016 and is predicted to grow at over 15% CAGR from 2017 to 2024, according to gminsights.com.

Emerging trend of software as a service (SaaS) and cloud computing, coupled with the favorable regulatory scenario is anticipated to escalate electronic document management system market growth. The growing trend of Bring Your Own Device (BYOD) and integration of document management solution with mobile devices has propelled adoption of the technology among enterprises. Government initiatives and mandates on data storage protocols are expected to offer growth opportunities for the market.

A major factor propelling the industry growth can be attributed to the benefit of a paperless environment created by such solutions. The system reduces the costs and time associated with document management by providing multiple version control and federated searches. The document management software is integrated into the business process thereby allowing organizations to

effectively manage their documentation needs. Industry players are focusing on innovation and technological evolution to customization and enhance their product offering. Ease of integration of the system with existing and new technology solutions is expected to drive EDMS market penetration.

### Next-gen EDM

Xerox Emirates, IMMJ Systems and Ideal Middle East have come together in a strategic partnership to create an all-in-one solution for the medical industry, MediViewer; the game-changing next generation Electronic Document Management System in the UAE.

Specifically designed for patient records to deliver a paperless healthcare environment, MediViewer provides clinicians and relevant hospital staff with a powerful, intuitive and user-friendly solution to view a patient's digitized paper and electronic records. This simple yet sophisticated platform facilitates rapid access to clinical content providing a 360º view of a patient's record at the point of care.

MediViewer also offers a revolutionary integrated scanning and document classification module that drastically reduces the time and costs historically associated with scanning and indexing records bringing seamless and unrivalled benefits to the scanning process and ingestion of the digital imagery into MediViewer. This is especially important considering the mandatory requirements to connect to Health Information Exchanges across the region.

Raed Hmoud, Head of Xerox Emirates Services, explains to Ayesha Rashid of Mediworldme how



MediViewer is the best best solution for clinical engagement with its intuitive user interface.

### Tell us in detail about MediViewer in the UAE?

MediViewer offers a revolutionary integrated scanning and document classification module that drastically reduces the time and costs historically associated with scanning and indexing records bringing seamless and unrivalled benefits to the scanning process and ingestion of the digital imagery. This is especially important considering the mandatory requirements to connect to Health Information Exchanges across the region (especially organizations in Abu Dhabi, where connecting to the Malaffi Exchange has become a prerequisite for continued accreditation.) As organizations are focusing on their digital transformation journey, this solution plays a vital role in the early stages of the digital journey offering access to patient health data and contributes to their national health record. For more digitally mature organizations, the management of residual paper records generated is a technological challenge; hence working with Ideal Middle East, MediViewer are able to implement fast and safe results that ensure a business's continuity.

### Why did you launch it in the UAE?

The healthcare industry in the UAE has undergone a digital revolution and is now recognized as one of the world's leading healthcare sectors. In line with this, we are working with leading healthcare organizations through their digital transformation journey. One of the key challenges that we have come across is to improve hospital (and clinics) efficiency and streamline management of large quantities of paper including thousands of records and clinical notes associated with patient history, visits, treatments, and follow-up care.

The Xerox Emirates, IMMJ Systems and Ideal ME partnership can meet this challenge by digitizing paper records with MediViewer, a secure cloud-based or on premise Document Management system, completely integrated with a hospital or clinic's Electronic Health Record (EHR) system. The clinicians and patient can then view and access a complete record anytime, anywhere, on any device enabling them to make more informed decisions more quickly and efficiently.

### How and why will this system be an all in one solution for the medical industry?

We along with our partners can deliver a 'paper to data' turnkey digital transformation solution starting with scanning physical records, applying intelligence to unstructured information and then presenting the digitized records within MediViewer.

Xerox Emirates' Scanning, Healthcare Informatics and Digital Transformation teams can manage the whole process of eradicating the need for paper based records within a healthcare setting leading to a more productive and efficient record management

UK EDMS market size, by service, 2016 & 2024 (USD Million)
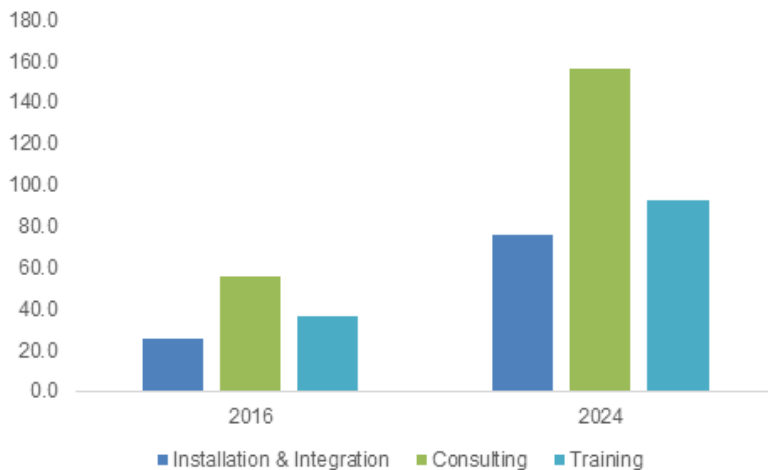
Source: www.gminsights.com

*The Xerox Emirates, IMMJ Systems and Ideal ME partnership can meet this challenge by digitizing paper records with MediViewer, a secure cloud-based or on premise Document Management system, completely integrated with a hospital or clinic's Electronic Health Record (EHR) system. The clinicians and patient can then view and access a complete record anytime, anywhere, on any device enabling them to make more informed decisions more quickly and efficiently.*

process.

### *Describe its user-friendly solution to view a patient's digitized paper and electronic records?*

MediViewer provides a completely unique way to manage medical records. They provide a viewing platform based on a metadata driven structure. That means that they don't have conventional folders and all of the limitations that come with it. Within MediViewer, all of the information within a medical record is stored in a single place, giving powerful filter and search options personalized to each user. Combining this with their dynamic classification engine means the most important information can be found within a few clicks.

### *Describe its 360 degrees view of a patient's record at the point of care?*

MediViewer merges all of the unstructured content from a scanned medical record and combines it with structured data. Due to the Open API options within MediViewer and their world class HL7 and FHIR integration engines, MediViewer can pull and push content and data from many sources and capture it alongside the scanned medical record. This means that MediViewer can provide a holistic view of individual patient's medical record instead of having a huge number of separate files to maintain.

### *What are other important aspects of Mediviewer?*

MediViewer provides many important features, from viewing upcoming clinic lists to powerful personal filters. But probably the most important aspects of the system are its ease of use and its speed of finding and viewing the information you need to make more informed clinical decisions. The system provides many unique features such as reduction in space to store physical files, multiple healthcare professionals can view different records from almost any device simultaneously making every experience within MediViewer an efficient one.

### *How will the partnership strengthen the paperless approach in the healthcare industry in the UAE?*

We have an unparalleled reputation for delivering successful Electronic Document Management solutions in the UAE however the complexity of patient care models and the critical nature of clinical information require a breadth of expertise and real world healthcare experience. Our partnership with IMMJ Systems & Ideal Health ME, provides clinically trained specialists the opportunity to use their industry expertise combined with the MediViewer solution to transform paper based medical records into digital data allowing them to accelerate their paperless strategies.

### *What do you hope to achieve with this partnership with IMMJ Systems, and how will this partnership help the medical industry?*

By partnering with IMMJ Systems, we are entering into a strategic collaboration that gives both entities access to a vast network of highly trained experts and professionals in the healthcare sector. This partnership will help strengthen the paperless approach in the UAE's healthcare sector, which is something we're very proud of at Xerox Emirates. The all in one solution is a perfect synergy and each of our expertise will ensure an easier to use, faster to implement, more adaptable system than there has ever been before in this industry

### **Do you think innovations like this will revolutionize the medical technology industry and why?**

Absolutely. Now more than ever, the medical industry is seeing a big shift in the way they work due to the COVID 19 situation. There is an urgency to establish new technological advancements and ways of working. For example, the concept of remote consultation with a doctor or care provider has historically not been adopted as a mainstream practice despite telehealth being available for a long time. However, with limited physical access to healthcare facilities due to COVID-19, it has entered mainstream thinking and become an essential part of the healthcare journey for both patients and healthcare professionals. Similarly, solutions like MediViewer are now being deployed to allow healthcare professionals access patient information resulting in quick response times and better care.

# Handled in good company.

From arrival until departure, your Dangerous Goods shipments will benefit from our experience, unique infrastructure and our careful and sensitive approach. Quality first.

- Unique area for DGR shipments: 1,000 sq. m.
- Staff trained to IATA standards and requirements.
- Acceptance and handling available 24/7.
- Handling capacity for all 9 hazard classes.

Please call **+352 2456 6001** or visit **www.luxaircargo.lu** for more information.

**Luxair CARGO**

# Royal Philips

## introduces non-invasive ventilator therapy

*"ExpiraFlow Technology represents a shift in the paradigm of ventilator COPD management toward more personalized therapy, which automatically optimizes ventilation to the individual needs of the patient,"* said Peter Calverley, Professor of Respiratory Medicine, School of Aging and Chronic Disease at the University of Liverpool. *"By monitoring the presence of EFL on a breath-by-breath basis, the A40 EFL system can automatically adjust therapy pressures to ensure efficient lung emptying and better gas exchange. This new focus allows us to consider individual differences in lung mechanics and gas exchange when managing complex respiratory patients,"* says Peter Calverley

Chronic obstructive pulmonary disease (COPD) is a chronic inflammatory lung disease that causes obstructed airflow from the lungs. Symptoms include breathing difficulty, cough, mucus production and wheezing. It is typically caused by long-term exposure to irritating gases or particulate matter, most often from cigarette smoke. People with COPD are at increased risk of developing heart disease, lung cancer and a variety of other conditions.

Emphysema and chronic bronchitis are the two most common conditions that contribute to COPD. These two conditions usually occur together and can vary in severity among individuals with COPD.

Chronic bronchitis is inflammation of the lining of the bronchial tubes, which carry air to and from the air sacs (alveoli) of the lungs. It is characterized by daily cough and mucus production.

Emphysema is a condition in which the alveoli at the end of the smallest air passages (bronchioles) of the lungs are destroyed as a result of damaging exposure to cigarette smoke and other irritating gases and particulate matter.

Although COPD is a progressive disease that gets worse over time, COPD is treatable. With proper management, most people with COPD can achieve good symptom control and quality of life, as well as reduced risk of other associated conditions.

The global mechanical ventilators market size is expected to reach $3.6 billion by 2027 according to a new report. The market is projected to register a CAGR of 4.7% from 2022 to 2027. The unprecedented dawn of COVID-19 pandemic,

increasing incidence of Chronic Obstructive Pulmonary Disease (COPD), rising incidence of respiratory emergencies, and technological innovation in respiratory care devices are the major factors driving the market growth.

Technological advancements such as rapid innovation in the field of Positive Airway Pressure (PAP) devices, portability and improvement in the battery life of transport and portable devices are the factors driving the growth of the market. The World Health Organization (WHO) estimates that, at present, approximately 90% of COPD-related deaths occur in low- and middle-income countries.

Therefore, the rise in prevalence of such diseases, introduction, and availability of portable, cost contained, and easy-to-use mechanical ventilators for the treatment of respiratory conditions is expected to drive the growth in the demand for mechanical ventilators worldwide.

## Non-invasive ventilator therapy

Royal Philips, a global leader in healthcare technology, recently announced the launch of Philips Ventilator BiPAP A40 EFL. With the introduction of this non-invasive ventilator, Philips extends its homecare solutions with a new ventilation therapy feature for chronic obstructive pulmonary disease (COPD) patients to breathe easier. Now, pulmonologists can identify COPD patients with expiratory flow limitation (EFL) and treat them with targeted therapy to reduce symptoms and increase their comfort while sleeping. The BiPAP A40 EFL ventilator continuously and optimally adjusts pressure based on patient needs.

BiPAP A40 EFL is the first and only non-invasive ventilator that allows health care professionals to automatically screen

for and detect EFL, then provide optimal homecare therapy to dynamically and automatically abolish EFL [1]. This helps to reduce the patient's work of breathing. Built with Philips proprietary and clinically validated ExpiraFlow technology, BiPAP A40 EFL is designed to connect across the care pathway – from diagnostic work to point of care therapy – to enable informed clinical decisions and optimize ventilation therapy, even remotely.

*More than 50 percent of COPD patients experience EFL – limited exhalation of breath from the lungs – which occurs in the lower airways when patients are breathing quietly. EFL causes hyperinflation, or breathing at increased lung volumes. COPD patients with EFL are more likely to be hospitalized more often and have increased mortality rates, however EFL is difficult to detect and often undertreated, despite its prevalence. Philips unique ExpiraFlow technology automatically detects EFL more accurately than any alternate methods to enable the more effective treatment of patient in the home and help avoid hospital readmissions.*

"ExpiraFlow Technology represents a shift in the paradigm of ventilator COPD management toward more personalized therapy, which automatically optimizes ventilation to the individual needs of the patient," said Peter Calverley, Professor of Respiratory Medicine, School of Aging and Chronic Disease at the University of Liverpool. "By monitoring the presence of EFL on a breath-by-breath basis, the A40 EFL system can automatically adjust therapy pressures to ensure efficient lung emptying and better gas exchange. This new focus allows us to consider individual differences in lung mechanics and gas exchange when managing complex respiratory patients."

Revolutionizing COPD care solutions

BiPAP A40 EFL aims to revolutionize COPD care solutions. Clinicians can now detect EFL in hypercapnic COPD patients at the point of care, ensure personalized patient treatment at home and monitor care remotely.

"EFL often goes undetected, meaning patients don't receive the care they need to improve their disease," said Eli Diacopoulos, Respiratory Care Business Leader at Philips. "At Philips, we're committed to identifying these gaps and meeting the challenges that COPD patients face every day. BiPAP A40 EFL aims to revolutionize COPD care solutions. Clinicians can now detect EFL in hypercapnic COPD patients at the point of care, ensure personalized patient treatment at home and monitor care remotely."

The BiPAP A40 EFL leverages Philips leading connected solution platform to streamline diagnostic work through integration to Philips Alice sleep lab and home diagnostic systems. When prescribed and used in the home, the BiPAP A40 EFL connects to Philips Care Orchestrator cloud-based care management system. By making it easier to analyze and share information, this connectivity enables providers to make faster, more informed clinical decisions, and identify and prioritize patients who are in need of therapy intervention to better manage chronic respiratory patient care from hospital to home.

BiPAP A40 EFL is CE marked and initially available in selected countries in Europe, with expansion in to additional European markets expected in 2021.

# WORLD CARGO SUMMIT 2021

Transforming Global Air Logistics Beyond the Crisis

**January 26-27, 2021**

Web Conference • 1:1 Meetings • Virtual Exhibition

## World Cargo Summit 2021

is a new unique 100% virtual experience that will give the air cargo industry a possibility to meet again. Two-day web-conference with 60+ speakers from all parts of the world, 1:1 meetings in our networking lounge and a virtual exhibition platform where exhibitors can highlight their products and services. Our theme will be "Transforming Global Air Logistics Beyond the Crisis".

www.worldcargosummit.com

# French
## medical device market valued at EUR 15.5b by 2021

**French medical device market will grow at an average annual rate of 4.7%, from EUR 13.5 billion (2018) to EUR 15.5 billion in 2021 (BMI Research). The French medical technology association SNITEM (Syndicat National de L'Industrie des Technologies Medicale) even expects sector sales of EUR 28 billion (2016), of which EUR 8 billion will be exported.  A look at health expenditure in 2017 shows a share of 11.5% of GDP (Germany 11.3%) (OECD)**

France consists of metropolitan France in Western Europe and several overseas regions and territories. The metropolitan area of France extends from the Rhine to the Atlantic Ocean and from the Mediterranean Sea to the English Channel and the North Sea. It borders Belgium, Luxembourg and Germany to the northeast, Switzerland, Monaco and Italy to the east and Andorra and Spain to the south. The overseas territories include French Guiana in South America and several islands in the Atlantic, Pacific and Indian Oceans. The country's 18 integral regions (five of which are situated overseas) span a combined area of 643,801 km2 (248,573 sq mi) and a total population of 67.07 million (as of June 2020). France is a unitary semi-presidential republic with its capital in Paris, the country's largest city and main cultural and commercial center.

Following the revolution, France reached its political and military zenith in the early 19th century under Napoleon Bonaparte, subjugating much of continental Europe and establishing the First French Empire. The French Revolutionary and Napoleonic Wars shaped the course of European and world history. After the collapse of the empire and a relative decline, France endured a tumultuous succession of governments culminating in the establishment of the French Third Republic in 1870 in the midst of the Franco-Prussian War. France was one of the prominent participants of World War I, from which it emerged victorious, and was one of the Allied powers in World War II, but came under occupation by the Axis in 1940. Following liberation in 1944, a Fourth Republic was established and later dissolved in the course of the Algerian War. The Fifth Republic, led by Charles de Gaulle, was formed in 1958 and remains to this day. Algeria and nearly all other French colonies became independent in the 1960s, with most retaining close economic and military connections with France.

France retains its centuries-long status as a global center of art, science, and philosophy. It hosts the world's fifth-largest number of UNESCO World Heritage Sites and is the leading tourist destination, receiving over 89 million foreign visitors in 2018. France is a developed country with the world's seventh-largest economy by nominal GDP, and the tenth-largest by PPP. In terms of aggregate household wealth, it ranks fourth in the world. France performs well in international rankings of education, health care, life expectancy, and human development. It remains a great power in global affairs, being one of the five permanent members of the United Nations Security Council and an official nuclear-weapon state. France is a founding and leading member of the European Union and the Eurozone, and a member of the Group of 7, North Atlantic Treaty Organization (NATO), Organization for Economic Co-operation and Development (OECD), the World Trade Organization (WTO), and La Francophonie.

### Healthcare Sector

The French health care system is generally recognized as offering one of the best, services of public health care in the world. Above all, it is a system that works, provides universal cover and is a system that is strongly defended by virtually everyone in France.

The health care system in France is made up of a fully-integrated network of public hospitals, private hospitals, doctors and other medical service providers. It is a universal service providing health care for every citizen, irrespective of wealth, age or social status.

The French health care system is one of universal health care largely financed by government national health insurance. In its 2000 assessment of world health care systems, the World Health Organization found that France provided the

*American hospital of Paris, Paris.*



"best overall health care" in the world. In 2017, France spent 11.3% of GDP on health care, or $5,370 per capita, a figure higher than the average spent by rich countries (OECD average is 8.8%, 2017), though similar to Germany (10.6%) and Canada (10%), but much less than in the US (17.1%, 2018). Approximately 77% of health expenditures are covered by government funded agencies.

Most general physicians are in private practice but draw their income from the public insurance funds. These funds, unlike their German counterparts, have never gained self-management responsibility. Instead, the government has taken responsibility for the financial and operational management of health insurance (by setting premium levels related to income and determining the prices of goods and services refunded). The French government generally refunds patients 70% of most health care costs, and 100% in case of costly or long-term ailments. Supplemental coverage may be bought from private insurers, most of them nonprofit, mutual insurers. Until 2000, coverage was restricted to those who contributed to social security (generally, workers or retirees), excluding some poor segments of the population; the government of Lionel Jospin put into place universal health coverage and extended the coverage to all those legally resident in France. Only about 3.7% of hospital treatment costs are reimbursed through private insurance, but a much higher share of the cost of spectacles and prostheses (21.9%), drugs (18.6%) and dental care (35.9%) (figures from the year 2000). There are public hospitals, non-profit independent hospitals (which are linked to the public system), as well as private for-profit hospitals.

## Medical device market

With 67 million inhabitants, France is the second largest market in Europe after Germany. And this also applies to the Medical Device sector. Therefore, medical device manufacturers from all over the world would like to place their products here as well. But how can a successful market entry take place?

According to forecasts by BMI Research, the market will grow at an average annual rate of 4.7 percent, from EUR 13.5 billion (2018) to EUR 15.5 billion in 2021. The French medical technology association SNITEM (Syndicat National de L'Industrie des Technologies Medicale) even expects sector sales of EUR 28 billion (2016), of which EUR 8 billion will be exported.  A look at health

expenditure in 2017 shows a share of 11.5% of GDP (Germany 11.3%) (OECD).

Total market demand in France for medical equipment was estimated at $40.3 billion in 2019, with imports accounting for $14 billion. Imports from the United States were forecasted at USD 4.7 billion, or 33.5% of total imports. This percentage is expected to remain approximately the same over the next two years, with overall demand growing at 3% annually.

The French medical device market is the second largest market in Europe and the fifth largest in the world.

French manufacturers used to control the majority of the domestic medical device industry, but the current market relies increasingly on imports as manufacturing shifts to other parts of the world. Medical device imports amounted to $3.8 billion in 2015, more than 50% of the overall market. However, French device manufacturers are

sophisticated and formidable, presenting significant competition to importers selling in France.

Opportunities in the French market: The French medical device market is robust. Manufacturers producing in-demand technologies such as diagnostic imaging equipment, disposable medical products, non-invasive surgical devices, orthopedic implants, intensive care equipment, hygiene products, and other innovative products will find their products are well-received.

Industry challenges in France: It is difficult to predict how the French medical device market will evolve in the next few years. The relatively weak Euro continues to benefit French companies exporting to the US, but presents ongoing challenges for importers, particularly from the United States. Nonetheless, foreign manufacturers continue to recognize the size and potential of the French market but face hefty competition from large, multinational corporations with established subsidiaries in France.

### How France compares to other markets?

France ranks among the top five largest medical device markets in the world. France spends 3% of total health expenditure on medical equipment and supplies, and 0.3% of its GDP, which is average for a Western European country. The overall market is generally well developed; however, certain sub-sectors in the more innovative forms of technology still present opportunities for entry. While the public sector is the largest purchaser of diagnostic, therapeutic and surgical equipment, the private sector is also a very dynamic player.

The continuing deficit of the national health insurance funds has prompted new measures to control spending on medical devices, similar to those already in force for pharmaceuticals.

To export medical devices to France, US companies should either have a local agent/distributor or set up a subsidiary.

Medical devices in the French market, whether imported products or domestically manufactured lines, are subject to the following requirements:

### Current market trends

The medical market is likely to only see moderate growth, as it has risen at a very small, steady rate in past years. The medical manufacturing industry has seen entry of foreign companies; larger manufacturers are now subsidiaries of multinational groups.

Domestic production in several sectors of the French medical device market is meeting part of the demand, and is supplemented by imports, which now account for around 35% of consumption.

US companies can expect to face competition in this market from major global suppliers such as Siemens, Fresenius, Hitachi, Toshiba, Philips, and Smith & Nephew. Additionally, competition can be expected from French players such as Air Liquide, Asklé Santé, Coloplast, Landanger, Mediprema, Moria, Paul Hartmann, Peters Surgical, Proteor, Systam, Thuasne. France is home to many subsidiaries of American companies such as Abbott Vascular, Alcon, BD, Boston Scientific, 3M Santé, Baxter, Edwards Lifesciences, GE Medical, Johnson & Johnson Ethicon, Medtronic, St. Jude Medical and Zimmer.

### E – Health in France

France's new healthcare act adopted by Parliament in mid-2019 (based on the government's plan 'My Health 2022') seeks to foster the country's e-health readiness:

Streamlined governance, improved interoperability, and enhanced security are key focus areas

Electronic Health Records [EHR] will be rolled out nationwide after significant delay and will become the cornerstone of several e-Health platforms

Artificial Intelligence [AI] Health has been identified as a

| | FRANCE | GERMANY | UNITED KINGDOM |
|---|---|---|---|
| Population | 66,553,766 | 80,854,408 | 64,088,222 |
| Primary language(s) | French | German | English |
| Total healthcare spending | $330 billion | $437 billion | $252 billion |
| Healthcare expenditures total (% of GDP) | 11.5% | 11.3% | 9.1% |
| Healthcare expenditures per capita | $4959 | $5411 | $3935 |
| Expenditures on healthcare | Government: 78% Private: 22% | Government: 77% Private: 23% | Government: 83% Private: 17% |
| Size of medical device market (USD) | $14.5 billion (USD) | $26 billion (USD – 2014) | $9.5 billion (USD) |
| Number of hospital beds | 6.4 per 1000 people | 8.2 per 1000 people | 2.9 per 1000 people |
| Age distribution | 0-14 years: 19% 15-64 years: 72% 65 years and over: 19% (2015 est.) | 0-14 years: 13% 15-64 years: 66% 65 years and over: 21% (2015 est.) | 0-14 years: 17% 15-64 years: 65% 65 years and over: 18% (2015 est.) |
| Life expectancy at birth | Male: 78 years Female: 85 years | Male: 78 years Female: 83 years | Male: 78 years Female: 83 years |
| Currency | Euro (€) | Euro (€) | Pound sterling (£) |

Source: Emergo by UL

*University Hospital Henri Mondor, Paris, France*

priority domain, and a data hub for the exploration of one of the world's largest healthcare data sets has been established

Telemedicine, already strengthened through recent introduction of full coverage by the public health system, will be opened further to additional healthcare professions

With a higher than European average spending of 11.5% of GDP on healthcare and good health outcomes, France has been regularly lauded for the high quality of healthcare provided1. Yet, the country has often been perceived as a laggard in digitalization of the healthcare system.

**Building on successive digital health policy efforts since 2010, France has significantly sharpened its focus to result in today's global vision for a comprehensive national e-Health agenda, which puts the patient at the center. The 'National Health Strategy 2022', which was enacted as law in mid-2019, promotes, among other non-digital measures, the reinforcement of governance, security, and interoperability as well as the accelerated roll-out of digital health applications. It aims to stimulate innovation in digital care provision, notably telemedicine, and is supported by an investment program for increasing the digital readiness of the country's hospital network.**

Driven by the desire for closer coordination of all stakeholders, both public and private, a single ministerial delegation will take charge of all e-Health activities within the Ministry of Health. In addition, the national digital health agency (ANS) was created in December 2019 from its predecessor agency ASIP Santé to operationalize the government's e-health strategy. In February 2020, the ANS published the overarching technical policy framework for the e-health services and platforms foreseen by the new

legislation. This comprehensive framework will serve as a basis for subsequent enforcement ordinances by the ministry.

In particular, the ANS mission includes the continuation of the development and dissemination of frameworks for security and interoperability of health information systems. Since no standards from the interoperability framework have yet been completely enforced, facilitation of interoperability in EHR systems through a standardized language and coding for all providers and stakeholders remains a key priority.

### Developments in the future

In the coming years, the government will release investments of 5 billion euros for the digitalization of the health sector. 3 billion of this is earmarked for the modernization of technical equipment and infrastructure.

According to the SNITEM association, the social security system will make savings above all in the area of medical devices. In particular, further savings will be made on investments by hospitals. This applies especially to public hospitals, as they account for 77 percent of health expenditure.

All in all, it remains to be seen that the reforms in France will also change the individual distribution structures, especially in the outpatient sector. Medical technology companies should be called upon to monitor this market closely in the coming months and react to changes accordingly. With a suitable strategic partner, market entry should be successful.


*Emergency medical services in France*

# THE ONLY E-PLATFORM
## MADE BY PEOPLE FOR PEOPLE



**DATA-PROCESSING ABILITY**

**INTUITIVE**

**SENSE OF SERVICE**

**EMOTIONAL INTELLIGENCE**

**RELIABLE**

**STRESS-FREE**

**FLEXIBILITY**

**COMPLEX PROBLEM-SOLVING**
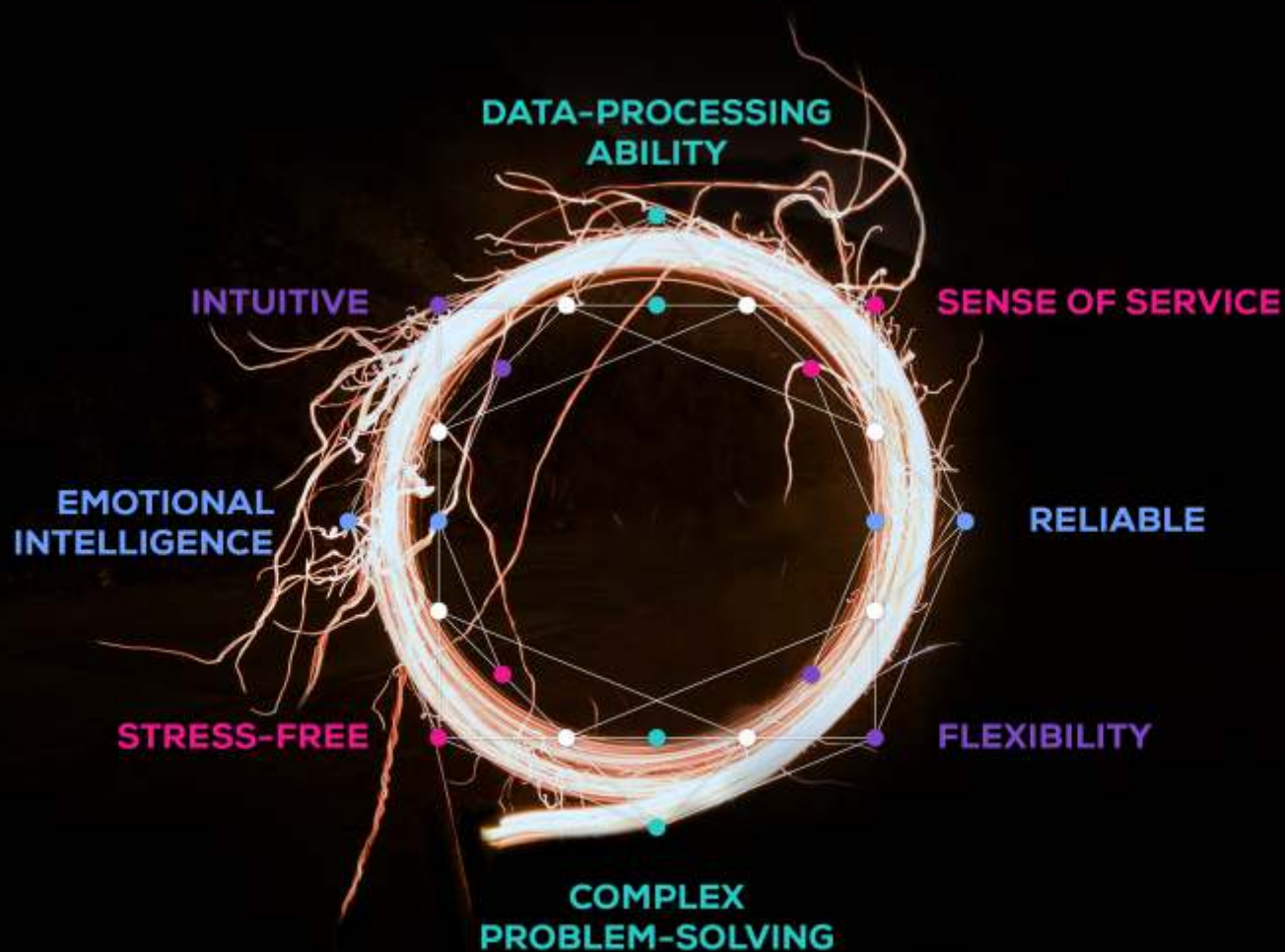
CargoAi

ANOTHER WAY TO THINK CARGO

# Noble & Aptar Pharma to launch AdhereIT™

Noble and Aptar Pharma have announced the launch of AdhereIT™ — a connected, intuitive and user-friendly onboarding solution for the growing number of patients with chronic conditions who use autoinjectors to administer their medications at home. AdhereIT™ is the first fully interchangeable, connected add-on solution that can work across a multitude of autoinjector platforms. This launch is an important advancement for Noble, an Aptar Pharma company, whose mission is to foster healthy outcomes for patients who self-administer their therapies, partnering with pharma and biotech companies to provide robust training devices and onboarding programs.

Adherence to prescribed biologics is a significant challenge. A recent report in the Journal of the American Academy of Dermatology reported that 45% of studied patients suffering from psoriasis discontinue their treatments. The reasons include insufficient training or time with an instructor, lack of confidence during the self-injection process, and feelings of high anxiety and lack of control. COVID-19 has contributed to the increased utilization of telemedicine and remote healthcare, which has even further complicated this challenge by reducing healthcare professional (HCP) training opportunities with patients.

AdhereIT™ is part of the digital ecosystem that enables patients to gain control and confidence over their at-home drug delivery while easing the anxiety associated with self-injecting. AdhereIT™ integrates with the existing software applications developed by the Digital Healthcare team at Aptar Pharma by pairing a patient's autoinjector via Bluetooth technology to their mobile phone. The device — available in two design options to accommodate dexterity for a one-handed or two-handed injection process — precisely detects an injection event and provides real-time visual, audio and haptic feedback about whether the injection was performed correctly. The AdhereIT™ onboarding platform also allows HCPs to monitor their patients' therapeutic performance via a smart analytical dashboard, providing valuable patient-specific adherence behavior information.

"We are excited to welcome Noble's AdhereIT™ connected onboarding platform into the suite of Aptar Pharma's Digital Healthcare solutions. This innovative technology further enhances our ability to improve patients' lives by creating a seamless integration of injectable products into our disease management offerings," said Adam Shain, Director of Business Development for Digital Healthcare, Aptar Pharma.

Noble developed AdhereIT™ in partnership with Aptar Pharma, who has made significant investments in digital healthcare over the past three years to actively develop a portfolio of disease management platforms and connected device solutions across dermal, pulmonary, nasal, ophthalmic and injectable routes of administration.

"Connected medical devices represent the future of healthcare for patients, pharmaceutical companies, health insurers and HCPs, playing a vital role in the remote tracking and treatment of chronic illnesses, and delivering a range of benefits that include improved drug management, enriched patient experiences and enhanced patient outcomes," said Tim McLeroy, Noble's Executive Director of Marketing & Patient Services. "The connectivity of digital technology solutions like AdhereIT™ also create market differentiation and enable value-based contracting for biopharmaceutical companies and medical device manufacturers to survive in a competitive and challenging marketplace."

# Teleflex launches Urolift Advanced Tissue Control system to treat patients with BPH

Teleflex has launched the Urolift Advanced Tissue Control system, a product designed to treat patients with benign prostatic hyperplasia (BPH). The system can be used to open the urethra by inserting small implants that hold the lobes of the prostrate in a retracted position. The device is specifically tailored to treat those with challenging prostatic anatomy, including those with large lateral lobes and an obstructive median lobe.

BPH is a common condition affecting perhaps over 500 million men globally, and it often occurs with increasing age. For men who are affected, it can lead to a decreased quality of life. Treatments include medication or surgical intervention, but these approaches don't always work well for everyone.

The Urolift system aims to provide a minimally invasive approach to treating the condition, and does not require an incision or destructive enlargement of the urethra. Patients can be treated in an outpatient procedure that takes only about an hour or two. A urologist can advance the device into the urethra under cystoscopic visualization, and then use it to insert small implants around the enlarged prostatic lobes, pushing them aside to create more space.

Tissue control wings that help to hold tissue back during the procedure are included in the new system, helping the urologist to visualize the blockage more easily. The device tip has also been enhanced, making it easier to deliver the implants. Laser-etched indicators on the needle location marker also help to predictably place the implants.

"We are encouraged by early positive responses from urologists to the UroLift ATC System," said Dave Amerson, president of the Teleflex Interventional Urology business unit, in an announcement. "Urologists are reporting high satisfaction with its ease of use and indicating their willingness to adopt the new device in their practices to treat patients with challenging anatomies, including obstructive median lobe and large lateral lobes."

# Microneedle patch to rapidly detect the presence of malaria in interstitial fluid

Researchers at Rice University have developed a microneedle patch that can rapidly detect the presence of malaria in interstitial fluid. Users can apply the patch to their skin, as you would a bandage, and then obtain a result in as little as 20 minutes. The technology is low-cost and requires no expertise to utilize.

Malaria is a significant killer in many parts of the world where access to medical services is limited or non-existent. Obtaining a laboratory-based malaria diagnosis is challenging or impossible for many people living in such regions. Low-cost, point-of-care diagnostic alternatives are clearly needed, and this latest technology may fulfill these criteria.

Containing a 4 x 4 array of hollow microneedles, the patch gently penetrates the skin when applied and draws interstitial fluid inside itself, where an antibody-based lateral-flow test strip detects protein biomarkers of malaria. The device provides an easy to read visual result in the form of colored strips, similar to a pregnancy test, in about 20 minutes.

At only 375 microns wide, the microneedles are truly tiny, and do not cause significant pain on insertion. They are hydrophilic, and so easily draw interstitial fluid into the device. "Xue and I have applied the patch to our skin, and it doesn't feel painful at all compared to a finger prick or a blood draw," said Peter Lillehoj, a researcher involved in the study, in a Rice University press release. "It's less painful than getting a splinter. I would say it feels like putting tape on your skin and then peeling it off."



Interestingly, the bandage may also be useful in detecting other diseases, including COVID-19. "In this paper, we focus on malaria detection because this project was funded by the Bill and Melinda Gates Foundation, and it's a big priority for them," said Lillehoj. "But we can adapt this technology to detect other diseases for which biomarkers appear in interstitial fluid."

The researchers estimate that the device may cost as little as $1 if manufactured in bulk, suggesting that it may be useful in low resource regions. Its appearance as a bandage helps to make it more relatable and less daunting for non-clinical users and not scary for the patients getting screened.

"We didn't intend for it to look like a bandage," said Lillehoj. "We started with a rectangular shape and then just rounded the edges to make it a little more presentable. We didn't plan for that, but perhaps it makes the patch more relatable to the general public."

# New respirator an improvement on standard N95 masks



Researchers at Brigham and Women's Hospital and Massachusetts Institute of Technology have designed a new respirator, conceived as an improvement on standard N95 masks. The transparent respirator contains sensors that allow users to know if the mask is fitting snugly and alerts them when the filters need to be replaced. The mask, called the transparent, elastomeric, adaptable, long-lasting (TEAL) respirator, can be sterilized repeatedly, helping to reduce waste and avoid respirator shortages.

"During the COVID-19 pandemic, the need for respirators and masks has been urgent. Our team has worked to develop a respirator platform that not only fits comfortably and snugly but can also be sterilized and re-sterilized," said Giovanni Traverso, a researcher involved in the study. "In this study, we looked at up to 100 re-sterilization cycles and found that the TEAL respirator we've designed can withstand that."

So far, the researchers have tested a variety of sterilization procedures with the respirator, including bleaching, UV sterilization, autoclaving, microwaving, and exposure to isopropyl alcohol. The mask maintained its elasticity and effectiveness with each sterilization procedure, suggesting that it is suitable for use in a wide variety of healthcare settings.

The device incorporates sensors to help users wear it correctly and ensure that it is functioning as intended. These include a thermochromic coating that changes color when it contacts the skin, helping users to ensure that it is providing a snug fit against the face. Other sensors can detect when the filters are saturated, and a variety of other parameters including exhalation/inhalation pressures, respiratory rate, and exhalation temperature can be measured.

The transparent mask may also help with communication, which can be difficult with conventional masks. "One of the big benefits of the TEAL respirator is that it enables visualization of the lips," said James Byrne, another researcher involved in the study. "This can be immensely helpful in communication and expression, especially during this time when communication through N95 respirators and surgical masks makes it challenging to understand one another."

In a trial of the respirator with a group of volunteers, the majority preferred the respirator compared with conventional respirators, and were able to wear the respirator correctly and easily change the filters. "We were excited to receive the feedback from the trial participants that they would love to continue using and testing the respirator, given its comfort, transparency and ease of use," said Byrne.

# Implantable sensor to measure levels of NO and NO2 gases in the body

Researchers at Penn State have developed an implantable sensor that can measure levels of NO and NO2 gases in the body, both of which are medically relevant. Consisting of silicon and magnesium, the sensor is flexible and completely biodegradable, and so does not need to be removed after implantation.

Measuring levels of NO and NO2 gas in the body can provide useful information for clinicians. NO is involved in vasodilation, and is important in cardiovascular diseases, whereas NO2 is a pollutant that can play a role in the progression of chronic obstructive pulmonary disease (COPD). The gases are also linked, whereby reactive NO can be converted to NO2 when it encounters oxygen.

Current technologies to measure such gases are not optimal – these include bulky sensors that are typically used outside the body that do not provide the most accurate or physiologically relevant readings. Using an implantable sensor could help to provide more appropriate readings from within the body, but could potentially require two surgeries – one to implant it and another to remove it. These issues inspired the Penn State researchers to develop an implantable,

biodegradable sensor that will not need to be removed later.

"Let's say you have a cardiac surgical operation, the monitor outside of the body might not be sufficient to detect the gas," said Huanyu Cheng, a researcher involved in the study, in a press release. "It might be much more beneficial to monitor the gas levels from the heart surface, or from those internal organs. This gas sensor is implantable, and biodegradable as well, which is another research direction we've been working on. If the patient fully recovers from a surgical operation, they don't need the device any longer, which makes biodegradable devices useful."
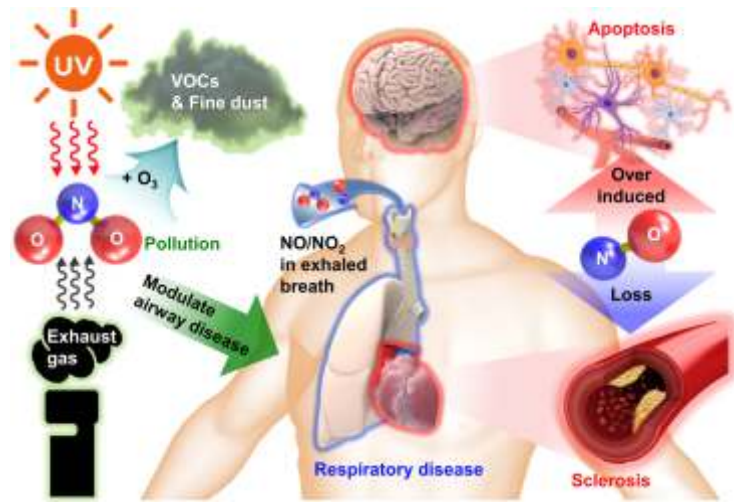


## A device to measure cortisol levels in the body through easy earwax sampling

Researchers at University College London and King's College London have developed a device that allows for easy earwax sampling, with the goal that the wax could be a convenient and reliable way to measure cortisol levels. The device can be used by a patient at home to obtain a sample of earwax and is less invasive and unpleasant than existing methods, such as syringing.

Cortisol levels change in patients with conditions such as depression, Addison's disease, and Cushing syndrome, and so measuring someone's cortisol levels could be useful in diagnosing and monitoring these diseases. However, cortisol levels are difficult to reliably measure in the blood as they can fluctuate a great deal. Hair can also reflect cortisol levels, but not everyone has enough to provide a sample, and it can also be prone to cortisol fluctuations along with being time-consuming and expensive to analyze.

"Cortisol sampling is notoriously difficult, as levels of the hormone can fluctuate, so a sample might not be an accurate reflection of a person's chronic cortisol levels. Moreover, sampling methods themselves can induce stress and influence the results," explained Andres Herane-Vives, a researcher involved in the study. Another option is earwax, which sounds unappealing, but may provide a stable source of cortisol. "Cortisol levels in earwax appear to be more stable, and with our new device, it's easy to take a sample and get it tested quickly, cheaply and effectively," added Andres Herane-Vives.

Current standard techniques to obtain earwax samples include syringing, which is

messy, can be uncomfortable, and typically occurs in a doctor's clinic. This new approach is intended to be easy and rapid, and a user could conceivably perform the procedure themselves in their own home.

The new device resembles a colorful cotton swab, but unlike a conventional swab its design does not permit a user to advance it too far into the ear canal, thereby preventing inadvertent damage to the ear. The tip of the device is covered in a cellulose sponge soaked in a mineral oil solution containing magnesium chloride, which is intended to maximize sample uptake.

So far, the researchers have tested the device in a pilot study with human volunteers and found that it was simple and quick to use, and the resulting earwax samples provided a robust and reliable source of cortisol. "After this successful pilot study, if our device holds up to further scrutiny in larger trials, we hope to transform diagnostics and care for millions of people with depression or cortisol-related conditions such as Addison's disease and Cushing syndrome, and potentially numerous other conditions," said Herane-Vives.

# DHA launches stand-alone laboratory for TB and Legionella testing

The Dubai Health Authority (DHA) has launched a new stand-alone laboratory which is the only facility in Dubai and the Northern Emirates to provide testing for Tuberculosis (TB) and Legionella.

The lab, which was previously located in Rashid Hospital and is now located in Satwa, will provide a range of molecular diagnostic services.

The CAP-accredited laboratory conforms to Gold Standards and provides specialized services such as AFB smear microscopy, TB culture, MTB complex Identification test, Drug Susceptibility test by genotypic and phenotypic methods, Rapid Molecular testing and T-SPOT test for latent TB infection diagnosis.

The lab falls under the DHA's Microbiology and Infection Control unit in the Pathology Laboratory Department and provides centralized diagnostic



services for mycobacteria, TB, and Legionella detection service for all health facilities in Dubai. Additionally, the TB diagnostic testing service is a referral service for the entire Northern Emirates as well.

"In the process of disease recognition, the diagnostic laboratory plays a crucial role. From disease aetiology to an interpretative role and disease surveillance, laboratory professionals provide the medical sector much-needed support and are an important link in the patient-care process," said Dr Hussain Al Samt, director of Pathology and Genetics Department at the DHA.

"Additionally, it is the only service in the UAE providing second line Drug Susceptibility Test for TB. It is a very important test to know the drug susceptibility in patients with diseases such as TB. It helps them understand which medicines will and will not work on them," added Dr. Rania Medhat Seliem, head of Pathology Laboratory, Rashid Hospital and Consultant at the DHA's Pathology and Genetics Department.

# Dubai Police to issue mask exemption permits to residents



The Dubai Police will now begin issuing permits to residents who apply for an exemption to the mandatory rule for wearing face masks, provided that they can prove that they have a medical condition which necessitates an exemption.

The application will be processed within five days. The validity of the exemption granted to an applicant will depend on his or her health condition.

The Dubai Health Authority (DHA) has partnered with the Dubai Police for this initiative, with the DHA's General Medical Committee Office responsible for evaluating the applications, which must

include a medical report, confirming the applicant suffers from medical grievances that can be aggravated by face masks.

Apart from medical reports, key documents that must be submitted include the applicant's Emirates ID.

**The following are the categories of individuals who will be exempted from the face mask rule:**

- Those suffering from fungal dermatitis, especially if they have severe symptoms in the face like bleeding, itching and scaly skin.

- Those allergic to any component of a mask (allergic dermatitis, contact dermatitis, contact urticaria).

- Individuals with severe herpes simplex infection that affects the mouth, nose or face.

- Individuals with acute and uncontrolled chronic sinusitis.

- Patients with uncontrolled asthma

- People of determination who have mental and psychological conditions.

The DHA added that while wearing masks is not mandatory for people who receive the exemptions, it encouraged them nonetheless to wear it in public places as far as possible to protect themselves and others from the risk of the Covid-19 infection.

# GCC to continue investing in healthcare sector to maintain fiscal and monetary policies



The International Monetary Fund (IMF) has asked the GCC countries to continue investing in the healthcare system and also maintain supportive fiscal and monetary policies.

While giving remarks at a meeting of GCC finance ministers and central bank governors, Kristalina Georgieva, managing director of the IMF, praised the UAE and other GCC countries for deploying some of the largest per capita testing and contact tracing regimes which helped keep fatality rates in the GCC among the lowest in the world.

**"Continue doing what you know works. Keep investing in health systems. Maintain supportive fiscal and monetary policies until we are out of the woods of the health crisis. And increasingly target households and businesses most in need. Then start shifting support away to firms that are likely to succeed and to individuals most in need,"**
**Georgieva said.**

"You have enhanced already-strong public health systems, and that has kept fatality rates in the GCC among the lowest in the world… Bahrain and the UAE rapidly deployed some of the largest per capita testing and contact tracing regimes in the world. And I cannot stress enough how important having those in place is for people and for the economy," she added.

IMF see a six per cent GDP contraction in 2020, followed by growth of 2.3 per cent in 2021 and the region also faces large fiscal and external deficits. These projections reflect the combined impact of oil price declines, oil production cuts, and of course, as everywhere else, lockdowns. And they assume continued progress in fighting the virus.

She said introduction of value-added tax (VAT) and cutting inefficient fuel subsidies are

very positive, and they need to continue. "And strengthening social safety nets, improving the management of government assets and liabilities, particularly given the increase in debt. And most important, putting in place robust medium-term fiscal frameworks so we can anchor expectations for stability."

In the medium-term, she pointed out that the region is likely to see economic scars – unemployed workers, reduced business investment, students who have been out of school — which takes away from productivity in the future by harming the human capital of the region.

"As you know, we also have to brace for possibly prolonged low oil prices and prepare for advancement toward alternative sources of energy," she added.

IMF chief acknowledged that the fiscal packages and liquidity support have protected incomes and livelihoods, and the financial sector. Timely and innovative measures included tax exemptions and deferrals, cash transfers, and subsidies to small and medium-sized enterprises, she added.

# UAE revenues to reach Dhs39.4b in 2021 at CAGR of 7.5%



Revenue generated from sales within the UAE healthcare sector is forecast to grow at a compound annual growth rate (CAGR) of 7.5% over the over the next five years to reach Dh39.4 billion in 2021, new analysis from Dubai Chamber of Commerce and Industry predicts.

Growing momentum behind private spending, privatization and preventative care within the market are among the key factors supporting this growth trend, according to the findings, which are based on data from Euromonitor.

Private sector healthcare sector spending is set to outpace public sector health care spending over the next five years, due to increasing market activity driven by compulsory health insurance, privatization of hospitals, a growing occurrence of lifestyle diseases such as diabetes or obesity and better awareness of preventive care among UAE residents.

Healthcare expenditure will likely see significant growth in the UAE and worldwide in 2021 as additional resources are required to reboot infrastructure for the return of elective procedures following temporary suspension of these services due to Covid-19-related restrictions.

The UAE government's implemen-tation of precautionary measures and smart technologies to reduce the spread of Covid-19 and the successful re-opening of the country's economy and borders are other key developments that will accelerate a rebound in medical tourism and attract international visitors to Dubai who are seeking treatment, the analysis noted. These efforts should result in a positive impact on medical tourism sales in the country which are projected to reach Dh8.4 billion in 2021 and grow by a CAGR of 17.1% between 2021 and 2025.

According to the International Healthcare Research Centre (IHRC), Dubai ranked 6th out of 46 destinations in Global Medical Tourism Index 2020-2021. In addition, Dubai ranked 5th in Quality of Healthcare Facilities and Services, 7th in Destination Environment, and 13th in Medical Tourism Industry, as reported by IHRC.

Although telehealth services were offered in the UAE prior to the Covid-19 outbreak, the pandemic has accelerated the growth of this market segment. Today, telehealth and tele-radiology services are prevalent among leading healthcare providers across the UAE. Recent Google trends data also show that in online searches for telehealth services reached a peak point in April 2020.

It is worth noting that several healthcare service providers in UAE reacted quickly by providing telehealth services to patients during the lockdown. Lifestyle disorders, aging population and rising demand for personalized patient care as well as self-health management tools will continue to drive the telehealth market in the UAE. Besides, as per experts, telehealth can also improve quality, efficiency and customer service in medical tourism applications. In particular, telehealth in medical tourism may improve the process and quality of pre- and post-operative care.

# Emirates SkyCargo flies Pfizer vaccines for the first time to the UAE

Emirates SkyCargo has notched yet another milestone by flying in COVID-19 vaccines manufactured by Pfizer-BioNTech to the UAE for the first time for the Dubai Health Authority (DHA). The vaccines were transported from Brussels on Emirates flight EK 182 on 22 December 2020, arriving at Dubai International Airport (DXB) at 22.15 local time.

HH Sheikh Ahmed bin Saeed Al Maktoum, Chairman and Chief Executive, Emirates Group said: "Emirates is proud to be transporting the first batch of Pfizer vaccines for COVID-19 into the UAE for the Dubai Health Authority. Our healthcare ecosystem has played an absolutely critical role in every step of the fight against COVID-19. I would like to thank everyone who has worked unceasingly over the last year to protect the lives of those most vulnerable against the disease. In recognition of their immense contribution for the wellbeing of everyone in the UAE, it has been our honor to transport these vaccines free of charge on our flight."

Nabil Sultan, Emirates Divisional Senior Vice President, Cargo said: "At Emirates SkyCargo we are doing our part to join Dubai's efforts to fight the COVID-19 pandemic. Thanks to the effective management of the pandemic by Dubai's visionary leadership, the city has retained its position as a global logistical hub for connecting vital cargo including PPE, medical supplies, vaccines, food and other



essential items. Emirates SkyCargo has set up the world's largest airside hub dedicated to distributing COVID-19 vaccines and we stand ready to support not just Dubai, but countries around the world, including markets with limited cool chain infrastructure with our advanced capabilities. By transporting COVID-19 vaccines across our extensive network, we look forward to helping people around the world get back on their feet after the devastating impact of the pandemic."

# PRODUCT LAUNCH

## Siemens Healthineers expand precision medicine with the launch of new (PET/CT) scanner



Siemens Healthineers introduces the Biograph Vision Quadra, a CE-Marked positron emission tomography/computed tomography (PET/CT) scanner that is designed for clinical use as well as translational research – or the application of scientific research to create therapies and procedures that improve health outcomes. In this manner, the Biograph Vision Quadra expands precision medicine.

In addition to the 3.2 mm silicon photomultiplier (SiPM) detector technology and Time of Flight (ToF) performance that are cornerstones of the established Biograph Vision PET/CT scanner, the Biograph Vision Quadra has an extended 106 cm axial field of view (FoV) – four times the PET axial FoV of the Biograph Vision 600. These technological features deliver significantly increased effective sensitivity[1] and enable the clinician to image the average patient dynamically from the top of the head to the thigh in just one position. With the scanner's extended axial FoV, the clinician can examine patient anatomy during radiopharmaceutical uptake over time. The combination of SiPM detectors and extended axial FoV permits more anatomical coverage in one bed position than a standard PET/CT scanner, enabling fast scanning at low patient radiation dose.

"The Biograph Vision Quadra is an order of magnitude more powerful than current state-of-the-art clinical scanners available today[1]," said James Williams, Head of the Molecular Imaging business at Siemens Healthineers. "This scanner will open possibilities for the imaging of complex and subtle biological processes that are key to the understanding of both physiology and pathophysiology alike."

The Biograph Vision Quadra can be sited in the same clinical space as traditional PET/CT scanners, so the institution does not need to construct a large new room to house the scanner.



SURE Universal of Ramat Gan, Israel, has partnered with the United Arab Emirates' Hamad Bin Khalifa (HBK) Department of Projects to launch a white-label smart IoT healthcare solution, HBKiCare, for the UAE and Middle East regional markets.

This is the first joint product launch in the UAE between an Israeli technology company and an Emirati company after the normalization of relations between the two countries announced in August.

HBKiCare is a universal remote healthcare Internet of Things (IoT) platform and home care kit enabling continuous monitoring of ECG, temperature, pulse, blood oxygen and blood pressure.

## Israel, UAE health-tech firms to launch white-label smart IoT based healthcare solution

The product also can detect falls and monitor activities of daily living (ADLs) and personal location, supported by AI-based insights and voice-activated interaction via Google Home, Amazon Alexa or Baidu.

SURE Universal develops pioneering IoT software for home healthcare. HBK Department of Projects is a UAE royal family initiative to support and advance the development of social progress, environmental balance and economic growth around the world.

"We are honored to be part of this historic partnership and the product launch. Remote patient monitoring and home healthcare are critical imperatives during this time of the global health crisis, and we are proud to contribute our innovative technology to this urgently needed solution," said Ray Stata, cofounder and chairman of SURE Universal and semiconductor company Analog Devices.

# UPCOMING EVENTS

**The Non-communicable Diseases Congress (NCD Congress)**

07-08 January
**Dubai**

**Annual Arab International Paediatric Medical Congress**

11-13 January
**Dubai**

**Derma Gulf International dermatology Conference**

21-22 January
**Dubai**

**Dubai International Nursing & Midwifery Congress (DINAMC)**

22-23 January
**Dubai**

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

27-28 January
**Abu Dhabi**

**Emirates Plastic Surgery Society Congress (EPSS Congress)**

28-30 January
**Dubai**

**Dubai World Dental Meeting (DWDM)**

09-11 February
**Dubai**

**Pediatric & Neonatal Int'l Conference UHS (PNICUHS)**

11-12 February
**Dubai**

**World Physical Medicine & Rehabilitation Conf. (Rehabilitation Health)**

22-23 February
**Dubai**

**World Psychiatry, Mental Health & Positive Psychology Conference (PMPP)**

24-25 February
**Dubai**

**2ND International conference on Research in Life sciences and healthcare**

24-25 February
**Dubai**

مطار الشارقة
Sharjah Airport

# YOUR PHARMA IS IN SAFE HANDS

Sharjah Airport is the first to offer IATA CEIV Pharma certified cargo handling services in the Middle East and Africa, via its sole ground handling agent Sharjah Aviation Services.
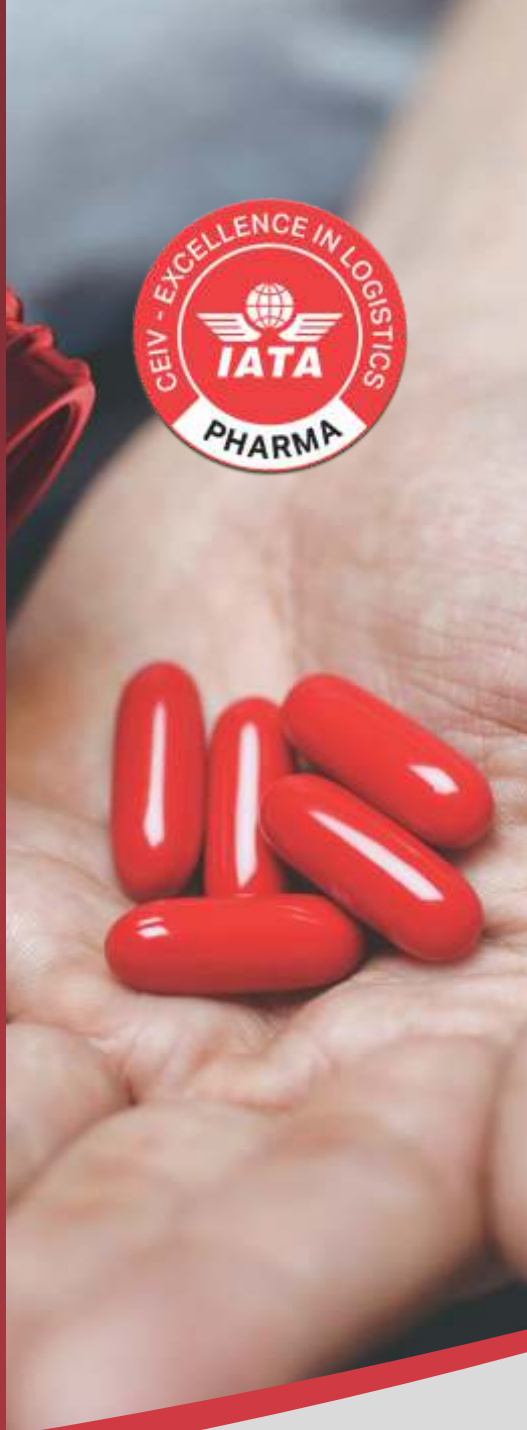
## Dedicated Temperature Controlled Storage

- 1500 m³ capacity of 2-8°C and 15-25°C temperature controlled and monitored storage

## Active Cooling Equipment

- Owned and managed rollerbed reefer trucks 4x Q7 Positions (or equivalent) with Real Time Temperature Monitoring & GPS tracking.
  Cooling range -18°C to +25°C

- 10Ft (or 2 LD3) ULD dollies.
  Cooling range -18°C/ +25°C
- Bulk trailers 2500Kg / 14m³ capacity.
  Cooling range 0°C/ +18°C

الشارقة لخدمات الطيران
Sharjah Aviation Services
www.sharjahaviation.com

CEIV PHARMA
EXCELLENCE IN PHARMACEUTICAL LOGISTICS

CEIV
CENTER OF EXCELLENCE FOR INDEPENDENT VALIDATORS

PHARMA AERO
STRATEGIC MEMBER

COOL CHAIN ASSOCIATION

# TURKISH CARGO CONTINUES TO RISE.

TURKISH CARGO BECAME THE ONLY AIR CARGO BRAND TO HOLD
IATA CEIV PHARMA, IATA CEIV ANIMALS AND IATA CEIV FRESH CERTIFICATIONS,
ONE OF THE MOST PRESTIGIOUS CERTIFICATES FOR THE AIR CARGO INDUSTRY.

**TURKISH CARGO**

turkishcargo.com.tr