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Editorial

Middle East's Digital Pulse

The sands of the Middle East are shifting, whispering not of desert winds but of a promising healthcare transformation. Gone are the days of limited access and antiquated practices; a digital wave is engulfing the region, reshaping the healthcare industry with the precision of a scalpel and the speed of a lightning strike.

The numbers paint a vibrant picture: per capita healthcare spending soaring above the global average, a future laden with private sector participation, and a growing digital health market expected to touch \$7.9 billion by 2026. These aren't mere statistics; they're the lifeblood of a revolution in the making.

Telemedicine, once a fledgling concept, has taken flight. The pandemic served as a catalyst, skyrocketing consultations by a staggering 100%. Mobile health apps, like trusty digital companions, walk hand-in-hand with 40% of the region's adults, empowering them to manage their well-being with a tap of a finger.

But the true heart of this revolution beats in the orbit of artificial intelligence (AI) and machine learning (ML). These digital sorcerers are weaving spells of improved diagnostics, personalized treatment plans, and enhanced patient care. The Middle East is embracing AI with open arms, with a 34% annual growth rate whispering promises of a future where technology amplifies human expertise, not replaces it.

The Middle East's healthcare narrative is being rewritten, not with ink and guill, but with code and compassion. This is a story not just of technological progress, but of human empowerment, of lives transformed, and of a future where healthcare knows no boundaries. And we, the fortunate witnesses, are perched on the edge of history, ready to be swept away by this digital healthcare tide.

So, let us celebrate this digital dawn, raise a toast to the pioneers, and embrace the transformative power of healthcare's new mantra: one click, one byte, one revolution at a time.

Mohammed Irshad Senior Editor



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Healing at the Click of a Button:

Fakeeh University
Hospital Reimagines
Healthcare in the
Digital Age

Interview By Poonam Chawla I Written By Mohammed Irshad

"Fakeeh distinguishes itself as an integrated healthcare delivery model, providing not only medical services but also education and research while leveraging advanced technology."

Dr. Mohaymen Abdelghany CEO of Fakeeh University Hospital





cross the globe, a silent revolution is unfolding. The lines between hospitals and tech havens are blurring, as patient care embraces the transformative power of digitization. From Al-powered diagnosis to cloud-based medical records, this digital wave promises to streamline processes, unlock unprecedented medical insights. and redefine the very meaning of accessible healthcare.

Fueled by a relentless drive to rewrite the healthcare narrative, Fakeeh University Hospital (FUH) paints a vibrant canvas of innovation under the brushstrokes of Dr. Mohaymen Abdelghany, its Chief Executive Officer (CEO). Here, healthcare isn't merely dispensed, it's orchestrated - a seamless harmony of human expertise and technological finesse. Patient care transforms into a bespoke journey, where cutting-edge tools whisper insights only AI can hear, and where compassion remains the empathetic conductor, ensuring every step in this journey feels the rhythm of healing with every beat.

In an exclusive interview with **Mediworld**, Dr. Abdelghany unlocks the treasure chest of FUH's pioneering spirit. Together, we'll explore how they pioneer digitalization efforts within the Middle East, navigate the challenges of integrating technology into established healthcare systems, and ultimately, lead the way for a future where personalized medicine and remote expertise become the norm.

FUH's Academic Healthcare Journey

Dr. Abdelghany sets the stage by providing insights into FUH's unique position as an academic healthcare institution. With a distinguished career spanning two decades, Dr. Ghany expresses his privilege in leading FUH and emphasizes the hospital's roots in a larger Saudi Arabian healthcare group with a remarkable 47-year

"Fakeeh distinguishes itself as an integrated healthcare delivery model," Dr. Abdelghany shares. He highlights the hospital's role in providing not only medical services but also education and research while leveraging advanced technology. FUH's journey, beginning in late 2020, unfolds in Dubai Silicon Oasis—a strategic location symbolizing the future innovation hub for the entire UAE.

"The flagship has been there for 47 years in Jeddah Flagship Hospital, and it's one of the largest healthcare providers in the kingdom of Saudi Arabia with so many achievements as the first in the region," he proudly states.

The hospital's integration into the dynamic landscape of Dubai Silicon Oasis is not merely geographical but also thematic. Dr. Abdelghany elaborates on how FUH's academic healthcare model aligns with the futuristic ambitions of the region, providing not just medical services but contributing significantly to education, research, and technological advancements.

"Fakeeh is part of a larger group in Saudi Arabia, which is more than four decades," Dr. Abdelghany explains. "It's an integrated care model where we provide healthcare services, education, research, and enable that with the technology platform."

Clinical Workflows and Health Information Exchange

As the conversation progresses, Dr. Ghany stresses the challenges faced by healthcare providers particularly the burden of paperwork and manual processes in clinical workflows. With a forwardlooking perspective, he unveils the role of health information exchanges (HIEs) in transforming these workflows.









7





"The health information exchange of Dubai is working very well," Dr. Abdelghany notes, emphasizing its success in providing clinicians with seamless access to patient information. This not only reduces the time required for diagnosis but also ensures that patients receive more efficient and informed care.

Dr. Abdelghany eloquently describes how HIEs have become the backbone of FUH's operations, allowing for a more connected and efficient healthcare ecosystem. He details how the seamless exchange of health information has become a linchpin in delivering patient-centric care, minimizing redundancy in diagnostic procedures, and expediting treatment plans.

Further emphasizing the impact of HIEs, He discusses the positive outcomes on patient outcomes. By having comprehensive access to a patient's medical history, healthcare providers at FUH are empowered to make more informed decisions, leading to enhanced care quality and improved patient satisfaction.

The Digitalization Surge and Impact on Patient Care

Shifting the focus to the broader landscape of healthcare digitization, Dr. Abdelghany reflects on the transformative impact of digital tools, especially during the COVID-19 pandemic. He narrates how telehealth and teleconsultation, once met with skepticism, gained widespread acceptance during the pandemic, enhancing patient access to timely medical advice and medication delivery.

The conversation evolves into a discussion on how digitization has significantly improved patient experiences. Dr. Abdelghany elucidates, "Patients can benefit greatly from connecting all their medical information. They have access to reports, lab results, and can even schedule appointments seamlessly." This, he believes, not only empowers patients but also enhances the overall patient experience.





Dr. Abdelghany weaves an insightful narrative about the hospital's embrace of digital tools beyond the conventional realms of healthcare. He details how FUH has integrated telemedicine and other digital platforms into its patient care model, ensuring a holistic and patient-centric approach.

The discussion extends to the broader societal impact of digitization on healthcare. He emphasizes how the acceptance of telehealth during the pandemic has transformed the perception of digital healthcare solutions. Patients, initially hesitant, now actively engage with these platforms, leading to a more connected and informed healthcare

Data-Driven Precision Medicine

As the interview progresses, Dr. Abdelghany unveils his visionary perspective on the future of healthcare—precision medicine. He anticipates a future where healthcare is not a one-size-fits-all approach, but a personalized, precise science based on individual genomic profiles.

"The more data we collect from electronic medical records and genomics, the more we can customize and individualize healthcare plans," Dr. Abdelghany asserts. He envisions a future where the dosing of medications and interventions are tailored to individuals, propelled by the integration of artificial intelligence tools.

His words are not just informative but also forward-looking. He discusses ongoing initiatives at FUH related to genomics, emphasizing the hospital's commitment to staying at the forefront of medical advancements. The integration of AI tools, Dr. Abdelghany stresses, is not just a possibility but an imminent reality that will redefine healthcare delivery.

Expanding on the genomics aspect, He draws attention to the potential societal impact. He discusses the implications of a data-rich healthcare environment, where genomic data, coupled with electronic medical















records, opens new avenues for personalized medicine. The vision, he notes, is not just about treating illnesses but proactively preventing them based on individual genetic predispositions.

Strategic Expansion Plans and Digital Transformation Initiatives

With the groundwork laid for the transformative role of digitization in healthcare, the conversation shifts to Fakeeh University Hospital's strategic expansion plans. Dr. Abdelghany unveils an ambitious growth trajectory, both within the UAE and across the Middle East, showcasing FUH's commitment to providing advanced healthcare services.

"FUH plans to grow to 300-350 beds within the next 2 to 3 years," Dr. Abdelghany discloses, underscoring the hospital's dedication to providing comprehensive healthcare services. This revelation signifies not just numerical growth but a strong commitment to enhancing FUH's capacity to cater to diverse medical needs.

He introduces the innovative Smart Clinics program, a promise to FUH's progressive stance in the space of digital transformation. These clinics, he explains, are poised to revolutionize community access to specialist care by leveraging cutting-edge technology, connecting patients seamlessly with the best specialists available.

In Dr. Abdelghany's own words, "The Smart Clinics initiative is a commitment to making healthcare more accessible and convenient for the community." This goes beyond the conventional understanding of expansion; it's a bold leap toward redefining healthcare accessibility by bringing specialized care closer to individuals, irrespective of geographical constraints.

As the discussion progresses, Dr. Abdelghany provides valuable insights into the timelines for implementing the Smart Clinics initiative. With a cautious approach due to the intricacies involved, he emphasizes the importance of meticulous technological integration, team training, and model development.

"While careful not to overcommit, Dr. Abdelghany expresses optimism, anticipating the first 2 to 3 pilots to be implemented within the first half of 2024." These timelines reflect not just a project deadline but the culmination of FUH's careful planning and commitment to ensuring the success of the Smart Clinics program.

The expansion discourse takes an intriguing turn as He sheds light on the geopolitical significance of FUH's growth in Saudi Arabia. His insights underline FUH's role not just as a local healthcare provider but as a regional influencer shaping healthcare accessibility standards across borders.

"In Saudi Arabia, FUH has left its footprint in key cities like Jeddah, Riyadh, Neom, and soon in Madinah," He articulates, showcasing the hospital's impact on a regional scale. This expansion is not merely about establishing physical entities; it's a strategic move contributing to the broader healthcare ecosystem in the Middle East.

Dr. Mohaymen Abdelghany's insights provide a comprehensive view of Fakeeh University Hospital's journey—a journey marked by integration, innovation, and a relentless pursuit of transforming healthcare in the digital age. As FUH continues to pioneer advancements, it stands as an icon of healthcare excellence, redefining standards and inspiring the industry at large.











ardiogenic shock is considered the most extreme form of cardiac infarction, with a ▶high mortality rate — studies show that, if untreated, fatality can occur in 60 to 70 percent of cases (many studies put it down to 70 to 90 per cent).

According to mayoclinic.org, it is a life-threatening condition "in which your heart suddenly can't pump enough blood to meet your body's needs. The condition is most often caused by a severe heart attack, but not everyone who has a heart attack has cardiogenic shock".

In simple terms, it occurs when there is a lack of oxygen to your heart, which damages the left ventricle, and the heart muscles weaken dangerously, subsequently suffering cardiogenic shock — often with devastating consequences because there is a lack of understanding about its nuances and how it needs to be treated differently from a regular heart attack.

It's also a rare form of cardiac compromise, which is why the need for more research and clinical studies have to be addressed more robustly. On the National Library of Medicine website, in an article on cardiogenic shock written by Ateet Kosaraju, Venkata Satish Pendela, and Ofek Hai, it is observed that, "The pathophysiology of cardiogenic shock is complex and not fully understood. Ischemia to the myocardium causes derangement to both systolic and diastolic left ventricular function, resulting in a profound depression of myocardial contractility. This, in turn, leads to a potentially catastrophic and vicious spiral of reduced cardiac output and low blood pressure, perpetuating further coronary ischemia and impairment of contractility."

There is a general consensus among healthcare specialists and interventionists that a lot of more education is needed in the area. The importance of raising awareness levels and constantly improving treatments, therapies and technologies cannot be emphasised enough.

It's against this backdrop that the Gulf Heart Association (GHA) — the region's pre-eminent cardiology organization — has teamed up with the Society of Cardiovascular Angiography & Interventions (SCAI) — the only professional medical society in the US dedicated solely to









interventional cardiology — to bring to the region a first-of-its-kind platform for interventional cardiologists, cardiovascular surgeons, and intensivists to meet, exchange ideas and build bridges for scientific and medical cooperation and dissemination of latest science and technology related specifically the segment of cardiogenic shock.

This initiative — SHOCK MENA — will be held on 2nd and 3rd February 2024 at the Le Meridien Hotel and Conference Centre, Dubai, UAE. The two-day conference will boast panel discussions, presentations and case studies by a distinguished and authoritative band of doctors and healthcare professionals. SHOCK MENA will witness participation from across the region and will provide the industry with the opportunity to network with leaders in this field and also showcase their products and achievements in this field

Some of the clutterbreaking topics that will figure at the SHOCK **MENA** include:

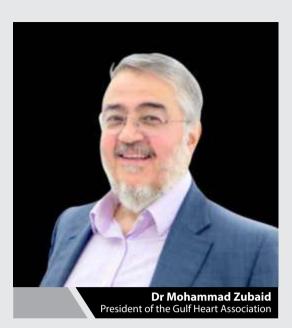
- Landscape of shock from regional studies
- Trials in cardiogenic shock
- The importance of building and participating in shock registries
- Overview of successful shock initiatives

About GHA

Recognizing the importance of having a holistic regional cardiac care advisory institution with a strong academic leaning, the Gulf Heart Association (GHA) was formed more than 20 years ago — during the first Gulf Cooperation Council (GCC) Cardiovascular Conference in Doha which was held over January 15 to January 17, 2002. According to GHA's website — gulfheart.org — "The formation of the GHA was a landmark accomplishment for the GCC states that built bridges of cooperation among cardiologists, cardiovascular surgeons, and other cardiovascular specialties in the GCC states," as espoused in a message by its president Dr Mohammad Zubaid, MB, ChB, FRCPC, FACC, FGHA.

The agenda of GHA includes:

- Raising the standard of cardiac care in the GCC states.
- Conducting scientific conferences and symposia.
- Carrying out scientific research on cardiovascular diseases.
- Creating professional, educational, and social ties among members of GHA



- Collaborating with international cardiology institutions and professional societies
- Establishing criteria for GCC cardiovascular specialists to meet high standards of competence and expertise.
- Working with GCC governments to create prevention programs aimed at reducing cardiovascular diseases.
- Publishing professional periodicals, and bringing out Heart Views (www.heartviews.org), which is GHA's dedicated official journal.

Worldwide, and across the GCC, coronary artery disease (CAD) is the leading cause of death. Several factors have contributed to the rise of CAD, most of them lifestyle related: diabetes, obesity, hypertension, smoking, a sedentary routine without much physical activity — all leading to hypercholesterolemia, that, in turn, leads to acceleration of cardiac compromises. Worryingly, the GCC is home to a proliferation of all these factors (the prevalence of diabetes, for instance, is higher here than it is in the rest of the world).

According to the GHA website, "Data on heart disease in the Gulf is fragmented and rare. The need for accurate documentation and analysis of the incidence, prevalence, treatment success, and mortality of heart disease could be achieved prospectively through a well-established central registry for all the GCC states. This is the task that the GHA is eager to accomplish with the cooperation of the GCC Ministries of Health Executive Office." Cardiogenic shock, by its very nature, needs to be understood better, which is why GHA has teamed up with SCAI for this unique initiative.

About SCAI

The Society for Cardiovascular Angiography & Interventions (SCAI) is a leading nonprofit medical organisation in the US that represents invasive and interventional cardiology. Founded in 1978, SCAI The Society for Cardiovascular Angiography & Interventions (SCAI)has been built as a body whose mission it is to "lead the global interventional cardiovascular community through education, advocacy, research, and quality patient care."

SCAI has dedicated its work to advancing the profession and is the designated society for guidance, representation, professional recognition, education, and research opportunities for invasive and interventional cardiology professionals. For more than 40 years, SCAI has personified professional excellence and innovation globally, fostering a trusted community of more than 4,500 members dedicated to medical advancement and lifesaving care for adults and children with cardiovascular disease. According to a report that appeared on the American Heart Association website, "SCAI promotes excellence in interventional cardiovascular medicine for both adults and children through education, representation, and the advancement of quality standards to enhance patient care."















Digital Medicine Dawns:

Al and ML Reimagine Healthcare in the Middle East

By Mohammed Irshad



All three healthcare professionals emphasize the potential of Al and ML in enhancing healthcare capacity and reducing human errors. Dr. Al Shaya mentions the capacity-boosting benefits of Holter monitors, allowing the transformation of normal patient beds into semi-HDU or HDU beds. This not only increases bed capacity but also exemplifies the adaptability of Al in optimizing resource utilization.











ealthcare is undergoing a seismic shift, its old foundations cracking under the pressure of a rising tide - the tide of Al and Machine Learning. These disruptive forces are reshaping the very fabric of patient care, from diagnosis to treatment, offering a future where healthcare is personalized, predictive, and, perhaps most importantly, hopeful.

This investigation analyzes into the significant ideas generously provided by notable healthcare leaders - Dr. Sara Al Shaya, helming the Data and Statistics Department at Emirates Health Services; Rola Hammoud, a visionary as the CEO of Madeena Hospital-Fakeeh Care Group and concurrently serving as the President of ACHE MENA; and the venerable Prof. Abdel Rahman Omer, steering the ship as CEO of Burjeel Hospital in Abu Dhabi.

In collective harmony, they weave a rich tapestry, offering an intricate perspective on the metamorphic influence wielded by AI and ML within the healthcare sector, spotlighting the nuanced contours of the Middle East's healthcare panorama.

The Current Landscape in Middle East **Healthcare:**

Dr. Sara Al Shaya highlights the rapid advancements in the Middle East healthcare industry, particularly in adopting Al and ML. Specifically, at Emirates Health Services, she showcases the successful implementation of a Customer Intelligence Program, leveraging Al-driven patient feedback sentiment analysis.

Introducing the groundbreaking EHS Intelligence Space Platform, Dr. Al Shaya emphasizes its role in consolidating data from diverse sources, with a focus on data analytics, artificial intelligence, and machine learning. Boasting 39 dashboards, 11 Al models, and 24 statistical data hubs, this platform acts as a centralized system, facilitating data sharing and ensuring clean, consistent data. Notably, it features an AI solution for primary healthcare management, optimizing operations based on patient volume, waiting time, and resource allocation. Results indicate a remarkable 44% reduction in patient waiting time and a 10% decrease in no-shows, showcasing impactful outcomes, particularly in Amal Kawin and Fajara

Beyond streamlining patient feedback analysis, this program enhances decision-making in clinical and administrative settings. Dr. Al Shaya underscores the

importance of transparent communication regarding the benefits and risks of AI to patients, emphasizing the ongoing need for training to ensure safe and effective use.

AI Applications in Patient Care:

Rola Hammoud, drawing from her experience as CEO of Madeena Hospital-Fakeeh Care Group, sheds light on Al applications in patient care. She discusses the vital role of tools such as tele ECG monitoring and Holter monitors in hospitals. The tele ECG monitoring system allows for real-time arrhythmia detection, connecting patients with physicians promptly.

However, Hammoud raises important questions about the limitations of such tools, including challenges when physicians are not available or in different time zones. Despite these challenges, the transformative impact on patient care is undeniable, showcasing the potential of AI to detect and address health issues swiftly.

The Role of AI in Diagnostics and Therapeutics:

Prof. Abdel Rahman Omer outlines the pivotal role of artificial intelligence (AI) in Middle Eastern healthcare, spanning management, capacity, finance, diagnostics, and therapies. Al's significance is underscored in diagnostics, notably in early identification of critical conditions like septicemia and septic shock. Its extension into therapeutics enhances emergency response times, improving patient outcomes. As AI evolves, it becomes increasingly vital in healthcare management, capacity optimization, and financial efficiency.

In hospitals, it is crucial to closely examine and keep an eye on patient tools like tele-ECG monitoring. Despite their advantages, addressing limitations like the physician's location, potential sleep disruptions, or connectivity issues is crucial. Users demand clarity about these tools, urging healthcare systems to prioritize safety. Another prevalent algorithm in hospitals focuses on using vital signs for early detection of septicemia and septic shock.

Acknowledging the role of Holter monitors in augmenting bed capacity, Professor Omer notes operator dependency and the evolving role of AI in automated responses. In critical scenarios like suspected cardiac arrest, Al acts decisively, issuing alerts and administering interventions automatically, improving patient survival rates. The overarching objective is to leverage augmented and artificial intelligence in Middle Eastern healthcare for enhanced practices, reduced errors, and capacity-friendly systems. Professor Omer emphasizes the imperative need to embrace these advancements as they unfold in Middle Eastern healthcare.

Enhancing Capacity and Reducing Human Errors:

All three healthcare professionals emphasize the potential of Al and ML in enhancing healthcare capacity and reducing human errors. Dr. Al Shaya mentions the capacity-boosting benefits of Holter monitors, allowing the transformation of normal patient beds into semi-HDU or HDU beds. This not only increases bed capacity but also exemplifies the adaptability of Alin optimizing resource utilization.

Hammoud reinforces this perspective by highlighting Al's role in automated responses during emergencies, significantly improving patient survival rates. Whereas Prof. Omer stresses the need for continuous training to ensure the effective use of AI, emphasizing its role in making healthcare safer and more efficient.















Challenges and Opportunities:

As with any technological advancement, the integration of Al and ML in healthcare comes with its challenges. The speakers collectively address concerns such as the need for greater clarity for users, the potential risks of unsafe Al use, and the dependence on operator expertise. However, they also see these challenges as opportunities for growth and improvement. They acknowledge that Al is not a replacement for human expertise but a powerful tool to augment and enhance existing healthcare practices.

The Middle East's Unique Perspective:

In discussing the transformative impact of AI and ML in the Middle East, it is crucial to consider the region's unique challenges and opportunities. The Middle East has been rapidly embracing technological advancements, and the healthcare sector is no exception. The speakers highlight how the region's commitment to digitalization has paved the way for innovative healthcare solutions. The Middle East's diverse population and varying healthcare needs demand tailored approaches, and AI and ML are proving instrumental in meeting these challenges.

Continuous Training for Healthcare Professionals:

Dr. Al Shaya stresses the importance of continuous training for healthcare professionals to keep pace with evolving technologies. As Al and ML become integral parts of healthcare systems, healthcare professionals need to be well-versed in utilizing these tools effectively. Ongoing education programs and workshops can ensure that medical staff not only understand the capabilities of Al but also feel confident in incorporating these technologies into their daily practices. This commitment to education will be crucial in maximizing the benefits of Al and ML in patient care.

Transparency in Al Implementation:

Hammoud sheds light on the critical aspect of regulation in Al and digitization within the healthcare landscape. She emphasizes that the FDA is considerably behind in regulating artificial intelligence in healthcare, urging all stakeholders to actively support regulatory efforts. She underlines the necessity of regulation, considering the typical journey from manufacturing to end-user utilization, which often remains unknown. With patient care as the ultimate goal, efficiency, effectiveness, and, most importantly, safety become paramount.

Expressing concern over the uncertainty of technology's safety for users, Hammoud advocates for a global call to all regulators, both FDA and non-FDA, to expedite the regulatory process. In the interim, she suggests adapting at the hospital and institution levels by establishing specific frameworks. These frameworks



ensure that technologies implemented in patient care are thoroughly examined for safety, validity, and reliability. She stresses the importance of institution-level committees involving diverse stakeholders to assess products and provide clearance for their safe implementation on patients, a crucial aspect that she believes merits attention from regulators.

Hammoud highlights the need for transparency in the implementation of AI, particularly in tools used directly by patients. The user, whether a healthcare professional or a patient, must have a clear understanding of the capabilities and limitations of AI systems. Transparent communication about how AI tools function and the potential scenarios in which they may face limitations is vital. This transparency builds trust between healthcare providers, AI developers, and end-users, fostering a collaborative environment for the successful integration of AI in healthcare.

Conclusion:

The transformative impact of AI and ML in the Middle East healthcare industry is evident from the insights shared by Dr. Sara AI Shaya, Rola Hammoud, and Prof. Abdel Rahman Omer. From patient care to diagnostics and overall healthcare management, AI and ML are ushering in a new era of efficiency and effectiveness.

The Middle East, with its rapid digitalization journey, is poised to be at the forefront of leveraging these technologies for the betterment of healthcare. As we embrace these advancements, continuous training, transparency, and a collaborative approach between human operators and AI technologies will be key to unlocking the full potential of AI and ML in shaping the future of healthcare in the Middle East.





The Transformative Potential of AI and Machine Learning in Biomedical Research and Healthcare

n a recent article published by Oxford Academic, authors discussed several ways that artificial intelligence (AI) and machine learning (ML) could transform biomedical research and healthcare. This includes enhancing operational efficiency, reducing costs, improving diagnostics, identifying therapeutic targets, and enabling personalized treatment. Despite these opportunities, challenges, such as responsible and ethical implementation, workforce diversity, and equitable access, remain.

The article makes mention of Monica Bertagnolli, director of the National Institutes of Health, highlighting in a related piece, the need for a multidisciplinary approach involving researchers, clinicians, patients, community organizations, social scientists, equity researchers, and policy experts to optimize AI/ML outcomes.2 Authors also point to President Biden's recent executive order on Al's safe development, emphasizing the importance of responsible implementation, considering privacy, security, and civil rights.

"As Bertagnolli rightfully points out, a multidisciplinary perspective is required to achieve these important goals—one that is inclusive of not only researchers and clinicians but also patients and community organizations, social scientists and equity researchers, and policy and legal experts," the authors wrote.

ML, as a University of Colorado School of Medicine report notes, can be used to enhance the power of physicians and healthcare professionals, ranging from using closed captioning on a video call with a patient to something more challenging, such as discovering new personalized medicine treatments for rare diseases.4 ML, the report adds, has evolved at a rapid pace in the last 10 years. CU School of Medicine mentions a 2014 joke about computers taking hours to identify a bird in a photo. Nowadays, a simple phone app can watch a bird feeder, inform you when one arrives, and identify what type of bird it is.

Oxford Academic authors acknowledge that there will be further equity challenges in AI/ML implementation, including hurdles in workforce diversity and geographic biases, potential for unintentionally discriminatory algorithms, and possible post-approval application inequities and digital divides.

"To ensure equity, prevent unintended consequences, and maximize AI's impact and achievements, governance must instead be iterative and dynamic, capable of capturing the broad view of development and evolution of AI across sectors and across all facets of health and medicine, 5" the authors wrote. "As described in a recent report from the National Academies and the NAM—Toward Equitable Innovation in Health and Medicine: A Framework—this will require considering the many types of equity in science and technology innovation and how to incorporate them across stages of the innovation life cycle—from conceiving and embarking on an idea, to research and development, to technological evaluation, to access and use of technology, through post-market evaluation and long-term learning. Governance for AI/ML must be able to address the various needs at every stage in the technological life cycle."

Further improvements to scale and infrastructure are recommended as well. Citing international collaborative efforts, the authors believe that working together will be necessary to achieve scale and avoid costly duplicative efforts. Federal efforts to make this happen, the article cites, include Vice President Kamala Harris's involvement in the Al Safety Summit. Furthermore, the US Department of State has been heavily involved in the Organization for Economic Cooperation and Development Al Policy Observatory, a platform, the authors explain, that is aimed to shape global public policies for responsible, trustworthy, and beneficial Al. Lastly, according to the article, the US is a member of the Global Partnership on Artificial Intelligence (GPAI), an international and multistakeholder initiative to guide the responsible development and use of Al, grounded in human rights, inclusion, diversity, innovation, and economic growth.







WORLDAY WORLDAY

"The end of AIDS is possible; it is within our grasp.
To follow the path that ends AIDS, the world needs to let communities lead."

Winnie Byanyima, Executive Director, UNAIDS





Epidemics start and end in communities.
This World AIDS Day, WHO affirms the vital role of communities in leading the response to HIV. Thanks to decades of activism, advocacy and support from affected communities, millions of new infections have been averted and 30 million people are receiving antiretroviral therapy.





MBZUAI and United Al-Saqer Group sign research deal

United Arab Emirates: Mohamed bin Zayed University of Artificial Intelligence (MBZUAI) and United Al-Saqer Group have signed a 10-year research endowment agreement aimed at advancing education, knowledge and innovation in digital health.

The funds contributed by United Al-Saqer Group will be used to establish and sustain health research projects at MBZUAI, the world's first university dedicated to Al research, under the name of Sheikh Mohamed bin Butti Al Hamed.

Healthcare has been a key focus area for MBZUAI, and United Al-Saqer Group also has a strong commitment to support the development and enhancement of the sector.

Sheikh Abdulla Al Hamed, Member of United Al-Saqer Group's Board of Directors, said: "The UAE is committed to innovation in healthcare to improve the lives of nationals



and residents, and to propel the nation forward as a global leader in the sector while aligning with the healthcare aims of Abu Dhabi 2030 Economic Vision. Through this research endowment agreement, United Al-Saqer Group and MBZUAI will ensure that the UAE remains at the cutting edge of Al innovation across the healthcare ecosystem."

MBZUAI President and University Professor, Eric Xing, said: "This strategic research endowment aligns with MBZUAI's commitment to advancing education, research, and innovation, and will prove instrumental in shaping the future of AI in healthcare in the UAE and beyond. We look forward to closely collaborating with United AI-Saqer Group to conduct cutting-edge AI research that delivers tangible healthcare solutions."

MBZUAI is already conducting numerous research projects aimed at tapping the power of AI to tackle challenges including the spread of malaria, the early detection of cardio and fetal abnormalities, and remote patient monitoring.







Doha, Qatar: Qatar Biobank, a member of Qatar Foundation (QF), has achieved significant milestones in the 2022-2023 period, demonstrating its unwavering commitment to supporting the local research community.

The institution, now under the umbrella of the Qatar Precision Health Institute, has played a pivotal role in advancing research endeavors through its streamlined research access application process and proficient scientific data extraction.

According to the recently published 2022-2023 annual report by Qatar Biobank, the facility has facilitated over 350 research applications and 210 data extractions. These efforts have empowered researchers by providing access to high-quality deep phenotypic data, marking a substantial contribution to the scientific landscape.

The annual report highlights Qatar Biobank's prolific engagement in numerous research and projects, resulting in the publication of 24 articles and contributions to 28 research projects. Notably, the ongoing Q-chip project is a testament to the institution's cutting-

Qatar Biobank makes significant contribution to local health research



edge initiatives, with 30,000 genetic analyses underway to identify patients and mutation carriers.

Qatar Biobank's invaluable contribution to health research is manifested through its comprehensive collection of biological samples and health and lifestyle data from a substantial portion of Qatar's population.

Among its local partners are the Ministry of Public Health Qatar, Hamad Medical Corporation, Qatar Biomedical Research Institute, Hamad Bin Khalifa University, Sidra Medicine, Qatar University, and Texas A&M Qatar. Over 20 research organizations have registered 358 projects with Qatar Biobank, with significant participation from Qatar University, Sidra, Hamad Medical Corporation, Weill Cornell Medicine - Qatar, and Hamad Bin Khalifa University.





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Deciphering the Interaction Between Health Insurance and Digitized Medical Data in Saudi Arabia

By Mohammed Irshad



A Comprehensive Exploration of the Transformative evolution

n a conversation that peels back the layers of traditional healthcare, Dr. Nasser **Aljehani, the Executive Director** of Enablement and Supervision and Medical Director at the **Council of Health Insurance** (CHI) in Saudi Arabia, takes us on a journey through the dynamic intersection of digitized medical data and the dynamic evolution of health insurance.

This article meticulously explores the multifaceted dimensions of how the digitization of medical information is reshaping healthcare practices and revolutionizing the health insurance landscape in the Middle East.

From Paper Trails to Digital Highways: The Evolution of **Digitalization in Healthcare**

Dr. Aljehani sets the stage by illuminating the profound transformation brought about by digitizing medical data. "In the past, medical data were mostly unstructured, mainly written on papers," he notes. The historical shift from unstructured, paper-based records to systematically coded and structured information has unlocked unprecedented possibilities.

This evolution signifies more than just a technological advancement; it symbolizes a paradigm shift in the very fabric of healthcare. The transition from paper to code is not merely a change in medium but a reimagining of how healthcare information is processed, analyzed, and utilized.











Coding for Connectivity

According to Dr. Aljehani, initiatives like coding diagnoses and creating Saudi billing system codes have catalyzed a paradigm shift. "We started with coding diagnoses. So we are adopting the ICD-10 codes in Saudi Arabia where physicians must enter the diagnosis as a code, not as text," he explains. This approach not only facilitates efficient auditing of physicians but also enables insightful analysis of prevalent health issues, procedures, and provider performance.

The introduction of ICD-10 codes and Saudi billing system codes not only marks a departure from the cumbersome era of unstructured medical data but signifies a leap towards interoperability, where healthcare entities can communicate seamlessly.

Diagnosis-Related Groupings (DRGs): A Game-Changer in Healthcare Economics

Dr. Aljehani explains how grouping diagnoses allows for the creation of bundled payments. "This enabled us to control a very important aspect, which is the length of stay also in hospitals," he emphasizes. The integration of DRGs into the healthcare economic framework is akin to orchestrating a symphony. As these bundled payments gain traction, they not only offer financial predictability for both healthcare providers and insurance companies but also serve as an impetus for optimizing patient care.

The emergence of DRGs is not just a refinement of financial processes; it represents a fundamental shift towards valuebased care. The focus shifts from volume-driven practices to outcomes, incentivizing healthcare providers to deliver efficient and effective care.

Data-Driven Risk Assessment in Health Insurance

Dr. Aljehani elucidates the evolution of risk assessment in health insurance. The interview emphasizes how insurance companies are transitioning from traditional demographic-based risk assessments to leveraging digitized medical data. "The more accurately they do that, the more stable their business is," Dr. Aljehani states. This shift to data-driven practices not only ensures more accurate risk evaluations but also forms the bedrock for an adaptable and robust health insurance landscape.

The integration of digitized medical data into risk assessment isn't just a technological upgrade; it's a strategic realignment of how insurance companies perceive and manage risk. The granularity and accuracy afforded by digital data empower insurers to make informed decisions, building a more sustainable and adaptive insurance industry.

The Changing Role of Health Insurance **Companies**

Dr. Aljehani underscores the transformative journey of insurance companies from policy sellers to active care managers. "We are working with our health insurance



companies' partners to transform how health insurance is being done in Saudi Arabia," he notes. This collaborative approach is not just a paradigm shift; it's a strategic realignment that recognizes the interconnectedness of insurance, healthcare, and overall societal well-being.

The traditional role of insurance companies as financial intermediaries is evolving into a proactive partnership in healthcare delivery. Insurance companies, by actively participating in care management, become integral contributors to the overall health and well-being of the population they serve.

Saudi Arabia's Initiatives for Seamless **Integration**

Dr. Aljehani details the creation of standards, the implementation of a unified platform for data exchange, and the development of policies to create a transparent and standardized healthcare market. "We have to provide the market with policies that create a level playing field," he states. The implementation of a unified platform complements this standardization effort, creating a digital agora where healthcare entities can converge, exchange information seamlessly, and collectively contribute to a richer understanding of patient health.

The establishment of standards and a unified platform isn't just a regulatory measure; it's a strategic initiative to create a collaborative ecosystem. By fostering a standardized environment, Saudi Arabia is paving the way for enhanced data sharing, interoperability, and a collective effort toward achieving comprehensive healthcare goals.

Challenges and Opportunities in the Digital Transformation Journey

Dr. Aljehani identifies the human factor, investment requirements,











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and the importance of effective change management. "So, you need to upskill the skills of the people," he says. The transition from traditional documentation methods to the nuanced language of coding and data analysis necessitates not just training but a cultural shift in the perception of healthcare workflows.

The challenges in this journey aren't just technological; they are deeply rooted in the human element. The transformation requires not just updated skill sets but a cultural evolution where healthcare professionals seamlessly integrate technology into their practice.

The Impact of COVID-19: Catalyst for **Accelerated Digitalization**

"The pandemic is a sad story for all humanity. And it has created other opportunities," Dr. Aljehani reflects. The tech-savvy demographic in Saudi Arabia, coupled with a necessity-driven acceptance of virtual platforms, propelled the nation towards a digitally empowered healthcare future. The pandemic, often regarded as a disruptor, emerged as a catalyst, hastening the adoption of technologies that might have otherwise taken years to become integral components of the healthcare landscape.

The global crisis forced a rapid reevaluation of healthcare practices, acting as a catalyst for change that extended beyond the immediate challenges. It prompted a realization that the future of healthcare lies in a digitally integrated, flexible, and responsive system.

Cultural Considerations and Future Prospects

Dr. Aljehani credits the predominantly young and techsavvy population for embracing technology, making advancements like voice recognition, and recording of medical documentation feasible. "We're lucky in Saudi Arabia that we have about 70% of the population under the age of 35," he notes. The fusion of tradition and technology paints a promising picture, where healthcare becomes not just a service but an intrinsic part of daily life.

The alignment of cultural acceptance with technological advancements signifies a harmonious integration of tradition and progress. As new technologies become ingrained in daily healthcare practices, the synergy between cultural understanding and technological innovation becomes a cornerstone for future developments.

Forging a Digital Path in Healthcare

In conclusion, this extended article provides a holistic exploration of the digitization of medical data and its profound linkage to health insurance in Saudi Arabia. Dr. Nasser Aliehani's insights reveal a novel journey that not only improves the efficiency of healthcare practices but also reshapes the health insurance landscape, setting the stage for a future where datadriven decisions are at the core of a vibrant healthcare ecosystem.

As Saudi Arabia continues to chart its course toward a digitally empowered healthcare future, The symbiotic relationship between digitized medical data and health insurance is proof of the country's belief in innovation, collaboration, and the well-being of its residents.













From Shortage to Sharing: **Digital Pathology Connects Patients to Experts**



By Kamal Director PathnSitu Biotechnologies

he practice of tissue pathology in developing countries is fraught with challenges, primarily stemming from limited resources, shortages of subspecialists, and a lack of trained laboratory personnel and continuing education programs. This article explores the impact of these challenges on cancer diagnosis and highlights the critical role of trained pathologists in performing surgical/Onco pathology tests.

Shortage of Skilled Pathologists:

One of the pressing issues in many regions, especially rural areas, is the shortage of skilled pathologists. This scarcity compels the samples to travel across cities and countries for processing and reporting, causing significant delays in reaching a final diagnosis. These delays contribute to the metastasis of primary tumors, leading to lower life expectancies for patients.

The Role of Digital Pathology:

Digital pathology emerges as a transformative solution, playing a pivotal role in basic and clinical research and disease diagnosis. The technology involves the generation of digital slides from glass slides using specialized scanning devices. These digital slides offer high-resolution images that can be visualized on computer or mobile screens, rendering traditional light microscopes obsolete.

The recent innovation of whole-slide imaging digitizes tissue/cell preparations, offering benefits such as teleconsultation for expert opinions worldwide, standardization in pathology education, remote access to expertise (including Live Frozen Section), improved patient outcomes, reduced fatigue for pathologists (Microscope on Desktop), and the prospect of Al-based disease screening.

Overcoming Regulatory Barriers:

Despite the advantages, the adoption of digital pathology faces hurdles, with strict federal and local regulations on clinical reporting hindering progress in many countries. The technology offers higher-resolution images, accurate color representation, and enhanced tools for annotation, measurement, and capturing, thereby improving the accuracy and efficiency of slide assessments.



Teleconsultation as a Global Solution:

Digital pathology, using scanners and cloud-based slide sharing platforms, bridges the gap between healthcare resources in high-income and low-middle-income countries. Teleconsultation allows pathologists in under-resourced areas to access knowledge and care resources from more developed regions, ensuring that patients, regardless of their location, receive consistent and high-quality care.

Moreover, global demographics are shifting such that the United Nations projects up to 68% of the world's population will live in urban areas by 2050. With these changes, many regions would be left behind entirely if it were not for digital pathology making it possible for clinicians to consult and diagnose remotely.

To perform the necessary laboratory tests for illness diagnosis, trained pathologists are important. However, there is a shortage of skilled pathologists in some regions, particularly in rural areas. The digital pathology allows for remote consultation, enabling pathologists to work together across large distances, which helps to alleviate the shortage of pathologists or subject matter experts in certain regions. By enabling teleconsultation, digital pathology is helping to bridge the gap in healthcare resources between different regions of the world.

Al Applications in Pathology:

The integration of artificial intelligence in pathology brings quantitative accuracy and enables the geographical contextualization of data using spatial algorithms. Adding spatial metrics to

IHC enhances the clinical value of biomarker identification approaches and enables spatial analysis, providing highly precise and unbiased readouts. This integration empowers pathologists to access and interpret data remotely, marking a substantial advancement over traditional methods.

While challenges persist in tissue pathology in developing countries, the advent of digital pathology, coupled with Al applications, offers a promising avenue for overcoming these obstacles and ensuring equitable access to quality healthcare resources globally.









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Six Simple Steps to Prevent Vast **Majority of Strokes**

Dr. Russman offers advice on how to reduce stroke risk by better managing existing health conditions and also through implementing lifestyle changes. "These tips are interrelated as most of the lifestyle changes mentioned also play a role in improving management of hypertension, high cholesterol and diabetes, which all increase stroke risk," Dr. Russman points out.









n a proactive approach to stroke prevention, Andrew Russman, DO. Medical Director of **Cleveland Clinic's Comprehensive** Stroke Center. shares valuable insights into the impact of lifestyle changes and effective disease management.

According to the World Stroke Organization (WSO), stroke is the leading cause of disability worldwide. The WSO says one in four people will have a stroke in their lifetimes, and each year over 12 million people worldwide

have strokes. However, it adds that 90% of strokes are preventable by addressing a small number of risk factors that are responsible for most strokes.

Dr. Russman offers advice on how to reduce stroke risk by better managing existing health conditions and also through implementing lifestyle changes. "These tips are interrelated as most of the lifestyle changes mentioned also play a role in improving management of hypertension, high cholesterol and diabetes, which all increase stroke risk," Dr. Russman points out.

Reduce hypertension

"Uncontrolled hypertension - that is, blood pressure that is consistently above 130/80 - is the single most important modifiable risk factor in stroke worldwide,"



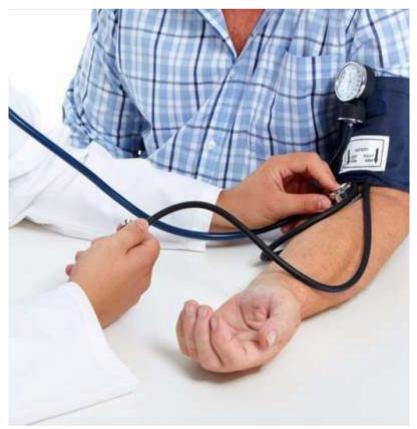
says Dr. Russman.

Aside from medication, an important step in reducing blood pressure is to reduce salt intake, which Dr. Russman says is good advice even if you don't have high blood pressure. "We recommend consuming no more than 2g of salt per day. I advise my patients to check food labels and nutritional websites for sodium levels as their intake is usually far higher than they realize," he adds.

Be wary of diabetes

It is important to be tested for diabetes, and if diagnosed, to manage the condition well, says Dr. Russman. He explains that diabetes causes narrowing of small, medium and large blood vessels in the body, including vessels of the eyes, kidney, heart and brain. Owing to this, diabetes can contribute to a variety of vascular. cardiovascular and cerebrovascular problems including stroke. In addition, for patients who have survived a stroke, the risk of having a second is three times higher in those patients whose diabetes is not controlled.

Dr. Russman says that as part of their treatment plan, people with diabetes should have their condition monitored through HbA1C tests, which provide a















three-month snapshot of their blood sugar control. "We recommend that these individuals aim for an HbA1C result of 7.0 or less. Taking prescribed medication correctly, watching their diet, exercising regularly, and following their healthcare provider's recommendations will help them achieve this."

Address atrial fibrillation

The WSO says atrial fibrillation is associated with one in four strokes, and Dr. Russman says these strokes tend to be more severe and disabling than strokes associated with other risk factors.

"Atrial fibrillation is a heart rhythm condition characterized by very rapid heartbeats that don't allow the top left chamber of the heart - the left atrium - to contract normally. Instead, it fibrillates and flutters so blood is not eiected normally from the chamber," he says. "Anytime blood is stagnant for too long, it can form a blood clot that can travel elsewhere in the body. This clot could cause a stroke by blocking a blood vessel in the brain, depriving that part of the brain of the oxygen and nutrients it needs."

Dr. Russman savs atrial fibrillation is the most common acquired heart rhythm disorder in older adults, and its associated risk is strongly related to age. "The older you are, the more at risk you are of acquiring the condition, but also the higher the risk of stroke associated with the condition," he says. "It is estimated that up to half of all patients with a heart rhythm condition are not aware of it. However, once



diagnosed, atrial fibrillation can be treated with a bloodthinning medication. These do carry some risks, but the benefits far outweigh these in the vast majority of patients."

Manage cholesterol levels

In addition to reducing high levels of low-density lipoprotein (LDL) or 'bad' cholesterol through diet, for example, by avoiding saturated fat, individuals might be prescribed statin medications that reduce future risk of heart attacks and strokes. Dr. Russman says these medications, particularly rosuvastatin and atorvastatin, may benefit patients beyond simply reducing cholesterol levels in that they also appear to reduce inflammation and stabilize plaque build-up in blood vessels.

Stop smoking

"Any type of smoking is associated with increased risk of cardiovascular disease and stroke, and is strongly associated with accelerated hardening of the arteries and narrowing of blood vessels in the brain, heart and elsewhere." notes Dr. Russman. "We therefore strongly recommend everyone completely stop any form of nicotine ingestion to significantly reduce their longterm risk for a multitude of diseases."

Adopt a healthy lifestyle

Dr. Russman recommends following an eating plan that is low in saturated fats and sodium, and to avoid alcohol and excessive caffeine consumption. "Regular physical activity is also important as it can reduce the risk of stroke directly, but also indirectly as it helps to lower high blood pressure and blood sugar levels. Exercise can also help to reduce stress, as can other activities such as meditation or deep breathing, which is important as stress causes the body to release chemicals that can increase blood pressure, affect hormones, and raise blood sugar levels," he said.







MoHAP Hosts 3-Day Workshop for National Mentorship Program in Nursing Research

Dubai: The Ministry of Health and Prevention (MoHAP), in collaboration with the College of Nursing and Midwifery at Mohammed Bin Rashid University of Medicine and Health Sciences, recently organised a three-day comprehensive workshop targeting participants in the National Mentorship Programme for Nursing and Midwifery Research.

Hosted by MoHAP's National Committee for Nursing and Midwifery in Dubai, the event aimed to enhance the skills and capabilities of nursing and midwifery staff in conducting directed research studies under the mentorship of scientific research experts. During the gathering, trainees and their mentors discussed ways to develop a mentorship plan as they revised the programme's requirements and goals.

The National Programme for Nursing and Midwifery



Research was launched as part of the Ministry's "Nebras: My Journey in the World of Nursing and Midwifery Research" initiative, which was rolled out in mid-June.

Additionally, 82 nurses and midwives from various health authorities, such as Emirates Health Services, Dubai Academic Health Corporation, Abu Dhabi Health Services Company (SEHA), and Dubai Police Health Centre, took part in the workshop.

As many as 25 health research experts from prestigious academic institutions across the UAE, including the United Arab Emirates University (UAEU), Fatima College of Health Sciences (FCHS), University of Sharjah, Higher Colleges of Technology, Gulf Medical College, and University of Wellington Dubai, were also present.



Riyadh: The Global Health Exhibition which was organized recently by the Ministry of Health (MOH) over three days, concluded with the signing of 138 agreements, memorandums of understanding, and deals, with a total investment exceeding SR. 13.3 billion, and the presence of more than 111 thousand visitors and interested local and international stakeholders.

The exhibition, which was held under the theme "Invest in Health," witnessed the holding of a ministerial session, in which ministers and decisionmakers discussed the investment file in the kingdom's health sector. It also witnessed the holding of a meeting between His Excellency the Minister of Health, Mr. Fahd bin Abdul Rahman Al-Jalajel, and the owners of hospitals and small facilities, in which He invited them to take advantage of this exhibition to enhance investment opportunities in the fields of technology, research, innovation, and digital health solutions to improve the quality and efficiency of services, medical education, and training.

The Global Health

Exhibition Concludes Sessions with 138 Agreements and Investments of SR. 13.3 Billion



The sessions and events of the Global Health Exhibition focused on the importance of raising the quality of life in the health sector to attract local and global investments and achieve a prosperous economy and integrated and innovative health care. The exhibition aimed to encourage investment in the healthcare sector, increase its growth opportunities, strengthen the Kingdom's leadership in this sector, and introduce the dimensions of progress witnessed by the health system and its digital transformations and medical technologies.

The exhibition hosted more than 300 exhibiting companies, including local, regional, and international companies from 29 countries, as part of an exhibition containing the latest healthcare innovations and technologies in multiple qualitative fields in digital health, artificial intelligence, emerging technologies, and the latest research and knowledge.









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From Europe to Anatolia: Why You Should **Choose Turkey** for Your Next **Medical Procedure**

In the future, medical tourism in Turkey will continue to develop actively, because the country's government is actively investing in the healthcare sector. Turkey is also considered an ideal region for health tourism due to the convenience of transportation provided by Turkish Airlines, the national airline that operates flights to most destinations in the world (120 countries, 299 cities, and 302 airports). In 2023, Turkey plans to reach 1.5 million health tourists per year and 10 billion USD in income from health tourism.



urkey has been an important tourist destination for many years, attracting travelers with its beauty and cultural heritage. Located at the crossroads of the Eastern and Western worlds. the Republic of Turkey has absorbed and combined the best of Europe and Asia.









Most medical procedures in Turkey are on average 40-50% cheaper than in the EU and USA.







Medical tourism is no exception, in recent years, Turkey has emerged as a leading destination for medical tourism, attracting millions of visitors seeking high-quality healthcare services combined with affordable costs. With its state-of-theart medical facilities, internationally renowned doctors, and captivating tourist attractions, Turkey has established itself as a preferred choice for individuals from around the globe seeking medical treatments.

Among the most popular procedures are complex surgical and dental operations, kidney dialysis, cosmetic surgery, and organ transplantation. This article explores the reasons why Turkey shines as a premier destination for medical tourism.

The popularity of medical tourism in **Turkey**

Turkey is among the top ten medical tourism destinations in the world because Turkish medical tourism has three strong advantages: low cost, high quality of service, and guick access to world-class treatment.

Why is Turkey the best destination for medical tourism?

Turkey has become a popular destination for medical tourism due to its advanced medical technology, highly qualified doctors, and affordable prices. One of the most popular cities for medical tourism in Turkey is Antalya, which is located on the coast of the Mediterranean Sea, and Istanbul.

In the future, medical tourism in Turkey will continue to develop actively, because the country's government is actively investing in the healthcare sector. Turkey is also considered an ideal region for health tourism due to the convenience of transportation provided by Turkish Airlines, the national airline that operates flights to most destinations in the world (120 countries, 299 cities, and 302 airports). In 2023, Turkey plans to reach 1.5 million health tourists per year and 10 billion USD in income from health tourism.













Turkey is one of the most popular holiday destinations in the world and is now becoming a popular destination for medical tourism. Hospitals in Turkey offer treatment according to the most modern medical protocols using high-quality equipment. Turkey is a well-known destination for health tourism and will continue to develop the sector in the future.

Treatment in Turkey has several advantages, including:

Exceptional Healthcare Infrastructure: In recent years, Turkey has invested heavily in medical infrastructure, which is why most hospitals and clinics are equipped with the latest medical equipment. Thanks to this, patients can receive high-quality treatment. These facilities are outfitted with cutting-edge technology, and advanced medical equipment, and adhere to international standards.

Surgical intervention is also performed using the latest equipment and technologies. For example, Turkey has one of the largest robotic surgery systems in Europe, allowing for more precise surgeries and faster recovery

Qualified and Experienced Medical Professionals:

One of Turkey's greatest strengths in the field of medical tourism lies in its highly skilled and experienced medical professionals. The country is home to a vast pool of doctors, surgeons, and healthcare providers who have acquired their education and training from prestigious institutions worldwide. Many Turkish doctors are not only highly qualified but are also recognized as leaders in their respective fields, often actively participating in research and innovation.

Affordability without Compromising Quality:

One of the biggest advantages of medical tourism in Turkey is the cost savings. Medical tourists are drawn to Turkey not only for the exceptional medical care but also for the affordability it offers. Treatment and surgery in Turkey can be 60-70% cheaper than in the United States or Europe, making the country attractive to people looking for high-quality medical care at a low cost. For example, the cost of a heart bypass surgery in Turkey is about \$10,000, and in the United States - up to \$100,000.

Extensive Range of Medical Specialties:

Turkey provides an extensive range of medical specialties, covering various areas of healthcare. From cosmetic surgery, orthopedics, and cardiology to dentistry, fertility treatments, and hair transplantation, Turkey offers a comprehensive array of medical services. Patients can easily find the expertise they require, often benefiting from multidisciplinary approaches and personalized treatment plans tailored to their specific needs.

World-Class Facilities for Wellness and **Recovery:**

Beyond exceptional healthcare, Turkey's appeal as a medical tourism destination extends to its exceptional wellness and recovery facilities. The country's serene environment, natural beauty, and therapeutic thermal spas offer an ideal setting for recuperation. Patients can enjoy post-treatment relaxation, engage in rejuvenating activities, and explore the rich cultural heritage of Turkey, making their medical journey a holistic experience.

Geographical Advantage and Accessibility:

Situated at the crossroads of Europe and Asia, Turkey benefits from its strategic location, making it easily accessible for travelers from all over the world. The country boasts modern airports, efficient transportation networks, and a range of accommodation options, ensuring convenient travel arrangements for medical tourists and their companions.

Turkish Hospitality and Cultural Richness:

In addition to its medical prowess, Turkey is renowned for its warm hospitality and rich cultural heritage. Visitors to the country can immerse themselves in a vibrant blend of tradition, history, and culinary delights.

Beautiful nature and many natural monuments - in Turkey, many cities are located on the seashore, particularly Antalya. Patients can enjoy stunning sea and mountain views while recovering from treatment or surgery. The welcoming nature of the Turkish people creates a supportive and caring environment for medical tourists, contributing to their overall experience and well-being.

Do I need a visa for medical tourism in Turkey?

Visitors to Turkey must obtain a medical visa unless they are citizens of visa-exempt countries and territories.

There are generally two types of medical visas available:

- A regular medical visa that you can get through the Turkish embassy or consulate in your area.
- An electronic visa (e-visa), which can be obtained through the online visa system of the Turkish government.

Turkey have most economical medical tourism cost in the world.

The cost of medical care in Turkey is primarily impacted by the lower cost of living and lower physician fees. Turkish hospitals and clinics use the same high quality diagnostic and surgical equipment as the hospitals overseas do. Most medical procedures in Turkey are on average 40-50% cheaper than in the EU and USA.









Beyond a Fad: Telemedicine's Enduring **Impact Redefines Healthcare**

Reenita Das uncovers telemedicine's core – harnessing technology to bridge the physical gap in healthcare. Though its roots stretch back to the 1950s and 60s, COVID-19 served as a potent catalyst, propelling its reach to a staggering 80-90%. Originally conceived for remote regions facing harsh realities, telemedicine swiftly became a crucial weapon in the pandemic arsenal. From triaging symptoms and tracking contacts to delivering specialized care to the isolated, it proved its transformative power. By Mohammed Irshad









orget fleeting trends. ■ Telemedicine, a digital wave reshaping healthcare, is here to stay. Driven by workforce pressures, surging home care demands, and retailization's growing shadow, telemedicine's significance goes far beyond a convenient stopgap. As **Reenita Das, Vice President** and Partner, Healthcare and Lifesciences, practice, Frost & Sullivan, expertly reveals, this transformative approach boasts a rich history and an even brighter future.

Delving deeper, Das uncovers telemedicine's core - harnessing technology to bridge the physical gap in healthcare. Though its roots stretch back to the 1950s and 60s, COVID-19 served as a potent catalyst, propelling its reach to a staggering 80-90%. Originally conceived for remote regions facing harsh realities, telemedicine swiftly became a crucial weapon in the pandemic arsenal. From triaging symptoms and tracking contacts to delivering specialized care to the isolated, it proved its transformative power. Expediting testing, easing hospital burdens, and enabling seamless communication - these were not mere feats, but a glimpse into healthcare's digitally-driven future.

Post-COVID Telemedicine Landscape:

Contrary to expectations, the end of the pandemic did not signal a decline in telemedicine usage. Das highlights its continued relevance in general healthcare, particularly for wellness visits, blood pressure control, and managing chronic conditions like diabetes. Mental health counseling became a cornerstone of telemedicine, addressing the profound impact of the pandemic on global mental health. From weight management to physical therapy and prescription refills, telemedicine diversified its applications, demonstrating its adaptability and sustainability.

Specialized Telemedicine Areas:

Das elaborates on specific telemedicine applications such as tele-intensive care, including telestroke and tele-radiology. These technologies enable remote communication between specialists and emergency doctors, addressing shortages and improving patient outcomes. Tele-psychiatry has also emerged as a vital tool for direct interaction between patients and psychiatrists through virtual platforms.



Four Reasons Telemedicine is Here to Stay:

Das identifies four key reasons why telemedicine is poised to stay and evolve beyond the pandemic. Firstly, the global healthcare workforce shortage and escalating hospital bed costs drive the adoption of the 'hospital at home' concept. Secondly, the growing care-at-home trend, marked by significant investments from tech companies, insurers, and retailers, underscores the ongoing importance of telemedicine. Thirdly, the consumerization and retailization of healthcare are shifting the focus from hospitals to homes, driven by consumer preferences for comfort, convenience, and cost savings. Lastly, the surge in the geriatric population, rising healthcare costs, and clinician burnout contribute to the sustained growth of telemedicine.

Forecasted Growth and Market Dynamics:

Das highlights the extensive research conducted by Frost & Sullivan on the digital health and remote patient monitoring landscape. With a projected Compound Annual Growth Rate (CAGR) of approximately 19 percent from 2023 to 2027, the telemedicine market is set for significant expansion. Currently valued at \$5 billion, the market is still in its growth stage, attracting a diverse array of participants—over 100 companies and counting. Das emphasizes the question of why so many are entering the industry, setting the stage for a discussion on the driving forces behind this unprecedented growth.

Evolution of Virtual Visits and Overcoming Challenges in Remote Areas:

Examining the evolution of virtual visits, Das provides compelling statistics. Prepandemic, virtual visits constituted a mere 5 to 10 percent of healthcare interactions. However, with the advent of the pandemic, this figure skyrocketed to 80 percent worldwide. Post-pandemic, the numbers dipped to around 30 percent, but Das predicts a resurgence, with virtual visits expected to surpass 50 percent by 2030. The transition from an option to a necessity, particularly in the context of the hybrid care model, wherein hospitals are integrating virtual care into their services, is a key factor propelling this shift.

The integration of 5G technology is poised to play a pivotal role in overcoming the existing challenges in global telehealth accessibility. Disparities in internet access quality and technology awareness between urban and rural areas have impeded the widespread adoption of telehealth. Acknowledging telehealth as an effective solution to extend healthcare to underserved regions, the resolution of internet coverage issues and increased consumer awareness become imperative.

Addressing the challenges of extending telemedicine to remote and underserved regions, Das underscores the pivotal role of technology. The advent of 5G, advancements in cloud computing, and the integration of Artificial Intelligence (AI) have played crucial roles in overcoming barriers. Das predicts that the use of















generative AI technology in digital health ventures will grow from two percent to 50 to 60 percent over the next decade. Notably, in the Middle East, 63 percent of private ventures leverage AI, indicating a higher adoption rate compared to North America and Europe. This technological leap is expected to redefine healthcare delivery, making care accessible anytime, anywhere.

Governments, recognizing the significance of this issue, are actively working to enhance rural internet access, as exemplified by the US government's recent announcement of a \$73 million Affordable Connectivity Outreach Grant for affordable internet. This commitment to improving internet infrastructure holds the potential to benefit telehealth vendors, offering broader internet access through broadband expansion and leveraging 5G connectivity for enhanced bandwidth and reduced latency. With a considerable population equipped with smartphone access and the emergence of 5G fixed wireless access (FWA), there is optimism that these advancements could bridge the digital divide and significantly improve telehealth accessibility.

Physician Adoption and Changing Mindsets:

Das acknowledges the need for a mindset shift among practitioners. While traditional medical interactions rely on in-person trust-building, she believes telemedicine has a place in follow-up visits, particularly for chronic care cases. Das foresees growing acceptance, especially among newer generations of doctors who are increasingly familiar with using software tools.

Digital Therapeutics and Personal Emergency Response Systems:

Das introduces the concept of digital therapeutics, where solutions such as wearables and apps play a vital role in managing patient care and controlling costs. This innovative approach extends beyond hospital settings, reaching consumers and employers as part of wellness programs. Additionally, Das highlights the role of personal emergency response systems, exemplifying how wearables and mobile apps can detect falls among the elderly, providing timely alerts to caregivers or facilities

Metaverse Integration and Mental Health:

Das emphasizes the significant role of telemedicine in mental health, particularly in addressing societal taboos surrounding issues like addiction and behavioral disorders. She highlights how telemedicine offers a discreet platform for patients who prefer not to reveal themselves in person, especially within the context of the emerging metaverse concept.

Telemedicine for Autism:

Das shares a real-world example of a telemedicine platform tailored to address autism. Despite initial skepticism, telehealth is proving to be an invaluable resource for autism treatment. As autism cases continue to rise globally, affecting 1 in 100 children and escalating to 1 in 44 in the US, patients and their families encounter challenges related to long-distance visits, treatment costs, and the availability of professionals.

In response to these challenges, telehealth emerges as a transformative solution, enhancing access to care through virtual consultations and providing valuable training for parents, caregivers, and teachers in Applied Behavior Analysis (ABA), a widely used autism therapy. The benefits extend to patients, offering better control over the treatment environment and alleviating the hassles associated with hospital visits, while simultaneously simplifying the diagnosis and treatment monitoring processes for healthcare professionals.

Regulatory Challenges and Future Directions:

Das discusses the challenges posed by regulatory changes and reimbursement policies in the telemedicine industry. She highlights a significant milestone—the FDA's approval of software as a medical device. This regulatory validation is seen as a positive step, paving the way for interoperable and validated software solutions, reducing costs, and enhancing care delivery. Das also emphasizes ongoing efforts to establish guidelines, conduct clinical trials, and build realworld evidence for improved patient outcomes

Global Data and Privacy **Concerns:**

Regarding concerns about data sharing policies, Das emphasizes the lack of a global standard for data sharing. She underscores the importance of continued scrutiny and development of data-sharing policies, citing examples such as HIPAA in the United States and the European Health Data Space in the European Commission. Despite regional regulations, Das envisions a future where a unified global standard facilitates seamless data sharing, especially in the context of medical tourism.

Optimism about the Future of Telemedicine:

In conclusion, Das expresses optimism about the future of telemedicine, citing the current technological landscape, increasing patient education, and the consumerization of healthcare. She envisions telemedicine as a key player in reducing healthcare spending, alleviating the burden of chronic diseases, and combating physician burnout.

Das emphasizes that telemedicine has become a standard in healthcare. She foresees virtual visits and remote patient monitoring becoming integral components of the new healthcare ecosystem within the next three to five years. With its versatility, adaptability, and ability to address healthcare challenges across diverse settings, telemedicine is poised to shape the future of healthcare delivery on a global scale.

However, she cautions that these advancements should be approached with care, thoughtful review, and consideration for ethical practices. Das predicts telemedicine will dramatically transform the healthcare industry across various dimensions.











GENEVA: The World Health Organisation (WHO) has published the 2023 global health expenditure report, which sheds new light on the evolution of global health spending at the height of the COVID-19 pandemic.

Released ahead of Universal Health Coverage (UHC) Day, the report reveals that in 2021 global spending on health reached a new high of **US\$ 9.8 trillion or 10.3** percent of global gross domestic product (GDP). Nevertheless, the distribution of spending remained grossly unequal. Public spending on health had increased across the world, except in low-income countries where government health spending decreased and external health aid played an essential supporting role.

In 2021, about 11 percent of the world's population lived in countries that spent less than US\$ 50 per person per year, while the average per capita spending on health was around US\$ 4 000 in high-income countries. Low-income countries accounted for only 0.24 percent of global health expenditure, despite having an 8 percent share of the world's population.

The record spending on health in 2021 demonstrated how countries prioritised public health during the pandemic even as economies and societies reeled from the massive disruptions it caused. However, the report also highlights that the scale of growth in public spending on health observed during this period is unlikely to be sustained, as countries shift focus to handle other economic priorities such as slowing growth, high inflation rates and increased debt servicing obligations associated with rising indebtedness.

"Sustained public financing on health is urgently needed to progress towards universal health coverage. It is especially critical at this time when the world is confronted by the climate crisis, conflicts and other complex emergencies. People's health and well-being need to be protected by resilient health systems that can also withstand these shocks," said Dr. Bruce Aylward, WHO Assistant Director-General, Universal Health Coverage, Life Course.

The 2023 global health expenditure report also draws on disaggregated spending data by health service providers from 50 countries. Spending at hospitals, ambulatory care providers and pharmacies accounted for most health spending across all income groups (65 percent-84 percent). While spending by all types of health service providers increased in most countries, more rapid growth was seen in spending by preventive care providers than other types of providers.

During the pandemic, countries also adjusted their service delivery mechanisms to adapt to the new demands of battling COVID-19 while sustaining essential services. For example, the report shows that more high-income countries started to utilise pharmacies to deliver preventive care services since the pandemic.

A new and important aspect of this year's global health expenditure report is the insights into health capital investments, which is essential to the functioning of health systems, now and into the future.

In contrast to current health spending, which reflects the day-to-day consumption of resources, capital investments create new assets, such as buildings and equipment.

Capital investments increased in all income groups during the pandemic: 40-50 percent in low- and lower-middle income countries, and 8-9 percent in uppermiddle and high-income countries. In low-income countries, there was a surge in machinery and equipment spending, possibly influenced by the lack of essential equipment, such as ventilators and hospital beds, at the beginning of the pandemic. Hospitals received over half of all reported investments in all income groups. Government spending was also a major driver of the rise in health capital investment. The exception, once again, was low-income countries, where government and external health aid played a critical complementary role in bolstering investment.











EHS achieves 12% reduction in carbon emissions using AI and telemedicine

DUBAI: The Emirates Health Services (EHS) has revealed the outcomes of its Green Patient Care project which was launched earlier this year as part of its sustainability drive.

The announcement came during EHS' participation in an event titled "Climate and Health Response in UAE" which was hosted by the Ministry of Health and Prevention (MOHAP) on the sidelines of COP28 at Expo City.

According to EHS, the healthcare facilities in the UAE receive close to 2.6 million outpatient visits in a year. Studies suggest around 17 percent of the total emissions of the healthcare sector result from the transportation of patients and medical aid leading to 5 million tonnes of CO2 emissions monthly. EHS forecasted six months of emissions using advanced statistical techniques and developed an Al-based solution to reduce these emissions.

Dr. Sara AlShaya, Director of the Data and Statistics Department at EHS, presented the outcomes of the Green Patient Care project speaking extensively about the Virtual Health Clinics/Telemedicine and the AI model in providing health services while reducing carbon footprint.

As part of its Green Patient Care project, EHS launched the first-of-a-kind CO2



simulator for the estimation of carbon emission due to patient commute and used advanced AI to identify avoidable in-person visits. These initiatives led to 300,000 e-visits in 2023 which resulted in cutting down more than 6 million tonnes of CO2 emissions. They also helped in creating awareness among patients about the carbon footprint generated by hospital visits and urged them to use virtual consultation whenever possible.

The virtual care was also enhanced using advanced Al model which proactively identified visits to be converted to tele-visits. The machine learning model output was integrated within the appointment booking system to effectively assist the conversion to tele-visits. These initiatives resulted in an overall 12 percent reduction in CO2 emissions. The project involves continuous monitoring and training across EHS to reduce carbon emissions and make the Healthcare Sector more sustainable.

PureHealth Holding Enjoys 76% Surge in Remarkable Market Debut

Abu Dhabi's PureHealth Holding made a stellar entry into the market, witnessing a remarkable 76% surge on its first day of trading at the Abu Dhabi Securities Exchange (ADX). The healthcare platform's shares, which opened at AED3.26, soared to AED5.74, underscoring strong investor confidence.

PureHealth, a key player in COVID-19 screening in the UAE, raised nearly \$1 billion in its Initial Public Offering (IPO). It is backed by Abu Dhabi's sovereign wealth fund ADQ and IHC, chaired by Sheikh Tahnoun bin Zayed Al Nahyan, the national security adviser and brother of UAE President Sheikh Mohammed bin Zayed.

The market capitalization surged from AED36.22 billion at listing to AED63.77 billion on the debut day. Trading activity was robust, with over AED218.7 million and 39.14 million shares changing hands in 6,418 transactions.

PureHealth's successful debut positions it as a formidable force not only in the UAE but also in the global healthcare landscape. The IPO, offering \$1 billion, represents 10% of the total share capital, highlighting the company's strategic move to deepen capital markets.

Overall, PureHealth's strong market performance reflects its pivotal role in healthcare and sets a positive trajectory for its growth and influence both regionally and internationally.









Health Insights Asia to invest \$3.5mln in digital healthcare solutions

Health Insights Asia, a company specializing in medical systems management programs, has announced its plan to invest \$3.5m next year.

The company's CEO, Nasser Shahata, said that the investment would focus on developing digital medical applications, solutions, and devices and supporting research, development, and training programs for human resources.

Shahata also said that the company had signed agreements with several private hospitals in Malaysia and Southeast Asia to implement and activate the "Medica CloudCare" system to improve healthcare quality, enhance hospital operational efficiency, reduce healthcare costs,

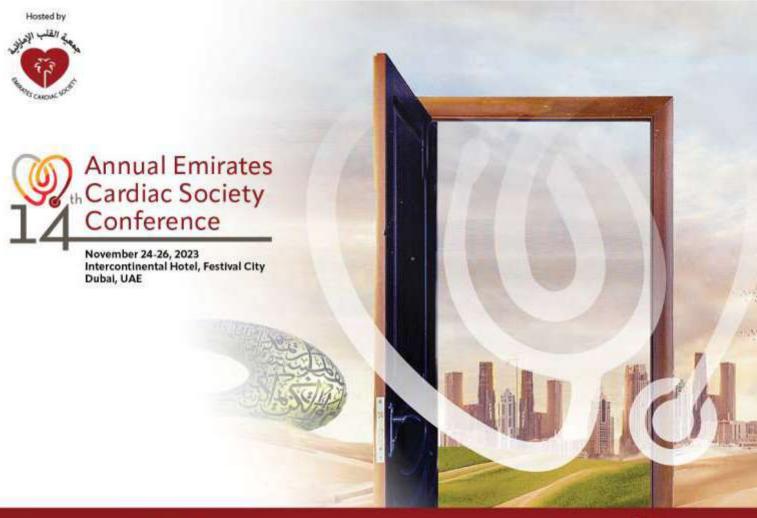


and provide competitive medical services for all patients.

He explained that the Medica CloudCare system would help hospitals support medical tourism by providing a robust and upgradable infrastructure. The system would also help transform the medical facilities in Malaysia and Southeast Asia into smart hospitals, enabling them to offer more efficient and cost-effective healthcare while meeting the needs of the international market.

Shahata revealed in previous press statements that Health Insights Asia planned to establish a factory in Egypt soon for manufacturing medical devices for diagnosing heart diseases.

The factory's anticipated commencement in January comes with considerations regarding the investment cost, as noted by Shahata. With an investment of approximately \$70 million since its inception in 2012, the company remains committed to providing innovative solutions for digital transformation in healthcare. This aligns with its overarching strategy to support the environmental and economic sustainability of medical institutions.





UPCOMING EVENTS



DUPHAT Conferences and Exhibititon

The Emirates Sleep Medicine Conference 2024

20-21 January

Dubai

29 Jan-01 Feb

Arab Health

Dubai

2024



Global Orthopedic Summit (GOS)

05-06 February Dubai



Dubai

Medlab Middle East 2024

05-08 February

Dubai

09-11 January

Health 2.0 Conference

20-22 February

Dubai



7th UAE Int'l Conference on Antimicrobial Resistance (ICAMR) 2024

23-24 February

Dubai



Dubai World Dermatology and Laser Conference & Exhibition (Dubai Derma)

05-07 March





5 - 7 March 2024 | 23" Dubai World Dermatology and Laser Conference & Exhibition Shaping the Future of Dermatology & Aesthetics

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- Basic Surgery and Advanced Fellowship Course on Dermatology, Aesthetics and Laser

SCAN FOR UPDATES



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Non Sticky



Soft On Hands



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