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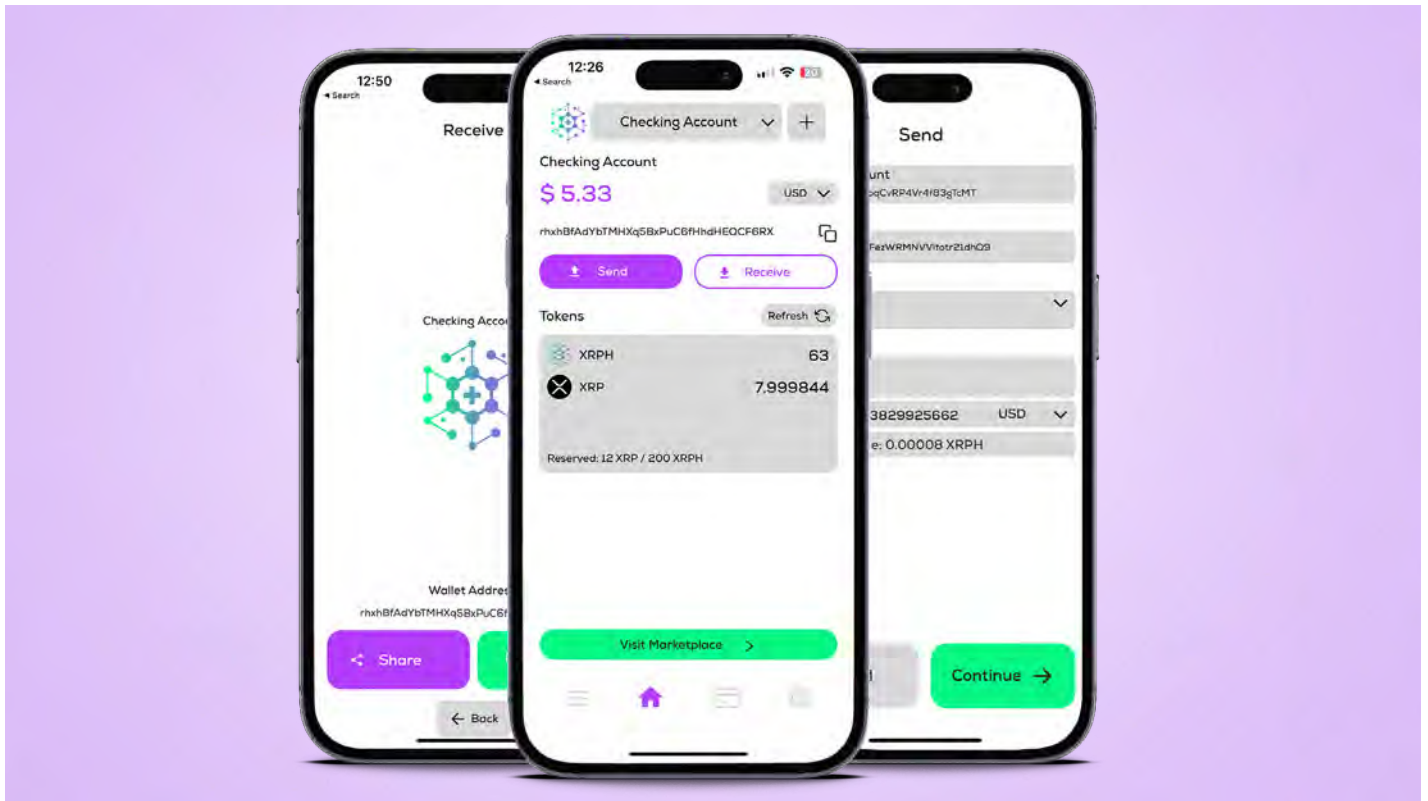


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On a mission to transform global healthcare with blockchain innovation



KAIN ROOMES & LABAN ROOMES - Founder and Co-founder XRP Healthcare respectively

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MIDDLE EAST & AFRICA

Year 2 | Issue No.8 | Sep-Oct

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The utilization of blockchain and Web3 technology has the potential to catalyze healthcare revolution in Africa

Africa, a continent known for its rich diversity of cultures and landscapes, has long grappled with healthcare challenges. Limited access to quality medical services, fragmented healthcare infrastructure, and a lack of interoperability in healthcare systems have hindered progress. However, XRP Healthcare has taken a bold step towards reshaping the future of healthcare in Africa by embarking on an ambitious mission: to merge and acquire 1500-2000 private health institutions across the continent, streamlining healthcare delivery using innovative technology.

In the midst of this transformative wave, XRP Healthcare (XRPH) emerges as a pioneering company, harnessing Web3 technology and blockchain to revolutionize healthcare access and affordability. XRPH stands as a beacon of change, the first pharmaceutical and healthcare platform built on the secure and efficient XRP Ledger blockchain.

Blockchain, serving as an immutable and transparent ledger, ensures the secure and traceable storage of patient data, thereby reducing fraud, improving data integrity, and enhancing patient privacy. Web3 technology, characterized by decentralized applications and peer-to-peer interactions, promises to foster interoperability, enabling healthcare providers to seamlessly exchange information and collaborate across borders.

The XRP Ledger's reputation for speed and scalability makes it an ideal foundation for a healthcare system that must handle vast amounts of data and transactions. This choice ensures that patient records, financial transactions, and supply chain data are handled with the utmost precision and speed, setting new standards for reliability in healthcare.

XRP Healthcare's mission to merge and acquire private health institutions across Africa is particularly promising. By consolidating these fragmented healthcare entities under a unified technology-driven platform, XRP Healthcare aims to achieve several critical objectives. Firstly, it can standardize healthcare delivery and ensure quality control, thereby enhancing the overall patient experience. Secondly, it can optimize supply chain logistics, reducing costs and ensuring the availability of essential medical supplies. Lastly, it can harness the power of data analytics to predict healthcare trends, allocate resources efficiently, and provide proactive care to patients.

The potential impact of blockchain is profound. It has the potential to create a healthcare ecosystem that transcends borders, connecting patients, providers, and pharmaceutical companies seamlessly. Patients will have access to quality care regardless of their geographical location. Healthcare providers will benefit from streamlined operations and access to a broader patient base. Pharmaceutical companies can ensure the timely delivery of medications and vaccines, contributing to public health goals.

However, it is crucial to approach this endeavor with care and diligence. Merging and acquiring such a significant number of private health institutions requires meticulous planning, adherence to regulatory standards, and a commitment to preserving patient trust. Additionally, ensuring that the benefits of this transformation reach underserved communities should be a top priority.

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Aster Hospitals introduces the Advanced Heart Clinic in the UAE

UAE — Aster Hospitals has introduced the Advanced Heart Clinic in the United Arab Emirates, aimed at assisting patients dealing with heart failure in effectively managing their condition. This clinic, strategically located at Aster Hospital Mankhool and Aster Hospital Qusais, will offer comprehensive evaluations, accurate diagnoses, and personalized treatment plans for individuals with documented heart failure and related symptoms. The clinic will be led by Dr. Sachin Upadhyaya and Dr. Abdul Rauoof Malik, supported by a team of cardiology specialists.

This initiative aligns with the UAE Government's efforts to combat the increasing incidence of cardiovascular diseases in the region and address the gaps in specialized management facilities for heart failure. Cardiovascular



diseases have become a leading cause of mortality in the UAE, and the timely identification and treatment of cardiac ailments are crucial for improving patient outcomes.

Aster Hospitals aims to provide accessible, high-quality healthcare and make a significant impact on the well-being of the community.

PUBLIC HEALTH

France and Africa CDC partner to enhance continent's public health and security



ETHIOPIA — The Africa Centres for Disease Control and Prevention (Africa CDC) and the government of France have signed a historic memorandum of understanding (MoU) to strengthen public health in Africa. The signing ceremony, held in Addis Ababa, signifies a significant step towards enhancing healthcare on the continent.

The MoU outlines several key initiatives aimed at improving Africa's healthcare landscape. It seeks to bolster Africa CDC's capabilities and promote innovation in healthcare. Additionally, the partnership aims to enhance disease surveillance and emergency response capacities, crucial for safeguarding African populations. A notable aspect of the MoU is the promotion of local manufacturing of vaccines, diagnostics, and therapeutics. This move aims to reduce Africa's reliance on external sources, ensuring timely healthcare support.

Education and skill development are vital components of the partnership, with a focus on training a highly skilled healthcare workforce capable of addressing complex health challenges.

The MoU also fosters research collaborations between French and

African institutions, promising groundbreaking advancements in public health. France's commitment to Africa's public health is evident through initiatives like the Access to COVID-19 Tools Accelerator and vaccine donations. France's financial support, technical expertise, and health program commitments have significantly contributed to advancing healthcare systems in Africa.

THE MOU OUTLINES SEVERAL KEY INITIATIVES AIMED AT IMPROVING AFRICA'S HEALTHCARE LANDSCAPE. IT SEEKS TO BOLSTER AFRICA CDC'S CAPABILITIES AND PROMOTE INNOVATION IN HEALTHCARE.

Burjeel Holdings chooses Oracle Health for its Electronic Medical Record ecosystem



UAE — Burjeel Holdings has forged a strategic partnership with Oracle Health to implement Oracle Health's cutting-edge Electronic Medical Record (EMR) ecosystem. This collaboration aims to enhance clinical outcomes, as well as improve operational and financial efficiencies within Burjeel's healthcare network.

Over a structured three-year rollout program, Burjeel Holdings will implement Oracle Health's EMR system and integrated solutions across its facilities, including Burjeel Medical City, Burjeel Hospital, Abu Dhabi, and Burjeel Day Care Surgery Center.

The adoption of Oracle Health's omnichannel and EMR platform will enable seamless integration of Burjeel's clinical ecosystem across its healthcare assets. The Board of Directors at Burjeel has approved an AED 125 million (US\$34.03 million) service contract with Oracle Health, reflecting the commitment to providing efficient, accessible, and affordable healthcare in the Middle East and North Africa (MENA) region.

This collaboration will empower Burjeel to support real-time care coordination and information exchange among multiple providers, patients, and locations, resulting in streamlined

patient experiences with reduced waiting times and increased face-time with clinicians.

Burjeel Holdings will become one of the first regional healthcare providers to implement Oracle Health's EMR solution on Oracle Cloud Infrastructure in the Oracle Cloud Dubai Region, contributing to patient safety and operational excellence.

Burjeel Holdings, with its extensive network of assets, including hospitals, medical centers, and pharmacies across the MENA region, is poised to leverage Oracle's technology to drive value creation and innovation in healthcare delivery.

THE ADOPTION OF ORACLE HEALTH'S OMNICHANNEL AND EMR PLATFORM WILL ENABLE SEAMLESS INTEGRATION OF BURJEEL'S CLINICAL ECOSYSTEM ACROSS ITS HEALTHCARE ASSETS.

Boston Scientific's strategic US\$850 million acquisition to revolutionize chronic lower back pain treatment

USA — Boston Scientific, a leading medical technology company, is set to acquire Relievant Medsystems, a Minnesota-based innovator in ablation technology for chronic lower back pain, in a substantial deal valued at US\$850 million in cash, with additional contingent payments linked to Relievant's future sales performance over the next three years. The acquisition aims to expand Boston Scientific's offerings in pain management and personalized treatment for individuals with chronic low back pain.

Relievant Medsystems developed the Intracept system, which gained FDA clearance in 2016 as the only system specifically approved to treat vertebrogenic pain, a specific type of



chronic low back pain resulting from damage to the vertebral endplates. This condition affects over 5 million individuals in the United States. Relievant is expected to achieve sales exceeding \$70 million this year, with projections of significant growth under Boston Scientific's ownership.

The deal is expected to close in the first half of the coming year and represents Boston Scientific's first major merger and acquisition since shifting its strategy from the previously intended purchase of Korean stent manufacturer M.I.Tech.



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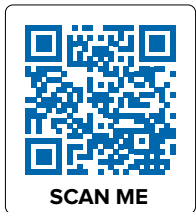
Plan to attend the highly-engaging clinical talks that will be addressed by professionals and consultants in the healthcare sector in Africa.

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Saudi Arabia's KFSH&RC conducts first-ever fully robotic liver transplant

SAUDI ARABIA — King Faisal Specialist Hospital & Research Centre (KFSH&RC) in Saudi Arabia has achieved a groundbreaking milestone by conducting the world's first fully robotic liver transplant. The recipient of this pioneering surgery was a 66-year-old male patient with a history of non-alcoholic liver cirrhosis and hepatocellular carcinoma. KFSH&RC's Organ Transplant Center of Excellence (OTCoE) utilized state-of-the-art robotic technology for both donor and recipient surgeries, eliminating the need for a hybrid approach.



This achievement solidifies KFSH&RC's global leadership in minimally invasive transplant surgery and distinguishes it as the sole institution providing fully robotic liver transplant surgery. Traditional liver transplants often involve major incisions and carry a high risk of complications. In contrast, KFSH&RC's approach offers smaller incisions, reduced recovery times, and significantly lower complication rates.

KFSH&RC is a leading healthcare provider in the Middle East, actively engaging in partnerships with other medical institutions to advance the understanding of minimally invasive transplant procedures. This milestone aligns with Saudi Arabia's Vision 2030 and underscores KFSH&RC's commitment to providing the highest level of specialized healthcare in an integrated educational and research setting.

HOSPITALS

Apollo Hospitals acquires new asset from Future Oncology Hospital and Research Centre



INDIA — Apollo Multispeciality Hospitals in Kolkata has successfully acquired a partially-constructed hospital from Future Oncology Hospital and Research Centre for Rs 102 crores (US\$12.3 million). This acquisition is expected to significantly expand the hospital's bed capacity and enhance its international presence. Apollo Multispeciality Hospitals, a subsidiary of Apollo Hospitals Enterprise Limited, is the sole hospital in Eastern India accredited by Joint Commission International (JCI).

The newly acquired property spans 1.4 acres of land and includes a partially constructed hospital building with over 175,000 square feet of built-up area and medical equipment in Sonarpur, Kolkata. The hospital is expected to have a comprehensive bed capacity of 325 beds, with the initial phase comprising 225 beds scheduled for commissioning within the next 12 months.

The acquisition, fully funded by Apollo Multispeciality Hospitals, aims to strengthen healthcare services in the eastern region of India, providing a wide range of medical specialties, including comprehensive oncology services with radiotherapy.

This acquisition is part of Apollo Hospitals' expansion strategy, and it brings their total hospital bed capacity in East India to over 1,800 beds, with plans to add approximately 700 more beds in the coming years, reaching a total of 2,500 beds. Additionally, Apollo Multispeciality Hospitals has introduced a cutting-edge 5G-connected ambulance to improve healthcare accessibility in emergency situations and has extended support to improve the healthcare system in Bangladesh through conventional and digital platforms.

THE ACQUISITION, FULLY FUNDED BY APOLLO MULTISPECIALITY HOSPITALS, AIMS TO STRENGTHEN HEALTHCARE SERVICES IN THE EASTERN REGION OF INDIA.

WHO approves new malaria vaccine offering hope for a brighter future



SWITZERLAND — The World Health Organization (WHO) has granted approval for a second malaria vaccine, developed by Oxford University in partnership with the Serum Institute of India. This breakthrough represents a significant advancement in the fight against malaria, with the vaccine boasting an efficacy rate of over 75% and a cost ranging from US\$2 to US\$4, making it a cost-effective solution for malaria prevention.

Despite this achievement, the new vaccine is not a replacement for essential malaria prevention methods like bed nets and insecticide spraying. The first malaria vaccine, Mosquirix, manufactured by GSK, offers lower effectiveness, requiring four doses and providing short-lived protection.

The key difference between the two vaccines lies in accessibility. The Serum

Institute can produce up to 200 million doses of the Oxford vaccine annually, whereas GSK faces production capacity challenges, limiting distribution.

Experts suggest that countries may benefit from transitioning to the Oxford vaccine due to its potential for widespread availability in Africa, where malaria takes a significant toll. While celebrating this milestone, it's crucial to maintain a realistic perspective and continue multifaceted efforts to control and eventually eradicate malaria. In a separate development, WHO has authorized a dengue vaccine produced by Takeda, recommended for children aged 6 to 16 in countries with a high prevalence of the disease. Dengue is common in tropical Latin American and Asian countries and can lead to severe cases of internal bleeding, organ damage, and death.

Egypt's MPED sets aside US\$2.4B for the development of the healthcare sector in the FY 2023/24

EGYPT — Egypt's Ministry of Planning and Economic Development (MPED) has allocated EGP 75 billion (US\$2.43 billion) in its budget for the fiscal year 2023/2024 to develop the healthcare sector. The Ministry of Finance has also allocated approximately US\$12.97 billion (EGP 397 billion) for the same fiscal year, marking a 30.4% increase compared to the revised budget estimate for the previous fiscal year.

The funds allocated by the MPED will be used to implement various healthcare initiatives and projects to improve health services in line with the rights outlined in the Egyptian Constitution. Egypt's Minister of Planning and Economic Development, Dr. Hala Elsaid, emphasized that improving citizens'

health is a fundamental human right and aligns with the principles of the National Human Rights Strategy.

The healthcare investment plan for 2023/2024 includes the development and improvement of existing hospitals, the commissioning of 55 hospitals in strategic areas, and the enhancement of medical centers and units. The funds will also be used for environmental initiatives, the construction of hazardous medical waste incineration complexes, and the completion of various health-related projects.

Egypt's government aims to allocate at least 3% of its gross domestic product to improve healthcare services and promote good health and well-being, aligning with the Sustainable

Development Strategy: Egypt's Vision 2030.



Alameda Healthcare Group strikes new 7-year pact with Siemens Healthineers

EGYPT — Alameda Healthcare Group has entered into a seven-year strategic partnership agreement with Siemens Healthineers to revolutionize healthcare in Egypt. The collaboration involves the development of a technology roadmap and the installation, replacement, and maintenance of advanced medical technology systems and equipment across Alameda's medical facilities using Siemens Healthineers' state-of-the-art solutions. The partnership will also leverage Teamplay, Siemens Healthineers' data-driven platform, to enhance clinical effectiveness and optimize asset performance.

The primary goal of this agreement is to provide Egyptian patients with world-class care and access to the latest medical technology advancements. Alameda Healthcare Group, a leader in Egypt's healthcare landscape, is committed to delivering superior medical outcomes



and patient experiences.

The partnership also includes a joint training program to equip Alameda's medical professionals with the latest knowledge and skills in the field of medical technology. As-Salam International Hospital in Maadi, part of Alameda Healthcare Group, will serve as Siemens Healthineers' established reference site in Africa.

pharmacies, as well as a digital transformation initiative for streamlined information flow.

HOSPITALS

Nairobi Hospital makes pioneering commitment to global sustainability and healthcare innovation



KENYA — The Nairobi Hospital, Kenya's premier healthcare institution, has reaffirmed its commitment to the United Nations Global Compact Principles, aligning itself with global sustainability goals under the leadership of CEO James Nyamongo. This move signifies the hospital's dedication to healthcare that prioritizes the well-being of patients and the environment.

The Global Compact Network Kenya (GCNK) Kenya Executive Director, Judy Njino, welcomed the hospital's commitment, recognizing its potential to set a powerful precedent for the healthcare industry. The Nairobi Hospital joins over 800 companies in Kenya dedicated to the Code of Ethics for Business in Kenya, emphasizing ethical and transparent business practices.

In a significant investment totalling over Ksh. 1.6 billion (US\$10.8 million), The Nairobi Hospital has launched various projects aimed at elevating healthcare quality throughout East and Central Africa. These initiatives, financed through internally generated revenues, aim to reduce the number

of Kenyan nationals seeking medical treatment abroad and attract patients from neighbouring countries.

The hospital's infrastructure projects include a state-of-the-art Biplane Cath Lab for cardio, neuro, and vascular treatment services, upgraded MRI equipment, advanced theatres, laboratories, and pharmacies, as well as a digital transformation initiative for streamlined information flow.

THE NAIROBI HOSPITAL JOINS OVER 800 COMPANIES IN KENYA DEDICATED TO THE CODE OF ETHICS FOR BUSINESS IN KENYA, EMPHASIZING ETHICAL AND TRANSPARENT BUSINESS PRACTICES.

Kenyan government allocates US\$5 million and 30 acres for WHO's regional emergency hub



KENYA — The Kenyan government has allocated Ksh.741 million (US\$ 5 million) and dedicated 30 acres of Kenyatta University land to the World Health Organization (WHO) to establish the WHOAFRO Regional Emergency Operations and Logistics (OSL) Hub. This groundbreaking initiative aims to enhance public health preparedness and emergency response not only in Kenya but also across the African region.

The establishment of this hub comes as Africa faces an increasing number of health emergencies, including disease outbreaks and natural disasters, which threaten the progress made in health and development. The Ministry of Health (MoH) emphasized the importance of robust health systems, as logistics and supply chain management constitute a significant part of emergency response efforts.

The hub will address this gap by maintaining stockpiles of medical supplies and training multidisciplinary teams to serve as emergency experts, ensuring swift deployment during crises. It will become a center of excellence for emergency operations and mark the first in a network of African centers dedicated to bolstering emergency preparedness and response.

The initiative began with a meeting between Kenyan Public Health Principal Secretary Mary Muthoni and WHO officials in Nairobi. It was furthered through discussions with Norwegian officials. The hub's establishment promises to revolutionize emergency response, and its facilities will include a state-of-the-art training center and essential medical equipment stockpiles. This development follows the signing of a memorandum of understanding (MoU) in April 2023, with President William Ruto presiding over the Cabinet meeting.

THE ESTABLISHMENT OF THIS HUB COMES AS AFRICA FACES AN INCREASING NUMBER OF HEALTH EMERGENCIES, INCLUDING DISEASE OUTBREAKS AND NATURAL DISASTERS.

CEO qualifications controversy rocks KUTRRH management

KENYA — The Kenyatta University Teaching, Research, and Referral Hospital (KUTRRH) is embroiled in a dispute over its leadership and ownership. The controversy arose when it was revealed that the hospital's CEO, Ahmed Dagane, does not meet the legal qualifications for the position, as he is a nurse with a master's degree in Business Administration, while the law mandates that the CEO must be a medical doctor. Despite this requirement, Dagane assumed the position in July 2022.

The dispute also stems from a decision by former President Uhuru Kenyatta to gazette the hospital as a government parastatal under the Ministry of Health in 2019, separating it from Kenyatta University. The university argues that this move disrupted the hospital's original purpose, which was focused on teaching, training, and research.



The conflict has its roots in the university's refusal to comply with the legal notice that transformed the hospital into a government parastatal. The fate of KUTRRH now rests with President William Ruto's administration, with a call for a roundtable discussion involving key stakeholders to resolve the issue.

DIVESTMENTS

Novartis advances spin-off of Sandoz, eyes growth in generics and biosimilars



SWITZERLAND — Novartis is moving forward with the spin-off of its generics and biosimilars division, Sandoz, pending approval from shareholders at an extraordinary general meeting

on September 15. The company aims to complete the spin-off around October 4, with plans to list Sandoz on the SIX Swiss Exchange and establish an American Depositary Receipt (ADR) program in the United States, subject to regulatory approvals.

The decision to spin off Sandoz was initiated by Novartis in October 2021 as part of a comprehensive strategic review of its generics unit. This move aligns with CEO Vas Narasimhan's efforts to streamline Novartis' operations, which included the spin-off of its eye care business, Alcon, and significant restructuring.

For the first half of 2023, Sandoz reported impressive net sales of \$4.8 billion, marking an 8% growth rate driven by volume growth that offset pricing challenges. Sandoz anticipates mid-single-digit net sales growth for

2023 and aims to continue this growth trajectory from 2024 to 2028.

The spin-off allows both Sandoz and Novartis to focus on maximizing value creation while allowing Novartis to concentrate on its core therapeutic areas and technology platforms.

THE COMPANY AIMS TO COMPLETE THE SPIN-OFF AROUND OCTOBER 4, WITH PLANS TO LIST SANDOZ ON THE SIX SWISS EXCHANGE.

SCIENCE, TECHNOLOGY, AND RESEARCH

SC Johnson spatial repellent could repel mosquitoes for multiple rainy seasons



USA — SC Johnson's spatial repellent, Guardian, has shown remarkable efficacy, offering protection against disease-carrying mosquitoes for an entire year. In a world where malaria continues to afflict millions, this innovation has the potential to transform the fight against the deadly disease.

Spatial repellents are easy-to-use products that can be hung in semi-enclosed spaces, such as homes and schools, providing a shield against mosquitoes. Despite progress in the battle against malaria, the latest statistics are sobering, with hundreds of thousands of deaths annually, predominantly in Africa.

Guardian's extended efficacy, covering multiple rainy seasons, is particularly significant in regions like

East Africa, where malaria transmission is highly seasonal and coincides with heavy rainfall. SC Johnson's Chairman and CEO, Fisk Johnson, believes that Guardian can make a substantial difference in eradicating malaria.

SC Johnson is actively seeking a policy recommendation from the World Health Organization for spatial repellents, which could mark a pivotal moment in malaria prevention. In the meantime, the company is providing Guardian to at-risk populations through global public health partners.

The potential impact of Guardian is immense, offering mosquito protection to over a billion people. SC Johnson's commitment to fighting malaria spans over 60 years, with a specialized team dedicated to the cause.

EVA Pharma, Modon team up to launch a full-fledged pharmaceutical industrial complex



EGYPT — EVA Pharma and the Saudi Authority for Industrial Cities and Technology Zones (Modon) have partnered to build a pharmaceutical industrial complex in Sudair, Saudi Arabia. EVA Pharma will acquire a 50,517-square-meter plot of land facilitated by Modon for the project. The complex will house a state-of-the-art Research & Development (R&D) center and five pharmaceutical factories, including facilities for biologics, oncology products, oral dosage forms, immunosuppressants, and vaccine production.

Leveraging specialized containment technology, the industrial complex will produce over 150 pharmaceutical products, spanning biologics, vaccines, immunosuppressants, oncology, and high-potency medications. It is expected to reach full operational capacity in 2026, with an annual production capacity of 990 million units.

This initiative is expected to generate around 807 employment opportunities and contribute to the expansion of the local economy. EVA Pharma's investment in domestic manufacturing aligns with the Saudi Vision 2030 and its goal to bolster the pharmaceutical capabilities of the region.

The company aims to be a trusted partner in healthcare and support Saudi Arabia's national health goals. EVA Pharma is one of the fastest-growing pharmaceutical companies in the Middle East and Africa (MEA) and manufactures over one million packs of healthcare solutions daily. The industrial complex is also expected to become a hub for pharmaceutical manufacturing in the MEA region, catering to evolving patient needs through research and collaboration with local universities and hospitals.

THE INDUSTRIAL COMPLEX WILL PRODUCE OVER 150 PHARMACEUTICALS PRODUCTS, SPANNING BIOLOGICS, VACCINES, IMMUNOSUPPRESSANTS, ONCOLOGY, AND HIGH-POTENCY MEDICATIONS

Glenmark Pharmaceuticals secures financial stability by selling 75% of its API business to Nirma Limited

INDIA — Glenmark Pharmaceuticals is divesting 75% of its active pharmaceutical ingredient (API) business by selling the shares to Nirma Limited. This strategic move aims to bring financial stability to Glenmark and reorient its focus towards dermatology, oncology, and respiratory candidates. The divestment helps the company resolve long-standing debt issues, offering relief to stakeholders and extinguishing the total debt.

Nirma Limited, a conglomerate with diverse interests, will make an open offer to Glenmark's API subsidiary, Glenmark Life Sciences, ensuring a smooth transition. Post-divestment, Glenmark Pharmaceuticals will retain a 7.84% ownership stake in the API manufacturer, showing its commitment to the API industry.

Glenmark Pharmaceuticals recently



demonstrated strong growth, with a 22.5% year-over-year revenue increase in its first-quarter earnings. Notably, North America and Europe contributed significantly to this growth.

This strategic divestment comes after Glenmark's earlier consideration of selling the unit in 2019, and it follows other steps to address debt concerns, including the sale of dermatological brands and securing approvals in the pharmaceutical market. Nirma's acquisition expands its pharmaceutical portfolio, including injectables, parentals, and ophthalmic products, marking its entry into the API platform.

Controversy surrounds transfer of Kenyatta University Hospital as Attorney General voices concerns

KENYA — Kenya's Attorney General Justin Muturi has raised objections to the transfer of the Kenyatta University Teaching Referral and Research Hospital (KUTRRH) to the Ministry of Health (MoH), deeming it irregular. Muturi emphasized that the legal notice facilitating the handover should be reversed, and the hospital should be returned to the oversight of Kenyatta University.

He contended that KUTRRH should have been established through an act of parliament rather than initiated via a legal notice. Kenyatta University, responsible for the hospital's construction, had opposed the transfer to MoH, citing concerns about potential restrictions on access for teachers and



students. Paul Wainaina, Vice Chancellor of Kenyatta University, welcomed the attention to the matter and noted that the hospital and associated land were subjects of ongoing investigations. The Public Investments Committee intends to work with the Attorney General's Office to implement recommendations from the health committee, addressing the ongoing controversy surrounding KUTRRH's transfer and ensuring governance clarity.

PARTNERSHIPS

Saudi German Health introduces new Moneyback Guarantee Policy initiative



SAUDI ARABIA — Saudi German Health (SGH), a prominent healthcare group in the Middle East and North Africa (MENA) region, has introduced a "Moneyback Guarantee Policy" across its healthcare facilities in Saudi Arabia. This initiative is designed to enhance customer engagement by offering cashback for unsatisfactory services.

Makarem Sobhi Batterjee, President and Vice Chairman of Saudi German Health, emphasized that the policy underscores their commitment to "Caring Like Family" and signifies their assurance of service quality. The program aims to elevate service quality, promote a high-performance environment, and build trust through transparent operations. It reflects SGH's dedication to delivering excellent services to its customers.

Saudi German Health, operated by the Batterjee family under the name Bait Al Batterjee Medical Co., has a vast network of hospitals, clinics, pharmacies, and educational facilities across the MENA region. The group has established a comprehensive network of hospitals in various cities in Saudi

Arabia, including Jeddah, Riyadh, and Dammam, among others. They are also expanding their patient care capacity with state-of-the-art facilities in the region.

The introduction of the Moneyback Guarantee Policy aligns with SGH's strategy to become one of the largest private healthcare providers in the Gulf region and contribute to the advancement of the medical industry in Saudi Arabia.

THIS INITIATIVE IS DESIGNED TO ENHANCE CUSTOMER ENGAGEMENT BY OFFERING CASHBACK FOR UNSATISFACTORY SERVICES.

Africa CDC and APHF strengthen their partnership to mobilize public health resources

ETHIOPIA — The Africa Centres for Disease Control and Prevention (Africa CDC) and the Africa Public Health Foundation (APHF) have formed a groundbreaking partnership to revolutionize public health in Africa. This alliance, established with the shared goal of enhancing resource mobilization, is set to bring transformative change to healthcare in the region.

The partnership focuses on efficiently managing grants and mobilizing critical resources to support Africa CDC's strategic priorities. These priorities are encapsulated in five Flagship Programmes, which address key aspects of public health advancement.

These programs aim to safeguard healthcare workers, strengthen primary

healthcare through digitization, enhance health infrastructure by establishing National Public Health Institutes in all African Union Member States, boost laboratory capabilities, and broaden medical countermeasures beyond vaccines to include diagnostics and therapeutics.

Despite progress, challenges in health financing persist in Africa, with many countries falling short of targets like the Abuja Declaration's call to allocate 15% of government budgets to health. Challenges include low GDP, inefficient tax collection, and competing priorities for budget allocation. The COVID-19 pandemic has exposed the high out-of-pocket health expenditures in Africa.

The partnership emphasizes

sustainable financing, with the African Medical Supplies Platform (AMSP) and African Vaccines Acquisition Trust (AVAT) as successful examples of pooling resources for healthcare.

THE PARTNERSHIP FOCUSES ON EFFICIENTLY MANAGING GRANTS AND MOBILIZING CRITICAL RESOURCES TO SUPPORT AFRICA CDC'S STRATEGIC PRIORITIES.

Africa CDC supports SAHPRA to improve regulatory oversight of biopharmaceuticals

SOUTH AFRICA — The Africa Centre for Disease Control and Prevention (Africa CDC) has officially provided equipment worth US\$750,000 to the South African Health Products Regulatory Authority (SAHPRA) to support its regulatory functions, specifically in biopharmaceuticals manufacturing. This initiative is part of the broader Partnerships for African Vaccine Manufacturing (PAVM), established by the African Union Heads of States in April 2021.

PAVM, hosted by Africa CDC, aims to significantly increase Africa's vaccine manufacturing capacity from less than 1% to meet the continent's vaccine needs. Regulatory strengthening is one of the key components to achieve this goal, ensuring that vaccines produced in Africa adhere to safety and quality



standards.

The partnership involves cooperation with the African Union Development

Agency - The New Partnership for Africa's Development (AUDA NEPAD) to harmonize regulatory processes and strengthen National Regulatory Authorities (NRAs). It also supports the Regional Centres of Regulatory Excellence (RCORE) platform, facilitating vaccine regulatory oversight as health product manufacturing expands in Africa.

SAHPRA is the first recipient of this support under PAVM, aiming to bolster manufacturing capabilities in Africa. Additionally, Africa CDC has collaborated with Texas A&M University National Centre for Therapeutics Manufacturing (NCTM) and Biomedical Advanced Research and Development Authority (BARDA) to provide hands-on training to African candidates in biopharmaceutical manufacturing.



Amanat names Dr. Howard Podolsky as the new Group CEO of Cambridge Medical & Rehabilitation Center

UAE — Amanat Holdings has appointed Dr. Howard Podolsky as the new Group Chief Executive Officer of Cambridge Medical & Rehabilitation Center (CMRC), a leading post-acute care and rehabilitation provider in the UAE and Saudi Arabia. Dr. Podolsky, with over 25 years of experience in the healthcare sector, will be responsible for executing CMRC's ambitious growth strategy and overseeing its real estate assets in Abu Dhabi.

Dr. Podolsky has a comprehensive understanding of the UAE healthcare sector, having previously served as the Group Chief of Staff for SEHA (Abu Dhabi Health Services, PJSC). He also brings a wealth of experience in healthcare regulations, clinical leadership, and executive management.

Amanat Holdings, known for its focus on healthcare and education sectors in the MENA region, aims to expand and enhance post-acute care across Saudi Arabia through a partnership with Mada International Holding, focusing on Public-Private Partnership projects.

Prof Ali Muhammad Pate confirmed as Nigeria's Minister of Health

NIGERIA — Prof. Dr. Ali Muhammad Pate has been appointed as Nigeria's Minister of Health. He has a distinguished career in global healthcare, having worked in various public, private, and not-for-profit healthcare programs both in Nigeria and abroad.

Prof. Pate holds an MBA from Duke University in the United States and a Master's in Health System Management from the London School of Hygiene



& Tropical Medicine in the United Kingdom. He joined the World Bank Group as a Young Professional in 2000 and worked on health issues in several regions, including Africa and the East Asia Pacific.

He served as the Executive Director and Chief Executive Officer of the National Primary Health Care Agency and was later appointed as the Minister of State for Health in Nigeria. During his tenure, he initiated policies to encourage immunization, leading to a significant decrease in cases of wild polio.

Prof. Pate has received numerous awards and recognitions for his contributions to healthcare in developing countries, including the Harvard Health Leader award.



Zimmer Biomet CEO to lead 3M health business

USA— Bryan Hanson, the CEO of Zimmer Biomet, is set to become the CEO of 3M's Health Care Business Group, marking a significant leadership transition in the healthcare industry. Hanson's appointment is part of 3M's strategic plan to spin off its Health Care Business Group by late 2023 or early 2024, aligning with the company's focus on various segments.

Hanson's departure from Zimmer Biomet will result in the promotion of COO Ivan Tornos to the role of CEO. Tornos, who has been with the company since 2021, will also join the board of directors.

Hanson has a distinguished career, including his role as Zimmer Biomet's CEO since 2017, where he led a significant turnaround for the company and oversaw the spinoff of its spine and dental divisions. Before that, he led Medtronic's Minimally Invasive Therapies Group.

In addition to Hanson's appointment, 3M made other strategic leadership changes, with Carrie Cox becoming the chairman of the board for the healthcare business and Monish Patolawala taking on the role of CFO. At Zimmer Biomet, Ivan Tornos assumes the CEO position, and CFO Suketu Upadhyay's role is expanded to oversee global operations and the supply chain.

Nestlé Health Science's leadership shift: Anna Mohl named CEO as Greg Behar steps down

SOUTH AFRICA — Nestlé Health Science is ushering in a new era as Anna Mohl, a Nestlé veteran with over two decades of experience, is set to become the CEO of the company, effective January 1, 2024. Mohl's appointment comes as Nestlé Health Science continues to evolve in the realm of nutritional health solutions. She started her journey with



Nestlé over 20 years ago, holding various roles in marketing and innovation within Gerber, Nestlé's US infant nutrition business. In 2010, she joined Nestlé Health Science, eventually becoming CEO of Nestlé Health Science US.

Greg Behar, who has served as the chief executive of Nestlé Health Science for nine years, is stepping down from his role and will leave the company on December 31, 2023. Behar played a pivotal role in expanding the company's portfolio and global presence.

David Rennie, Head of Nestlé Coffee Brands and an Executive Board member of Nestlé S.A., will be promoted to the position of Executive Vice President, effective January 1, 2024.



Nestlé Health Science welcomes key executives amidst commercial revamp

USA — Nestlé Health Science is undergoing a significant transformation, marked by strategic appointments and a renewed marketing approach. The company has appointed Brian Groves as its U.S. Chief Marketing Officer and Gabriella Viljoen as Vice President of E-commerce, signaling a departure from its former trajectory and a reevaluation of its flagship pharma product, Palforzia.

Brian Groves, who joined the company in September, is tasked with steering the company's digital media and marketing strategy towards accelerated digital capabilities and activation. His extensive career includes roles at Meta, Pfizer's consumer healthcare unit, and Johnson & Johnson's consumer healthcare division.

Gabriella Viljoen, set to join as Vice President of E-commerce, brings experience from Garden of Life and Amazon, where she held the title of VP of Strategy. Her role is to drive profitable sales and optimize expenditure across Nestlé's U.S. operations.

Nestlé's strategic recalibration extends to its flagship pharma product, Palforzia, which faced challenges following its approval at the onset of the COVID-19 pandemic.

UN appoints Kenyan MOH official to lead malnutrition fight

KENYA — Ms. Gladys Mugambi has been appointed as the acting head of Kenya's Ministry of Health's Directorate of Health Promotion and Education by United Nations (UN) Secretary-General Antonio Guterres. She also serves as an Ex-officio member in the fight against malnutrition as part of the Scaling Up Nutrition (SUN) Movement, a global initiative dedicated to eradicating malnutrition worldwide. This movement prioritizes national nutrition plans, collaboration, and sustainable, nutritious diets for various populations. Ms. Mugambi's inclusion in the SUN



Movement Lead Group underscores Kenya's commitment to addressing nutritional needs.

Her extensive experience in health promotion and education positions her well to combat malnutrition and promote health education in Kenya and globally. Dr. Githinji Gitahi, CEO of AMREF Health Africa, has also been appointed to the SUN Movement Lead Group, further strengthening Kenya's position in the global fight against malnutrition. The Ministry of Health in Kenya now plays a crucial role in addressing malnutrition, reflecting the government's dedication to its population's nutritional needs. Together with other leaders, Ms. Mugambi aims to create a healthier, nourished future for all.

XRP HEALTHCARE

On a mission to transform global healthcare
with blockchain innovation

By **BENJAMIN OPUKO**

In the ever-evolving landscape of healthcare, innovation is the lifeline that connects individuals to better, more accessible services. Enter XRP Healthcare (XRPH), a pioneering solutions company that has harnessed the power of Web3 technology to transform the way people around the world access and afford healthcare services. XRP Healthcare stands as the pioneer, the first pharma and healthcare platform built on the XRP Ledger, a blockchain known for its efficiency and security.

The company's mission is clear: to improve the lives of individuals and families worldwide by providing a decentralized marketplace for pharmaceuticals as well as traditional and non-traditional healthcare services.

With its decentralized marketplace and lightning-fast payment transactions, XRPH is poised to change the game. Kain Roomes, the visionary founder, emphasizes, "We believe in harnessing the power of blockchain to create a healthcare ecosystem that transcends

geographical boundaries. Our focus is on delivering faster payment transactions worldwide via our mobile app, bridging the gap in healthcare access – XRP Healthcare with the help and dedication of our amazing team is building the first pharma and healthcare platform on the XRP Ledger, our mission is clear: to make healthcare accessible to anyone with a smartphone."

Despite being less than a year old, XRP Healthcare has made significant strides. Further, Business Development Officer and Co-founder Laban Roomes proudly recount their journey, stating, "Our company launched at the Sologenic meet-up event in London on November 9th, 2022, and in the months since we launched our biggest impact to date will be here in Africa, starting with Uganda where we have already identified several private healthcare facilities to acquire and upgrade once our due diligence is complete, with many more to follow – another milestone is the recent launch of our XRPH wallet and App, alongside the creation of our Decentralized marketplace."





THE XRP HEALTHCARE JOURNEY

In the fast-paced world of cryptocurrency and innovation, there are stories that transcend the boundaries of possibility and define a new era of limitless opportunities. The journey of XRP Healthcare (XRPH) is one such story—a tale of vision, determination, and the audacity to create currency and change lives.

Co-founder Laban Roomes reflects on the journey that led to the birth of XRP Healthcare, saying, “It’s been about five years since we started this journey, albeit as investors. It was five years of invaluable experience that laid the foundation for XRP Healthcare - Those early years were characterized by relentless dedication, commitment and higher guidance operating in our lives to be at the place we are now, both myself and Kain being fortunate enough to have emerged at the other end of those years financially, mentally and spiritually intact”

One pivotal moment in XRP Healthcare’s journey was the creation of its own cryptocurrency token. Laban recalls how the individual responsible for creating the token eventually moved on to a different opportunity that paid cash instead of a promise of free tokens, which even as the creator of the

token, he didn’t fully grasp the value of. In stark contrast, XRP Healthcare forged ahead, offering to pay its team members exclusively in tokens, without any traditional monetary compensation – some scoffed at the idea and left, while others had faith, stayed on, and were rewarded handsomely.

Kain and Laban reminisce about the pivotal choices made during those early days, stating, “Some accepted the tokens and became a part of this journey, while others declined.” It was a defining moment for the team, one that set the course for XRP Healthcare’s remarkable trajectory. As they ventured into cryptocurrency exchanges and pairing their token with USDT in the process, instantly giving the XRPH token value, those who had initially declined their offer sought to join the journey, but the train had already left the station.

The true marvel of XRP Healthcare’s journey lies in the fact that they created their own currency.

As Laban aptly puts it, “Essentially, we created our own global currency, and it’s something we still marvel at today.” In an era where opportunities are boundless, they seized the moment and carved out their unique path.

“What I want to emphasize is that we are living in times

where whatever you have the intent and desire to do, there are the people and tools available that will facilitate the manifestation of your will,” Co-founder Laban passionately asserts. He underscores that it’s not about possessing special skills; it’s about embracing the incredible era we live in. The internet, technology, and the unwavering human spirit for progress have ushered in a new age of possibilities. With vision and determination, one can turn their dreams into reality, the only caveat to this is you must want it, just as one wants to breathe.

XRPH MOBILE WALLET TO REVOLUTIONIZE HEALTHCARE ACCESS

In the rapidly evolving world of healthcare, innovation is the key to overcoming challenges and delivering better services to people around the globe. XRP Healthcare (XRPH) understands this better than anyone else, and they’ve just made a significant leap forward. On September 14, 2023, the XRP Healthcare team unveiled the groundbreaking XRPH Mobile Decentralized Wallet, marking a new era of secure, anonymous, and convenient transactions in the healthcare sector.

Founder of XRP Healthcare, Kain Roomes, shared insights into their journey and the challenges they faced in integrating blockchain technology into healthcare. He stated, “The challenge, if any, has been the development of the XRPH token and wallet, which is both secure and enables fast transactions globally.” The XRP Healthcare team embarked on a mission to create a wallet that not only prioritized security but also offered a user-friendly design that stood out in the market.

Despite the hurdles, XRP Healthcare has emerged as a trailblazer. The XRPH Wallet is now available for download on both the App Store and Google Play. This wallet isn’t just a run-of-the-mill digital asset wallet; it’s a game-changer that empowers users with unprecedented control over their assets while maintaining top-tier security and complete anonymity.

The XRPH Wallet is a non-custodial wallet, built on the XRP

Ledger, ensuring that users have full ownership and control of their digital assets. Every transaction carried out through this wallet is secure and entirely anonymous, preserving the privacy of users.

XRP Healthcare’s commitment to decentralization goes beyond the wallet itself. They’ve taken a bold step by offering a license-free open-source code to the community, encouraging the development of decentralized wallets. This move fosters innovation and pushes the boundaries of what the blockchain ecosystem can achieve.

Founder Kain Roomes expressed his excitement about the XRPH Decentralized Wallet’s launch, highlighting its potential impact on the XRP Ledger community. He said, “The launch of the XRPH Mobile is the culmination of our incredible five-star team’s effort, they have enabled and will continue to help materialize our vision for better healthcare, faster and secure transactions on a global scale as Phase 1 of its initial creation, with updates including staking and tele-pharma as our acquisitions of private medical practices grow in Africa”



“

IT’S BEEN ABOUT FIVE YEARS SINCE WE STARTED THIS JOURNEY, ALBEIT AS INVESTORS. IT WAS FIVE YEARS OF INVALUABLE EXPERIENCE THAT LAID THE FOUNDATION FOR XRPH HEALTHCARE. ”

Laban Roomes - Co-Founder, XRP Healthcare

This momentous occasion reflects the dedication and commitment of the XRP Healthcare team, whose mission is to transform healthcare with a focus on East Africa, initially.

UNLOCKING SAVINGS AND REWARDS WITH XRPH PRESCRIPTION SAVINGS CARD

The XRPH Prescription Savings Card is a standout innovation from XRP Healthcare, offering individuals seeking affordable healthcare solutions a lifeline. This ingenious card empowers users to save up to a staggering 80% on their prescription medications. It's a beacon of hope for those navigating the oft-tumultuous waters of healthcare costs, which has now been integrated into its Decentralized Mobile Wallet.

What truly sets the XRPH Prescription Savings Card apart is its dual benefit. It's not just about saving money; it's an opportunity to accumulate XRPH which has a limited supply of just 100,000,000 tokens, of which on 34,945,000 will only ever be released to exchanges. Each time a customer presents the XRPH Prescription Savings Card at any of the 68,000 participating pharmacies across the United States, including renowned establishments like Walmart, CVS, and Walgreens, they are rewarded with its token, paid directly into their XRPH Mobile Wallet when

rewards are distributed several times each quarter.

The XRPH tokens aren't just tokens; they are keys to a world of possibilities. These tokens are paired with USDT on prominent exchanges such as MEXC, Bitrue, Bitmart, and LBank, with exciting plans to expand their presence on more centralized exchanges in the coming months. This means that every healthcare transaction becomes an opportunity not just to save but to accumulate XRPH tokens, offering users the dual benefit of immediate cost savings and the potential for financial growth in the cryptocurrency realm.

The XRPH Prescription Savings Card represents a win-win proposition for healthcare consumers. It addresses the pressing issue of affordability while seamlessly integrating the burgeoning world of cryptocurrency. It's more than just a card; it's a bridge between traditional healthcare and the digital age.

TRANSFORMING HEALTHCARE IN EAST AFRICA

As XRP Healthcare continues to make waves in the healthcare industry, questions naturally arise about the company's plans for further advancement. Kain Roomes, the founder of XRP Healthcare, sheds light on their strategic outlook: "We have partnered with The Burnratty Investment Group,



who are our partners for Mergers and Acquisitions of private healthcare centers, pharmacies, and hospitals here in Africa, with the intention of upgrading the facilities, medical services and equipment - allowing for medical services and treatments to be paid with by the XRPH utility token."

This partnership is more than just a business deal; it's a meeting of shared



SOME OF THE PHARMACIES CURRENTLY ALLOWING PRESCRIPTION DRUGS' PURCHASE USING XRPH TOKENS



WE HAVE PARTNERED WITH THE BURNRATTY INVESTMENT GROUP, WHO ARE OUR PARTNERS FOR MERGERS AND ACQUISITIONS OF PRIVATE HEALTHCARE CENTERS, PHARMACIES, AND HOSPITALS HERE IN AFRICA, WITH THE INTENTION OF UPGRADING THE FACILITIES, MEDICAL SERVICES AND EQUIPMENT

visions. Business Development Officer and Co-founder Laban Roomes highlights the alignment, saying, “When The Burnratty Investment Group came to our attention it was literally a no-brainer to partner with them, their vision fits completely with our own. Their shared vision combines making healthcare affordable for all while raising the standards of private healthcare facilities in Africa.” The linchpin of this partnership is XRP Healthcare’s decentralized mobile wallet, a game-changing tool, set to facilitate seamless, secure, and efficient payments within the healthcare ecosystem.

Laban goes on to underscore the immense significance of this alliance: “Our partnership with The Burnratty Investment Group is a testament to our commitment to expand healthcare access across Africa, improving the quality of care, especially for those communities in need.” He further highlights the pivotal role of the XRPH decentralized mobile wallet in this, saying, “The XRPH decentralized mobile wallet is a pivotal tool in this endeavor, and will facilitate seamless, secure, and efficient payments within our healthcare ecosystem, bridging the gap in financial transactions that often hinder healthcare accessibility.”

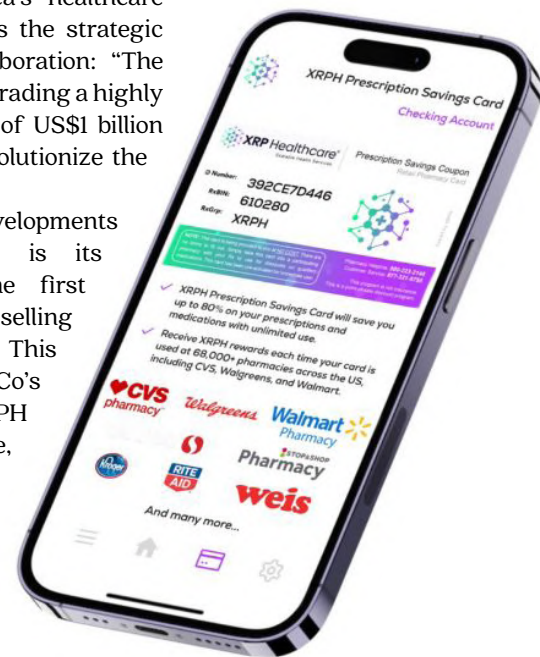
The XRPH wallet addresses a critical need in healthcare by streamlining payments. Patients

can effortlessly make payments for medical services, ensuring that healthcare providers receive their dues promptly. This streamlined process not only enhances efficiency but also contributes to the development of a sustainable healthcare infrastructure across Africa.

The recent partnership between XRP Healthcare Africa and The Burnratty Investment Group aims to transform Africa’s healthcare landscape. Kain Roomes explains the strategic considerations behind this collaboration: “The benefits are consolidating and upgrading a highly fragmented industry for an exit of US\$1 billion in 3 to 5 years. We intend to revolutionize the healthcare segment in Africa.”

One of the most significant developments in XRP Healthcare’s journey is its partnership with ScriptCo, the first and only pharmacy in America selling medications at cost price. This partnership integrates ScriptCo’s Pharmaceutical store into the XRPH Web3 decentralized marketplace, saving customers thousands of dollars annually.

Kain Roomes emphasizes, “Our commitment to collaboration doesn’t stop here. We will continue to partner with



health-focused organizations and pharmaceutical companies, enabling them to benefit from our platform's unique features and functionality."

In a world where healthcare access and affordability remain pressing concerns, XRP Healthcare is stepping up as a beacon of hope. With its Web3 technology-driven solutions, decentralized marketplace, and strategic partnerships, XRP Healthcare is poised to transform the global healthcare landscape, ensuring that quality healthcare is within reach for all. As Kain Roomes aptly puts it, "The future of healthcare is decentralized, and XRP Healthcare is leading the way."

OPENNESS TO STRATEGIC COLLABORATIONS

In the fast-evolving landscape of healthcare innovation, XRP Healthcare (XRPH) stands out not only for its vision but also for its meticulous approach to growth. Founder Kain Roomes provides insights into the company's strategy, emphasizing the importance of rigorous evaluation, continuity, and a commitment to seamless customer experiences.

XRP Healthcare's openness to strategic collaborations is a key driver of their success. Kain Roomes emphasizes this philosophy stating, "We are always looking for or being approached to form strategic partnerships, of which there will be several being announced over the course of this year. There is no need to reinvent the wheel; there are plenty of companies out there already doing some really amazing things. Our philosophy is simple: 'Together we are stronger.'"

When it comes to potential mergers and acquisitions, XRP Healthcare doesn't leave anything to chance. Kain Roomes outlines the stringent criteria their Tier one lawyers Shonubi, Musoke, and Co. Advocates do to assess opportunities: "Is the company already profitable? 3 years of audited accounts, does it fit with our vision, is there room to upgrade and make the establishment better, and more profitable? Will this acquisition add value to the whole?" This methodical approach ensures that each partnership aligns with XRP Healthcare's overarching mission of revolutionizing healthcare access and quality. It's about more than just financial gain; it's about creating a sustainable impact.

While XRP Healthcare explores growth opportunities, it remains committed to preserving the integrity and expertise of acquired entities. In each case, the plan is to retain the existing owner and team for a minimum of 3 years. This continuity not only ensures a smooth transition but also leverages the valuable knowledge and experience of those already entrenched in the healthcare landscape.

BRIDGING HEALTHCARE GAPS WITH NASA-CO-DEVELOPED TECHNOLOGY

One of the most intriguing collaborations in the healthcare sphere is the partnership between XRP Healthcare and NASA-designed ventilator manufacturers Spiritus Medical, a U.S.-based medical technology company. Together, they are introducing cutting-edge medical devices, including the SPIRITUS VITALITY Ventilator, to XRP Healthcare facilities



when acquired in Uganda.

Laban Roomes, Business Development Manager of XRP Healthcare, sheds light on the genesis of this partnership: "We wanted to make a real tangible difference in the healthcare space, so we reached out to Spiritus Medical, who we knew had a license from NASA granting them the rights to manufacture and distribute the NASA-designed ventilator." The critical shortage of ventilators in countries like Uganda necessitated the introduction of this life-saving technology.

The SPIRITUS VITALITY Ventilator, co-developed by NASA's Jet Propulsion Laboratory during the COVID-19 pandemic, offers a revolutionary approach to ventilatory support. Approved by the Food and Drug Administration (FDA) for Emergency Use Authorization, this device is designed to address the dire shortage of conventional ventilators in Africa.

What sets the SPIRITUS VITALITY Ventilator apart is its simplicity, reliability, and cost-effectiveness. With minimal parts and effortless assembly, it ensures easy maintenance. Moreover, streamlined manufacturing processes enable rapid scaling of production to meet global demand, making it an affordable and widely accessible solution.

This innovative ventilator allows more expensive full-featured ventilators to be reserved for severe cases, effectively addressing equipment shortages. Its versatility ensures seamless integration into various healthcare environments, from field hospitals to high-capacity facilities.

XRP Healthcare's commitment to accessibility is evident as they plan to make the SPIRITUS VITALITY Ventilator available for purchase on their decentralized marketplace,



IN NUMBERS

1500 - 2000

NUMBER OF PRIVATE HEALTHCARE INSTITUTIONS XRP HEALTHCARE INTENDS TO ACQUIRE IN THE NEXT 3 YEARS

using the XRPH token. We're not just a digital entity; we're acquiring physical pharmacies, medical centers, and hospitals".

The launch of XRP Healthcare's wallet is set to redefine healthcare transactions. "Our wallet, which has been launched will facilitate telepharmacy and telemedicine in later updates but for now it will be used for global payments helping to facilitate healthcare using our XRPH token, allowing the sender to send substantial sums in seconds," Laban Roomes reveals. This innovation isn't just about payments; it's about creating a healthcare ecosystem that seamlessly integrates with technology.

Variety is the spice of life, and XRP Healthcare understands this well. Kain Roomes emphasizes, "As our wallet develops, we intend to provide a variety of token options for payments." In their world, choice is paramount, allowing individuals to transact with ease using tokens like Bitcoin and USDT.

XRP Healthcare Africa, the branch responsible for acquisitions and mergers, will pivot around the token. "At the core of it all, XRP Healthcare Africa will revolve around our token. And yes, we'll accept payments in XRP and other tokens as we move forward," Kain Roomes assures. It's not just a digital transformation; it's a revolution fueled by the limitless possibilities of blockchain technology.

XRP HEALTHCARE'S AMBITIOUS EXPANSION PLANS AND SMOOTH TRANSITION TO UGANDA

XRP Healthcare is on the cusp of expanding its innovative healthcare solutions beyond Uganda. Founder

using their native utility token, XRPH. This approach democratizes advanced healthcare solutions, making them accessible to a broader population.

Founder Kain Roomes emphasizes the far-reaching impact of this partnership: "Our collaboration will help combat severe respiratory diseases, saving lives in Africa and beyond." This momentous partnership not only underscores XRPH's dedication to providing healthcare for all but also demonstrates the remarkable results that can be achieved through innovative collaborations in the healthcare sector.

EMPOWERING HEALTHCARE THROUGH BLOCKCHAIN REVOLUTION

In a world where innovation is the lifeblood of progress, XRP Healthcare (XRPH) stands as a beacon of transformation, revolutionizing healthcare with blockchain technology. Founder Kain Roomes shares an extraordinary vision, where the power of blockchain empowers individuals to reshape the world, and there's no sector more deserving of a revolution

than healthcare. Kain Roomes posits a powerful message: "These platforms are designed to empower individuals to revolutionize the world, and what better sector for a revolution than healthcare?" Indeed, healthcare remains an arena where millions still lack access to basic services. The remedy? Taking healthcare to the blockchain and integrating technology into its very core.

Blockchain isn't just a buzzword for XRP Healthcare; it's a catalyst for groundbreaking transformation. Laban Roomes elucidates, "You can upload medical records onto the blockchain, enabling tele-pharmacy and telemedicine, secure data storage, and even medication delivery using drones." This vision isn't confined to futuristic dreams; it's a tangible reality XRP Healthcare is actively shaping.

Decentralized transactions are the game-changers XRP Healthcare champions. By allowing transactions to bypass traditional banking systems, they're creating a healthcare ecosystem that thrives on innovation and efficiency. As Kain Roomes explains, "In our ecosystem, people will transact

Kain Roomes shares their vision, stating, “We plan to expand to Kenya and Rwanda after Uganda, then continue with our global marketing campaign to attract new users of our token, app, and decentralized marketplace.”

Remarkably, this expansion has been met with little to no significant challenges. Laban Roomes, co-founder of XRP Healthcare, paints a picture of their smooth transition, saying, “We haven’t faced any significant challenges in this venture. None, absolutely zero. If I were to mention something, and it’s not even a real challenge, it would be the process of relocating



from London to Uganda, making sure first-hand we are on top of all the incredible developments taking place in this nature-rich and resourceful country.”

Kain Roomes echoes this sentiment, emphasizing how their new life in Uganda has been seamless. He states, “I’m genuinely on a quest to discover if there have been any

challenges, especially in the context of XRP Healthcare’s journey. Sure, there have been challenges in the startup phase of XRP Healthcare, i.e. trolls doubting our legitimacy to run such a project and racist abuse, but when it comes to our adventure here in Uganda, it’s been smooth sailing. No, there really haven’t been any significant challenges to speak of.”

XRP Healthcare’s expansion into pharmerging countries is driven by its mission to make healthcare accessible to all. These nations, including China, India, Brazil, and others, face unique healthcare challenges that XRP Healthcare aims to address through faster and more secure payments.

Laban Roomes elaborates, “With the combination of rising populations and GDP in these countries, we see a tremendous opportunity to make a difference. XRPH technology is designed to be accessible to anyone with a smartphone, ensuring that healthcare is not a luxury but should be standard for all.

XRP HEALTHCARE’S FUTURE ROADMAP

In the realm of healthcare innovation, XRP Healthcare (XRPH) stands as a relentless force, reshaping the future of healthcare with a clear vision and unshakable determination. With a roadmap that shines like a beacon, XRP Healthcare is set to achieve remarkable milestones in the next 1-3 years, leaving an indelible mark on the industry.

Founder Kain Roomes paints a compelling picture of the immediate future, boldly declaring, “We intend to grow XRP Healthcare into a multi-billion-dollar company – period. In between this, we anticipate engaging in mergers and acquisitions involving 1500 to 2000 private healthcare medical centers, hospitals, and pharmacies”. This projection isn’t just ambitious; it’s a testament to XRP Healthcare’s unwavering commitment to catalyzing change. They aren’t merely envisioning the future; they are actively creating it.

In a world where healthcare trends, technological advancements, and regulatory landscapes are in a constant state of flux, XRP Healthcare stands prepared to adapt and lead. Founder Kain Roomes succinctly captures their approach, noting, “We acknowledge the growing disillusionment with the current healthcare system – people demand privacy and trust, and these can only be truly attained within a decentralized system.” This adaptability forms the bedrock of XRP Healthcare’s resilience. They are not passive followers of trends; they are visionary architects of a new era in healthcare.

But this is not just a story about a revolutionary healthcare company; it’s a tale of how the ripple effect of cryptocurrency innovation is reshaping the landscape of not just one region, but two - the Middle East and Africa.

In a move that has sent shockwaves through the cryptocurrency industry, Ripple Labs, a pioneer in blockchain technology, has declared its new home in the Middle East. This decision comes at a crucial juncture, as Africa grapples to catch up with the global cryptocurrency wave, with merely 10% of the continent embracing digital currencies.

Ripple Labs, renowned for its groundbreaking solutions in cross-border payments and digital asset management,



has been at the forefront of the cryptocurrency revolution. However, their choice to leave the bustling tech hub of Silicon Valley behind and establish roots in the Middle East is a clear indicator of the evolving dynamics in the crypto arena.

The Middle East has been increasingly positioning itself as a cryptocurrency and blockchain hub, with governments and businesses embracing the potential of this technology. Countries like the United Arab Emirates, Bahrain, and Saudi Arabia have been actively fostering crypto-friendly regulatory environments and encouraging blockchain innovation. Ripple Labs' relocation to this region signifies its commitment to expanding its reach and influence in a region that is quickly becoming a global leader in the crypto space.

On the flip side, Africa, brimming with potential and a youthful population, has been cautious in embracing cryptocurrencies. Currently, only 10% of the continent's population has engaged with digital currencies, mainly due to a variety of factors, including regulatory uncertainty, lack of infrastructure, and limited access to banking services in many parts of the continent. To address these challenges, efforts have been made to increase cryptocurrency awareness and adoption in Africa. Local startups and international organizations have been working to develop user-friendly solutions, and some African countries have started exploring regulatory frameworks to facilitate the growth of the crypto industry.

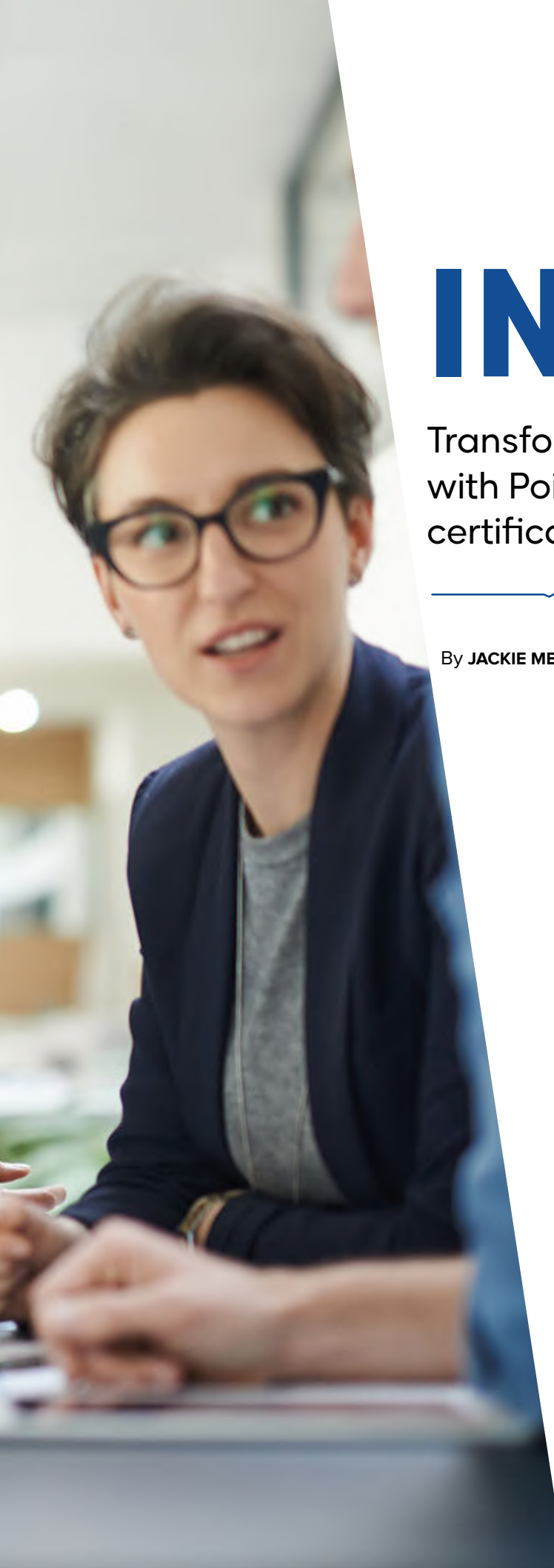
Ripple Labs' decision to move its operations to the Middle East may serve as a wake-up call for African governments and businesses to accelerate their efforts in embracing and regulating cryptocurrencies.

The potential benefits of widespread crypto adoption in Africa are significant, including financial inclusion, reduced remittance costs, and increased access to global markets for local businesses. With the emergence of XRP Healthcare on the continent even though they have no relationship with Ripple



Labs other than being built on the XRPL blockchain, heralds in an exciting epoch of potential crypto adoption with the launch of the XRP Mobile App. XRP Healthcare Africa plans to dominate and consolidate the highly fragmented healthcare industry in East Africa, with XRP being the utility token of its eco-system testament to XRP Healthcare's forward-thinking approach. XRP Healthcare isn't merely a healthcare company; it is a visionary force 





INTELEOS

Transforming maternal healthcare in Africa with Point of Care Ultrasound training and certification for medical professionals



By **JACKIE MBITHE**

In 2016, the inception of Inteleos marked a pivotal moment in the global healthcare landscape. With a noble mission to ensure that patients worldwide receive the highest quality healthcare, this non-profit community unites over 123,000 active medical professionals under its banner. These professionals share a collective dedication to upholding the most stringent standards in healthcare and patient safety.

Joseph Williamson, a Healthcare-Medical Imaging Consultant, and Medical Quality Consultant at the International Finance Corporation (IFC) emerges as our guide into the world of Inteleos. As both an Inteleos program lead and the head of clinical training for South Africa and Sub-Saharan Africa, Joseph introduces us to the organization's critical role in healthcare, especially in Africa. He emphasizes, "The needs that Inteleos addresses in Africa are those related to monitoring, accrediting practitioners who employ ultrasound devices for point-of-care testing, particularly in the maternal-fetal domain."

Joseph goes on to explain that Inteleos has its sights set on midwives, nurse officers, and doctors providing primary care to expectant mothers. Their mission is crystal clear: medical professionals performing ultrasounds must undergo standardized, rigorous assessments to validate their knowledge, skills, and abilities. Certification from an independent third-party organization is seen as essential to uphold best practices in delivering quality patient care. This expectation for quality transcends all healthcare settings, leaving no room for compromise.

"In Africa," Joseph continues, "our focus is on Point of Care Ultrasound (POCUS), tailored for physicians, nurses, midwives, and healthcare officials involved in maternal health. It's not just about equipping them with ultrasound devices; it's about providing sustainable training and certifying them to conduct maternal-fetal examinations using ultrasound."



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**IN A NUTSHELL, WHETHER YOU'RE
 A PHYSICIAN, PRACTITIONER, OR
 MIDWIFE, THE POCUS ACADEMY
 AND POCUS CERTIFICATION ARE
 APPLICABLE TO YOU.**”

Joseph Williamson - Program lead, Inteleos Africa

UNIFYING EXCELLENCE IN HEALTHCARE CERTIFICATION AND PHILANTHROPY

Inteleos serves as the governing and managerial nucleus for several branches, including the American Registry for Diagnostic Medical Sonography (ARDMS), the Point-of-Care Ultrasound (POCUS) Certification Academy, and the Alliance for Physician Certification and Advancement (APCA). Together, these entities represent nearly 107,000 certified medical professionals globally. The newly established Inteleos Foundation operates under the Inteleos umbrella, overseeing philanthropic initiatives.

With a vibrant community of over 123,000 active medical professionals, Inteleos has spent the past 45+ years shaping the future of healthcare by setting a standard of excellence through quality patient care and certification. Their certifications span 18 diverse medical disciplines, encompassing diagnostic medical sonography, cardiac MRI, CT, nuclear medicine, vascular medicine, and point-of-care ultrasound. Joseph underlines the universal applicability of their mission, stating, "In a nutshell, whether you're a physician, practitioner, or midwife, the POCUS Academy and POCUS certification are applicable to you. They validate your knowledge and ensure its recognition anywhere in the world."

Faith Muigai, a healthcare advisory and quality improvement specialist at IFC, steps into the conversation as the Business Development lead for Inteleos in East Africa and Sub-Saharan Africa, and the program lead in Kenya. She offers insight into Inteleos' alignment with IFC's mission to achieve universal health coverage. "We are all acutely aware that strengthening primary healthcare is vital," she affirms. "Inteleos has embarked on a grand challenge, setting goals to reduce maternal and fetal mortality by 2030."

In the context of sub-Saharan Africa, where maternal and neonatal mortality rates remain alarmingly high, Faith highlights the pressing need for innovative solutions. Governments have been entrusted with the responsibility of devising strategies to meet IFC's goals by 2030. "Inteleos," Faith asserts, "is dedicated to enhancing the skills of frontline healthcare workers. At the primary healthcare level, we believe that certain skills, unrecognized until now, can be expanded or enhanced for midwives and clinical officers. Our task is to collaborate with local governments and the private sector to ensure that these skills are made accessible to frontline staff. This ensures that women receive timely and affordable care."

Currently, these critical skills are primarily confined to sonographers and radiologists, leaving midwives without the recognition they deserve. Faith emphasizes Inteleos' role in bridging this gap by partnering with governments, the public sector, and the private sector to endorse regulations facilitating the expansion of skills in obstetric screening and triage to midwives and clinical officers. "The gap that we are trying to fill as an organization is partnering with governments, public sector, and private sector to endorse regulation around a skill expansion of this skill set, obstetric screening

and triage to midwives and clinical offices as a means of strengthening how we assess, monitor and deliver care to our mothers in sub-Saharan Africa," adds Faith.

EMPOWERING PRIMARY HEALTHCARE THROUGH INNOVATIVE TRAINING INITIATIVES

Inteleos' approach to revolutionizing primary healthcare involves multifaceted strategies that Joseph Williamson and Faith Muigai eloquently describe. A fundamental approach involves partnering with academic institutions to create comprehensive training curricula. These curricula are designed to seamlessly integrate into both pre-service training and in-service courses, as well as Continuous Professional Development (CPD) initiatives. Joseph explains the broader vision, saying, "We look at graduating medical students, whether they're nurses, doctors, or physical therapists, anyone utilizing ultrasound, and we aim to equip them with the capability to effectively employ POCUS in diagnosing fetal or maternal health."

Simultaneously, Inteleos is laying the groundwork for a long-term solution: the development of Technical and Vocational

Education and Training (TVET) courses. Faith emphasizes their proactive role in policy development to enable this transformation. She sees policy shifts as essential for the vision to materialize.

Another pivotal approach involves direct collaboration with healthcare institutions and hospitals. This entails upskilling existing clinicians in these specialized areas. Joseph elaborates on the process, explaining, "We can provide training courses for nurses, midwives, and clinical officers already practicing, teaching them how to leverage POCUS effectively. We then validate their learning through global accreditation, making them globally recognized." He underscores that it's not just about learning; it's about proving proficiency in this medical capability through global certification.

Faith adds an important dimension, highlighting that numerous initiatives are already investing in upskilling clinicians within the healthcare system. However, these efforts often lack recognition from regulatory bodies. Inteleos aims to reshape policies, not only enabling clinicians to perform these interventions but also ensuring recognition by regulatory bodies.

The introduction of certification is a pivotal

IN NUMBERS

123,000

ACTIVE NUMBER OF MEDICAL PROFESSIONALS AT INTELEOS



JOSEPH WILLIAMSON CONDUCTING A SONOGRAM AS OTHER MEDICAL PROFESSIONALS LOOK

aspect of their approach. Faith explains, "We aim to introduce certification so that individuals are not merely trained and awarded a certificate of attendance. Instead, they receive comprehensive training and are certified with a globally recognized certificate, transferable across borders. This certification signifies that an individual is not limited to a specific institution or country. Their skills are applicable wherever the certification is recognized."

Faith strongly underscores the value of certification, stating, "We bring in a new skill set and assert the significance of certification. It reflects the maintenance of proficiency in the transferred skill. When a nurse or doctor undergoes training, they obtain a license and must keep it up to date. Certification ensures that individuals are current with their skills and recognized under a globally accredited body."

FORGING COLLABORATIVE SOLUTIONS IN MATERNAL HEALTHCARE THROUGH MULTISECTORAL PARTNERSHIPS

In parallel to these approaches, Inteleos has convened forums, bringing together critical stakeholders, decision-makers, and key players from various sectors, including the Ministry of Health, the private sector, academia, equipment manufacturing firms, and financial institutions. They are challenging professional associations and regulatory bodies to take action. Faith describes a significant milestone—the Maternal Health summit held in November 2022, organized in partnership with

the Kenya Healthcare Federation (KHF). This summit gathered individuals who had never previously convened to discuss the potential shift in skillsets to enhance identified cadres.

Faith paints a vivid picture of the summit, where diverse participants, including radiologists, nursing consoles, and the Society of Radiography Clinical Officer Association, gathered. This unprecedented collaboration also featured presentations by industry leaders such as Philips and General Electric (GE), shedding light on their innovations in affordable handheld devices.

Faith positions Inteleos as the driving force behind this monumental gathering, assuming the role of both convener and coordinator. The organization's proactive approach ensured that critical discussions took place on this formidable platform. By bringing together key stakeholders and thought leaders from diverse sectors, Inteleos facilitated the exchange of ideas and the formulation of effective strategies. These strategies are poised to make a lasting impact on maternal and fetal healthcare, addressing a critical issue with diligence and determination.

In Faith's words, "Aga Khan and AMREF International University were at the summit with a report that showcased tried, tested, and data-supported evidence of the intervention's potential to significantly reduce maternal and fetal mortality, as well as perinatal losses." She underscores Inteleos' indispensable role as the orchestrator, stating, "As Inteleos, we have taken on the pivotal roles of both conveners and



▶ INTELEOS AFRICA LEADS, FAITH AND JOSEPH ALONGSIDE OTHER DELEGATES DURING A PAST AMEF WORKSHOP IN MOMBASA KENYA

coordinators, ensuring that the right discussions are held and the right strategies are set in motion to address this paramount healthcare issue."

EMPOWERING HEALTHCARE PROVIDERS FOR QUALITY MATERNAL AND FETAL CARE

Inteleos envisions a transformative role for Point of Care Ultrasound (POCUS) in primary healthcare across Africa. By making POCUS accessible within the primary healthcare framework, Inteleos aims to dispel the misconceptions surrounding sonography and radiology that have permeated the continent. Their mission aligns with the World Health Organization's (WHO) recommendation of ensuring eight antenatal care visits for expectant mothers, including at least one ultrasound examination.

WHO, in its mission to bolster maternal health, has underscored the importance of eight antenatal care visits for expectant women, inclusive of at least one ultrasound examination by the 24th week of pregnancy. Ultrasound, a versatile diagnostic tool, facilitates rapid assessment of maternal and fetal well-being, whether it is within the precincts of a level two or three healthcare facility or even within the confines of one's home.

The global landscape reveals a maternal mortality rate averaging 233 per 100,000 live births, a sobering statistic. The United Nations Sustainable Development Goals (SDG) program has ambitiously set its sights on reducing this figure to a mere 75 deaths per 100,000 live births by 2030. Joseph, speaking on Inteleos' alignment with this lofty goal, laments, "Most maternal deaths occur due to oversight or lack of comprehension of the images generated during examinations. Our medical professionals often lack the expertise to interpret these critical images."

Joseph emphatically articulates the crux of their mission: "POCUS aims to diminish maternal mortality by equipping those already performing these examinations with the knowledge they need. For instance, detecting a breech baby or cervical incompetence should be routine knowledge before a mother reaches the delivery table." He highlights a pervasive issue in Africa where ultrasounds outside specialized radiology units and Obstetrics and Gynecology (ObsGyn) offices often fail to identify abnormalities, resulting in tragic losses. "POCUS," he asserts, "seeks to curtail these losses by channeling expectant mothers through skilled practitioners.



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POINT-OF-CARE ULTRASOUND EMPOWERS CLINICIANS AT THE GRASSROOTS, ENABLING COMPREHENSIVE SCREENING USING PORTABLE HANDHELD DEVICES. ”

Faith Muigai - Program lead, Inteleos Africa.

Training is pivotal, and we've committed ourselves to extending our training programs across Africa."

Faith passionately elucidates, "Point-of-care ultrasound empowers clinicians at the grassroots, enabling comprehensive screening using portable handheld devices. We can either welcome women into healthcare facilities or take the devices to them." She draws parallels with historical community health strategies, stating, "We are sending apprentices to mothers, considering the challenges of access and transportation that often hinder women from reaching primary healthcare facilities. This approach allows us to detect complications promptly."



▲
DELEGATES
FOLLOWING
JOSEPH'S
PRESENTATION AT
THE 2023 MIDWIFE
SYMPOSIUM.

Addressing a critical issue, Faith explains, "This approach addresses the problem of women reaching a qualified sonographer in emergency situations, as these specialists are typically only available at tertiary levels of care." Joseph echoes this sentiment, emphasizing that the goal is to equip midwives, nurses, and OB-GYN professionals with the capability to identify issues before they escalate. He states, "By the time a patient reaches my level, the professional ultrasound stage, they're already in critical condition. Our objective is to ensure that midwives, nurses, and OB-GYNs, whom patients interact with regularly, possess the capability to identify these issues long before radiological intervention is necessary."

Inteleos endeavors to reshape the narrative by expanding the pool of clinicians capable of delivering a certain level of care and timely interventions. Faith succinctly encapsulates this paradigm shift, declaring, "We are increasing the number of clinicians and trained physicians at a certain level, a pool that currently doesn't exist."

INTELEOS' STRATEGIC TRAINING OUTREACH TO NURSE-RUN CLINICS

In the pursuit of United Nations' Sustainable Development Goal 3, which seeks to ensure healthy lives and promote well-being for all at

all ages, Joseph astutely observes the evolving landscape of nursing over the past decade. He notes a seismic shift in the responsibilities of nurses, who have shouldered a heavier burden, largely due to a shortage of skilled Obstetrics and Gynecology (ObsGyn) practitioners. "We're witnessing a significant exodus of doctors either emigrating or retiring from the healthcare sector," he remarks. "Consequently, nurses find themselves undertaking tasks they haven't previously handled as we grapple with an overwhelming influx of patients into these clinics."

Recognizing the pivotal role played by nursing institutions and nurse-run clinics, Inteleos has embarked on a strategic mission to extend training programs directly to these critical sectors. Their focus stems from the realization that the majority of patients navigate the healthcare system through nurse-run organizations. Faith elucidates this strategic approach, stating, "We're collaborating closely with various organizations, device agnostic, to ensure that our training initiatives reach the grassroots."

Emphasizing the importance of device affordability, Faith underscores the need for county governments to invest in accessible Point-of-Care Ultrasound (POCUS) devices. "Our aim is to ensure that every graduating midwife possesses a point-of-care ultrasound machine and has undergone rigorous training and validation of their proficiency in its use," she asserts. "This represents an invaluable county-level investment – providing access, offering training, validating proficiency, and equipping them with the necessary tools."

However, Inteleos understands that training alone is insufficient. In recognition of the ever-evolving technological landscape, they have implemented a structured mechanism to ensure the continuous enhancement of skills. "We've established a systematic schedule where individuals undergo periodic testing and skill upgrades, aligning with technological advancements," Faith explains. "This approach stands apart because it transcends conventional training paradigms. Skills can wither if left unpracticed, and we are determined to bring these vital skills and training to where they are needed most." She adds they want to make sure that they ensure a quality assurance mechanism that is embedded within the public and private sector, academia, and institutions to make sure that a mother is always treated by a skilled and proficient health care professional.

EXPANDING ACROSS AFRICA THROUGH STRATEGIC PARTNERSHIPS

Inteleos envisions a self-sustaining future, one that extends its reach beyond the borders of Kenya and South Africa, ultimately encompassing the entire African continent. Their blueprint for this ambitious expansion hinges on forging strategic partnerships and aligning with like-minded stakeholders who share their vision.

Joseph articulates this imperative by highlighting the pivotal role played by ultrasound device manufacturers in their vision. "Our collaboration with these manufacturers is paramount," he asserts, "as they possess invaluable insights into the dynamics of diverse clinics and healthcare settings."

Once these critical partnerships with device manufacturers are secured, Inteleos sets its sights on the private sector, engaging with private hospitals and clinics. Joseph explains, "To create a sustainable financial model, we need a diverse consortium of partners. The private sector, particularly those engaged in maternal-fetal care, becomes an integral part of this equation."

Expanding on this, he explains, "Within the private sector, we find a reservoir of funding potential, institutions eager to invest in training and quality assurance for their clinicians." The next step in their strategic progression involves engagement at the county government level, laying the groundwork for policies that will ripple upward to the national level. This will signify a seismic shift, a declaration that this endeavor is not just a necessity but an imperative.

Faith adds her perspective, emphasizing the significance of budgets allocated at the county level for human resources in health. She explains, "At the county level, there are allocated budgets for human resource development in healthcare. Transparent planning, accountability systems, and effective resource allocation ensure that funds reach our trainers, trainees, and healthcare professionals."

Reflecting on the shifting landscape

of healthcare initiatives, Faith notes a pivotal transition from donor-funded efforts to self-sustaining solutions. She elaborates, "Governments are now tasked with constructing sustainable systems, freeing themselves from donor dependence. Donors have played a crucial role in stimulating the market, but the onus is now on us to build locally-rooted systems. Sustainability becomes attainable when we prioritize the well-being of our women and children, recognizing their pivotal role in economic growth and development."

avoiding conflicts of interest and ensure the compatibility of devices within our designated market." Moreover, as Joseph underscores the significance of equipment maintenance and warranties to safeguard the continuity of ongoing initiatives, he emphasizes, "Data may be collected during trials," elucidating, "but the sustainability of our efforts hinges on the proper maintenance and continued support of these devices."

Joseph further unveils Inteleos' strategic partnerships in Kenya, revealing a formidable consortium of



JOSEPH AND FAITH POSE FOR A PHOTO WITH A NURSE AT THE KAMPALA HOSPITAL LIMITED AT A PAST FUNCTION

Joseph provides further evidence of this paradigm shift, citing South Africa's private institutions as trailblazers in funding education. He points to a prominent South African institution that has already committed to POCUS training, underscoring the growing recognition of this model's sustainability.

Delving into the intricacies of funding, Joseph delineates its multifaceted nature explaining that, "Our financial focus encompasses curriculum development, device acquisition, and market-aligned device procurement. We prioritize

collaborators. These include the pivotal Ministry of Health, an instrumental force in bringing national initiatives to fruition. Alongside them stand partners such as the Kenyan Health Care Federation, AMREF International University, and the Center for Health and Development, symbolizing the rich tapestry of stakeholders dedicated to propelling positive transformation in maternal-fetal care.

NAVIGATING THE COMPLEX TERRAIN OF ULTRASOUND AND



INTELEOS LEAD, FAITH MUIGAI POSE FOR A PHOTO WITH DELEGATES TO MARK THE END OF POCUS WORKSHOP IN NYERI, KENYA

POLICY REFORM

The journey towards transforming maternal-fetal care in Africa is a challenging one, marked by multifaceted hurdles. One of the most formidable obstacles faced by Inteleos in its mission is the complex world of policy advocacy.

"Policy doesn't change overnight," underscores Faith, a prominent figure in Inteleos' efforts. She elaborates on the intricate process, emphasizing, "It necessitates thorough research to establish our current baseline. We must then convene stakeholders and secure their consensus on the path forward."

This endeavor, Faith reveals, is often marred by apprehensions among professionals who fear a dilution of their value. As skills are entrusted to other cadres, some perceive it as a diminishment of their standing. However, the reality is quite the opposite, as these shifts empower individuals to focus on tasks that fully leverage their technical expertise. An illustrative example lies in certified nursing assistants tasked with monitoring blood pressure. "They report to the nurse based on predefined parameters," Faith elucidates, "ensuring that when critical values surface, immediate action can be taken."

"A similar challenge looms large in the realm of ultrasound, where certain skills traditionally held within the domain of radiologists and radiographer sonographers need to be entrusted

to other healthcare cadres. This necessitates a harmonized agreement among stakeholders."

Another hurdle arises from competing interests that often overshadow the broader healthcare agenda. Faith calls for a shift in perspective, asserting, "Countries must articulate their needs clearly. We should determine what's essential for our market and refrain from adopting initiatives thrust upon us without regard for their true utility."

Multidisciplinary communication, or the lack thereof, represents yet another barrier. Within the medical landscape, various disciplines such as radiology and Obstetrics-Gynecology (ObsGyn) often function in isolation. Faith bemoans this fragmented approach, explaining, "When we introduce ultrasound POCUS training, it inadvertently sparks competition."

FORGING A PATH TOWARDS COLLABORATION AND HEALTHCARE TRANSFORMATION

While competition within the medical field isn't inherently harmful, its encroachment on the creation of seamless referral pathways poses a significant challenge. "Currently, professionals in different specialties operate in silos, failing to create seamless pathways for the sharing of critical information," observes Faith, highlighting a pressing issue that needs to be addressed.

The magnitude of the problem is not lost on Faith, who bemoans the persistent separation of healthcare disciplines. She laments, "We have yet to bridge these silos. Radiologists, sonologists like myself, nurses – we've all been compartmentalized, lacking a concerted effort to devise an effective referral network. This, I believe, stands as one of the most substantial hurdles confronting clinical medicine, particularly in the realm of ultrasound and POCUS."

However, Faith is quick to underline the importance of tackling these challenges head-on. She states, "Addressing these challenges is paramount in reshaping the landscape of clinical medicine in Africa and raising the profile of ultrasound and POCUS in maternal-fetal care." In her view, it necessitates a unified endeavor aimed at dismantling existing barriers, nurturing collaborative spirit, and devising an integrated approach. The ultimate goal, she asserts, is to position the health and well-being of mothers and infants at the vanguard of healthcare transformation on the continent.

In essence, the path forward involves transcending competition, fostering synergy among healthcare professionals, and weaving a tapestry of collaboration that promises a brighter, healthier future for maternal-fetal care in Africa.

A VISION FOR THE FUTURE: COLLABORATIVE HEALTHCARE IN AFRICA

In the near future, Inteleos wants to strongly plant itself on the African continent and be able to feed into the African continent specifically for their needs. "One of the things that Inteleos is very good at is providing for the needs of the people that they train," Joseph says.

Joseph outlines an ambitious blueprint for the organization over the next five years. He envisions a landscape where nurses, midwives, and clinical officers attain quadruple certification, not just in POCUS or maternal-fetal medicine, but also in vascular specialties, musculoskeletal disciplines, abdominal trauma expertise, and emergency room proficiency. "In the next five years on the continent of Africa," he asserts, "Inteleos aims to see POCUS cease being a mere accessory and become ingrained as second nature."

For Faith, the forthcoming years are intrinsically linked to bolstering human resources for health, ultimately translating into the delivery of high-quality, safe, and affordable care. She expounds, "Our goal is to delve into the foundational values and invest in solutions that yield a profound impact on saving lives,

with tangible benefits for sustained economic productivity and development."

Faith passionately emphasizes the far-reaching implications of maternal health, recognizing that the loss of a single mother within a community carries profound consequences. "When you invest in a mother," she asserts, "you invest in a family, which in turn has a ripple effect on a country's productivity."

Joseph, in his closing remarks, calls for a transformative shift in the dynamics of healthcare systems throughout African hospitals and healthcare facilities. He advocates for unity among clinicians, urging them to cease competing with each other and embrace collaboration as the cornerstone of progress. "There's an abundance of patients in Africa," he notes, "but the fragmentation and lack of cooperation in healthcare settings, especially concerning women's health, hinder progress."

Joseph's vision is clear: a harmonious, collaborative environment where the health and well-being of patients take precedence over competition. In the realm of POCUS and women's health, as well as healthcare as a whole, Joseph ardently desires to witness African healthcare professionals working together, dedicated to the collective betterment of patients and the communities they serve. HCMEA

FAITH MUIGAI HOLDS AN INFANT IN ONE OF THE OUTREACH FUNCTIONS.





**Dr. Lutz Hilbrich - Chief
Executive Officer of
MiGenTra**

MIGENTRA

Pioneering healthcare revolution with biosimilars and affordable therapies

In the fast-paced world of pharmaceutical innovation, a titan has risen. MiGenTra, a groundbreaking entity born from the merger of industry giants ProBioGen and Minapharm Pharmaceuticals, is rewriting the rules of healthcare as we know it. Established in the second quarter of 2021, this powerhouse is set to redefine the future through the development and commercialization of biosimilars, cell- and gene therapies (CGT), and vaccines.

At the helm of this revolutionary biosimilar company stands Dr. Lutz Hilbrich, the visionary Chief Executive Officer of MiGenTra, who proclaims with unwavering conviction, "MiGenTra offers a unique and compelling portfolio of 16 biosimilar drug candidates, along with affordably priced cell- and gene therapies. Our biosimilars portfolio is a beacon of hope for those battling a range of medical conditions, with a particular focus on oncology, autoimmune diseases, osteoporosis, ophthalmology, and respiratory ailments."

MiGenTra's strength is not confined to its ambition alone; it's the fusion of ProBioGen and Minapharm's unparalleled capabilities that sets it apart. Dr. Hilbrich paints the picture vividly, stating, "ProBioGen, with a storied history spanning 29 years in Berlin, is the leading Contract Development and Manufacturing Organization (CDMO) renowned for spearheading the development and manufacturing of biopharmaceutical active ingredients, viral vectors, and vaccines."

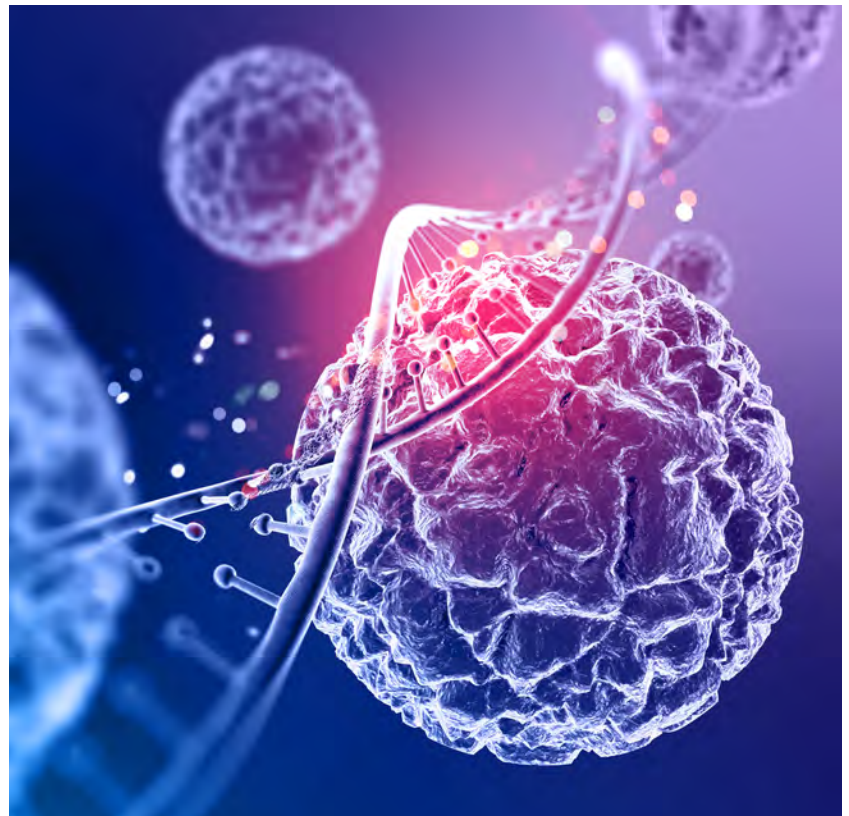
"In contrast, Minapharm, a trailblazer established 65 years ago in Cairo, is a beacon of biotechnology in Africa, boasting a cutting-edge manufacturing facility for biological medicines. MiGenTra brilliantly marries the distinctive strengths and capabilities of its parent companies

to deliver an unparalleled, all-encompassing offering to the market," Dr. Hilbrich passionately explains.

By **LORRAINE ABWAO**

A HEALTHCARE REVOLUTION IN MOTION

MiGenTra's mission extends far beyond profits and portfolios. Dr. Hilbrich passionately champions the efficient utilization of safe and high-quality medications at a reasonable cost. MiGenTra, under his guidance, plays a pivotal role in enhancing the affordability and accessibility of biologic drugs, with a particular emphasis on the Middle East and Africa.





▲
MINAPHARM
PHARMACEUTICALS
GROUP, MIGENTRA'S
RESEARCH AND
DEVELOPMENT
PARTNER IN EGYPT
SPECIALIZED ON
THE DEVELOPMENT
OF CELL LINES AND
BIOSIMILARS.

Dr. Hilbrich reflects on the situation and states, "The Middle East and Africa region is an attractive market for biosimilars, driven by a confluence of factors such as the growing demand for cost-effective healthcare, high prevalence of chronic diseases, government initiatives, regional manufacturing capabilities, and unexplored prospects.

"Africa, which accounts for 16% of the world's population, bears a disproportionate 23% of the global disease burden, primarily due to inadequate access to high-cost biological medicines, limited infrastructure, and insufficient awareness campaigns, especially in hard-to-access rural locations."

REVOLUTIONIZING MEDICINE WITH CUTTING-EDGE BIOSIMILAR MANUFACTURING

Dr. Hilbrich unveils the secrets behind the company's groundbreaking manufacturing process for biosimilars, poised to transform healthcare as we know it. Dr. Lutz Hilbrich kicks off the revelation by acknowledging the impending waves of change in the biopharmaceutical industry, emphasizing MiGenTra Egypt's prowess in establishing two vital expression

systems used in biotechnology. Notably, they harness the yeast expression system *Hansenula polymorpha* and the mammalian cell culture expression system Chinese hamster ovary (CHO) to develop processes for the production of new recombinant active pharmaceutical ingredients (API).

Explaining the significance, Dr. Hilbrich states, "To ensure safety and efficacy, each manufacturing facility complies with strict Good Manufacturing Practices (cGMP) regulations associated with quality testing related to the product. Each process and cycle must follow validated customer requirements to deliver stable, repeatable, and affordable products."

Crucially, these biosimilar manufacturing facilities have received the seal of approval from the European Medicines Agency (EMA) and the United States Food and Drug Administration (FDA), while adhering to the U.S. Department of Commerce's Economic Development Administration (EDA) guidelines.

A SYMPHONY OF QUALITY ASSURANCE

Quality assurance takes center stage in MiGenTra's biopharmaceutical manufacturing process, which Dr. Hilbrich elaborates upon.

He delineates it into two critical phases: the cultivation process (upstream) and the purification process (downstream). Emphasizing their role, he remarks, "In order to guarantee the safety and effectiveness of our biosimilar products, we have established a comprehensive quality control system. This system involves rigorous testing of raw materials to verify their identity, purity, and quality."

Dr. Hilbrich elucidates the company's cost-saving prowess, a feat accomplished by leveraging ProBioGen's highly productive cell lines, high-yield products of partner companies, and Minapharm's efficient manufacturing capabilities. "By doing so," he asserts, "the company can develop and commercialize quality biological medicines at a lower cost, passing on the benefits to patients and healthcare organizations, making the treatments more accessible and affordable."

The manufacturing journey is marked by meticulous in-process testing, culminating in extensive physicochemical and potency assays, as well as stability testing. Dr. Lutz Hilbrich reveals, "Advanced analytical techniques, such as mass spectrometry and chromatography, are employed to evaluate the molecular structure and biological function similarity to the reference biologic."

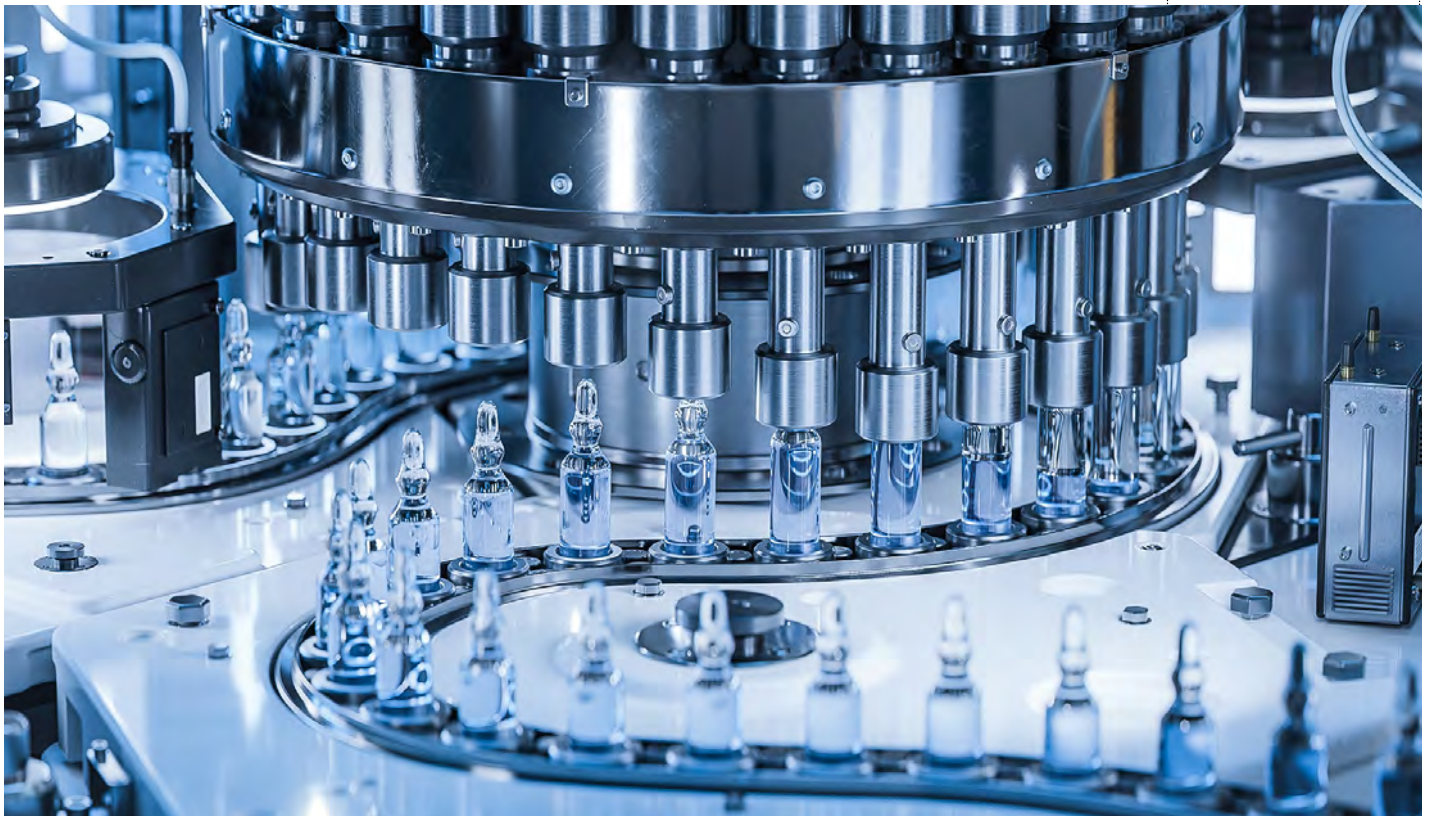
MIGENTRA'S METEORIC ASCENT

MiGenTra, a young but exceptionally ambitious entity, has ignited the industry with its meteoric rise. Born from the visionary merger of industry titans ProBioGen and Minapharm Pharmaceuticals just two short years ago, MiGenTra is already carving a unique path towards the future of healthcare.

Dr. Hilbrich offers a glimpse into this remarkable journey, stating with unwavering confidence, "While MiGenTra is a young company, it is on a high growth trajectory. In just two years since its inception, MiGenTra has managed to assemble an industry-wide unique portfolio of 16 biosimilar drug candidates. This achievement not only ensures business visibility but also solidifies our sustainability well into the early 2030s."

At the heart of MiGenTra's mission lies a groundbreaking endeavour to develop biosimilars for global blockbuster biological medicines that have transitioned beyond patent protection. This mission, as Dr. Hilbrich passionately emphasizes, is rooted in addressing unmet medical needs in Africa and beyond. He elucidates, "The company maintains a lean headquarters organization, functioning as a Centre of Excellence that houses seasoned experts in core functions for biological medicines. Our efficient development and manufacturing processes are made possible

MINAPHARM PHARMACEUTICAL'S FILL AND FINISH FACILITY IN EGYPT WHERE MIGENTRA'S BIOSIMILARS ARE MANUFACTURED.



by harnessing highly productive cell lines from ProBioGen and leveraging state-of-the-art process development and manufacturing capabilities from Minapharm."

In alignment with its audacious growth plan, MiGenTra is currently in the midst of constructing a robust network of distributors spanning Africa and the Middle East. This strategic initiative, Dr. Hilbrich explains, serves a dual purpose: "Our primary objective is to facilitate the registration, promotion, and sale of biological medicinal products in a manner that is both transparent and cost-effective. Simultaneously, we are unwaveringly committed to ensuring timely delivery, reinforcing our pledge to enhance access to critical healthcare solutions."

RIDING THE WAVES OF TRANSFORMATION

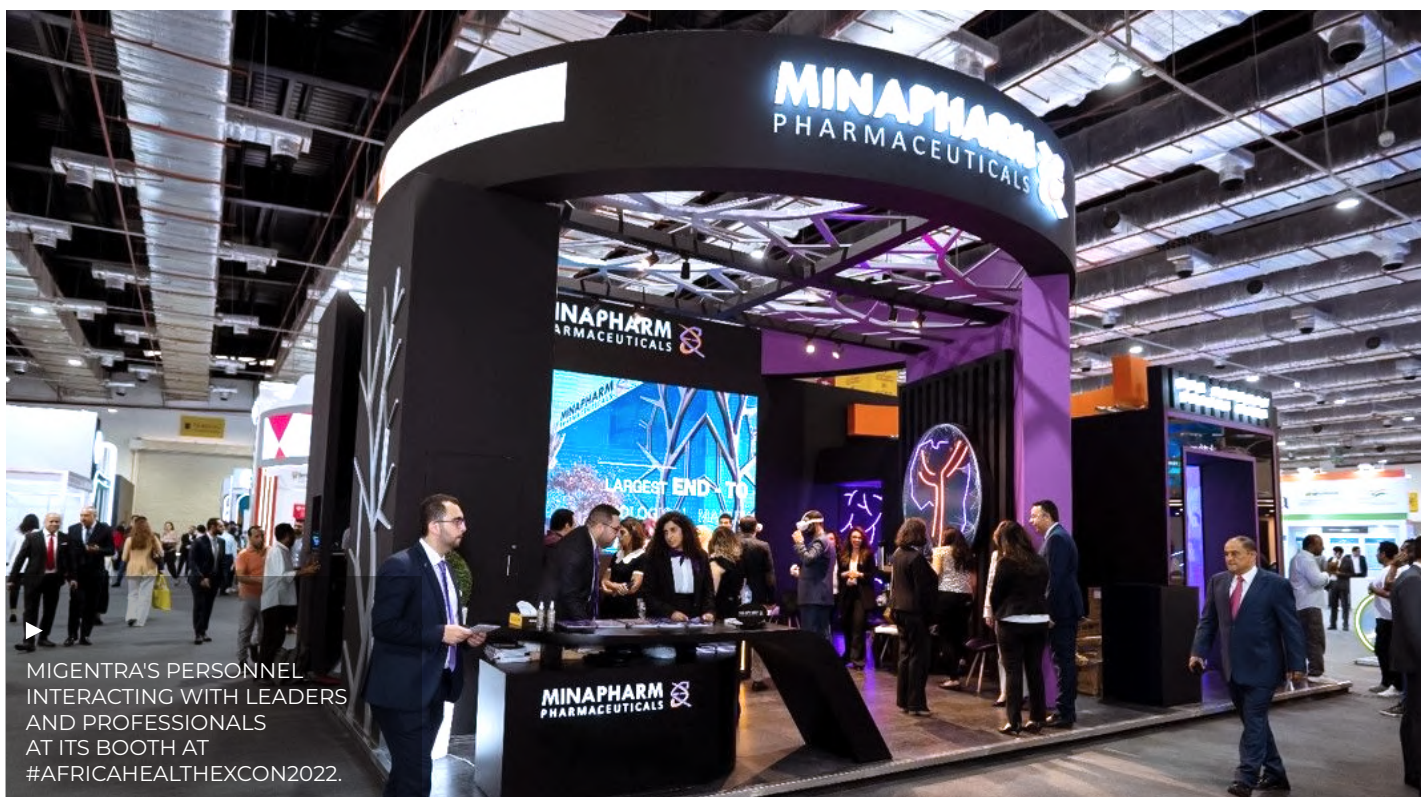
In a pharmaceutical landscape increasingly defined by change, Dr. Lutz Hilbrich reflects on the shifting tides, stating, "The biopharmaceutical industry has a major role in the development of cost-effective, robust, and reproducible processes to manufacture safe and efficacious products for various clinical indications."

Unlike conventional pills with readily available generic counterparts, complex biologics produced using living cells cannot be exactly duplicated. Enter biosimilars, the most comparable alternatives. Dr. Hilbrich elaborates on MiGenTra's manufacturing process for biosimilars, "Combining Minapharm's known experience with biosimilars and ProBioGen's expertise in cell- and gene-based therapeutic approaches and viral vector platforms for vaccine development, MiGenTra is ideally positioned to provide patients with



▶ MIGENTRA'S PERSONNEL MEET AFRICA'S HEALTHCARE LEADERS AND PROFESSIONALS AT ITS BOOTH IN #AFRICAHEALTHCON2022.

affordable and quality care and to boost the MEA region's drug



▶ MIGENTRA'S PERSONNEL INTERACTING WITH LEADERS AND PROFESSIONALS AT ITS BOOTH AT #AFRICAHEALTHCON2022.



patients in Africa." The secret sauce lies in a fusion of technology-driven solutions and strategic

“CURRENTLY, WE HAVE A Foothold IN 12 AFRICAN MARKETS THANKS TO MINAPHARM. WE HAVE BOLD PLANS TO ESTABLISH NEW EXPORT ROUTES IN PRIORITY COUNTRIES, INCLUDING MOROCCO, ALGERIA, GHANA, NIGERIA, AND KENYA.”

Dr. Lutz Hilbrich - CEO, MiGenTra

manufacturing capabilities."

SEIZING THE AFRICAN OPPORTUNITY

As the biosimilar market charts a meteoric rise globally, MiGenTra is set to ignite a healthcare revolution in the African continent. Dr. Hilbrich begins by illuminating the global biosimilar market's staggering growth potential, with a forecasted CAGR (compound annual growth rate) of 32 percent between 2020 and 2026. However, his focus is on a continent ripe for transformation, saying, "Africa's growing population, the exorbitant prices for biologics, and unmet medical needs in the region are the perfect breeding ground for a flourishing biosimilar industry."

In a profound revelation, Dr. Hilbrich unveils MiGenTra's strategic approach, revealing, "At present, MiGenTra is not yet operational but is actively preparing to enter the African market by no later than 2024. The current focus is on meticulous preparation for the initial launches."

For Dr. Hilbrich, the core mission is clear: "Striking a balance between affordability and maintaining high-quality standards is integral to the company's mission of providing quality biological medicines at accessible costs for

partnerships with ProBioGen, Minapharm, and other like-minded entities sharing their mission.

Highlighting the company's positive reception, he states, "As a biosimilars manufacturing company in Africa, MiGenTra has been well-received, and our mission and concept have garnered positive feedback."

PIONEERING STRATEGIES

In a captivating revelation, Dr. Hilbrich takes us on a journey through the company's pioneering strategies and global vision that are set to reshape healthcare as we know it. With the biosimilars landscape becoming increasingly competitive, Dr. Hilbrich delves into MiGenTra's innovative strategies that are propelling them to the forefront. Dr. Hilbrich unveils MiGenTra's winning formula, saying, "Our success hinges on two pillars - our in-house biosimilar development expertise and our partnership with Minapharm, a regional giant."

What truly sets them apart is their vision to seize commercialization opportunities through strategic partnerships. Dr. Hilbrich underlines their progress, stating, "Currently, we have a foothold in 12 African markets thanks to Minapharm. But we're not stopping there. We have bold plans to establish new export routes in priority countries, including Morocco, Algeria, Ghana, Nigeria, and Kenya. Our goal? To cover approximately 70% of the African population by 2028."



▲ MIGENTRA'S CEO DR. HILBRICH LUTZ (3RD RIGHT) ALONGSIDE HIS PARTNERS DURING PAST MEETING TO DISCUSS VACCINE EQUITY FOR AFRICA.

A GLOBAL VISION OF BOUNDLESS REACH

MiGenTra's vision extends far beyond geographical borders, encompassing a commitment to making biosimilars affordable for patients in the Middle East and Africa. Dr. Hilbrich emphasizes their global readiness, stating, "We're not just meeting biosimilar quality requirements in the US and the European Union; we're also prepared to interact professionally with regulatory bodies worldwide, thanks to the EDA guidelines."

As the biosimilars trend ripples through the global biologics industry, MiGenTra is strategically positioned to catalyse change in the Middle East and Africa. Dr. Hilbrich encapsulates their mission succinctly, "The demand for high-quality, affordable biologic medicines in the Middle East and Africa is substantial. Biosimilars, as cost-effective alternatives to expensive biologic drugs, are poised to address this demand, increasing accessibility to patients in need."

"Considering the significant burden of chronic diseases such as cancer, diabetes, and autoimmune disorders in the MEA region, biosimilars offer comparable efficacy and safety profiles to reference biologic products," Dr. Hilbrich concludes.

MIGENTRA'S GRIT TO REVOLUTIONIZE AFRICAN HEALTHCARE

In the crucible of challenges, MiGenTra is emerging as resolute in its mission to provide affordable, high-quality biological medicines across Africa. Dr. Hilbrich unveils their strategy to navigate the complex landscape and seize the golden opportunity for change. With a spirit akin to diamonds formed under immense pressure, MiGenTra takes on the most intricate challenges as it intensifies efforts to bring high-quality, affordable biological medicines to patients across the African region. Regulatory complexities and the isolation of remote populations loom large as significant hurdles.

On the regulatory front, Dr. Hilbrich pinpoints a pivotal issue, stating, "One of the key challenges is the lack of harmonization in regulations across the 50+ countries in Africa concerning the review and approval process for biological medicines and biosimilars. This lack of uniformity can lead to delays in approvals and market access for our products."

Undaunted, he outlines their proactive approach, noting, "To mitigate the regulatory hurdles, MiGenTra leaders intend to proactively engage with regulatory authorities in each African country, advocate for standardized review processes, and provide all necessary data and documentation to meet individual country requirements efficiently."

REACHING THE UNREACHABLE

Dr. Hilbrich acknowledges the population-focused challenges, revealing, "Approximately 60% of the African population lives in rural and isolated areas, with as much as 83% lacking access to essential healthcare services. Reaching patients in these remote regions presents logistical challenges." In response, he shares a visionary plan, saying, "To overcome this, we will identify and collaborate with local partners who have extensive reach into the hard-to-reach areas."

As MiGenTra strides into the future, Dr. Hilbrich emphasizes the significance of technology in bridging healthcare gaps in underserved regions. He states, "Going forward, we recognize the significance of leveraging technology to bridge the care gap in underserved regions. Investments in the development of telehealth solutions to support education, diagnosis, delivery, and monitoring of our products in remote areas is necessary to ensure that patients receive the care they need."

He reaffirms their commitment, stating, "Establishing clear and efficient regulatory pathways for biosimilars is expected to nurture investment and development in the biosimilars market in Africa. At MiGenTra, we have managed regulatory hurdles by planning for product launches starting in 2024 and building a strong organizational structure to support multiple launches each year until at least the end of the decade."

A €100 MILLION TURNOVER ASPIRATION

In an audacious proclamation, Dr. Lutz Hilbrich, the Chief Executive Officer of MiGenTra, unveils their ambitious goal of reaching a €100 million (US\$107 million) turnover. As the future unfolds, their strategic pillars—Africa, Science, Business, and Organization—hold the promise of transforming healthcare access and affordability across the African continent. With unwavering determination, Dr. Hilbrich sets the stage for a remarkable journey, stating, "We have set an ambitious goal of reaching a turnover of €100 million (US\$ 107 million)."

The contours of their future strategies come into focus, a well-defined framework with four pivotal pillars. Dr. Hilbrich underscores their significance, declaring, "MiGenTra aims to make its products available in at least 10 countries across the continent. With science at the heart of all production processes, we aim to emerge as the premier developer of biopharmaceuticals in Africa and for Africa."

For MiGenTra, an efficient organization is the cornerstone of success. Dr. Hilbrich reveals their commitment to meticulous structuring, optimization, and efficiency, stating, "To effectively execute its vision and mission, MiGenTra aims to build a fit-for-purpose organization. At MiGenTra, we are committed to contributing to the transformational change across healthcare on the African continent."

Dr. Hilbrich's vision is underpinned by a profound ideal, encapsulated in the words, "Healthcare is not a privilege but a human right!" With biosimilars at the forefront, MiGenTra holds the promise of significantly improving healthcare access, affordability, and health outcomes for the continent's population.

LOOKING FORWARD: CAPITALIZING ON UNTAPPED OPPORTUNITIES

In a visionary stride that transcends borders, Dr. Hilbrich takes us on a journey into a future where healthcare transcends boundaries. With

a resolute commitment to Africa's biosimilars market, he unveils a roadmap poised to reshape healthcare access and outcomes on the continent. On the way forward, Dr. Hilbrich says: "To capitalize on the untapped opportunities in the biosimilars market in Africa."

With a vision that embraces untapped potential, Dr. Hilbrich champions collaboration between industry stakeholders, governments, and regulatory authorities. He envisions a harmonious environment where intellectual property protection coexists seamlessly with affordable biosimilars, declaring, "By fostering an environment that balances intellectual property protection with increased access to affordable biosimilars, Africa can achieve significant advancements in healthcare and improve patient outcomes."

Yet, he acknowledges the intricacies of the patent landscape, where multiple patents covering original biologic drugs pose a challenge for the biosimilars market in the region. Dr. Hilbrich reflects, "The dynamic nature of the patent landscape and data exclusivity continues to pose a challenge, particularly in relation to the biosimilars market in Africa." HCMEA

IN NUMBERS

57.6%

DISCOVERY
HEALTH'S
MEDICAL
MARKET SHARE
IN SOUTH AFRICA

CEO DR. HILBRICH LUTZ POSING FOR A PHOTO AT THE DIND AWARDS



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 **IVD**  **CE**

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
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

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RAPID MOLECULAR TESTS *help advance* TUBERCULOSIS *diagnosis and treatment*

INTRODUCTION

Tuberculosis (TB) remains one of the world's most deadly infectious diseases, with global incidences increasing by 4.5% from 2020 to 2021, bucking the trend of the steady 2% decline in TB cases the world has welcomed in the previous two decades.¹ Caused by bacteria within the *Mycobacterium tuberculosis* complex (MTBC), TB affected 10.6 million individuals in 2021 and remains a persistent threat, particularly in the African region as well as being a leading cause of death globally. Improved diagnostic capabilities and higher throughput testing methods that produce results rapidly are crucial for early diagnosis, appropriate treatment decisions and prevention of further spread of TB.

NEW INSIGHTS INTO TB DIAGNOSTICS

The South African Medical Research Council (SAMRC) has established a flagship Center for Tuberculosis Research (CTR) housed within the Division of Molecular Biology and Human Genetics at Stellenbosch University to study TB at the molecular and cellular level. Working at the cutting edge of the molecular epidemiology of TB, the CTR trials and evaluates the effectiveness of new diagnostics tools, including rapid molecular tests, and advises on solutions to improve TB diagnosis and help combat drug resistance in the region and internationally.

Drug resistance is an ongoing concern in the fight against TB. The World Health Organization (WHO) Global Tuberculosis Report 2022 estimates that drug-resistant TB (DR-TB) incident cases increased by 3.1% globally between 2020 and 2021.¹ Drug-susceptible TB is treatable and curable with a course of first-line antimicrobial drugs including isoniazid (INH) and rifampicin (RIF). If these drugs are taken sporadically or if treatment ends prematurely, drug resistance can emerge in TB patients and spread to other people

through aerosols (transmission). Development of resistance to both INH and RIF leads to multidrug-resistant TB (MDR-TB). The WHO estimates 191,000 deaths were caused by MDR-TB and rifampicin-resistant TB (RR-TB) in 2021 alone.¹ Swift diagnosis of INH and RIF resistance can help doctors place TB patients on a tailored treatment of first- and second-line anti-TB drugs in a timely manner, improving the chances of a successful therapy and thereby decreasing transmission of MDR-TB strains. This current reality demands diagnostic tools that can identify the presence of drug-susceptible TB and DR-TB accurately and rapidly.

Rifampicin resistance, including multidrug resistance, affected 3.6% of new TB cases and 18% of previously treated TB cases in 2022,¹ with

By **PROFESSOR ROBIN WARREN & MARIA PODINOVSKAYA**



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over 450,000 cases in total globally and 21,000 cases in South Africa alone. Additionally, approximately 1 million TB cases are estimated to be resistant to INH. Undetected drug resistance and multidrug resistance actively threaten TB programs, necessitating the use of rapid and accurate diagnostic tools for identification of resistant strains. The current reality runs counter to such diagnostic goals as the WHO estimates that two-thirds of DR-TB strains are missed altogether, in part due to the persistent use of conventional testing methods with low sensitivity or long sample-to-result times. Tackling DR-TB and MDR-TB is grounded in the ability to promptly detect MTBC and accurately differentiate drug-resistant strains. It is therefore important to adopt diagnostic tests that can rapidly and sensitively detect resistances to both RIF and INH.

Central dogma suggests that resistance develops through a process of spontaneous mutation (nonsynonymous single nucleotide polymorphisms) in target genes, followed by antibiotic selection during periods of poor adherence or monotherapy. Resistance of *M. tuberculosis* to anti-TB drugs is thought to occur solely through mutations in target- or related genes. This concept is based on the close correlation of drug-resistance phenotypes with specific gene polymorphisms which in turn forms the basis of genetic drug susceptibility tests. Importantly, the sensitivity of these tests relies on our knowledge of the genetic mechanism of resistance.

A NEW DIAGNOSTIC METHOD

One of the biggest challenges in TB diagnostics is that MTBC bacteria grow very slowly, taking weeks to develop a conclusive test result under standard culture conditions, and up to two months for drug susceptibility testing if the culture is positive. Therefore, there is a need for testing methods that enable efficient and rapid identification of the causative agent as well as determination of drug resistance status of the detected pathogen. The WHO recommends rapid molecular tests, which have emerged

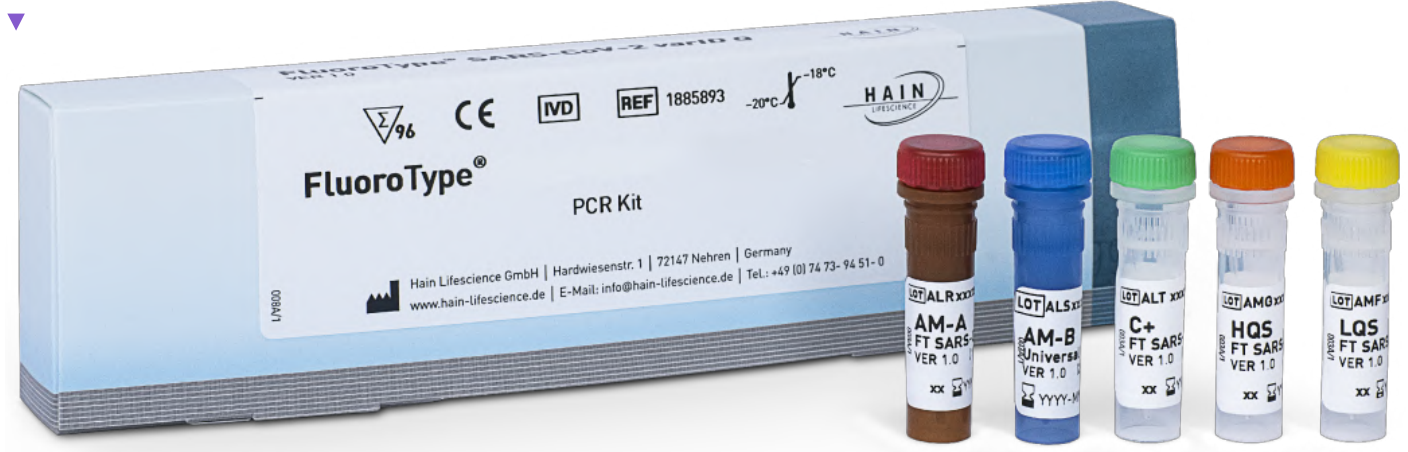
as an accurate and robust solution when compared to more conventional methods of TB diagnosis. Molecular tests can take as little as three to four hours to return a precise result from sputum samples, which allows clinicians to quickly determine and implement appropriate treatment plans for TB patients, initiating the correct course of treatment within hours. Rapid molecular tests do not require extensive specialist training to use and can be run at the touch of a button, to rapidly return easy-to-interpret results. The benefits offered by the molecular tests could, through their global adoption, provide a key means to help meet the United Nations' (UN) ambitious Sustainable Development Goal of ending TB epidemic by 2030. Through such global commitment, the prospect of worldwide implementation of rapid molecular tests gives hope to making TB a public health crisis of the past.

DETECTING ANTIBIOTIC RESISTANCES

Although TB is curable, it usually requires multiple months of multi-drug therapy with specialist antibiotics. Developing resistance to any of these drugs increases the risks of therapy failure and the spread of drug-resistant TB strains. Use of rapid molecular tests for the detection of antibiotic resistance in TB patients is a key solution for obtaining resistance information prior to treatment initiation and minimizing the risks of treatment failure. As a first-step diagnostic tool, advanced molecular assays are capable of multiplexing information from several resistance-mediating genes in one test or in a set of well-designed reflex tests. This one-step diagnostic approach provides means to a comprehensive assessment of one or several antibiotic resistances in each patient, ensuring that drug-resistant strains are caught reliably early on, and appropriate therapy is initiated.

In addition to rapid and sensitive detection of MTBC and drug resistances, molecular testing makes the identification of specific resistance-mediating mutations possible. Since

BRUKER'S TUBERCULOSIS
DIAGNOSTIC ASSAY
KIT FOR IMPROVED
MULTIPLEXING.



different mutations or their combinations may be associated with varying levels of drug resistance, understanding the nature of the mutation may have profound advantages for treatment decisions. For example, identification of a known mutation in the *inhA* promoter region indicates low-level INH resistance, a detail that may otherwise be missed in the conventional culture drug susceptibility testing (DST). Such information could be pivotal to the therapy choice, whereby a clinician may consider administration of high levels of INH to the patient as a potential option instead of or in addition to second-line antibiotics. Such tailored therapy solutions avoid the pitfalls of a one-size-fits-all approach and are more likely to lead to successful treatment outcomes.

CONCLUSION

To step up to the challenge of ending TB by 2030, implementation of innovative diagnostic solutions is urgently needed. Better diagnostics can boost case identification and drug resistance detection, both of which ultimately promote appropriate therapy, improve the chances of treatment success, and prevent the emergence of drug resistant strains. TB research centers play a leading role in trialing the latest diagnostic tools, including rapid molecular tests, and optimizing laboratory practices. Their pioneering work puts the advantages of rapid molecular tests in the spotlight and provides the basis for worldwide implementation of the most effective diagnostic approaches to help end TB HCMEA

REFERENCES

1. The World Health Organization, Global Tuberculosis Report (2022) p13. Accessed 31 January 2023. <https://www.who.int/publications/i/item/9789240061729>
2. Tuberculosis profile: South Africa (2023) TB profile. The World Health Organization. Available at: https://worldhealthorg.shinyapps.io/tb_profiles/?_inputs_&entity_type=%22country%22&lan=%22EN%22&iso2=%22ZA%22 (Accessed: April 13, 2023).
3. Dean, A.S. et al. (2020) Prevalence and genetic profiles of isoniazid resistance in tuberculosis patients: A multicountry analysis of cross-sectional data, PLOS Medicine. Public Library of Science. Available at: <https://journals.plos.org/plosmedicine/article?id=10.1371%2Fjournal.pmed.1003008> (Accessed: April 13, 2023).
4. New WHO recommendations issued to improve access to rapid molecular tests for the detection of TB and drug-resistant TB, (2021) <https://www.who.int/news/item/07-07-2021-new-who-recommendations-issued-to-improve-access-to-rapid-molecular-tests-for-the-detection-of-tb-and-drug-resistant-tb> [Date accessed 26.01.23]
5. World Health Organization, New WHO recommendations issued to improve access to rapid molecular tests for the detection of TB and drug-resistant TB, World Health Organization, 7 July 2021. <https://www.who.int/news/item/07-07-2021-new-who-recommendations-issued-to-improve-access-to-rapid-molecular-tests-for-the-detection-of-tb-and-drug-resistant-tb>
6. World Health Organization, Tuberculosis Key Facts, 14 October 2020. <https://www.who.int/news-room/fact-sheets/detail/tuberculosis>



Country

Focus:

SAUDI ARABIA



Striving to build sustainable healthcare systems

By **ELLY OKUTOYI**

Located in the heart of the Arabian desert, the Kingdom of Saudi Arabia (KSA) stands as a symbol of rich history and global influence. Founded in 1932 by King Abdulaziz, or Ibn Saud, it emerged from a series of remarkable conquests, notably the capture of Riyadh in 1902, the ancestral homeland of the House of Saud. Spanning a vast expanse of 2,149,690 square kilometers, Saudi Arabia boasts an enchanting coastline stretching 2,640 kilometers along the Arabian Gulf and the Red Sea. As of 2023, its population stands at 36,947,025, with a steady annual growth rate of 1.48%, marked by a significant foreign resident presence.

At the core of this captivating nation lies a healthcare system characterised by its three-tiered infrastructure, guaranteeing universal coverage. The system encompasses Primary Healthcare Services, offering fundamental preventive care and education, followed by hospitals and specialty centers constituting the secondary tier, providing advanced care and diagnostics. At the apex are specialized hospitals offering cutting-edge healthcare, encompassing life-saving procedures like organ transplants and advanced cancer treatments.

Remarkably, 62% of the nation's hospitals fall under the purview of the Ministry of Health, with the remainder managed by various government entities. Saudi Arabia proudly boasts over 40 JCI-accredited hospitals, a testament to its unwavering commitment to international quality standards. This robust healthcare framework is meticulously overseen and led by the Ministry of Health, which not only shapes policies but also delivers comprehensive healthcare services nationwide. The Ministry of Defence and the National Guard play pivotal roles in maintaining healthcare standards, while the Saudi Food & Drug Authority vigilantly oversees imports to ensure the safety of medical devices, pharmaceuticals,

and food products. The National Unified Company for Medical streamlines procurement, and the Cooperative of Health Insurance, operating independently, fosters fairness and transparency in the health insurance sector.

In this journey through Saudi Arabia's healthcare landscape, we witness the harmonious blend of tradition and innovation, all dedicated to safeguarding the well-being of its people.

SAUDI ARABIA'S WORLD-CLASS HEALTHCARE INSTITUTIONS

The Saudi government has invested heavily in healthcare infrastructure, resulting in a surge in the number of hospitals and primary healthcare centres. By 2021, the country boasted over 460 hospitals and 2,000 primary healthcare centres. This commitment to healthcare is underscored by increased government spending. In 2020, the government allocated SAR 147 billion (US\$39.2 billion) for the sector, a notable increase from previous years. In 2022, an impressive US\$36.8 billion was allocated for healthcare and social development, representing a substantial 14.4% of the national budget.

Specialised healthcare is well-represented by institutions like the King Khaled Eye Specialist Hospital, which offers 363 beds and handles complex and rare cases from across the Kingdom. The Saud Al-Babtain Cardiac Centre in Dammam has earned international recognition for high-quality healthcare services. King Fahad Specialist Hospital in Dammam, one of the largest specialized hospitals operated by the Ministry of Health (MOH), offers precise and sophisticated healthcare services. King Fahad Medical City, founded in 2004, is one of the Middle East's largest medical complexes with 1,095 beds, catering to a vast number of inpatients and outpatients across four hospitals.

Heraa Hospital, established in 1984, provides comprehensive care with 277 beds and 20 ICU



▲
FAHD BIN
ABDURRAHMAN
AL-JALAJEL, SAUDI
ARABIA'S MINISTER
OF HEALTH.

beds, covering various medical specialties. King Abdulaziz Hospital in Taif, operational since 2002, accommodates 500 beds, offering specialized care. King Saud Hospital in Unaizah, inaugurated in 1990, covers an extensive area and provides a wide array of healthcare services. King Fahad Hospital in Jeddah, founded in 1980, is the largest MOH hospital in the region and serves as a referential hospital for emergencies and traffic accidents. Saudi Arabia boasts world-class healthcare institutions with cutting-edge technology. King Fahd Medical City, for example, stands out as a beacon of healthcare excellence, featuring state-of-the-art technologies. The King Abdulaziz Medical Center in Jeddah, with its substantial bed capacity of 751, serves the healthcare needs of the western region.

Saudi Arabia's commitment extends to the development of five medical cities, including King Fahad Medical City in Riyadh, King Abdullah Medical City in Makkah, King Khalid Medical City in Dammam, King Faisal Medical City for Southern Regions, and Prince Mohammed Bin Abdulaziz Medical City for northern regions. These medical cities are expected to enhance medical tourism by fostering integration between local and global communities.

IMPROVED HEALTHCARE QUALITY INDICATORS, UHC, AND INVESTMENTS

Saudi Arabia has made remarkable progress in enhancing its healthcare system. Over the years, several healthcare indicators have shown significant improvement. According to the World Health Organization (WHO), life expectancy at birth in the country has steadily increased from 68 years in 1990 to an impressive 74 years in 2019. Additionally, there has been a substantial reduction in the infant mortality rate, plummeting from 32.5 per 1,000 live births in 1990 to an impressive 5.3 per 1,000 live births in 2019.

In 2019, the Saudi government launched Universal Health Coverage, ensuring that all Saudi citizens have access to free healthcare services. This initiative has played a crucial role in addressing prevalent health issues such as cardiovascular diseases, obesity, diabetes, and lower respiratory infections. Efforts have also been made to expand extended care services such as rehabilitation, long-term care, and home care. A greater distribution of these services will be made available across the Kingdom to ensure that individuals in remote areas have wider access to care options.

As the healthcare system advances, a key priority is to increase the number of healthcare professionals to match the growing population. Saudi Arabia has witnessed a 65% increase in healthcare professionals since the program's inception, indicating a fresh wave of talent to drive the vision forward. The newly established Health Holding Company (HHC), appointed by the government to oversee healthcare services, is at the forefront of digitizing and advancing the Kingdom's healthcare system. Taking over tasks previously handled by the Ministry of Health, the HHC will focus on providing medical services and care through upcoming health clusters, and independent companies specialising in various medical services.

In terms of healthcare personnel, Saudi Arabia employs 98,074 physicians, with 29.5% representing the Saudi workforce. The nursing workforce comprises 185,693 individuals, making up 36.7% of the Saudi workforce. Additionally, the country employs 28,312 pharmacists, accounting for 22.2% of the Saudi workforce.

Saudi Arabia has made substantial investments in healthcare infrastructure, resulting in a significant rise in the number of hospitals and primary healthcare centres. As of 2021, there were over 460 hospitals in the country, along with 2,000 primary healthcare centres, including

158 private health facilities. Looking ahead, the government has ambitious plans to privatise 295 hospitals and 2,259 healthcare centres by 2030. Notable achievements include the increase in the percentage of patients receiving emergency medical care within four hours of arrival, which rose from 26% in 2016 to an impressive 87% in 2020. Hospital and primary care services have also seen increased satisfaction levels, reflecting the positive systemic changes.

Patient satisfaction has also seen improvements, with satisfaction in hospital services increasing from 81.5% in 2019 to 84.06% in 2020. Satisfaction in primary care services has risen from 73% in 2018 to 80.52% in 2020, reflecting systemic changes across the board. Looking ahead, primary healthcare remains a key focus to ensure greater provision and consistency across the country, alongside increased availability of rehabilitation, long-term, and home care services. The emphasis is on elevating the quality of patient care, with plans for standardization aided by greater digitalization methods that will support resource management, activity levels, product quality, and performance.

These positive strides position Saudi Arabia as an attractive destination for foreign investment. Privatization targets and increasing demand create new market opportunities in

the Kingdom for private healthcare players and investors. Major private healthcare companies like Saudi German Health, Dr. Sulaiman Al-Habib Medical Group, and King's College Hospital have already announced plans to open or expand their services in Saudi Arabia, anticipating growth in demand over time.

DEMAND FOR BED SPACE

According to data from Export.gov, the healthcare landscape in Saudi Arabia is marked by a significant reliance on the public sector, which also incurs the majority of healthcare expenditures. This public healthcare domain represents a substantial 79% of the total bed capacity within the country. However, there is a notable shift on the horizon, as industry insiders anticipate a rapid expansion of the private sector, driven by recent government initiatives aimed at fostering increased private sector participation in healthcare provision.

Evidently, the Saudi government places a high priority on enhancing citizens' access to in-patient healthcare services. This commitment is exemplified by the remarkable growth in the number of hospital beds, which as of 2021 had reached 75,000, equating to 2.3 beds for every 1,000 people. Despite these significant strides, future projections indicate a pressing

IN NUMBERS

74 YEARS

SAUDI
ARABIA'S LIFE
EXPECTANCY.



need for an additional 20,000 beds by the year 2025 to adequately address the escalating demands for healthcare services. Illustrating this demand further, research conducted by Knight Frank underscores that Saudi Arabia must accommodate an additional 5,000 beds by 2020 and a staggering 20,000 beds by 2035, given the current bed-to-population ratio, in order to keep pace with the country's population growth.

Furthermore, when assessed against the global average of bed density, Saudi Arabia faced a shortfall of 14,000 beds in 2016. Alarming, this deficit is expected to widen to a staggering 40,000 beds by 2035. This alarming trend necessitates urgent attention to bridge this considerable gap in healthcare infrastructure. Adding

population aged above 65 years, Saudi Arabia currently requires anywhere between 6,400 to 9,600 LTC beds. Looking ahead to the year 2050, this requirement is projected to skyrocket to a range of 41,200 to 61,800 LTC beds, painting a vivid picture of the evolving healthcare landscape.

To meet these growing healthcare needs, the Kingdom of Saudi Arabia is poised to require substantial investments in the healthcare sector alone, estimated at a staggering SR250 billion (US\$ 66.65 billion) by the year 2030. This underscores the gravity of the situation and the imperative need for comprehensive planning and investments to bolster the healthcare infrastructure and services in the country.

hospitals and 2,300 primary health centres.

The Privatization Program, a key component of Vision 2030, aims to enhance private sector participation in various sectors, with a strong focus on healthcare. Within healthcare, it seeks to reduce public expenditure, improve access, enhance care quality, and boost efficiency. The program has led to the creation of healthcare clusters strategically positioned to serve regional demographics and needs, with dedicated consulting bodies overseeing each cluster.

These clusters, each serving around one million people, represent the future of Saudi healthcare. An early example, the First Health Cluster in the Eastern Province, comprises 10 hospitals and 95 primary healthcare centres, with oversight from consulting bodies with expertise from constituent hospitals.

The transformation of Saudi Arabia's healthcare system has attracted scholarly interest, with studies highlighting the rationale behind privatization. Privatisation addresses issues like fragmentation, fiscal dependency, dissatisfaction, and subpar care quality. The heavy reliance on government funding became unsustainable amid economic instability and increasing healthcare demands due to population growth and rising life expectancy.

Saudi Arabia's population is expected to reach 39.3 million by 2030, with life expectancy at 76.6 years, necessitating a shift towards healthcare privatisation. Foreign investors were granted 100% ownership in the healthcare sector, aligning with the government's commitment to privatization and positioning Saudi Arabia in the international medical tourism market.

Looking forward, Saudi Arabia plans to strengthen capacity building through public-private partnerships, focusing on specialised facilities in fields like oncology, gynaecology, and cosmetology. This strategy aims to meet growing healthcare demands and establish Saudi Arabia as a global healthcare leader.



to the complexity of the situation, the increasing life expectancy of both males and females in the country is poised to create a significant demand for long-term care (LTC) facilities.

This demand will be particularly centred around geriatric care, rehabilitation, and home healthcare services. Colliers International suggests that based on current international benchmarks of 4-6 beds per 1,000

TRANSFORMING HEALTHCARE THROUGH PRIVATISATION

Saudi Arabia's Vision 2030 initiative, launched in 2016, outlines an ambitious plan for the nation's development, including a massive US\$65 billion investment in healthcare infrastructure. A central aspect of this plan is increasing the private sector's contribution to healthcare from 40% to 65% by 2030, involving the privatization of 290

THE BOOMING DIGITAL HEALTH MARKET IN SAUDI ARABIA

The digital health market in Saudi Arabia is rapidly growing, driven by various factors and government initiatives. The Saudi government has allocated a significant budget of US\$1.5 billion for healthcare IT and digital transformation programs, emphasizing the importance of this sector.

The Ministry of Health has introduced an e-Health strategy that focuses on leveraging telemedicine to improve healthcare accessibility and quality, particularly in remote areas. Impressively, the country has achieved a remarkable telehealth adoption rate of 70%. Additionally, about 34% of young physicians are using artificial intelligence (AI) for diagnoses. Notably, the Seha Virtual Hospital, unveiled in 2022, is the world's largest of its kind.

Furthermore, the expansion of the insured population and the implementation of mandatory health insurance mandates have played a significant role in the growth of the digital health sector. Medical insurance has become a requirement for various segments of the population, including expatriates, Saudi employees in the private sector, and tourists, with strict enforcement increasing coverage.

As of August 2023, Saudi Arabia had made substantial progress in ensuring comprehensive health insurance coverage. The Council of Cooperative Health Insurance (CCHI) mandated a unified health insurance policy for all private-sector employers since July 1, 2018. Currently, there are 29 registered insurers, along with 186 brokers and service providers, covering 11.46 million insured individuals, including Saudi employees and expatriates, and their dependents. Leading insurance companies, such as Al-Rajhi Company, Aljazira Takaful Taawuni Company, SABB Takaful, and others, have played a pivotal role in expanding health insurance coverage.

Moreover, in 2022, Saudi Arabia allocated over US\$36 billion to healthcare, with a focus on advancing digital healthcare innovation. Proximie, a global health tech firm, has collaborated with physicians and healthcare networks in Saudi Arabia, offering a virtual operating room platform. This technology allows renowned surgeons to participate in real-time during surgeries conducted in clinics and hospitals across the country. It not only improves patient outcomes but also facilitates the exchange of clinical best practices among physicians, regardless of their geographic location.



THE EXPANSION OF THE INSURED POPULATION AND THE IMPLEMENTATION OF MANDATORY HEALTH INSURANCE MANDATES HAVE PLAYED A SIGNIFICANT ROLE IN THE GROWTH OF THE DIGITAL HEALTH SECTOR.

SAUDI ARABIA'S MEDICAL TOURISM GROWTH POTENTIAL

Saudi Arabia has the potential to excel in the medical tourism industry, particularly if it integrates it with religious tourism. A recent study by the strategic consulting and market research firm; BlueWeave Consulting revealed that the Saudi Arabia Medical Tourism Market is expected to grow at a CAGR of 4.6% during the forecast period 2022-2028. Market growth is anticipated owing to a well-established and robust healthcare ecosystem and the quintessential spiritual identity of Saudi Arabia, driving the market growth of the regional medical tourism market. Furthermore, the nation's unique potential lies in its religious significance, as it serves as a holy place for over one billion Muslims worldwide. Annually, approximately 5 million Muslims make the pilgrimage to Saudi Arabia for Hajj and

▲
SULAIMAN AL-HABIB MEDICAL GROUP (HMG), ONE OF THE LARGEST PROVIDERS OF COMPREHENSIVE HEALTHCARE SERVICES IN SAUDI ARABIA.

IN NUMBERS

106

NUMBER OF JCI-ACCREDITED HOSPITALS IN SAUDI ARABIA AS AT 2023.

KING FAISAL MEDICAL COMPLEX - A WORLD-CLASS HEALTH CENTER LOCATED IN THE SOUTHERN PROVINCE OF SAUDI ARABIA, ABHA.

Umrah, with the cities of Makkah and Madina naturally drawing millions of Muslim visitors. This significant influx of pilgrims presents an opportunity to promote medical tourism alongside religious tourism. Compared to its Middle Eastern counterparts, Saudi Arabia's medical tourism industry is relatively less promoted.

However, this oil-rich nation's wealth is reflected in its high-quality and luxurious medical facilities. What sets Saudi Arabia apart is not only the opulence but also the advanced technology and infrastructure that support its healthcare sector. Moreover, Saudi pharmaceuticals adhere to the stringent standards of the U.S. Food and Drug Administration, underscoring the country's commitment to excellence in healthcare.

The country's wealth has led to the establishment of numerous JCI-accredited healthcare institutions, setting the stage for further development in the medical tourism sector. Accreditation plays a pivotal role in building trust among international patients, and Saudi Arabia has made impressive strides in this regard. In 2012, more than 40 hospitals received accreditation from the Joint Commission International (JCI), a number that has grown to an incredible 106 to date. Many of these lie in the nation's capital, Riyadh, as well as the other populous cities of Jeddah and Medina. As of 2021, the number of hospitals in the Kingdom of

Saudi Arabia amounted to 497. This reflected an increase of 77 hospitals compared to 2011. The total number of hospitals across the country has been constantly on the rise in the last decade. The majority of Saudi doctors undergo training in Western countries, equipping them with the latest medical techniques and treatments, commanding a substantial level of confidence in international patients.

EVOLVING INBOUND AND OUTBOUND MARKETS IN 2021 AND BEYOND

In terms of the types of medical tourism, inbound medical tourism accounted for a larger market share in 2021 and is anticipated to witness a higher growth rate during the forecast period. Outbound medical travel, on the other hand, is predicted to expand significantly during the forecast period 2022-2028, owing to advances in medical technology and the development of more economical medical procedures in other countries. Though the healthcare facilities in the country are impressive, certain medical procedures require expensive medical devices and drugs, thereby making it unaffordable for certain patients. While government-aided outbound travel for medical purposes profits through it and aids the growth of Saudi Arabia's medical tourism market. Wealthy residents tend to travel to countries like the United States, Germany, the United Kingdom, and China for medical treatments. In fact, back in 2008, over 200,000 patients sought medical treatments abroad. According to the Saudi Ministry of Health, around 2,400 Saudi patients received treatment abroad, with a total cost of approximately US\$800 million.

Popular destinations for Saudi Arabian patients seeking treatment abroad include Britain, Germany, Canada, and the United States. In 2017, the cost of treatment abroad for 2,400 patients was approximately US\$330,000, with some of it covered by the government and the rest paid by the patients themselves. Interestingly, among those who funded their own medical trips, 49% preferred to go to Pakistan, especially for renal transplants, followed by the Philippines (28%), Egypt (11%), and the US (3.2%). Couples facing reproductive issues in Saudi Arabia also often choose to go abroad for treatment due to privacy considerations. However, it's essential to note that there has been a significant drop in the number of Saudi patients seeking medical treatment abroad. In 2019, 2,842 individuals went abroad for treatment, but in 2020, only 488 Saudis sought medical treatment abroad, representing an 82%



decline. This drop in numbers can be attributed to the more severe impact of the pandemic in 2020.

Arab nations account for a substantial portion of the global medical tourism industry, contributing around 30% of the US\$100 billion spent annually on healthcare tourism worldwide. The president of the Arab Tourism Organization, Bandar Al-Fihaid, anticipates that the medical tourism market will expand to over US\$200 billion in the next decade, underscoring the economic and investment opportunities it presents for the Arab region.

While Saudi Arabia's healthcare industry is on the rise, it faces stiff competition from Asian and Eastern European countries, which have been drawing a significant share of medical tourists from the Middle East. These nations offer quality healthcare at more affordable prices. Additionally, procedures like cosmetic surgery are widely accessible in various countries at a lower cost compared to Saudi Arabia. The cultural and political landscape in Saudi Arabia poses challenges for attracting medical tourists from regions where Westernized practices are the norm. Stringent dress codes and conservative societal norms may deter potential patients. Furthermore, the country's legal system, perceived as stricter, may not align with the preferences of medical tourists.

CAPITAL FINANCING CHALLENGES AND OPPORTUNITIES IN SAUDI ARABIA'S HEALTHCARE SECTOR

Capital financing plays a pivotal role in shaping Saudi Arabia's healthcare landscape. Financial institutions, primarily banks, show interest in healthcare investments, but their engagement tends to favor established players. For newcomers, securing project finance is a significant challenge, given the long-term commitment required, which often exceeds banks' customary risk appetite.

New entrants often turn to private investors, leading to licensing and operating agreements that involve



management fees. Alternatives include different ownership structures like Operating Company/Property Company Deal (Opco/Propco) models or joint ventures with investors. Each option has financial, operational, and legal implications, necessitating professional guidance.

The Saudi government promotes private-sector participation due to the substantial healthcare investment needed. Healthcare assets are emerging as a viable asset class amid limited opportunities in traditional markets. Healthcare projects with strong demographic demand continue to attract funding, even during economic uncertainties. The healthcare sector's resilience, often considered "recession-proof," has driven interest in sale-and-leaseback approaches, where operators create PropCo/OpCo structures and sell real estate assets to institutional investors, subject to long-term lease agreements.

The substantial investment requirement restricts retail investors, but Real Estate Investment Trusts (REITs) could be a solution. Colliers estimates that REITs in Saudi Arabia

could unlock substantial property value, offering diversification and income streams for investors while supporting the healthcare sector's growth.

LOCALIZATION OF PHARMACEUTICAL MANUFACTURING IN SAUDI ARABIA

The pharmaceutical and medical devices industries in Saudi Arabia are experiencing significant advancements, with a particular focus on localizing manufacturing operations. Saudi Arabia's pharmaceutical sector plays a crucial role in the Gulf Cooperation Council (GCC), accounting for approximately 60% of pharmaceutical product purchases in the region. This sector is set for substantial growth, with an expected annual growth rate of 5.5%, projected to reach a market value of US\$10.8 billion by 2023. Notably, the pharmaceutical market is concentrating its efforts on producing drugs for diabetes, cardiovascular diseases, antibiotics, and cancer treatment, which present promising prospects.

Moreover, Saudi Arabia's pharmaceutical sector is already the



CURRENTLY, THE KINGDOM BOASTS 40 LOCAL PHARMACEUTICAL FACTORIES, COVERING 29% OF ITS PHARMACEUTICAL NEEDS, GENERATING REVENUE EXCEEDING SAR1 BILLION (US\$266.6 MILLION).

largest in the Middle East in terms of investment, representing about 30% of the region's total value. Currently, the Kingdom boasts 40 local pharmaceutical factories, covering 29% of its pharmaceutical needs, generating revenue exceeding SAR1 billion (US\$266.6 million). The government is actively incentivizing local manufacturing to shift from low-value medical commodities to high-value medical products, fostering an environment conducive to innovation and growth.

Some of the high-value medical products showing promise in Saudi Arabia include COVID-19 testing kits, personal protective equipment (PPE), emergency room equipment, rehabilitation equipment, diagnostic equipment, orthopaedic devices, dental appliances and prosthetics, glucometers, implants, medical consumables, and advanced wound management products.

In 2022, the Local Content and Government Procurement Authority (LCGPA) signed seven agreements aimed at localizing the pharmaceutical industry and transferring knowledge, partnering with companies such as Tabuk Pharmaceuticals and the Saudi Pharmaceutical Industries and Medical Appliances Corporation (SPIMACO). These agreements target various pharmaceutical products, including thrombin inhibitors, antibiotics, muscle contraction treatments, anticoagulants, and immunosuppressants. They come with incentives, including listing on the mandatory list of national products. The localization of these products is expected to contribute significantly to the GDP, with cumulative gains of SAR500 million (US\$133.3 million) over the next decade. This initiative also involves direct investments of up to SAR145 million (US\$38.7 million), aiming to cover SAR 111 million (US\$29.6 million) of government demand annually, ultimately aligning with the goals of Saudi Vision 2030.

ENHANCING SAUDI ARABIA'S PHARMA SUPPLY CHAIN FOR IMPORT REDUCTION

The pharmaceutical supply chain in Saudi Arabia heavily relies on imports, making it susceptible to various risks. The Saudi government is committed to reducing this dependency by localising the production of active pharmaceutical ingredients, generic and branded drugs, and packaging. This aligns with Saudi Arabia's Vision 2030 initiative, emphasising local pharmaceutical production, technology transfer, clinical trials, and workforce development. By producing these essential pharmaceutical components domestically, Saudi Arabia aims to enhance economic resilience and self-sufficiency, mitigating risks related to global economic fluctuations, political instability, and natural disasters.

Aligned with Saudi Arabia's Vision 2030 initiative, the government actively encourages local pharmaceutical production, technology transfer, clinical trials, and workforce training. This approach signals a clear message to pharmaceutical companies: the government prioritizes investment within Saudi Arabia. Vision 2030 outlines strategic objectives for the healthcare industry, including improving the pharmaceutical sector's business environment and increasing the private sector's contribution to healthcare expenditure. The National Transformation Program (NTP), an integral part of Vision 2030, supports these goals, with plans for healthcare privatization and increased private

sector participation.

Pharmaceutical investment in Saudi Arabia is on the rise, with multinational giants such as Novartis, Pfizer, Sanofi, Merck, and GlaxoSmithKline establishing a presence through direct investment or local partnerships. The successful initial public offering of Jamjoom Pharma, raising SAR1.26 billion (US\$340 million), underscores growing confidence in the Saudi economy's potential.

The increasing demand for healthcare services, driven by factors such as an aging population, rising chronic diseases, and heightened public awareness, serves as a catalyst for pharmaceutical investment. According to Fitch Solutions, Saudi Arabia's pharmaceutical market is expected to reach SAR56.6 billion (US\$ 56.09 billion) in 2027, with an annual growth rate of 5.2%.

Saudi Arabia's government has also introduced regulatory reforms to encourage investment and support the local pharmaceutical industry. Beyond the domestic market, the Kingdom's strategic location and robust logistics infrastructure make it an attractive hub for pharmaceutical companies looking to serve the broader Middle East and North Africa region.

Meanwhile, the medical devices market is thriving in Saudi Arabia and is estimated at a value of US\$2 billion, with an impressive annual growth rate of approximately 10%. The growing emphasis on healthcare and increased demand for medical services create a strong market for medical equipment within the country. Recent regulatory changes, such as the Medical Device Interim Regulations, have transformed Saudi Arabia into a regulated market for all types of medical devices, requiring Saudi Food & Drug Authority (SFDA) Market Authorisation for manufacturers looking to supply medical devices within the Kingdom. This regulatory framework opens doors for medical device manufacturers, service providers, and dealers to make substantial progress in the Saudi market.

Evidencing the growth potential of

the medical devices sector, major players in the medical manufacturing industry, such as NABD Medical Industries, have made substantial investments, with NABD investing a significant sum of US\$61.9 million in the Saudi Healthcare Market. Other notable investors in this lucrative market include companies like Namat, Future Vision, and many more who have also made substantial contributions.

CHALLENGES IN THE SAUDI HEALTHCARE SECTOR

Saudi Arabia's healthcare system, though making strides, faces pressing challenges across accessibility, quality, and overall effectiveness. Chief among these challenges is a severe shortage of healthcare professionals, notably in rural areas, with an estimated deficit of 15,000 doctors and 20,000 nurses. This shortage leads to extended waiting times and limited access to care, prompting government efforts like establishing new medical schools and hiring foreign healthcare workers.

Another major issue is the system's focus on curative care over preventive measures, contributing to rising rates of

non-communicable diseases (NCDs) like diabetes and cardiovascular diseases. NCDs now top the country's causes of mortality, necessitating more substantial efforts to improve public health and combat these diseases. Private health insurance primarily relies on employers, covering around 67% of policies, leaving over 30% of the population dependent on public healthcare services. This strains public facilities and leads to lengthy wait times.

Mental health services face significant limitations, driven by cultural stigmas and a shortage of professionals, particularly in rural areas. With only 2.2 psychiatrists per 100,000 people, compared to the global average of 9.0, access to mental healthcare is constrained. Additionally, the healthcare system's heavy reliance on government funding calls for exploration of alternative financing mechanisms to ensure long-term sustainability. These challenges underscore the need for a comprehensive strategy to revamp and enhance Saudi Arabia's healthcare system to meet the demands of its growing population effectively HCMEA





NAVIGATING THE GLOBAL DIABETES EPIDEMIC

Challenges, projections and solutions for the 21st century

In an era where unchecked health conditions can pose grave threats to individuals worldwide, diabetes mellitus emerges as a formidable adversary. This chronic ailment, characterized by fluctuating and persistently elevated glucose levels, can unleash significant havoc on the human body. A chilling prophecy recently published in the Lancet scientific journal in June 2023 warns of a staggering statistic: by the year 2050, an estimated 1.3 billion individuals across the globe could find themselves grappling with the burdensome weight of diabetes.

This metabolic disorder, primarily known for its association with high blood sugar levels, divides into two distinct types, each presenting its unique challenges. Yet, amidst the sobering statistics and the mounting urgency to address this health crisis, one resounding truth emerges: the key to combating diabetes lies in effective self-management. The importance of this self-guided journey cannot be overstated, as it serves as the front line of defense against the dire consequences that diabetes can impose.

From the spectre of blindness to the looming threat of heart disease, kidney failure, and even limb amputations, the stakes are undeniably high for those living with diabetes. However, the path to successful self-management often proves to be a difficult one, riddled with obstacles that many struggle to surmount.

GLOBAL DIABETES LANDSCAPE: AN ALARMING RISE AND URGENT CONCERNS

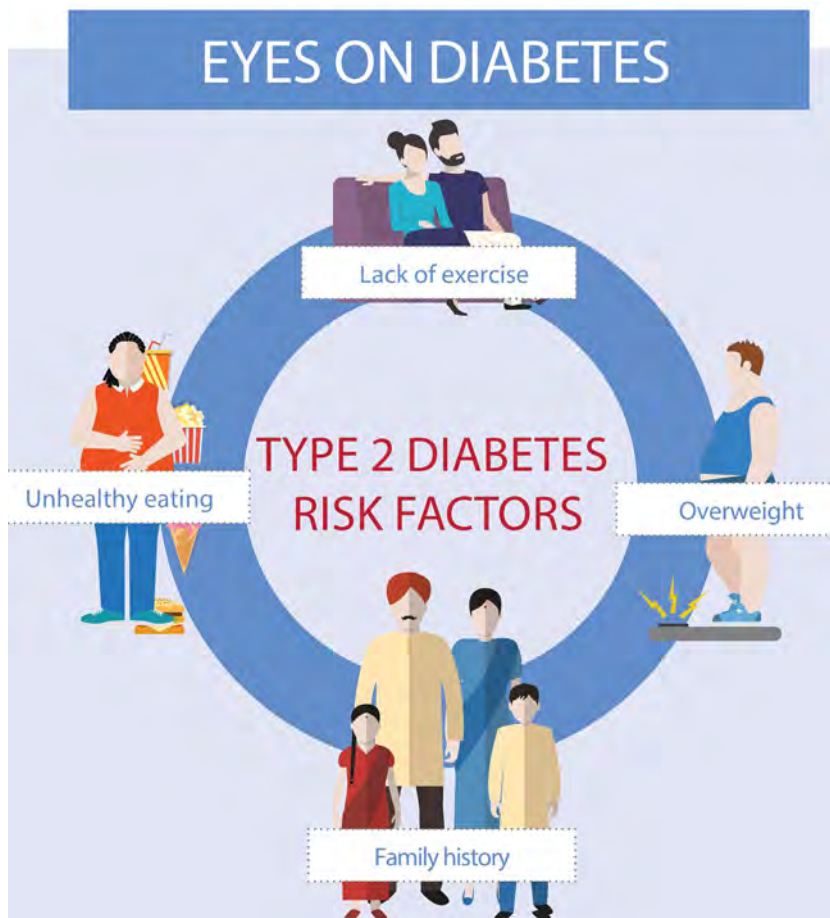
The global prevalence of diabetes presents a growing concern, with a startling statistic revealing that only 55% of individuals with diabetes are aware of their condition. This global surge in diabetes is primarily fuelled by the escalating incidence of Type 2 diabetes, closely intertwined with the rising tide of obesity and

shifting demographics.

Type 2 diabetes, which accounts for the majority of diabetes cases, can often be more manageable if detected early. The International Diabetes Federation (IDF) emphasizes the potential for "reversal" when diabetes is diagnosed in its initial stages or even during prediabetes. Prediabetes is characterized by elevated blood sugar levels that are higher than normal but not yet at the diabetes threshold.

Zooming in on the Asian continent, India stands at the forefront of the diabetes epidemic,

By **LORRAINE ABWAO**





SHOCKINGLY, ONLY 46 PERCENT OF INDIVIDUALS LIVING WITH THE DISEASE IN AFRICA ARE AWARE OF THEIR STATUS, IN STARK CONTRAST TO THE GLOBAL AVERAGE OF 55 PERCENT.

with over 101 million people currently living with diabetes—a significant increase from 70 million in 2019, as reported by the Indian Council of Medical Research. Alarming, an additional 136 million individuals in the country teeter on the edge of prediabetes. Meanwhile, in China, diagnosed cases of Type 2 diabetes are expected to climb at a compound annual growth rate (CAGR) of 2.21%, surging from 57.4 million in 2022 to an estimated 63.3 million by 2028.

DIABETES IN AFRICA: A LOOMING CRISIS REQUIRING URGENT ATTENTION

Africa faces an alarming diabetes crisis. With 24 million adults affected, which translates to

one in every 22 individuals, the continent is grappling with a severe diabetes burden. This burden is projected to surge by a staggering 129 percent to reach 55 million by 2045, marking the most significant increase globally, as reported by the International Diabetes Federation (IDF). Moreover, the dire consequences of this epidemic are evident, with 416,000 diabetes-related deaths occurring in Africa in 2021 alone. Notably, one in every eight live births in Africa is affected by hyperglycaemia in pregnancy, emphasising the profound impact of diabetes on maternal and child health. Zooming in on specific countries, Egypt ranks among the top 10 nations globally with the highest prevalence of diabetes in adults aged 20–79 in 2021. Algeria and Morocco also make the top 10 list for countries with the highest proportion of people aged 0–19 with type 1 diabetes. These statistics underscore the widespread nature of the diabetes crisis across the continent.

As the world gears up for World Diabetes Day 2023, Kenya is confronting a diabetes crisis, with a staggering 821,500 people currently living with the condition. According to the World Health Organization (WHO), diabetes prevalence in Kenya currently stands at 3.3%, a number projected to rise to 4.5% by 2025.

In South Africa, diabetes has emerged as the second-leading cause of death, closely following tuberculosis. The country is witnessing a concerning surge in the number of individuals living with diabetes, with estimates suggesting around 4.6 million South Africans are affected, according to the WHO.

Perhaps one of the most pressing issues is Africa's status as a world leader in undiagnosed diabetes. Shockingly, only 46 percent of individuals living with the disease in Africa are aware of their status, in stark contrast to the global average of 55 percent. This discrepancy highlights the urgent need for improved awareness and healthcare infrastructure.

Adding to the complexities of the diabetes challenge in Africa is the region's second-lowest expenditure globally on diabetes-related healthcare, totalling a mere US\$13 billion. This lack of financial resources presents a significant barrier to managing and treating the disease effectively.

While Type 2 diabetes garners significant attention due to its prevalence, the plight of those with Type 1 diabetes, particularly children, often remains overlooked in Africa. Shockingly, only one in every two individuals with Type 1 diabetes,

▲
KENYA DIABETES MANAGEMENT AND INFORMATION CENTRE (DMI KENYA) PERSONNEL DURING A PAST COMMUNITY OUTREACH IN GARISSA.

the most common form of childhood diabetes, has access to insulin treatment in the region. Over the past decade, Africa has witnessed a fivefold increase in Type 1 diabetes incidence among children and adolescents under 19, soaring from 4 per 1,000 youngsters to over 20 per 1,000. Furthermore, Type 2 diabetes, historically an adult affliction, has begun affecting younger populations, raising concerns about its long-term impact.

Gestational diabetes, a form of diabetes occurring during pregnancy, presents additional challenges in Africa. Women with gestational diabetes often encounter issues such as high blood pressure, preterm birth, and labour complications, further underscoring the urgency of addressing diabetes comprehensively.

COMBATting THE RISING TIDE OF DIABETES IN AFRICA

The rising tide of diabetes in African countries, encompassing both type 1 and type 2 cases, presents a significant challenge worsened by a lack of widespread diagnosis. In response to this escalating challenge, Kenya's Ministry of Health has taken substantial steps by establishing diabetes clinics in all county hospitals and strategically placing six centres of excellence across the nation. These centres, located at Kenyatta National Hospital, Moi Teaching and Referral Hospital, Nakuru Provincial General Hospital, Machakos County Referral Hospital, Coast Provincial General Hospital, and Kakamega County Referral Hospital, are designed to provide high-quality diabetes prevention, screening, diagnosis, and care. Kenya's dedication to diabetes management has even drawn patients from neighbouring African countries, including Uganda, Rwanda, Burundi, the Democratic Republic of Congo, Tanzania, Ethiopia, South Sudan, and Nigeria.

Furthermore, Kenya's Ministry of Health has made significant strides by developing comprehensive guidelines and manuals, including the National Clinical Guidelines for the Management of Diabetes Mellitus (2nd edition, 2018) and the Competency-Based Training Curriculum on Diabetes Mellitus for healthcare providers. These resources empower healthcare professionals with the latest knowledge and skills to deliver effective diabetes care. Additionally, Kenya has collaborated with partners such as the Kenya Diabetes Management and Information Centre, Novo Nordisk, and Roche Diabetes to launch the Changing Diabetes in Children (CDiC)

program. This initiative has transformed diabetes care for children and adolescents by providing insulin and essential medical supplies at no cost.

In Ghana, the Ministry of Health, in collaboration with Sanofi, recently launched the Access to Diabetes Care program. As part of this initiative, the IDF School of Diabetes is providing training to over 170 healthcare professionals in Ghana through an online course designed for diabetes educators. This course equips healthcare professionals with the knowledge and competencies to educate people with diabetes, promote healthy lifestyles, and support optimal diabetes control.

Pharmaceutical companies are playing a pivotal role in diabetes management by collaborating with healthcare providers and local regulatory agencies. These partnerships empower patients with the necessary tools and medical information to make informed decisions about their diabetes. In South Africa, the National Strategic Plan (NSP) for the Prevention and Control of Non-Communicable Diseases (2022-2027) sets ambitious targets for diabetes care, encompassing screening, treatment, and control.

Furthermore, the World Health Organization (WHO) is also making substantial efforts. This includes the inclusion of human insulin cartridges and pre-filled human insulin pens in

IN NUMBERS

57.6%

DISCOVERY HEALTH'S MEDICAL MARKET SHARE IN SOUTH AFRICA

A MEDICAL PRACTITIONER PERFORMING POINT-OF-CARE DIABETES TESTING FOR A CHILD.





the Model List of Essential Medicines, which is expected to benefit individuals with diabetes not only in Africa but worldwide. Additionally, WHO supports African countries through the PEN Plus initiative, which seeks to enhance access to diagnosis, treatment, and care for chronic diseases, including diabetes.

TRANSFORMATIVE COLLABORATIONS BEYOND AFRICA

Beyond Africa, innovative collaborations are making significant strides in diabetes care. In Lebanon, OptiFreight Logistics and Journey Biosciences, Inc. have joined forces to enhance point-of-care diabetes care by improving transportation and visibility across all modes. In the Middle East, Nabta Health, a women's healthcare platform in the United Arab Emirates, has strategically partnered with GluCare.Health to combat gestational diabetes and launch a weight management pilot program targeting chronic conditions, collaborating with Novo Nordisk.

In recent developments, the World Health Organization (WHO) took a significant step by including long-acting analogue insulins in its Model List of Essential Medicines (EML). This addition recognises the importance of these insulins for diabetes patients globally and promotes increased competition in the market. However, analogues still remain more expensive than human insulin and represent a minority of insulin usage in low- and middle-income countries (LMICs). To bridge this gap, a concerted

effort is needed to expand access to all insulin types, ensuring healthcare professionals can offer the best treatment options for their patients.

Furthermore, the expiration of patents on certain analogue insulins opens doors for biosimilar versions, potentially leading to more competitive pricing in LMICs. The WHO's Global Diabetes Compact, launched in 2021, aims to improve global access to diabetes care, set clear goals, and provide a framework for change. The World Health Assembly has ratified the first-ever global targets for diabetes, including the goal of achieving 100% access to affordable insulin and blood glucose self-monitoring for people with type 1 diabetes by 2030.

In addition to these efforts, initiatives like the "SUGAR-FREE JUDE" diabetes animation movie by the Merck Foundation aim to raise awareness about diabetes prevention and early detection, particularly among children and youth. Novo Nordisk's collaboration with Aspect Biosystems to develop bio-printed tissue therapeutics represents an innovative approach to improving the lives of individuals with diabetes and obesity.

Diabetes Day, observed annually on November 14, serves as a global platform to highlight the importance of diabetes awareness and action. The theme for World Diabetes Day 2023, "Know your risk, Know your response," aligns with the International Diabetes Federation's (IDF) emphasis on Diabetes Awareness Month, showcasing the significance of local and global initiatives and collaborations in advancing the fight against diabetes and offering hope to those living with this chronic condition.

ADVANCES IN DIABETES MANAGEMENT

Advances in diabetes management are transforming the global landscape, with a focus on expanding access to innovative biosimilar insulin products for both Type 1 and Type 2 diabetes. GlobalData forecasts a positive outlook for the Type 2 diabetes market, particularly in major markets like the United States, France, Germany, Italy, Spain, the United Kingdom, Japan, China, and India. In 2019, this market was valued at US\$45.9 billion, and it's expected to reach US\$136.2 billion by 2029, primarily driven by the development of biosimilar therapies, particularly from India and China.

Despite concerns about rising insulin costs, key manufacturers like Sanofi, Novo Nordisk, and Eli Lilly are addressing pricing issues. Sanofi, for example, has announced a 78% reduction in the US list price of Lantus, along with a price cap

of US\$35 for commercially insured individuals, starting January 2024. Eli Lilly and Novo Nordisk are also reducing the US prices of their insulins.

Smart insulin pens are a notable advancement in diabetes technology, connecting to smartphone apps and using continuous glucose monitoring (CGM) data to provide dose recommendations and reminders. These technologies offer real-time insights into insulin management. Companies like Guidepost and Dexcom are introducing AI-powered chatbots and advanced CGM systems, respectively, to enhance diabetes management.

Automated insulin delivery (AID) systems are revolutionising diabetes care by leveraging data and algorithms to improve blood glucose control and reduce the risk of hypoglycaemia. Additionally, innovations in insulin injection practices are reshaping the diabetes landscape.

Novel pharmaceutical developments like SGLT-2 inhibitors and GLP-1 agonists are significantly impacting glucose management while reducing the risk of cardiovascular disease and weight gain. Advanced injectable medications are also being introduced for individuals with Type 2 diabetes and obesity.

Data-driven approaches are leading to interconnected digital solutions that empower individuals with diabetes to manage their health more effectively. Promising developments in the prevention and reversal of Type 2 diabetes through digital therapeutics are on the horizon.

POORER POPULATIONS MISS OUT ON ACCESS TO INSULIN AND TREATMENT CHOICE IN LMICs

The global diabetes crisis looms large, with projections painting a bleak picture: by 2030, an astounding 643 million people will grapple with this condition, and that number is set to skyrocket to a staggering 783 million by 2045. However, the brunt of this disease falls disproportionately on low- and middle-income countries (LMICs), where a staggering 80% of the 463 million adults with diabetes reside.

At the heart of this dire situation lies a stark and troubling reality: access to insulin, a life-saving medication crucial for managing diabetes, remains profoundly unequal in LMICs. A report by the Access to Medicine Foundation underscores the pressing need for pharmaceutical companies that produce insulin to address this stark disparity.

Insulin, a medical marvel discovered a century ago, has transformed Type 1 diabetes from a certain death sentence into a manageable,

long-term condition. Yet, this transformation has not reached everyone. In LMICs, a vast number of people still lack access to essential diabetes products, especially insulin, which is vital for their survival and well-being.

The situation is particularly dire in 24 countries where no insulins are even registered, representing the first critical step toward making insulin available in a country. This alarming lack of access disproportionately affects poorer populations, particularly in LMICs.

Daily access to insulin is not a luxury; it's a necessity for survival, particularly for patients with Type 1 diabetes and many with Type 2. Regrettably, insulin products are often out of reach for those residing in LMICs. Even when available, they are frequently unaffordable. The harsh reality is that without access to insulin, countless diabetic children and adults will endure needless suffering and premature death due to this life-long, chronic disease.

THE UNENDING STRUGGLE FOR INSULIN ACCESS WORLDWIDE

This problem of unequal access to insulin is not new; it has persisted since insulin's discovery, manufacture, and sale. However, it is becoming

IN NUMBERS

US\$136.2B

TYPE 2 DIABETES MARKET VALUE PROJECTION BY 2029 AS PER GLOBALDATA

REFILLABLE INSULIN PENS FOR GIVING INSULIN INJECTIONS.





ASPEN PHARMACARE'S LOW-COST GOVERNMENT TENDER SYSTEM IS SET TO PRODUCE 16 MILLION VIALS OF INSULIN IN THE COMING YEAR, EACH PRICED AT A GUARANTEED CEILING OF JUST US\$3 PER VIAL.

▲ SOUTH AFRICAN-BASED ASPEN PHARMACARE- PROVIDER OF SPECIALTY AND GENERIC PHARMACEUTICALS FOR THE TREATMENT OF A RANGE OF ACUTE AND CHRONIC CONDITIONS.

increasingly acute. Managing diabetes imposes a staggering global burden, as evidenced by the total health expenditure due to diabetes in adults reaching US\$966 billion in 2021. The number of people with diabetes is projected to reach a daunting 643 million worldwide by 2030, with Type 2 diabetes cases surging most rapidly in LMICs. Poverty, conflict, and disease outbreaks exacerbate the situation. Local and global disruptions disrupt supply chains, damage fragile healthcare systems, and jeopardize the availability and affordability of insulin.

The affordability of insulin exacerbates this crisis. While analogue insulins, vital for diabetes management, are readily available in high-income and upper-middle-income countries, 15 of the

27 low-income countries lack any registered analogue insulin, limiting treatment options for patients.

Analogue insulins, often priced significantly higher than human insulins, present formidable barriers, especially in LMICs. Historically, pharmaceutical companies have focused on expanding access to human insulins in LMICs, with less attention given to analogues. However, the importance of ensuring access to both human and analogue insulins is gaining recognition, alongside the need for biosimilar products to encourage competition.

Quality-assured biosimilar insulins hold immense potential to enhance both availability and affordability. As several patents on long-acting insulins have recently expired, biosimilar versions can emerge as viable alternatives. While global insulin manufacturers continue to dominate the market, several biosimilars companies already produce and market insulin products in LMICs. Nevertheless, these companies face significant challenges in scaling up, competing with established brands, and navigating complex regulatory requirements.

In essence, addressing the glaring insulin access gap in LMICs is not just a healthcare imperative; it's a moral obligation. Pharmaceutical companies, global health stakeholders, and regulatory bodies must join forces to ensure equitable access to life-saving insulin for all individuals living with diabetes, regardless of their geographic location or economic status.

EXPLORING LOCAL INSULIN PRODUCTION FOR SUSTAINABLE ACCESS

In the last decade, insulin manufacturers have made concerted efforts to enhance insulin access in Low- and Middle-Income Countries (LMICs). However, these initiatives have often been fragmented and project-based, focusing on product types (e.g., human insulins), or patient groups (e.g., children). As a result, sustained access for insulin-dependent patients, who require lifelong treatment, has remained elusive. Nevertheless, there is a growing shift towards adopting more sustainable and systemic approaches to expand insulin access in LMICs.

This shift entails the development of targeted strategies tailored to the unique needs of populations lacking effective healthcare access. Collaborative partnerships are also emerging to strengthen local health systems and supply chains, recognizing that access to insulin should be complemented by access to monitoring and

delivery devices, such as glucometers and needles, essential for effective diabetes management.

In response to this pressing healthcare crisis, African nations are taking significant steps to bolster their medical diagnostics capabilities and domestic expertise. Square Pharmaceuticals, for instance, is poised to establish a production facility in Kenya, with the aim of reducing the cost of essential diabetes medications. Similarly, Aspen Pharmacare has partnered with Novo Nordisk to create South Africa's first insulin production facility, marking a significant stride towards self-sufficiency in medication production.

Katrine DiBona, Novo's corporate vice president for global public affairs and sustainability, highlights the severity of the global insulin shortage, with an estimated 60 million people worldwide in dire need but unable to access it, particularly in lower- and middle-income countries. Aspen Pharmacare's low-cost government tender system is set to produce 16 million vials of insulin in the coming year, each priced at a guaranteed ceiling of just US\$3 per vial. This initiative reflects a broader commitment to ensuring that life-saving insulin is within reach for people living with diabetes in Africa.

Eli Lilly, in a commendable move, has

partnered with Egypt's EVA Pharma to provide insulin's active pharmaceutical ingredients (API) at a significantly reduced cost. This collaboration facilitates faster and more affordable production of this vital medication. Furthermore, it includes pro-bono technology transfer to empower EVA Pharma to handle insulin vials and cartridges, with the goal of delivering 30 million insulin doses by 2030.

Dr. Bente Mikkelsen, Director of the Non-Communicable Disease (NCD) Programme at the World Health Organization (WHO), commends these initiatives. She emphasizes that controlling diabetes is pivotal for achieving Sustainable Development Goal (SDG) targets on NCDs, underlining the importance of early diagnosis, treatment, and universal health coverage, given that 74% of global deaths result from NCDs.

These local manufacturing initiatives align seamlessly with governments' aspirations for improved health and economic outcomes, aligning with the 2030 Agenda and its health-related Sustainable Development Goals. As access to insulin expands and local production capacity strengthens, Africa takes significant strides toward ensuring equitable healthcare access for all, particularly those living with diabetes **HCMEA**

SOUTH AFRICAN PRESIDENT CYRIL RAMAPHOSA VISITS ASPEN PHARMACARE MANUFACTURING FACILITY IN QOBERHA.



Philips pioneers AI integration in cardiac ultrasound for enhanced care



NETHERLANDS — Royal Philips is enhancing cardiac care by integrating artificial intelligence (AI) across its cardiac ultrasound and care offerings. At the European Society of Cardiology Congress, Philips showcased the Philips Ultrasound Compact System 5500 CV, which features an AI-powered automation tool for assessing

left ventricle function. This portable platform is aligned with the EPIQ CVx and Affiniti CVx systems, streamlining user interfaces and workflows. Philips is also introducing 3D quantification and heart modeling, automated 2D Doppler and length measurements, and reproducible 2D strain quantification and mitral valve analysis in its cardiac

ultrasound portfolio. By integrating AI, Philips aims to improve diagnostic confidence and streamline workflows, addressing challenges such as operator shortages and growing patient volumes in cardiac care. Philips also offers remote cardiac monitoring solutions powered by AI through Philips ECG Solutions.

THE PRIMARY OBJECTIVE OF THESE GUIDELINES IS TO TACKLE THE ESCALATING PROBLEM OF CHILDHOOD OBESITY.

Siemens Healthineers unveils innovative mammography system with wide-angle tomosynthesis



GERMANY — Siemens Healthineers has introduced the Mammomat B.brilliant mammography system at the European Society of Breast Imaging congress in Spain. This groundbreaking system utilizes wide-angle tomosynthesis technology,

featuring a 50° tube movement angle and a remarkable acquisition speed that is approximately 35% faster than competing devices, enhancing patient comfort during examinations. Verena Schön, Head of X-Ray Products at Siemens Healthineers, emphasizes the importance of delivering rapid mammography results to reduce patient anxiety. The system incorporates ComfortMove functionality, streamlining scan preparation and improving operator ergonomics.

Mammomat B.brilliant is the first Siemens Healthineers device to feature PlatinumTomo, a comprehensive innovation package that includes wide-angle tomosynthesis, a cutting-edge detector, the Flying Focus Spot tube, and Premia AI reconstruction for superior image quality. This advancement produces dynamic three-dimensional images and significantly increases the

detection rate for invasive cancer while reducing radiation dose.

Siemens Healthineers has also received FDA clearance for the portable 1.5 Tesla MRI system, MAGNETOM Viato.Mobile, featuring BioMatrix Technology and Deep Resolve image reconstruction for enhanced image quality. Jane Kilkenny, VP of Magnetic Resonance at Siemens Healthineers North America, highlights the impact of this technology on patients with limited access to MRI scanners.

Furthermore, Siemens Healthineers subsidiary Varian is set to acquire Aspekt Solutions, a radiology and radiation oncology services provider, to expand its oncology solutions portfolio. Chuck Lindley, VP of Advanced Oncology Solutions at Varian, stresses the importance of this acquisition in addressing the evolving challenges in cancer care.

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Danaher slashes prices on TB test cartridges, commits to zero-profit sales



USA — Danaher Corporation has announced a groundbreaking initiative to provide Cepheid's Xpert MTB/

RIF Ultra diagnostic test cartridges for tuberculosis (TB) detection at a significantly reduced cost of US\$7.97 per cartridge, down from US\$9.98. This move reflects Danaher's commitment to supporting global health initiatives and addressing the urgent need for affordable TB testing worldwide. The decision follows pressure from international health and aid organizations, including the Global Fund, Stop TB Partnership, and USAID, which initially advocated for a 50% price reduction.

The beneficiaries of this initiative are the Global Fund to Fight AIDS, TB, and Malaria, and less-developed

countries eligible for Cepheid's Global Access Program. Tuberculosis claims approximately 1.5 million lives annually, making it the world's deadliest infectious disease.

Danaher's cost-neutral approach in providing these cartridges underscores its dedication to addressing TB's global impact and making testing accessible to those in need. This initiative builds on a decade-long partnership between Cepheid and the Global Fund, working toward the goal of eradicating TB worldwide by 2030 through expanded access to essential diagnostic testing solutions.

Functional Fluids expand its sickle cell testing platform to Africa through Nigeria

NIGERIA — Functional Fluidics, a US-based biotechnology company, is expanding into Africa by opening offices in Lagos, Nigeria. The company has developed a platform technology to assess red blood cell health, primarily focusing on making the test available to pharmaceutical companies developing

therapeutics that affect red blood cells' health. Sickle cell disease (SCD) is a globally prevalent genetic disorder, with a significant burden in Sub-Saharan African countries. Functional Fluidics aims to expand access to its diagnostic tools in Africa to help individuals with SCD receive appropriate care. The

company recently raised US\$3.1 million to support its mission and plans to become a leading authority in red blood cell health. Expanding into Nigeria in 2023 is part of the company's proactive approach to address the challenges posed by SCD in the region.

JOOTRH receives diagnostic equipment from JICA to expand its telepathology capabilities

KENYA — The Jaramogi Oginga Odinga Teaching and Referral Hospital (JOOTRH) in Western Kenya has received diagnostic equipment from the Japan International Cooperation Agency (JICA) through the Ministry of Health's National Cancer Control Program. This Level 5 hospital will use the telepathology capacity to serve ten counties in its catchment area. The equipment includes Leica automated tissue processors, autostainers, microtomes, slide labelers, embedding stations, cassette printers, and slide scanners. Telepathology involves the electronic transmission of digital pathology images for remote education and diagnostic consultation.

These automated machines will enable the sharing of scanned slides with pathologists for discussing challenging cases and providing high-quality diagnostic services. They will also expedite tissue processing and, with additional technologists and pathologists, reduce turnaround times. Digital pathology allows rapid remote collaboration, enhancing efficiency and turnaround times, particularly for complex cases requiring a second opinion or consultation. It will enable immunohistochemistry, a diagnostic technique for more precise disease diagnosis, and improve diagnostic outcomes for cancer patients in rural



Kenya. JOOTRH has been expanding its services, including medical waste disposal.



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