UM6P

# In MOMENTUM

April 2025

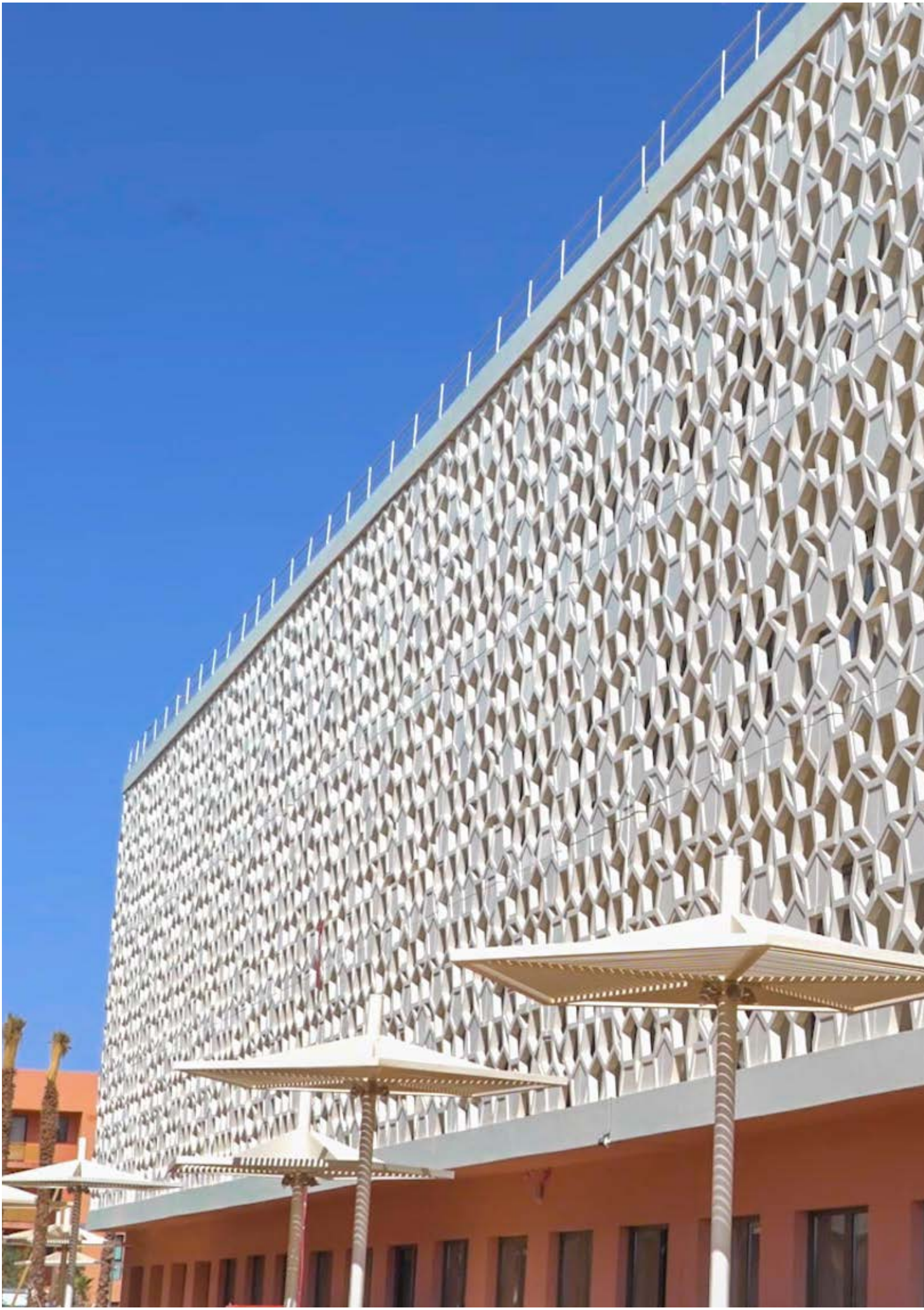
**Transforming African Healthcare**
A Holistic Approach to Wellbeing

## HEALING HORIZONS: UM6P'S JOURNEY TOWARD A HEALTHIER MOROCCO & AFRICA

**Preventive Radiology**
How Early Imaging Can Save Africa's Health Systems

**Humans of UM6P**
Discover Interviews with Dr. Sanae Ben Mkaddem and Mr. Jalil Chattaoui

*#05 - By UM6P Communication Department*



## Editorial Team


**Director of Publication:**
Amina Lahbabi

**Editor-in-chief:**
Majda Charkani

**Contributors:**
Mohamed Wail Aaminou - Sustainable Business Economics Center at Africa Business School
Fatim-Zahra Abeddad - Student at Higher Institute of Biological and Paramedical Sciences
Reda Adib - Student at Faculty of Governance, Economics and Social Sciences
Hajar Bahi - Africa Initiative
Inssaf Bahnini - Community Based Learning Program
Anas Bedraoui - PhD Student at Faculty of Medical Sciences
Isaac Asirifi Boakye - Student at Africa Business School
Anas Bounit - Student at College of Computing
Imane Bouayad - Student at Faculty of Governance, Economics and Social Sciences
Hiba Bouazza - Policy Center
Anass Chehboun - Faculty of Medical Sciences
Direction of Entrepreneurship and Venturing
Rachid El Fatimy - Director of the Smart Health Care City, Dean of the Faculty of Medical Sciences & Director of the Center for Doctoral Studies
Ezzouhra El Maaiden - African Sustainable Agriculture Research Institute
Fatima Zahra El Hajji - PhD Student at Faculty of Medical Sciences
Mahmoud Yassine El Mesnaoui - Student at Faculty of Governance, Economics and Social Sciences
Khadija Haidara - Student at School of Hospitality and Business Management
Azeez Adewale Hamzat - Africa Initiative
Khalil Kinani - Medical Director of UM6P Hospitals Facilities, Director of the Workplace Quality of Life Observatory & Director of UM6P Health Centers
Fouad Laroui - Office of the President
Walid Lamrini - Corporate Communication Department
Widad Meskine - Student at Africa Business School
Aya Ouardi - Student at School of Hospitality and Business Management
Mahamadou Dit N'Fa Simpara - Corporate Communication Department
Nour Alhouda Tabiti - Corporate Communication Department
Amine Touti - Student at Faculty of Medical Sciences

**Graphic Designer:**
Ilias El Mezouari

**Photographic credits:**
UM6P Photobank, Envato


# Empowering Minds.

# Contents

# Smart Health Care City

## UM6P's Blueprint for Africa's Medical Future

University Mohammed VI Polytechnic is taking a major step in transforming healthcare by creating the Smart Health Care City (SHCC) in the Rhamna region. This initiative aims to establish Benguerir as a key hub for medical education, research, and patient care, addressing the evolving healthcare needs of Morocco and Africa.

At the core of SHCC are the Faculty of Medical Sciences (FMS), UM6P Hospitals, and the Biotechnology Park, working together to shape the future of healthcare in the region and beyond.

**UM6P is committed to contributing to Africa's sustainable development by fostering education, research, and healthcare innovation**

The SHCC is a testament to this commitment, offering a unique ecosystem that nurtures the next generation of healthcare professionals, advances scientific discovery, and enhances access to quality healthcare services across the continent.

The pedagogical approach of learning through research offers medical, pharmacy and nursing students invaluable opportunities to develop critical thinking, evidence-based practice skills and a more comprehensive understanding of their respective fields of study. Designed to meet international standards, the FMS combines academic excellence with practical experience, ensuring students develop the competencies to address real-world healthcare challenges. Advanced facilities, including a simulation center and high-tech research laboratories, provide students with hands-on training in a dynamic learning environment. By incorporating the latest medical technologies and fostering a culture of innovation, the FMS equips students with the tools to meet Africa's growing healthcare demands.

The Research Center of the Faculty of Medical Sciences is a key pillar of SHCC, with laboratories focused on key areas such as epidemiology and public health, neuro-immuno-oncology, biomaterials science and infectious diseases, as well as data sciences for medical and biological applications. These research efforts aim to develop solutions tailored to the continent's unique healthcare challenges, ensuring that Africa is not only a beneficiary of medical innovation but also an active contributor to global scientific progress.

The clinical component of SHCC, or UM6P Hospitals, includes specialized healthcare facilities such as a general hospital, a rehabilitation center, and a geriatric center. These facilities are designed to provide high-quality, patient-centered care while serving as a practical training ground for students and healthcare professionals. They also reflect UM6P's mission to make advanced healthcare accessible to local and regional communities, ensuring a positive and lasting impact on African public health.

In addition to education, research and clinical services, SHCC fosters innovation through its biotechnology hub, which attracts startups, entrepreneurs, and key medical companies. This initiative aims to position Morocco and Africa as leaders in biomedical innovation, creating new opportunities for collaboration, economic growth, and technological advancement in the healthcare sector.

At the heart of SHCC's mission lies a strong commitment to social responsibility and collaboration. Through strategic partnerships, outreach programs, and community-driven initiatives, SHCC seeks to empower African communities by enhancing healthcare access, promoting awareness, and addressing pressing public health challenges.

The Smart Health Care City embodies UM6P's vision of a healthier, more prosperous Africa by bringing together education, research, innovation, and healthcare services. It stands as a model of collaboration, excellence, and sustainable impact, reinforcing the collective effort needed to achieve a brighter future for the continent.

**Rachid El Fatimy**
Director of the Smart Health Care City, Dean of the Faculty of Medical Sciences & Director of the Center for Doctoral Studies

# Transforming African Healthcare

## A Holistic Approach to Wellbeing

Africa faces persistent health challenges, including limited medical infrastructure, a shortage of professionals, and a growing burden of chronic diseases. Addressing these issues requires innovative, integrated, and sustainable healthcare solutions.

University Mohammed VI Polytechnic is at the forefront of this transformation, driving medical innovation, holistic health services, and well-being initiatives.

Through UM6P Hospitals, Health Centers, and the Quality of Work Life Observatory, University Mohammed VI Polytechnic is redefining healthcare delivery, preventive medicine, and medical research across Africa.

### University Mohammed VI Polytechnic Hospitals: A Model for Patient-Centered Care

University Mohammed VI Polytechnic Hospitals is a non-profit private institution setting new standards for clinical excellence across three specialized centers. Equipped with state-of-the-art technology and top medical professionals, it provides a wide range of specialized healthcare services. It prioritizes delivering high-quality, personalized, and accessible care to every patient.

**Key Facilities and Services :**

**General Hospital (140 beds):** Offers emergency care and specialized departments.

**Geriatric Center (62 beds):** Dedicated to providing comprehensive elderly care.

**Rehabilitation and Post-Operative Care Center (120 beds):** Focuses on patient recovery, including revolutionary hyperbaric medicine.

**Advanced Diagnostic and Research Laboratories:** Equipped with cutting-edge pathology and radiology technology, including 3T MRI.

As a key player in a collaborative healthcare ecosystem, UM6P Hospitals align with the Faculty of Medical Sciences (FMS) to foster continuous learning and medical innovation.

### University Mohammed VI Polytechnic Health Centers: Comprehensive and Preventive Care

University Mohammed VI Polytechnic Health Centers provides high-quality healthcare to the university community. It plays a pivotal role in emergency management, preventive care, and health services.

**Core Services :**

**Student Health:**
General consultations, chronic disease management, and referrals to specialized hospitals.

**Occupational Health:**
Ensures workplace health compliance, accident management, and routine medical check-ups.

**Psychological Support & Mental Health:**
Professional counseling and therapy.

**Food Safety & Hygiene:**
Oversees strict food safety standards, supplier audits, and regulatory compliance.

**Public Health Awareness & Prevention Initiatives:**
Organizes campaigns on non-communicable diseases and preventive healthcare.

The Health Centers continually expands its multidisciplinary team to maintain a high standard of patient care.

### Quality of Work Life Observatory: Advancing Employees, Students, and PhDs Well-being

The Quality of Work Life Observatory is dedicated to monitoring, analyzing, and improving working and studying conditions to ensure a safer, healthier, and more productive environment.

**Core Services :**

**Holistic Well-being:**
Implementing ergonomic assessments and psychological support programs.

**Health Risks and Exposure Management:**
Identifying chemical, physical, and environmental hazards in the workplace.

**Predictive Health Analytics, Research, and Benchmarking:**
Using data collection to anticipate health trends and potential risks, allowing for proactive interventions and tailored solutions.

By integrating focused strategies, the Quality of Work Life Observatory supports employees, students and PhDs well-being and overall productivity.

## The Wellness Program:
### Enhancing Mental and Cognitive Health

As part of its commitment to holistic health, the Quality of Work Life Observatory and Health Center have launched The Wellness Program to prevent mental health issues and promote well-being within University Mohammed VI Polytechnic community. This program is structured around:

**Psychological and Cognitive Assessments:**
Evaluations to identify stress factors, cognitive vulnerabilities, and emotional and physical well-being indicators.

The Wellness Program then adopts a multidimensional intervention strategy based on three key approaches aiming to support vulnerability:

**Therapeutic Approach:** Focuses on individual and group psychological support for individuals facing mental health challenges.

**Wellness Approach:** Integrates holistic well-being practices such as therapeutic yoga, art workshops (painting, drawing, and pottery), meditation via VR, and more.

**Coaching Approach:** Designed to empower individuals through personal and professional development.

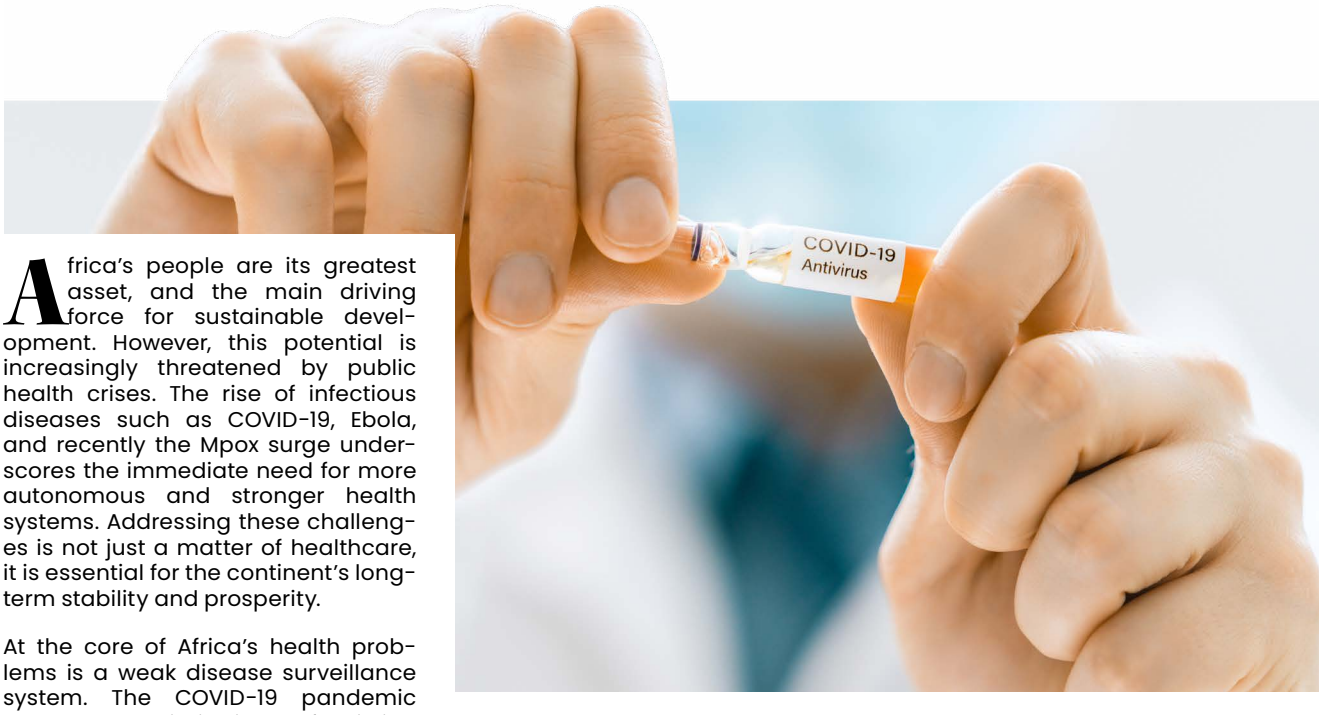

## Shaping the Future of Health and Well-being in Africa

As healthcare challenges evolve, University Mohammed VI Polytechnic remains committed to developing impactful solutions that address Africa's health needs, ensuring better care, improved well-being, and a more resilient future for all.

**Khalil Kinani**
Medical Director of UM6P Hospitals Facilities
Director of the Workplace Quality of Life Observatory
Director of UM6P Health Centers

# Africa's Health Defense

## Strengthening Disease Surveillance and Local Vaccine Production




Africa's people are its greatest asset, and the main driving force for sustainable development. However, this potential is increasingly threatened by public health crises. The rise of infectious diseases such as COVID-19, Ebola, and recently the Mpox surge underscores the immediate need for more autonomous and stronger health systems. Addressing these challenges is not just a matter of healthcare, it is essential for the continent's long-term stability and prosperity.

At the core of Africa's health problems is a weak disease surveillance system. The COVID-19 pandemic exposed the limitations of existing structures, displaying how late detection can lead to devastating consequences. Fast response and containment depend on an efficient system for monitoring and tracking outbursts. The African Union, through its health agency, the Africa Centres for Disease Control and Prevention (Africa CDC), is playing a crucial role in developing disease intelligence. Africa CDC has been actively involved in strengthening public health institutions, enhancing surveillance networks, and coordinating responses across borders. Despite these efforts, gaps remain in data-sharing, funding, and the deployment of real-time tracking technologies.

The second major obstacle to public health security is Africa's dependence on external vaccine supplies. During the COVID-19 pandemic, delays in vaccine shipments left many African nations vulnerable, exposing the risks of relying on international suppliers. Currently, fewer than 10 vaccine manufacturers operate on the continent, and most production is limited to final-stage processing rather than full-scale development. Recognizing this weakness, Africa CDC has set an ambitious target: by 2040, Africa aims to produce 60% of its vaccine needs locally. The African Vaccine Manufacturing Accelerator (AVMA) is a key initiative in this effort, committing $1 billion over the next decade to expand vaccine production. Additionally, partnerships such as the collaboration between the Institut Pasteur de Dakar and IAVI are working to enhance Africa's research and development capabilities.

For Africa to achieve public health security, disease surveillance and vaccine production must go hand in hand. An integrated approach ensures that outbreaks are detected early, and vaccines can be developed and distributed accordingly. Lessons from COVID-19 show that a delay in either surveillance or vaccine access can have severe consequences. Transnational collaboration is critical. Strengthening regional networks, investing in digital disease monitoring systems, and increasing funding for biotechnology will allow Africa to respond more effectively to emerging threats. Public-private partnerships, combined with government and international support, are crucial to build a self-sufficient and resilient health system.

Ensuring Africa's health security is not just about responding to crises, it is about anticipating, and preparing for them. By developing disease surveillance and investing in local vaccine production, Africa can protect its most valuable resource: its people. With continued collaboration, innovation, and investment, the continent can move from being dependent on external health solutions to becoming a leader in global public health resilience.

**Reda Adib**
Student at Faculty of Governance, Economics and Social Sciences

UM6P

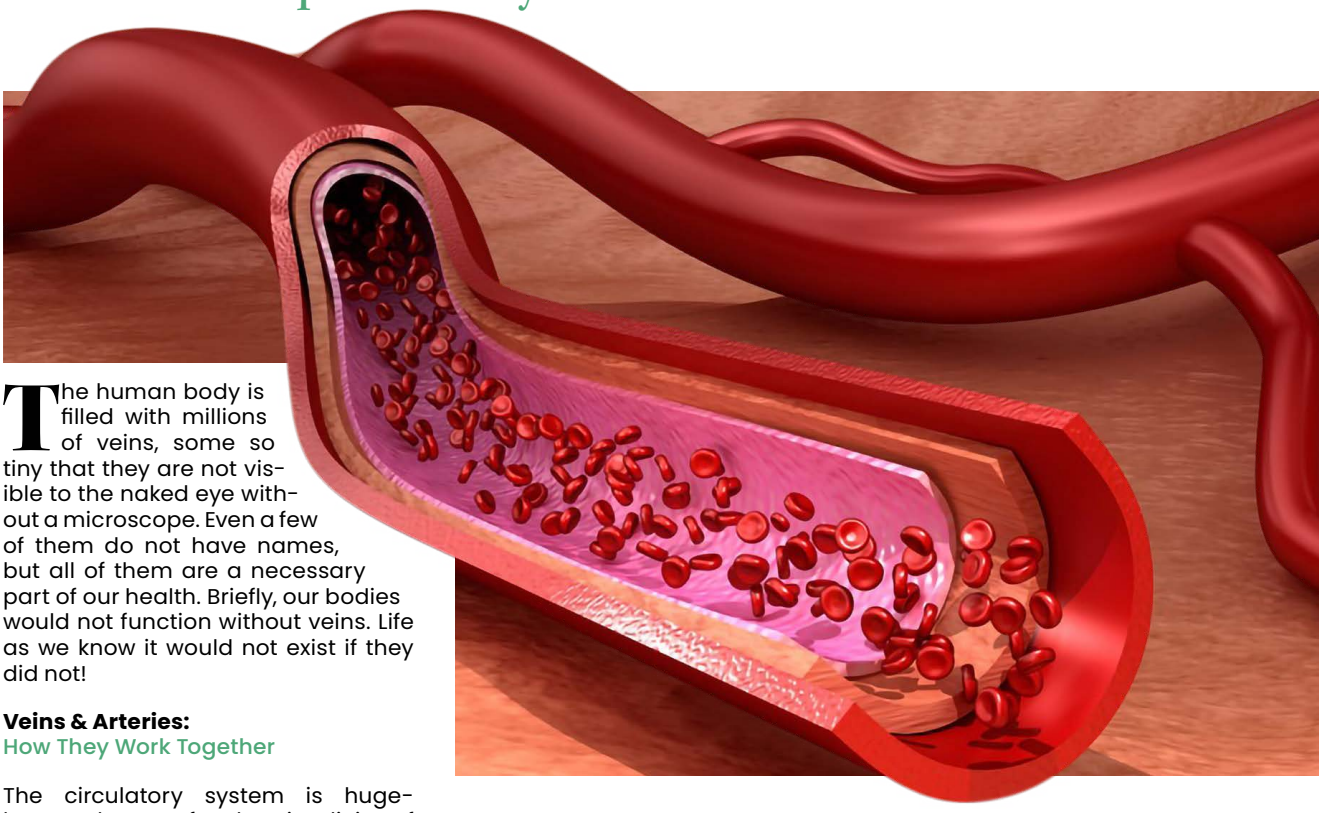
CONTENT FACTORY

# Times of UM6P

Gathering Minds, Shaping Futures

# The Hidden Highways

## How Veins Keep Your Body Alive



The human body is filled with millions of veins, some so tiny that they are not visible to the naked eye without a microscope. Even a few of them do not have names, but all of them are a necessary part of our health. Briefly, our bodies would not function without veins. Life as we know it would not exist if they did not!

### Veins & Arteries: How They Work Together

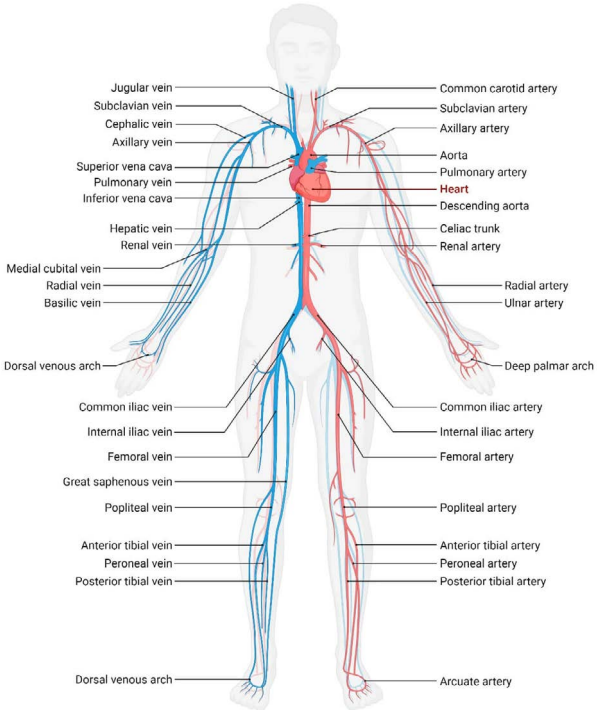
The circulatory system is hugely complex, yet for the simplicity of explanation, it can be split into two main components: veins and arteries.

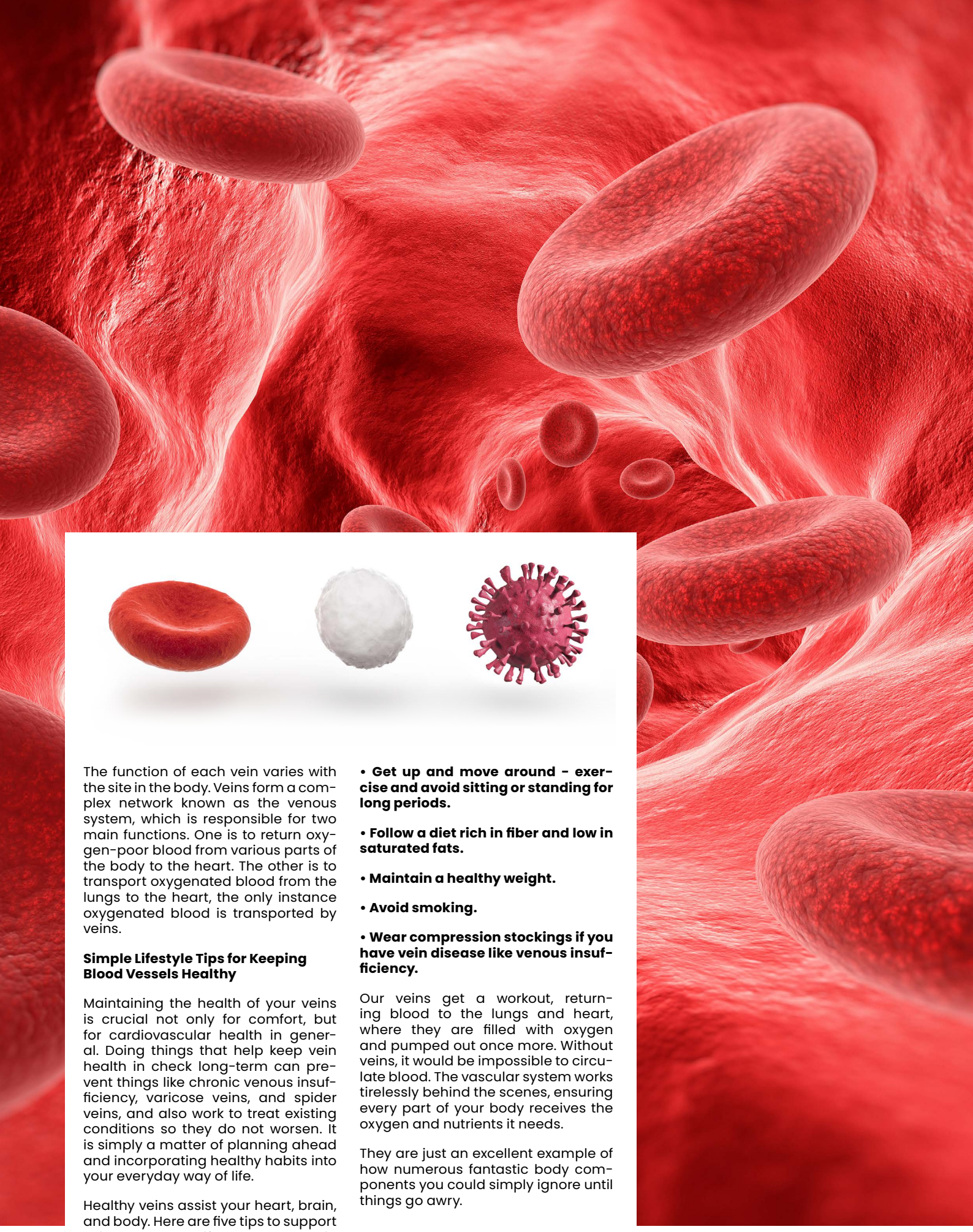
Arteries are responsible for circulating oxygen-rich (oxygenated) blood-full-of-nutrients from the heart out to the rest of the body. Veins return oxygen-starved (deoxygenated) blood back to the heart.

In brief, arteries transport blood from the heart, and veins transport it to the heart. Even though gravity assists arteries in pumping blood away from the heart, veins face the more difficult task of fighting against gravity to pump blood to the heart. To do so, all veins, no matter what size they are, are lined with valves that keep blood traveling in one direction only. Incidentally, veins hold roughly 75% of the blood in your body!

The greatest difference between veins and arteries is the type of blood that they carry. Arteries carry oxygen-rich blood away from the heart, while veins carry oxygen-poor blood back. There is a single exception, however: the pulmonary veins. These four distinct veins, located between the lungs and the heart, carry oxygen-rich blood from the lungs to the heart, where it is then pumped out into the body.

*"According to the National Institute of Aging (part of the United States National Institutes of Health (NIH) », when you stretch out the veins, capillaries, and arteries, they would measure 60,000 miles in a child and 100,000 miles in an adult. The earth's circumference is about 24,000 miles, meaning a baby's blood vessels could circle the globe more than twice."*





The function of each vein varies with the site in the body. Veins form a complex network known as the venous system, which is responsible for two main functions. One is to return oxygen-poor blood from various parts of the body to the heart. The other is to transport oxygenated blood from the lungs to the heart, the only instance oxygenated blood is transported by veins.

**Simple Lifestyle Tips for Keeping Blood Vessels Healthy**

Maintaining the health of your veins is crucial not only for comfort, but for cardiovascular health in general. Doing things that help keep vein health in check long-term can prevent things like chronic venous insufficiency, varicose veins, and spider veins, and also work to treat existing conditions so they do not worsen. It is simply a matter of planning ahead and incorporating healthy habits into your everyday way of life.

Healthy veins assist your heart, brain, and body. Here are five tips to support vein health even if you do have vein disease:

- **Get up and move around - exercise and avoid sitting or standing for long periods.**
- **Follow a diet rich in fiber and low in saturated fats.**
- **Maintain a healthy weight.**
- **Avoid smoking.**
- **Wear compression stockings if you have vein disease like venous insufficiency.**

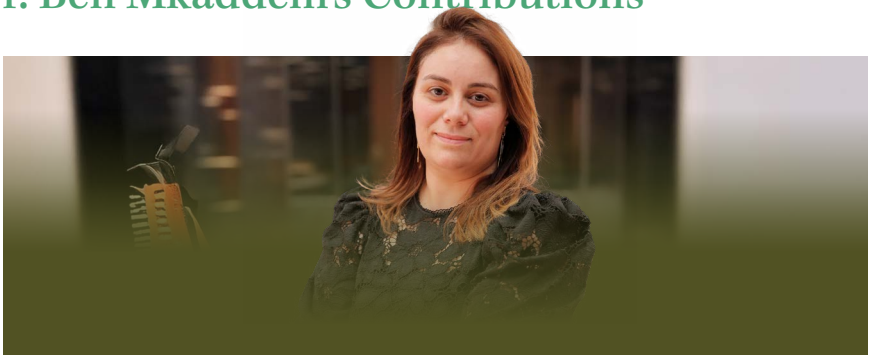
Our veins get a workout, returning blood to the lungs and heart, where they are filled with oxygen and pumped out once more. Without veins, it would be impossible to circulate blood. The vascular system works tirelessly behind the scenes, ensuring every part of your body receives the oxygen and nutrients it needs.

They are just an excellent example of how numerous fantastic body components you could simply ignore until things go awry.

**Majda Charkani**
Corporate Communication Department

# Dr. Sanae Ben Mkaddem

## From Lab to Impact: Dr. Ben Mkaddem's Contributions to African Health



The future of healthcare in Africa will not be shaped by a single breakthrough but by the collective force of innovation, interdisciplinary research, and technological advancements. At UM6P's Faculty of Medical Sciences (FMS) within Smart Health Care City, Professor Dr. Sanae Ben Mkaddem is contributing to this effort, combining immunology, artificial intelligence, and biomedical research to pioneer solutions that will redefine healthcare accessibility, efficiency, and impact.

"Science should not remain confined within laboratories. Its true power lies in translating discoveries into tangible healthcare solutions," she explains. "That's what drives my work at UM6P."

**From Scientific Curiosity to Transformational Healthcare**

With a career dedicated to unraveling the complexities of the immune system and its responses to diseases, Dr. Ben Mkaddem's research spans autoimmune disorders, infectious diseases, and cancer immunotherapy. Her work is not just about understanding disease mechanisms but about developing practical treatments that can directly benefit patients across Africa.

Her decision to join UM6P was driven by the university's vision of impact-driven science and interdisciplinary collaboration. "UM6P fosters an ecosystem where researchers, clinicians, and engineers co-create solutions. That synergy is what makes groundbreaking healthcare innovations possible."

**An Interdisciplinary Model for Africa's Healthcare Future**

At Smart Health Care City, UM6P has designed a research model that bridges medicine, biotechnology, AI, and engineering, ensuring that scientific breakthroughs are seamlessly integrated into healthcare systems.

Dr. Ben Mkaddem highlights three key pillars that are transforming Africa's healthcare landscape:

• AI-powered diagnostics: Machine learning algorithms enhance disease detection, making early diagnosis accessible even in remote areas.

• Precision medicine and immunotherapy: Personalized treatments are being developed for cancer, autoimmune diseases, and infectious conditions.

• Telemedicine and digital health: Antenna engineering is driving advancements in remote patient monitoring and AI-driven diagnostics, ensuring that healthcare reaches those who need it most.

"Africa's healthcare challenges require solutions tailored to its specific needs," she emphasizes. "By merging disciplines, we create holistic and scalable innovations."

**Building a Smarter, Data-Driven Healthcare Ecosystem**

One of Dr. Ben Mkaddem's most ambitious ideas is an AI-powered immunological surveillance network for Africa—a proactive system that would monitor and predict disease outbreaks in real-time.

This initiative would leverage **AI, big data, and real-time diagnostics** to:

**• Track emerging pathogens and antimicrobial resistance trends.**

**• Monitor and predict disease outbreaks before they escalate.**

**• Optimize vaccine distribution and public health interventions.**

**"Africa faces frequent infectious disease outbreaks, but lacks real-time monitoring systems," she explains. "By integrating AI-driven disease modeling, wearable biosensors, and mobile health platforms, we can revolutionize how we respond to public health crises."**

**From Research to Real-World Impact**

At the Faculty of Medical Sciences, **research isn't just about discovery—it's about measurable** impact. UM6P accelerates the transition from **breakthrough research to patient care** by focusing on:

• **Clinical partnerships**, ensuring new medical technologies meet real-world healthcare needs.

• **Technology transfer and startup incubation**, transforming research into **market-ready solutions**.

• **Cross-disciplinary collaboration**, integrating medicine, AI, and biomedical engineering to tackle Africa's unique challenges.

**"We are not just advancing science—we are contributing to shaping the future of healthcare in Africa,"** Dr. Ben Mkaddem asserts. **"Every breakthrough we achieve must translate into real-world change."**

**Joining Forces for a Healthier Africa**

UM6P is committed to **driving Africa's healthcare transformation** by fostering **collaboration, technology-driven solutions, and medical innovation**. Through its **Smart Health Care City**, the university is leading a paradigm shift, ensuring that **healthcare is accessible, efficient, and resilient.**

**"True innovation happens when we join forces,"** Dr. Ben Mkaddem concludes. **"By working together—scientists, engineers, policymakers, and healthcare providers—we can build a healthier future for Africa."**

As UM6P continues to **push the boundaries of medical science,** Dr. Sanae Ben Mkaddem's work demonstrates how knowledge, when applied effectively, can transform healthcare.

**Mahmoud Yassine El Mesnaoui**
Student at Faculty of Governance, Economic and Social Sciences

# Mr. Jalil Chattaoui

## Mental Health as Academic Excellence Fuel

At UM6P, an institution known for fostering innovation and excellence, the importance of mental health is recognized as a fundamental pillar of student success. Mr. Jalil Chattaoui, a psychoanalytically inspired clinical psychologist at the UM6P Health Center, is dedicated to ensuring that students receive the psychological support they need to navigate the challenges of university life. His journey into the field of psychology and his commitment to student well-being reflect a vision where education is not only about academic learning but also about personal growth and resilience.

**A Passion for Psychological Support in Higher Education**

Mr. Chattaoui's professional path has taken him through various settings, deepening his understanding of the unique psychological needs of students.

"A university is not just a place for academic learning, but also a space for personal transformation," he explains. This belief led him to join UM6P, where he saw an opportunity to both grow as a psychologist and contribute to an environment that prioritizes student well-being. The Health Center plays a crucial role in this mission by offering tailored psychological support that helps students maintain balance and develop holistically. "My role is to create a supportive and welcoming space where students feel heard, understood, and empowered to thrive," he adds.

**Addressing the Psychological Challenges of University Life**

In today's academic environment, students face high expectations, constant pressures, and rapid personal transformations. Mr. Chattaoui identifies key challenges such as stress from heavy academic workloads, performance anxiety, and existential concerns that arise during this pivotal stage of life. "These challenges can deeply affect a student's overall well-being and development," he observes.

Under the leadership of Dr. Khalil Kinani, the Health Center has implemented several initiatives to support the psychological well-being of the UM6P community. Individual consultations, stress management workshops, and targeted psychological support programs help students navigate daily challenges and foster resilience, ensuring that mental health remains a priority alongside academic success.

**The Role of Technology in Mental Health Support**

While technology has transformed many sectors, Mr. Chattaoui emphasizes that human connection remains essential in mental health care. Digital tools like mobile apps, online therapy platforms, and AI-driven solutions can provide immediate support for managing stress or anxiety. However, he notes, "These tools are limited when it comes to addressing deeper psychological issues that require a nuanced, personalized approach."

Direct contact with mental health professionals—where empathy, active listening, and individualized interventions are central—remains the cornerstone of sustainable psychological support in an academic setting.

**Building Mental Resilience at UM6P**

Recognizing the ubiquitous nature of stress in dynamic academic environments, UM6P has introduced the Wellness Program—a comprehensive initiative aimed at both students and staff. Developed under the guidance of Dr. Khalil Kinani, this program addresses psychological, physiological, and neuropsychological challenges, equipping the university community with the tools necessary to manage stress and build lasting mental resilience.

**Interdisciplinary Collaboration: A Model for Mental Health Innovation**

The interdisciplinary approach at the Health Center is vital for advancing mental health care. By fostering close collaboration between psychologists, doctors, and nurses, the center offers a holistic model of care that addresses the interconnected nature of mental and physical well-being. "This collaborative approach allows us to tailor interventions to the specific needs of our patients, ensuring that care is comprehensive and effective," Mr. Chattaoui explains.

This model is especially valuable in Morocco and across Africa, where mental health is influenced by unique cultural, social, and economic factors. By integrating innovative, interdisciplinary strategies, the Health Center not only makes mental health care more accessible but also sets a precedent for other institutions striving to reduce stigma and enhance psychological well-being.

**A Vision for the Future**

Mr. Chattaoui's work at UM6P embodies a commitment to ensuring that students are not only academically successful but also emotionally resilient. His mission is clear: to create an environment where mental health support is woven into the fabric of university life, enabling personal transformation and sustainable well-being. "Mental health is not a luxury but a necessity," he affirms, emphasizing that robust support systems are essential for preparing students to face the challenges of today and tomorrow.

Through innovative initiatives and a compassionate approach to care, UM6P is leading the way in redefining mental health support in higher education, setting an example for institutions across the continent.

**Fatima-Zahra Abeddad**
Student at Higher Institute of Biological and Paramedical Sciences

# Preventive Radiology

## How Early Imaging Can Save Africa's Health Systems

Radiology is a medical specialty that uses imaging modalities of different sources and configurations, we cite for example conventional radiography, ultrasound, CT or MRI to diagnose diseases or treat patients with minimally invasive interventions.

It is a specialty at the crossroads of all other disciplines since we can image the whole body from head to toe.

Public health is aimed at disease prevention, prolonging life and improving quality of life through organized efforts and informed choices of society, organisations, communities and individuals. Analysing the determinants of health of a population and the threats it faces is the basis for public health.

One of the main challenges facing our health system is the increasing number of cancers diagnosed in different age groups, including young people. This results in an increase in morbidity and mortality and a considerable cost and financial burden.

The estimated global economic cost of cancers from 2020 to 2050 is 25 trillion dollars.

In Africa, we add to these costs the various other problems that we encounter such as access to care, and the lack of pharmaceutical self-sufficiency.

We thus understand that our efforts should be deployed and concentrated on the prevention of cancers on different scales among which cancer screening.

Screening simply refers to diagnosing a disease in a patient without symptoms and in our case diagnosing cancers in a non-sick population.

There are several ways to screen cancers depending on their types, biological test (PSA) for prostatic cancer, pap test for cervical cancer ..

Radiology plays an increasingly growing role in screening, mainly thanks to technical developments in different modalities allowing us to target many organs without limits, going beyond breast cancer screening that everyone is familiar with, thus creating a bridge between medical imaging and public health under the spectrum of 'preventive radiology'.

Let's take lung cancer as an example. Unfortunately, most of the lung cancers that we treat nowadays are diagnosed late, and this is because the symptoms can be misleading or even absent, CT scan is the modality of choice to detect those cancers that appear in most cases as a 'mass' or 'nodule', making it, in theory, detectable at an early stage if we are to perform CT scans of all patients at risk mainly smokers.

The only limit is exposure to X-rays, which is not justifiable in a subject without symptoms. To remedy this, we currently have a so-called low-dose CT technique, allowing us to detect these nodules while maintaining minimal exposure of the subjects.

As a result, it has been validated worldwide (in the United States and now in Europe) to screen for lung cancer using low-dose chest CT scans in all smokers from the age of 50.

Another example is pancreatic cancer. It is believed that it will become the most common cancer in the coming years because it is linked to two risk factors, obesity, and diabetes, which are scourges in our society.

Its unfavorable prognosis is due to the delay in diagnosis but also to its topography which is difficult to operate in the event of local invasion and until now, there is no effective means of screening for pancreatic cancer.

However, there is a growing interest in pancreatic MRI in this sense, allowing both the anatomical study of the organ but also the cellular behavior thanks to diffusion imaging making this organ potentially accessible to screening by allowing early detection of tumor foci at the infracentimeter scale.

Radiology plays thus a major role in screening that is constantly growing expanding its role from diagnosis and treatment of individual patients to disease surveillance and prevention at the population level.

It is therefore time for us at UM6P Hospitals to launch a large-scale screening program thanks to -edge technologies at all scales and including all modalities, as well as human skills in all medical, paramedical, technical, and computer science disciplines, offering the possibility of applying these preventive policies at the local and national level initially and at the African level subsequently by sharing expertise and resources, guaranteeing a better future for our beloved continent.

**Anass Chehboun**
Clinical Research Fellow - Faculty of Medical Sciences

# Why Teachers Matter More Than Ever

Back in the 1920s, a Dutch newspaper asked its readers — young and old — to list the ten professions they admired and respected the most. The results were predictable: university professors topped the list, followed by pastors (this was, after all, a deeply Calvinist country), doctors, and so on.

***Many people don't realize this, but we've never needed teachers more than we do today. Why? Because of the internet, social media and the unstoppable rise of Artificial Intelligence.***

Fast forward to around 2015, and the same newspaper (or its modern successor after a few mergers) decided to ask the same question. I was in Amsterdam when the results came out, and I was stunned. University professors had vanished from the rankings entirely. (I walked to my lecture hall that morning with a heavy heart…) Doctors had slipped down a few spots. Pastors were barely a blip on the radar. And who took the top spots? I could hardly believe it.

Footballers. TV presenters. Even DJs made the cut.

Sure, you could argue that younger voters skewed the results, but it was still disheartening. Essentially, the people they admired most were those who could kick a ball, read a script, or spin records.

I'm not saying this is the end of the world, but it's close. One consequence of this shift is that people who idolize such figures often end up voting for demagogues, wannabe dictators, and serial liars.

Don't get me wrong — I love football. I admire the skill of players like Ziyech or the efficiency of Hakimi. I have nothing against TV presenters (some of my friends are in the business), and yes, we all need a DJ to blast our eardrums now and then. But is this really what keeps a country running?

You might wonder where the soldiers guarding our borders or the nurses caring for the sick are in all this — but let's focus on those who topped the list in 1920 and have since disappeared : university professors.

I think many people don't realize this: we've never needed professors and teachers more than we do today. Why? Because of the internet, social media and the unstoppable rise of Artificial Intelligence.

To understand this, I only need to compare two moments in my career, thirty years apart.

In 1990, I was in Amsterdam, teaching macroeconomics and econometrics to a room full of students. They were bright and curious, but I was the one who knew. I'd define a concept, like GDP, write an equation on the board, and answer their questions.

In 2020, I was in Benguerir, teaching epistemology to another group of bright, curious students at an elite university. But this time, I wasn't the one who knew. Their laptops were open, and as soon as I mentioned a term like "Darwinism," they had the definition — and hundreds of pages of debate — at their fingertips. In theory, they knew far more than I did. So, had teachers become obsolete?

Not at all. In fact, the opposite is true. In this flood of information and opinions online, how can students tell fact from fiction? They need someone who has spent years mastering a subject — it takes years to truly understand Darwinism, for example — and someone whose expertise has been validated by their peers. That's what a teacher is.

Teachers today must adapt. They're no longer the ones who know; they're the ones who know how to know. They understand the history of human thought, the methods of scientific inquiry, and how to distinguish between belief and knowledge, proof and probability, dialectics and rhetoric. We've never needed teachers more, especially in fields like epistemology and the philosophy of science. (You might say I'm biased—and you'd be right. But am I wrong?)

In fact, teachers are more important today than they were in 1920. Why? Because they're up against formidable competition: influencers, YouTubers, charlatans, and 'elonmusks' (let's use this term for ultra-wealthy individuals who insist on pushing their half-baked ideas on us—at least the old-school plutocrats were content with just being rich). This is another way the profession has had to adapt. I now spend part of my lectures debunking claims made by YouTubers who "prove" the Earth is flat, ghosts are real, or fortune-tellers have psychic powers.

Here's a wild idea: what if we slapped a 50% flat tax on the income of influencers, YouTubers, charlatans, elonmusks, and fortune-tellers and used it to raise teachers' salaries?

The mental health of our society and the future of our country depend on it.

**Fouad Laroui**
Professor of the History and Philosophy of Science

# Sustainable Hospitality

## Africa's Untapped Path to Healthier Communities

Sustainable hospitality, once a luxury, is now becoming a necessity that can change the face of Africa for generations to come. African countries are taking steps to lead the way in sustainable hospitality to ensure a healthier future for the continent.

### But are we truly joining forces for a healthier Africa through sustainable hospitality?

It is, therefore, much bigger than saving on energy consumption: it represents finding a healthy balance between resource conservation, economic development, and social justice. According to the UNWTO, the growth of millions of jobs throughout Africa because of sustainable tourism would improve living standards and also save ecosystems. The African hospitality industry begins to absorb such practices, including water and energy conservation, local community responsibility through responsible sourcing, and labor practice.

But taking the right steps towards sustainable tourism contains pillars, and practice isn't the main pillar, but education is. In the heart of Africa's rising hospitality industry, the seeds for a healthier, more sustainable future are planted in the classrooms today. A real-world example of that is demonstrated at Mohammed VI Polytechnic University.

Where, indeed, sustainable hospitality is well grounded here instead of being incorporated into the picture afterward. Involvement in doors starts with us studying courses combined by theory together with real practice. We begin here to stand ready to advance hospitality for a greener future and healthier Africa.

All this leads us to Joining forces for a healthier Africa, a call to action more than being a statement. To respond to this call to action, it is crucial to understand that Africa's true power in sustainability lies in its people, especially the youth. By educating future leaders, we are giving Africa the tools to turn its rich natural and cultural heritage into a thriving, eco-conscious tourism industry.

Africa is set to take the lead in sustainable hospitality, empowered by the right education to seize this opportunity. From Morocco's innovative practices to Kenya's ecotourism, the continent is already on its way. With the proper foundation, Africa's hospitality industry can flourish while preserving what makes it unique: its people, culture, and extraordinary landscapes. This is the Africa we are shaping today, and it begins with us, the leaders of tomorrow.

***It is up to us to make a positive impact on the continent we call home!***

**Khadija Haidara**
Student at School of Hospitality and Business Management

**Artificial Intelligence is reshaping labour markets: 3.7% of women hold jobs that could be replaced by the technology, compared to 1.4% of men**

UN Women, September 2024

#UM6P_Engaged

Corporate Communication

# A Compilation of Latest UM6P Press Articles in the Media Editions

### L'université Mohammed VI Polytechnique de Rabat, fabrique des futurs leaders africains

Située à quelques minutes de l'aéroport international de Rabat et en bordure de la rocade reliant la capitale politique à Salé, l'Université Mohammed-VI Polytechnique (UM6P) est un temple du savoir aux allures de forteresse, veillée jour et nuit par un impressionnant dispositif de sécurité.

Le Point

Link to the article >>>

### L'Université Mohammed VI Polytechnique accueille des sommités au colloque «Science et Quête de Sens»

Le Centre Science et Quête de Sens de l'Africa Business School (ABS) de l'Université Mohammed VI Polytechnique (UM6P) a inauguré la deuxième édition de son colloque international intitulé «Science et Quête de Sens». L'événement se déroule du 6 au 7 décembre 2024 sur le campus de Ben Guerir et s'articule autour du thème : «La conscience et la nature du réel : deux énigmes du XXIe siècle».

Challenge

Link to the article >>>


### The Forge : La nouvelle fabrique à licornes de l'UM6P

L'Université Mohammed VI Polytechnique (UM6P) continue de marquer son empreinte dans l'écosystème entrepreneurial marocain avec le lancement de The Forge, une initiative ambitieuse dédiée à la création de startups à impact global.

LA VIE ÉCO

Link to the article >>>

### L'UM6P accompagne l'essor de la recherche et de l'innovation en Afrique

Forte d'un total de 7 229 étudiants issus de quarante nationalités, l'Université Mohammed VI Polytechnique (UM6P) compte près de mille (995) doctorants, répartis entre son campus principal de Benguerir (près de Marrakech) et ses antennes de Rabat, Laayoune, Paris et Montréal.

afrique magazine

Link to the article >>>

### Université Mohammed VI Polytechnique : l'innovation au service de la santé durable

L'Université Mohammed VI Polytechnique (UM6P) redéfinit les contours de l'innovation médicale en Afrique avec la Smart Health Care City (SHCC). Ce projet associe formation, infrastructures médicales de pointe et développement technologique pour répondre aux défis sanitaires locaux et continentaux.

LES ÉCO.ma

Link to the article >>>


### تقرير حول تدشين تواجد جامعة محمد السادس متعددة التخصصات التقنية ب STATION F

دشنت جامعة محمد السادس متعددة التخصصات التقنية، اليوم الخميس بباريس، تواجدها في محطة (STATION F)، التي تعد أكبر مركز جامعي للشركات الناشئة في العالم.

M24

Link to the article >>>

### NBA Africa, UM6P Launch Landmark Youth Basketball Initiative in Morocco

NBA Africa and the University Mohammed VI Polytechnic (UM6P) have announced their most extensive youth basketball development program in Morocco, introducing the most comprehensive basketball program to date in the country.

MOROCCO WORLD NEWS

Link to the article >>>

### تقرير نشرة أخبار قناة الأولى - أسبوع العلوم

تقرير نشرة أخبار قناة الأولى حول افتتاح النسخة الخامسة من أسبوع العلوم بجامعة محمد السادس متعددة التخصصات التقنية، مسلطا الضوء على الأنشطة العلمية والتعليمية التي ميزت هذه الفعالية، مما يعكس التزام الجامعة بالابتكار ونشر المعرفة.

الأولى

Link to the article >>>

### High-tech Moroccan university takes on the Ivy League

University Mohammed VI Polytechnic (UM6P) in Morocco has thought through the problem and evolved a model which it says is capable of producing highly skilled graduates able to rival the best from any other continent.

African BUSINESS

Link to the article >>>

**Walid Lamrini**
Corporate Communication Department

# Art Therapy

## Healing Through Creativity in Africa

Art therapy, a practice that merges creativity with psychological care, is emerging as a vital tool for addressing mental health challenges in Africa. In a continent where stigma around mental health persists and resources are often scarce, art therapy offers an accessible and culturally aligned approach. Research, such as a 2016 study in Frontiers in Psychology, shows that just 45 minutes of art-making can reduce cortisol levels, lowering stress and promoting emotional well-being.

Real-world applications highlight its transformative impact: In Kenya, initiatives such as "Art for Change" use creative outlets like drawing and writing to support children facing anxiety fostering emotional resilience and improved academic focus. Similarly, in Nigeria, hospitals are integrating art therapy into holistic care for cancer patients, helping them manage emotional distress and improve their quality of life.

What makes art therapy particularly effective in Africa is its ability to transcend language barriers and cultural differences. It allows individuals to express emotions that might be difficult to articulate verbally, making it an ideal tool in diverse and multilingual communities. Moreover, its alignment with Africa's rich artistic heritage—spanning painting, music, and storytelling—ensures that it resonates deeply with participants.

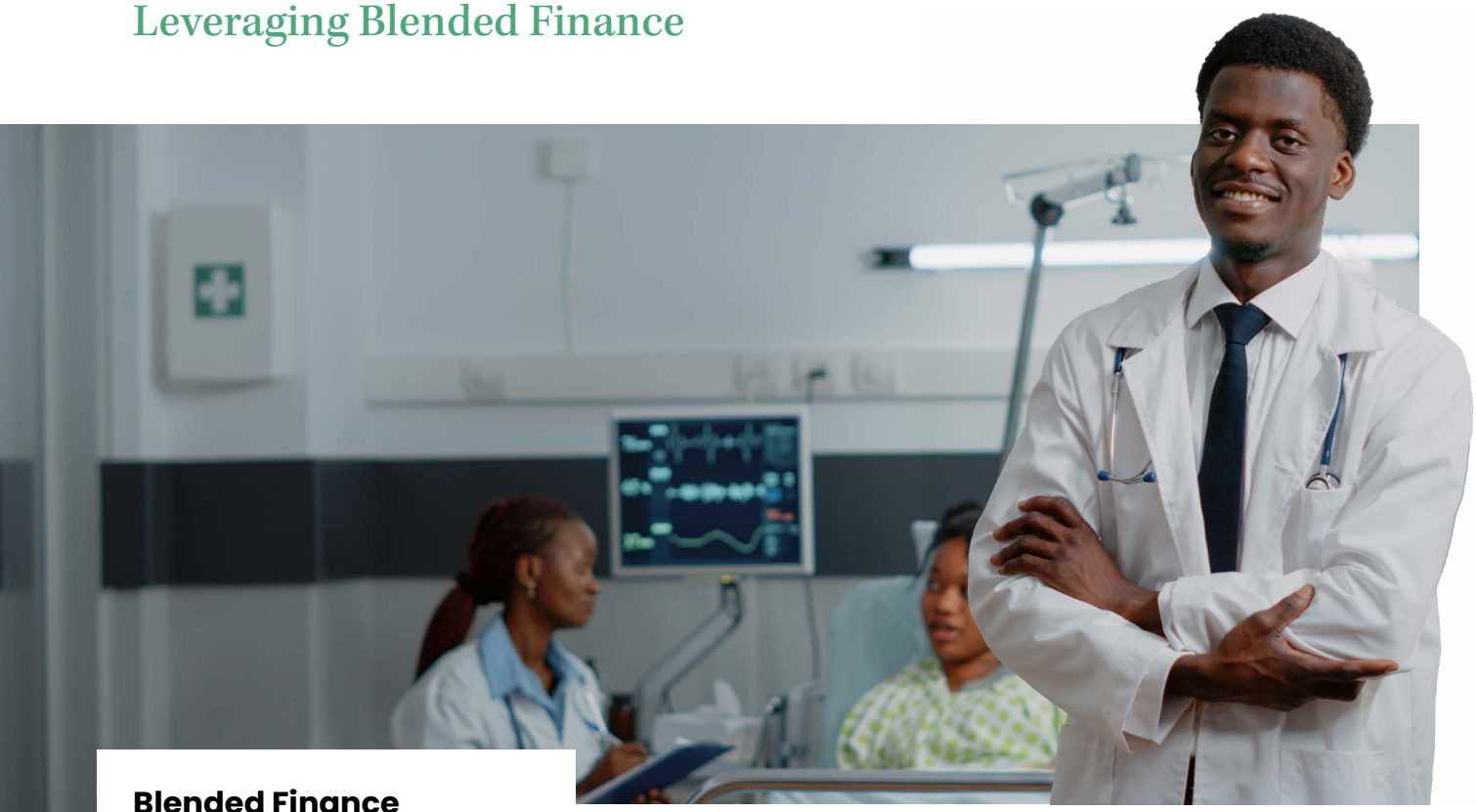
For art therapy to reach its full potential, greater investment in training and community awareness is essential. Collaborations between health organizations, local artists, and governments can bridge gaps in mental health care, offering a pathway to healing that is both innovative and deeply rooted in culture.

By embracing creativity, Africa can take a powerful step toward addressing its mental health challenges with dignity and compassion !

**Aya Ouardi**
Student at School of Hospitality and Business Management

# Innovative Financing for Healthcare in Africa

## Leveraging Blended Finance



### Blended Finance in a nutshell

Blended finance is characterized as "the strategic use of catalytic capital from public or philanthropic entities to attract private sector investment towards sustainable development."[1]

In addition, a blended financing transaction should have three characteristics:

• It contributes to achieving the SDGs. However, private investors involved in blended financing may simply be looking for a financial return at market rates.

• Overall, the transaction is expected to generate a positive financial return. Investors involved in a blended financing structure will have different return expectations, ranging from concessional to market rates.

• Public and/or philanthropic stakeholders act as catalysts. Their involvement improves the risk/return profile of the transaction to attract private sector participation, while ensuring the additionality of the transaction. (A project would not have been financed without the use of blended financing) .

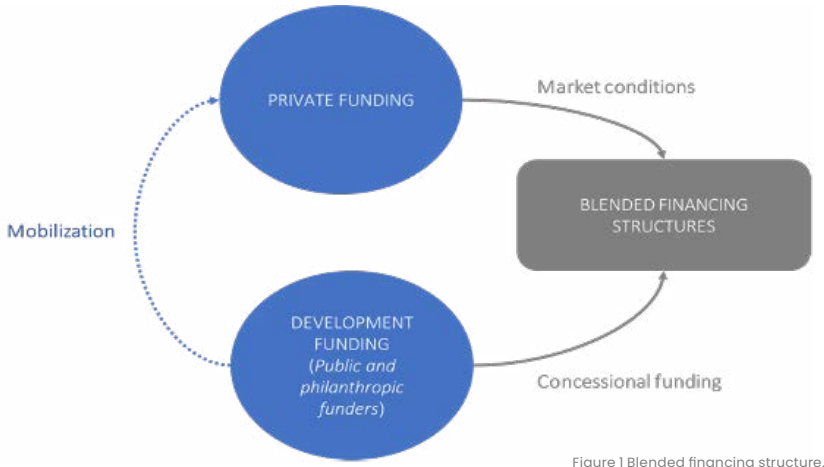
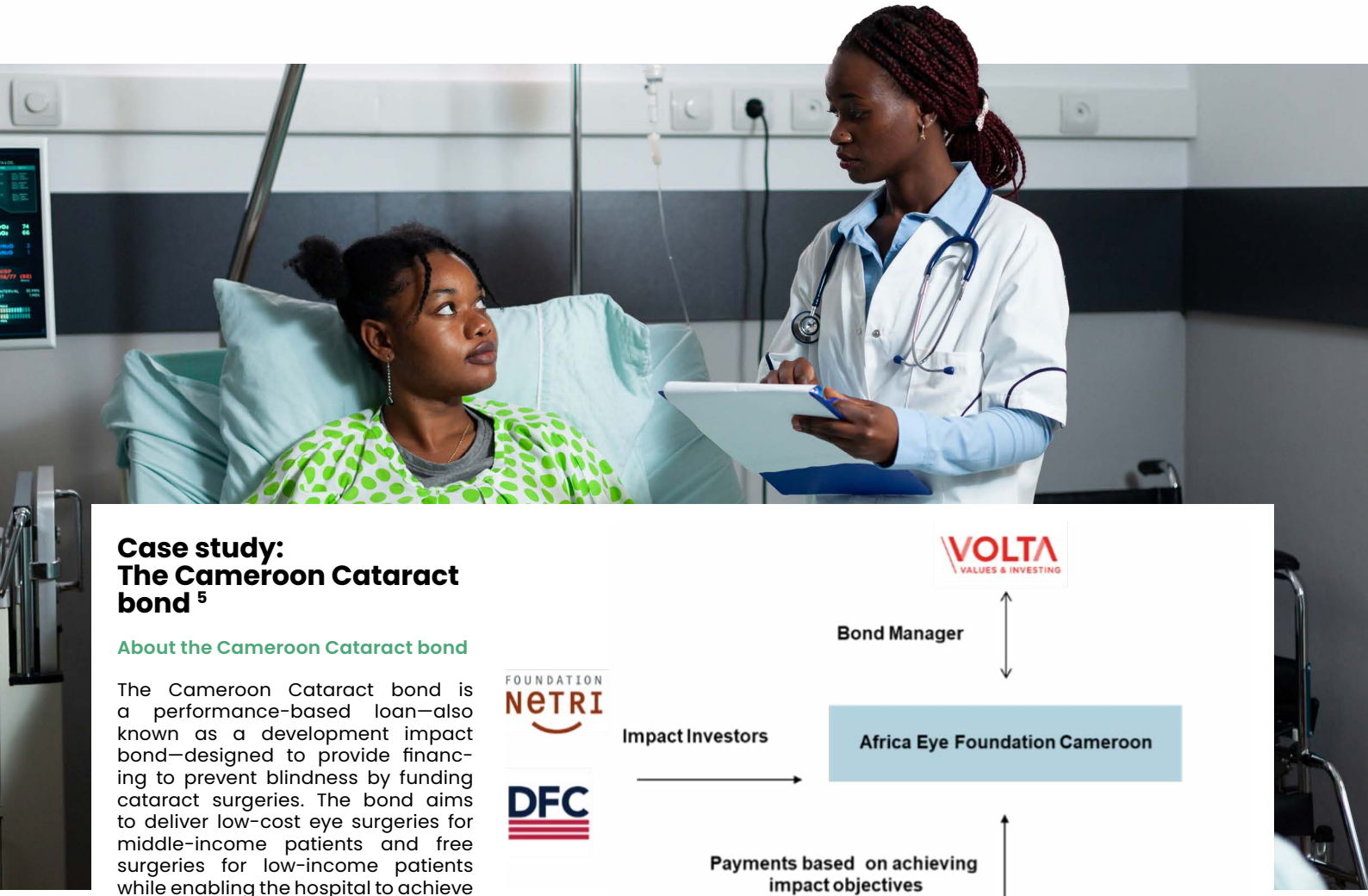



Figure 1 Blended financing structure.
Source: Convergence Blended Finance

### The role of blended financing in financing healthcare in Africa

Africa faces a substantial healthcare financing gap, with estimates indicating an annual shortfall of over $370 billion to achieve the Sustainable Development Goal health targets by 2030 . In 2021 for instance, half of sub-Saharan African countries relied on external financing for more than one-third of their health expenditures . Government resources remain insufficient to meet the continent's growing healthcare needs. Blended financing, which combines public, private, and philanthropic funds, can help bridge this gap by leveraging private sector investments alongside public funds. This approach can enhance the sustainability of healthcare infrastructure, expand access to essential services, and foster innovation in medical technologies across Africa.



## Case study: The Cameroon Cataract bond [5]

### About the Cameroon Cataract bond

The Cameroon Cataract bond is a performance-based loan—also known as a development impact bond—designed to provide financing to prevent blindness by funding cataract surgeries. The bond aims to deliver low-cost eye surgeries for middle-income patients and free surgeries for low-income patients while enabling the hospital to achieve self-sufficiency within five years. Additionally, the bond seeks to support the hospital in becoming a regional training institute for the Economic and Monetary Community of Central Africa (CEMAC) region after the bond's maturity.

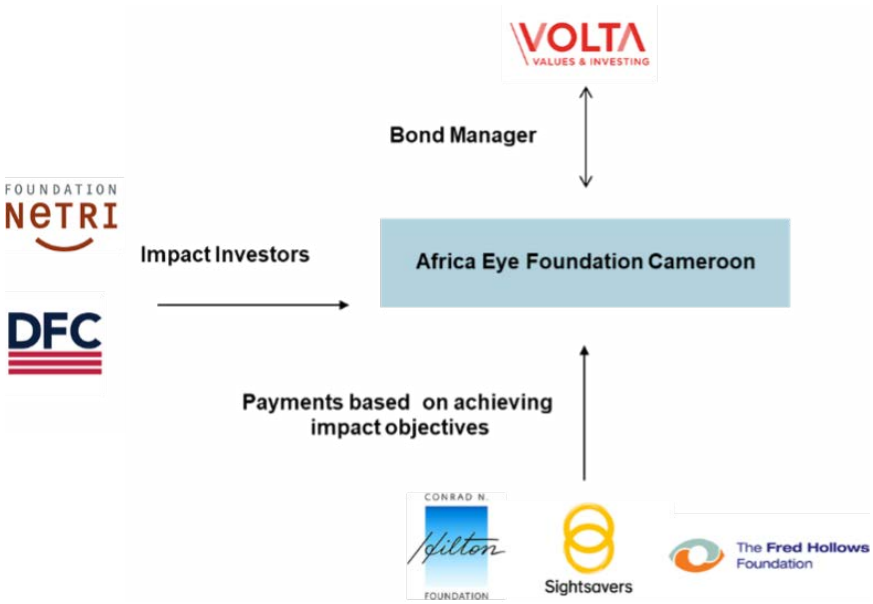



Figure2: Financial Structure of the Cameroon Cataract Bond

### Blended finance structure

The Cameroon Cataract bond was initiated by the Cataract Bond Design Coalition, comprising the Fred Hollows Foundation, the Conrad N. Hilton Foundation, Sightsavers, the African Eye Foundation (AEF), and Volta Capital. The funders aimed to be early adopters of development impact bonds and to open new markets in innovative financing. Launched in 2018 with a maturity in 2023, the bond secured an additional $2 million in funding from the U.S. International Development Finance Corporation (DFC) and the Netri Foundation to complement the $10 million already raised. These funds were allocated to finance operations at the Magrabi ICO Cameroon Eye Institute (MICEI).

MICEI is the flagship project of the African Eye Foundation and the first specialized eye care hospital and training institute in Central Africa to offer cataract surgery for the treatment of preventable blindness.

### Impact objectives

• Number of cataract surgeries: 18,000 over five years.

• Quality of surgeries: At least 50% of cataract surgeries must achieve a "good" outcome based on WHO guidelines for post-surgery visual acuity.

• Equity in access: By the end of the fifth year, at least 40% of surgeries must be performed on individuals from the bottom two wealth quintiles in Cameroon.

### Replicability and Scalability

This model of the Cameroon Cataract bond has proven to be replicable in other regions, both for eye care services and for medical interventions more broadly.

### References:


1. *Convergence Blended Finance. "Blended Finance Primer." Accessed June 6, 2024. https://www.convergence.finance/blended-finance.*

2. *Convergence Blended Finance. The State of Blended Finance 2024. Convergence Report, 2024. Accessed June 6, 2024. https://www.convergence.finance/resource/state-of-blended-finance-2024/view.*

3. *Bharali, I., & McDade, K. K. (2019, March 1). Closing Africa's health financing gap. Brookings Institution. Retrieved from https://www.brookings.edu/articles/closing-africas-health-financing-gap/*

4. *Krugman, A. (2024, August 29). Africa's health financing gap. Think Global Health. Retrieved from https://www.thinkglobalhealth.org/article/africas-health-financing-gap*

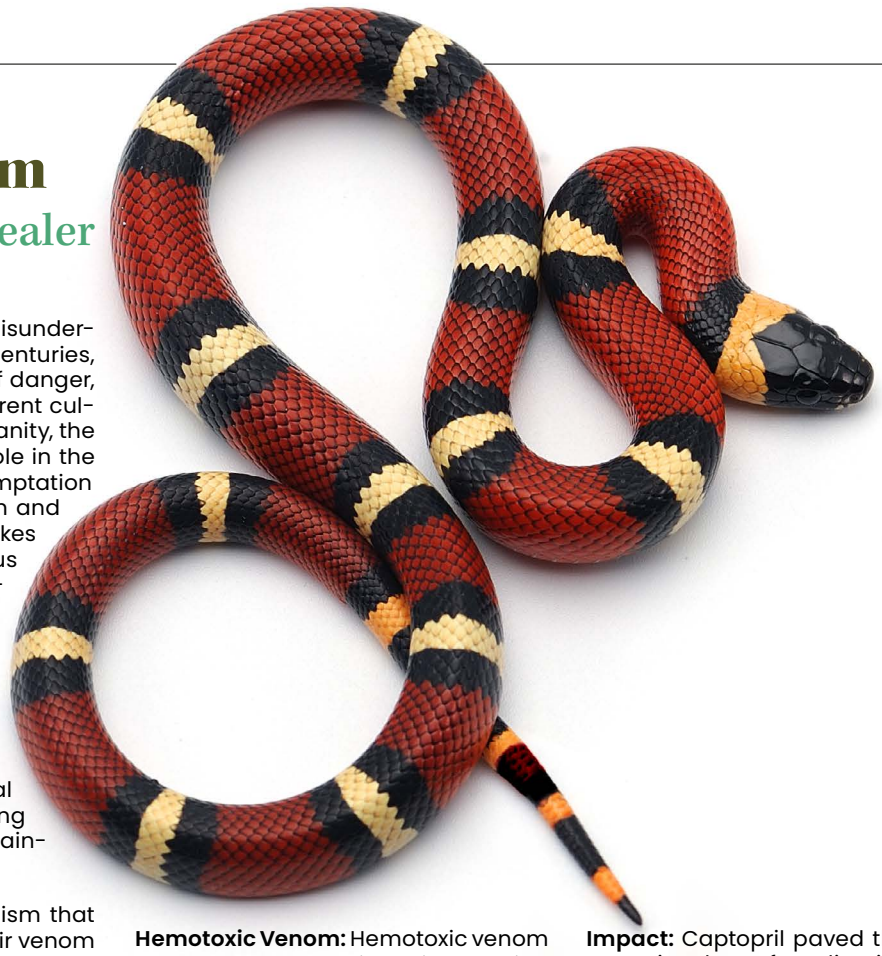
5. *ECORYS (nd), Cameroon Cataract Bond: A case study produced as part of the Cameroon Cataract Bond Evaluation*



**Mohamed Wail Aaminou**
Affiliate Professor at the Sustainable Business Economics Center at Africa Business School

# Snake Venom

## A Killer and a Healer



Snakes have long been misunderstood creatures. For centuries, they've been symbols of danger, deceit, and even evil in different cultures and religions. In Christianity, the serpent is infamous for its role in the fall of man, representing temptation and sin in the story of Adam and Eve. Hinduism also links snakes to powerful but dangerous forces, as seen in the depiction of Vasuki, the king of serpents. In many African and Native American traditions, snakes often symbolize both life and death, reflecting their dual nature. Despite their feared reputation, snakes play a crucial role in ecosystems, controlling pest populations and maintaining balance.

But it's not just their symbolism that makes them fascinating; their venom is a true paradox.

It's a substance that can kill but also heal, a deadly cocktail that has saved lives and continues to inspire medical breakthroughs.

### What Makes Snake Venom So Deadly?

Snake venom is not a single substance but a complex mixture of proteins, enzymes, and other molecules that work together to immobilize prey or defend against threats[1]. The effects of venom vary widely, depending on the species of the snake.

**Neurotoxic Venom:** This type of venom attacks the nervous system. It can block signals between the brain and muscles, leading to paralysis, respiratory failure, and, if untreated, death. For example, cobras and sea snakes are known for their neurotoxic venom, which can immobilize prey almost instantly.

**Cytotoxic Venom:** Cytotoxic venom destroys tissues and cells, often causing severe swelling, pain, and tissue death (necrosis). This type of venom is common in vipers, like puff adders. If untreated, the damage may lead to amputations or long-term disability.

**Hemotoxic Venom:** Hemotoxic venom targets the blood, disrupting clotting mechanisms and causing internal bleeding. It can lead to organ failure and severe hemorrhaging. The venom of rattlesnakes (Viperidae Family) is a prime example of this type.

Some snake species, such as the Russell's viper, produce venom that combines multiple effects, making them particularly dangerous. The complexity of venom poses challenges for treatment and scientific study, but it's also what makes it so valuable in medicine.

### The Healing Power of Snake Venom

While the idea of venom as medicine might sound counterintuitive, history and science tell a different story. Snake venom has been used in traditional medicine for centuries, and modern research has turned it into a goldmine for drug discovery [1].

**Captopril [2]:**

**Source:** Brazilian pit viper (Bothrops jararaca).

**Use:** This drug, approved in 1981, was a game-changer in treating high blood pressure and heart failure. It works by inhibiting an enzyme that causes blood vessels to narrow, allowing blood to flow more easily.

**Impact:** Captopril paved the way for an entire class of medications known as ACE inhibitors, which are now widely used worldwide.

**Tirofiban [3]:**

**Source:** Saw-scaled viper (Echis carinatus).

**Use:** Approved in 1998, this drug prevents blood clots and is commonly used in patients experiencing heart attacks. It works by blocking platelet aggregation, a crucial step in clot formation.

**Cobratide [4]:**

**Source:** Chinese cobra (Naja atra).

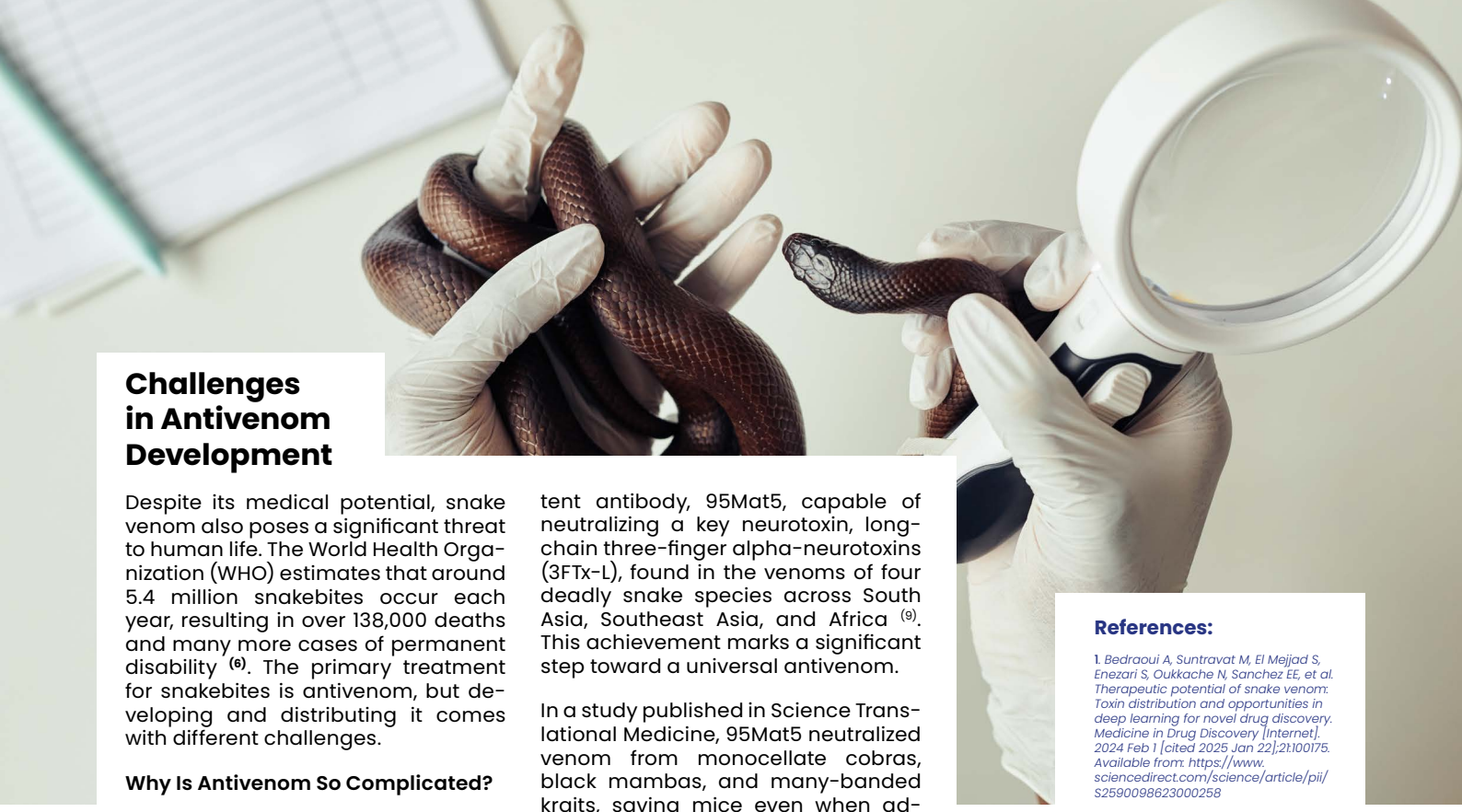
**Use:** Cobratide, a peptide derived from cobra venom, has shown promise in pain management and other therapeutic applications. While still under research, it represents the potential of venom in treating conditions beyond cardiovascular diseases.

**Ziconotide [5]:**

**Source:** Cone snail venom (not a snake but worth mentioning).

**Use:** This powerful painkiller is used to treat severe chronic pain, particularly in patients who don't respond to traditional opioids.

These examples underscore how venom, a substance designed to kill, can be used to save live!!



## Challenges in Antivenom Development

Despite its medical potential, snake venom also poses a significant threat to human life. The World Health Organization (WHO) estimates that around 5.4 million snakebites occur each year, resulting in over 138,000 deaths and many more cases of permanent disability [6]. The primary treatment for snakebites is antivenom, but developing and distributing it comes with different challenges.

### Why Is Antivenom So Complicated?

**Venom Variability:** Snake venom composition varies between species and also between individuals of the same species. A cobra in one region may produce venom with different effects than a cobra elsewhere (1). This makes it difficult to develop a "one-size-fits-all" antivenom.

**Production Process:** Antivenom is made by injecting small amounts of venom into animals like horses or sheep, which then produce antibodies to neutralize the venom. These antibodies are extracted and purified to create the antivenom. The process is time-consuming, expensive, and requires specialized facilities.

**Limited Access:** Many regions affected by snakebites, such as rural areas in Africa, Asia, and Latin America, lack access to affordable and effective antivenom. Even when available, it may not target the specific snake species responsible for the bite.

Adverse Reactions: Antivenoms are not without risks. Some patients experience severe allergic reactions to the treatment, which can complicate recovery.

### The Dream of a Universal Antivenom

Scientists have long sought a universal antivenom that could neutralize the venom of multiple snake species. While progress has been made, the complexity of venom remains a significant hurdle. However, a recent breakthrough offers hope (7,8). Researchers identified a potent antibody, 95Mat5, capable of neutralizing a key neurotoxin, long-chain three-finger alpha-neurotoxins (3FTx-L), found in the venoms of four deadly snake species across South Asia, Southeast Asia, and Africa [9]. This achievement marks a significant step toward a universal antivenom.

In a study published in Science Translational Medicine, 95Mat5 neutralized venom from monocellate cobras, black mambas, and many-banded kraits, saving mice even when administered 20 minutes after **exposure** to venom [10]. This antibody binds to alpha-bungarotoxin—the primary 3FTx-L toxin—at the same site it uses to paralyze nerve and muscle cells. Impressively, it protected mice from venom containing dozens of toxins and showed potential to supplement existing antivenoms, which often fail to address 3FTx-L toxins effectively.

Current antivenoms, derived from animal proteins, are species-specific and carry risks of severe immune reactions. A universal antivenom based on human-derived antibodies like 95Mat5 could overcome these challenges, eliminating the need for region-specific treatments and reducing adverse side effects.

Despite its promise, developing and producing such treatments remains a challenge, especially as snakebites disproportionately affect low- and middle-income countries. The researchers aim to extend their discovery process to other venom components, with the ultimate goal of creating an antibody cocktail capable of neutralizing the venom from all 200+ dangerous snake species worldwide.

### References:


1. *Bedraoui A, Suntravat M, El Mejjad S, Enezari S, Oukkache N, Sanchez EE, et al. Therapeutic potential of snake venom: Toxin distribution and opportunities in deep learning for novel drug discovery. Medicine in Drug Discovery [Internet]. 2024 Feb 1 [cited 2025 Jan 22];21:100175. Available from: https://www.sciencedirect.com/science/article/pii/S2590098623000258*

2. *Marte F, Sankar P, Cassagnol M. Captopril. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 [cited 2022 Oct 27]. Available from: http://www.ncbi.nlm.nih.gov/books/NBK535386/*

3. *Guo Y zhe, Zhao Z wen, Li S mei, Chen L long. Clinical efficacy and safety of tirofiban combined with conventional dual antiplatelet therapy in ACS patients undergoing PCI. Sci Rep. 2021 Aug 25;11:17144.*

4. *Liu B, Wang W, Gao T, Huang L, Fan H, Chen HX. Separation, identification and quantification of associated impurities in cobratide using sheathless CE-MS and CE-UV. Anal Methods. 2021 Sep 2;13(34):3845–51.*

5. *Safavi-Hemami H, Brogan SE, Olivera BM. Pain Therapeutics from Cone Snail Venoms: From Ziconotide to Novel Non-Opioid Pathways. J Proteomics [Internet]. 2019 Jan 6 [cited 2025 Jan 22];190:12–20. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6214764/*

6. *Snakebite [Internet]. [cited 2025 Jan 22]. Available from: https://www.who.int/health-topics/snakebite#tab=tab_1*

7. *Willyard C. Next-generation snakebite therapies could reduce death toll. Nature [Internet]. 2024 Nov 21 [cited 2025 Jan 22]; Available from: https://www.nature.com/articles/d41586-024-03818-z*

8. *Antivenom slithers back to life. Nat Biotechnol [Internet]. 2024 Apr [cited 2024 Sep 10];42(4):537–8. Available from: https://www.nature.com/articles/s41587-024-02221-3*

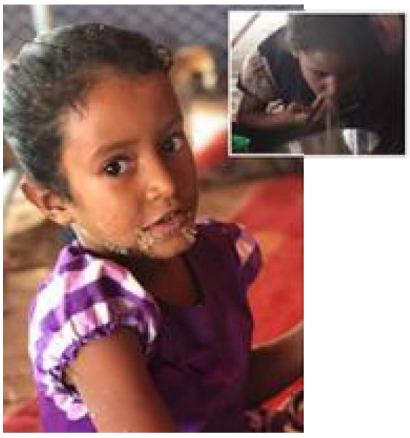
9. *Powerful new antivenom raises hopes for a universal solution to lethal snakebites [Internet]. [cited 2025 Jan 22]. Available from: https://www.science.org/content/article/powerful-new-antivenom-raises-hopes-universal-solution-lethal-snakebites*

10. *Khalek IS, Senji Laxme RR, Nguyen YTK, Khochare S, Patel RN, Woehl J, et al. Synthetic development of a broadly neutralizing antibody against snake venom long-chain α-neurotoxins. Science Translational Medicine [Internet]. 2024 Feb 21 [cited 2024 Sep 10];16(735):eadk1867. Available from: https://www.science.org/doi/10.1126/scitranslmed.adk1867*



**Anas Bedraoui**
PhD Student at Faculty of Medical Sciences

# Risks to Health from Cultural Weight Gain Practices in Africa



Body image and perceptions of ideal body size are deeply influenced by cultural beliefs and societal expectations. In many African and Arab societies, a fuller figure in women is associated with wealth, fertility, strength, and overall health.

This contrasts with the Western ideal, where a slim body is often seen as the standard of beauty. Consequently, in several African communities, the desire for a fuller body has led to the adoption of unregulated and dangerous weight gain practices, posing serious health risks. In regions where a larger body size symbolizes prosperity and attractiveness, women employ various methods to gain weight. These practices are prevalent in rural areas but are increasingly observed in urban settings due to societal pressures. From West Africa to North and East Africa, communities have developed harmful methods to achieve rapid weight gain, often unaware of the long-term consequences.

A particularly alarming practice involves the use of corticosteroids and pharmaceutical substances, including drugs intended for animal fattening. Cyproheptadine, appetite-stimulating syrups, and even psychotropic drugs are widely consumed by women seeking quick weight gain. Herbal concoctions, promoted as "natural" solutions, are also common despite their potential toxicity. These substances disrupt metabolic functions, cause hormonal imbalances, and may lead to severe psychological side effects such as anxiety and depression.

Traditional methods, such as the "Lahgin" technique in some parts of North Africa—where water is injected into the body to induce swelling—are still practiced, particularly in rural areas with limited access to health education.

While these methods are declining in urban centers, they remain deeply ingrained in some communities where beauty ideals emphasize fuller bodies. The rising rates of obesity and overweight in Africa underscore the dangers of these practices. In countries like Sudan, Somalia, and Niger, where fuller body sizes are idealized, obesity rates are increasing. However, these cultural preferences often overlook the associated health risks, including heart disease, diabetes, and other metabolic disorders. The widespread use of unregulated weight-gain products further exacerbates the public health crisis, yet little scientific research has been conducted on their specific risks.

The lack of regulation and awareness makes it difficult for women to make informed health choices. Social media and word of mouth continue to spread misinformation, increasing the urgency for public health interventions. Addressing this issue requires a multi-faceted approach, including public health education, scientific research on the effects of these practices, and the promotion of healthier body image standards. By raising awareness, challenging harmful beauty ideals, and providing accurate health information, a healthier environment can be fostered—one that prioritizes well-being over unrealistic cultural expectations.

**Ezzouhra El Maaiden**
Scientist at African Sustainable Agriculture Research Institute

**Women account for only 35% of all science, technology, engineering and math graduates**

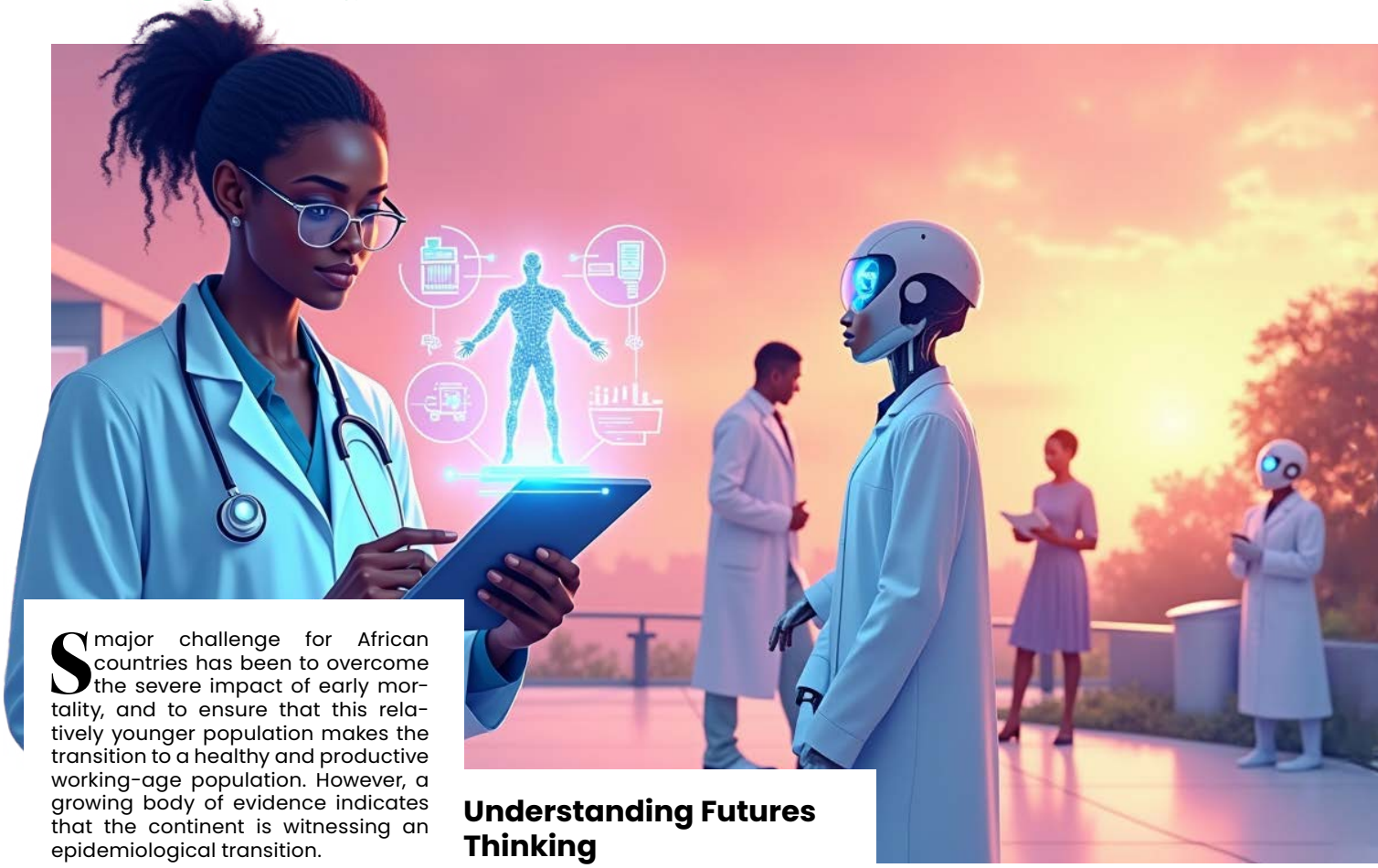
UN Women, September 2024

#UM6P_Engaged

Corporate Communication

# African Health Futures

## A Foresight Perspective for a Resilient Tomorrow



Smajor challenge for African countries has been to overcome the severe impact of early mortality, and to ensure that this relatively younger population makes the transition to a healthy and productive working-age population. However, a growing body of evidence indicates that the continent is witnessing an epidemiological transition.

Rapid unplanned urbanization and the trend of rising incomes are contributing to an increase in the incidence of non-communicable diseases in Africa by leading to changes in lifestyles; these include unhealthy dietary habits, reduced physical activity and increased tobacco consumption. Chronic conditions such as obesity and heart disease are creating a double-edged sword that the current healthcare models are not fully equipped to handle. This is predicted to surpass communicable diseases as Africa's leading health threat by 2030, according to a World Bank report.

A new set of dynamic realities is emerging, with a dramatically different matrix of development challenges than the 20th century. Which begs the question: Could strategic foresight have helped us anticipate this better?

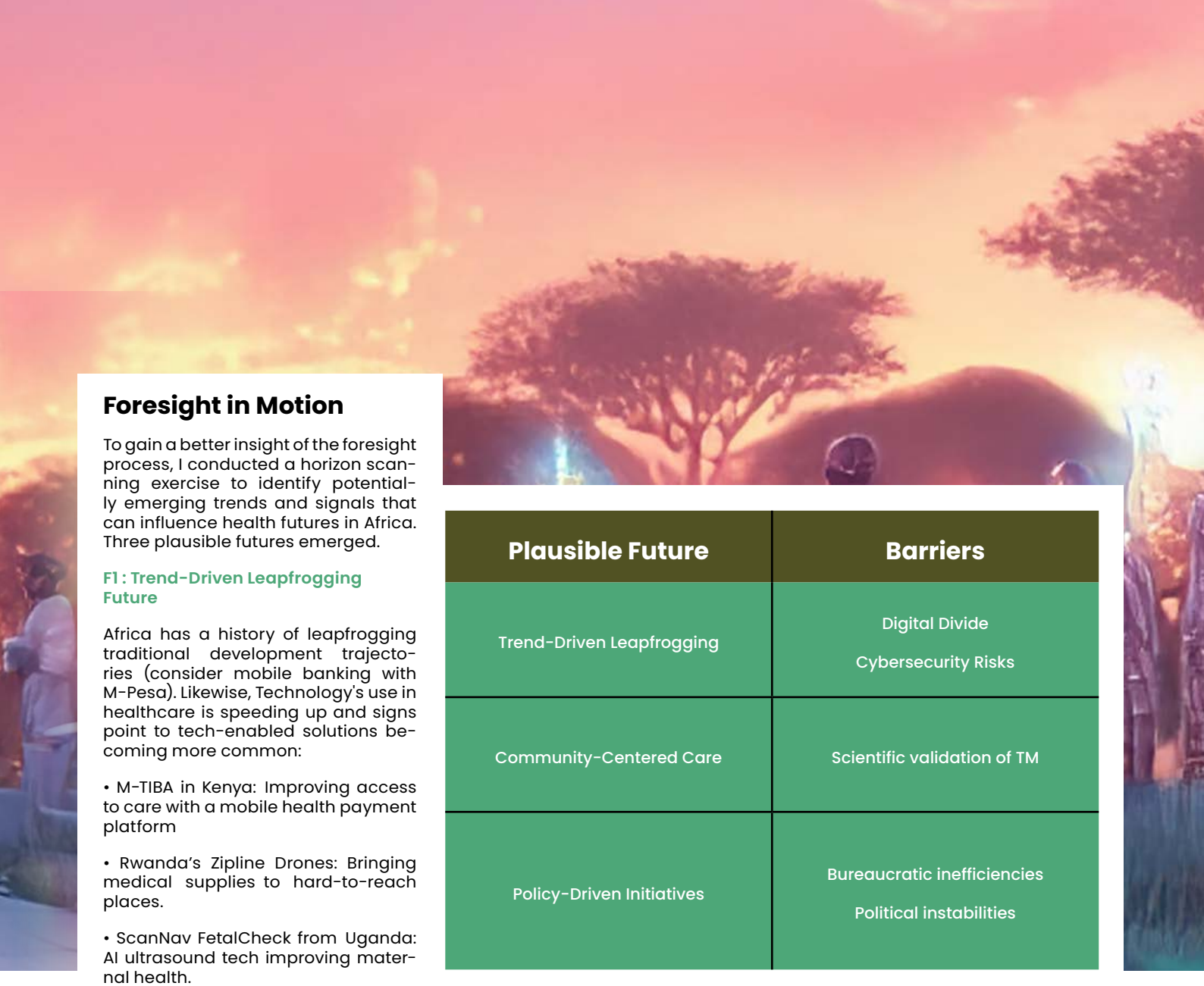
### Understanding Futures Thinking

Futures thinking or foresight is a structured way of exploring and preparing for different futures. It is not about predicting any one inevitable future, but rather opening up a range of possibilities as it helps us navigate complexity and uncertainty. This perspective forces us to ask, "What if?" and "How could things be different?". Foresight covers a heterogeneous collection of theories, frameworks, methods and processes arising from over 50 years of thought-leadership and application.

In practice, Futures research starts with a scanning exercise to recognize important trends and detect early possible changes by noticing weak signals. This is typically linked with what is referred to as "emerging issue analysis," which focuses on observing weak signals alongside the "outliers," including early adopters, exceptional innovators, or paradigm-shifters and nonconformists.

In retrospect, when we discuss swift urban growth, intelligent uses of technological advancements, greater involvement in the global movement of individuals, commerce, and finances, along with the ongoing repercussions of climate change, these represent a once "collection of weak signals" that have evolved into the trends we observe today.

In the realm of health , where emerging, accelerating scientific and technological advances are changing the meaning of patient care, transforming the delivery of health care and the limits of the feasible in terms of the possible medical interventions , these tools and approaches can empower us to proactively identify, anticipate and prepare solutions for the pressing issues that hold great potential and challenges for African health.



## Foresight in Motion

To gain a better insight of the foresight process, I conducted a horizon scanning exercise to identify potentially emerging trends and signals that can influence health futures in Africa. Three plausible futures emerged.

### F1 : Trend-Driven Leapfrogging Future

Africa has a history of leapfrogging traditional development trajectories (consider mobile banking with M-Pesa). Likewise, Technology's use in healthcare is speeding up and signs point to tech-enabled solutions becoming more common:

• M-TIBA in Kenya: Improving access to care with a mobile health payment platform

• Rwanda's Zipline Drones: Bringing medical supplies to hard-to-reach places.

• ScanNav FetalCheck from Uganda: AI ultrasound tech improving maternal health.

### F2 : Community-Centered Care Future

In this scenario, we see a move towards more localized, community-driven healthcare models, improving access and trust. In fact, most Africans still prefer receiving informal and community-based care for reasons of affordability and cultural relevance. Some weak signals for this trend are the following:

• Pioneering Community Health Extension Programmers: The Case of Ethiopia

• WHO Traditional Medicine Global Summit (India, 2023): Asserts the increasing acknowledgement of traditional and indigenous medicine.

| Plausible Future | Barriers |
|---|---|
| Trend-Driven Leapfrogging | Digital Divide<br>Cybersecurity Risks |
| Community-Centered Care | Scientific validation of TM |
| Policy-Driven Initiatives | Bureaucratic inefficiencies<br>Political instabilities |

### F3 : Policy-Driven Initiatives Future

Sustainable health care systems require robust policy frameworks. In this scenario, governments and policymakers forcefully step up to improve the healthcare infrastructure, financing and regulation. Key signals include Angola and Côte d'Ivoire national healthcare projects, Africa CDC Role in Pandemic Response, Rwanda's Mutuelle de Santé.

While this is a generic exploration of Africa's possible health futures, it should be noted that each scenario also brings its own challenges, even the most desirable ones. Beyond a solid foresight exercise, this calls for a proper evaluation of possible implications to inform a better path ahead.

## The Road Ahead

At its root, Futures Thinking or Foresight encourages us to welcome uncertainty — not as a cause of anxiety, but as fertile ground for innovation and advancement.

In Africa, where the road to a healthier nation is neither linear nor guaranteed, foresight becomes a strategic capacity on demand that serves as a compass to foresee future health problems and opportunities.

For scientists and researchers, this means thinking beyond proximal problem-solvers and considering the more distal impacts of their work. It means asking not simply "What is the next breakthrough? but even "How will our health systems function in 20 or 50 years?". These kinds of questions empower us to explore new frontiers and lead us to resilient Futures for Africa.

**Hajar Bahi**
Africa Initiative

# Redefining Progress

## How AI is Transforming HealthTech in Africa

With 4.5 billion people worldwide lacking access to essential healthcare services and a projected shortfall of 10 million health workers by 2030, Artificial intelligence (AI) emerges as a transformative force capable of bridging this gap and redefining the future of healthcare. Beyond merely adopting advanced tools, AI represents a fundamental shift in how healthcare is conceptualized, accessed, and delivered, particularly for underserved populations in geographically isolated rural areas and regions with limited health coverage. By enabling equitable distribution and accessibility of healthcare services, AI holds the potential to accelerate progress toward achieving universal health coverage.

Africa, home to 16% of the global population, shoulders 23% of the world's disease burden yet receives only 1% of global health funding. This disparity is starkly reflected in the continent's healthcare challenges, where over 600 million people lack access to basic healthcare and the region grapples with a critical shortage of health workers, accounting for just 3% of the global healthcare workforce.

As Africa's population is projected to grow to 2.8 billion by 2050, addressing these challenges will require innovative solutions. Integrating artificial intelligence (AI) into HealthTech systems offers a promising pathway to transform healthcare delivery. By enabling more accurate diagnoses, streamlining administrative processes, and enhancing medical records management, AI has the potential to save time, reduce costs, and significantly improve healthcare efficiency and accessibility across the continent.

### The Rise of AI-Powered HealthTech Startups in Africa

Africa's healthcare landscape, while facing significant hurdles, has also grown to become a hub for innovation, positioning the continent as one of the most dynamic and fast-evolving entrepreneurial ecosystems in the world. This surge in innovation highlights Africa's untapped potential to leverage DeepTech to drive transformative progress in HealthTech, with the rise of startups harnessing artificial intelligence (AI) to revolutionize healthcare delivery. These ventures are designing cutting-edge solutions tailored to Africa's unique needs, utilizing innovations like mobile technologies, machine learning, and big data to tackle longstanding barriers.

Venture capital plays a pivotal role in driving the continent's HealthTech transformation, as AI is dominating global healthcare investments—accounting for one in every four dollars invested—the potential for scalable, impactful innovation is immense.

UM6P Ventures, counting as the investment arm of UM6P, focuses on HealthTech as a key vertical within its entrepreneurship and DeepTech initiatives. The firm supports startups leveraging AI to develop solutions tailored to Africa's unique healthcare challenges. By aligning its investments with broader goals of regional and continental development, UM6P Ventures aims to drive scientific innovation, promote entrepreneurship, and contribute to building sustainable health systems that improve the lives for millions across Africa.

## SIENSBIOTEK:
### Transforming Diagnosis with AI

One example of an AI-driven health solution making waves in Africa is SenseBioTek, a startup pioneering non-invasive cancer detection through AI-powered nanosensors. Founded by Nabil Moumane, a French Moroccan physician and medical physics engineer, SenseBioTek is developing a medical electronic nose capable of detecting cancer at an early stage by analyzing volatile organic compounds (VOCs) emitted by the human body. This innovative approach eliminates the need for invasive procedures or complex medical equipment, offering a faster, more accessible, and reliable screening solution.

Cancer remains a leading cause of mortality worldwide, with an estimated 10 million deaths annually. Research shows that each month of delayed diagnosis increases the risk of mortality by 10%, highlighting the critical importance of early detection.

The startup's work is backed by leading academic research and institutions, including a recent collaboration with University Mohammed VI Polytechnic (UM6P). Through this partnership, SenseBioTek is laying the groundwork for deploying its technology across Africa, ensuring that millions of people—particularly in underserved regions—can benefit from life-saving diagnostics. This effort aligns with broader goals of advancing preventive healthcare and reducing disparities in access to innovative medical solutions on the continent.

## DeepEcho:
### Advancing Prenatal Care in Africa with AI

DeepEcho, a Moroccan-based startup, is using the power of Artificial Intelligence (AI) and Deep Learning to transform prenatal diagnostics. Their software mimics the expertise of a trained sonographer, analyzing ultrasound scans to assist radiologists and minimally trained clinicians in diagnosing high-risk pregnancies.

In Africa, where access to quality prenatal care remains a significant challenge, DeepEcho's technology addresses critical issues such as birth defects, preterm birth, low birth weight, and their associated outcomes. By providing accurate and accessible diagnostics, the software offers a lifeline in resource-constrained settings, helping to reduce fetal mortality and improve maternal health.

Backed by UM6P Ventures, DeepEcho's AI-driven solution has achieved 95% accuracy in measuring fetal structures. This precision is supported by one of the largest annotated fetal ultrasound databases in the world.

## DEEPTECH SUMMIT 2025:

Serving as a platform for exploring the far-reaching impact of artificial intelligence across various sectors, including HealthTech, The DeepTech Summit 2025, hosted by UM6P's Entrepreneurship & Venturing division, is set to take place on May 8-9 in Benguerir, Morocco. Under the theme "Redefining Progress: How AI is Transforming Deep Tech Innovation"

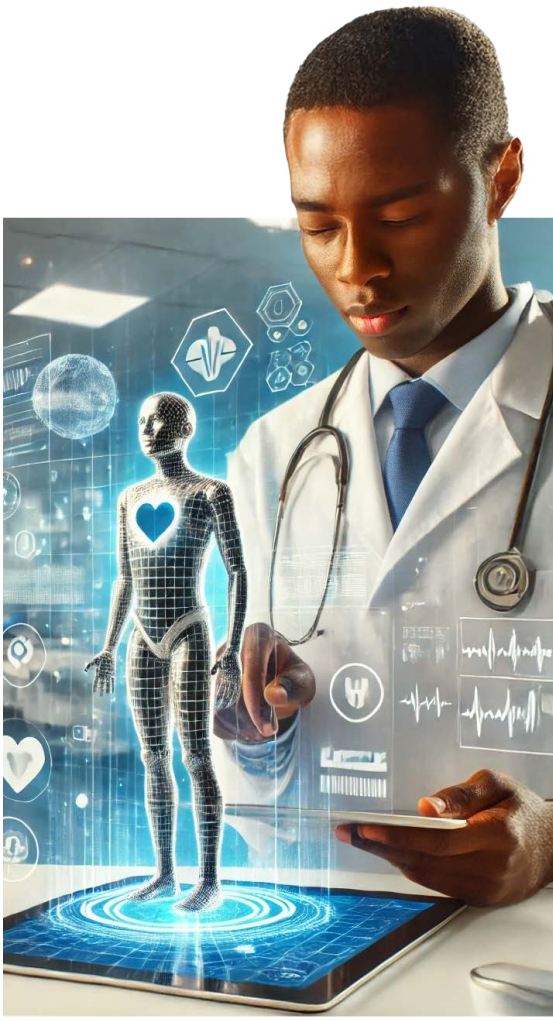
Whith HealthTech being one of the key tracks, the event is designed to foster cross-industry collaboration, bringing together policymakers, researchers, innovators, industry leaders, and stakeholders to discuss breakthrough innovations and actionable strategies for implementing AI-driven solutions. In the HealthTech track, discussions will focus on leveraging AI to address Africa's most pressing healthcare challenges, from improving diagnostics to enhancing access to quality care, while also addressing ethical and practical considerations.

The summit's broader goal is to inspire meaningful progress by uniting diverse voices and expertise. By creating a space for collaboration and knowledge-sharing, the Summit aims to accelerate the adoption of AI technologies that can drive transformative change—not only in healthcare but across multiple sectors critical to Africa's development.

Though HealthTech is not the sole focus, its inclusion as a key track underscores the importance of innovation in addressing healthcare disparities and improving outcomes. The event promises to be a catalyst for actionable solutions, paving the way for a future where AI-powered technologies benefit communities across the continent and beyond.

To advance health tech solutions in Africa, stakeholders must take decisive action. This includes investing in technology-driven services like telemedicine and AI diagnostics, setting clear procurement targets to support local innovations, and fostering inclusive public-private partnerships (PPPs) to scale successful models. Prioritizing learning and evidence generation will help identify what works, while grants and mentorship can empower the next generation of innovators.

AI has the potential to revolutionize healthcare by improving treatments and supporting professionals, but its success depends on collaboration between public and private sectors. By aligning strategies, building trust, and expanding PPPs, leaders can create a sustainable ecosystem for AI in health, driving transformative and equitable healthcare outcomes across Africa.



**Direction of Entrepreneurship and Venturing**

# Rethinking Africa's Health Systems for Sustainable Resilience

Africa's health systems remain fragile, burdened by deep-rooted weaknesses. Many hospitals and clinics still lack stable electricity, clean water, basic medical supplies, and enough trained staff. When crises hit, responses are sluggish and fragmented. People bear the brunt. Health systems fail under fractured structures, coordination is weak, and funding shortfalls leave hospitals in dire conditions.

Some progress is visible. Countries like Morocco, Egypt, South Africa, and Senegal are increasing pharmaceutical production, yet local vaccine output meets just 1% of demand (Mohammed et al., 2023). Africa accounts for only 3% of global pharmaceutical manufacturing (Asoko Insight, 2023), with 80% of production concentrated in a handful of countries (Ussai et al., 2022), leaving much of the continent dependent on imports. While some healthcare networks are expanding, and hospitals are being built, rural areas remain underserved, and local production falls far short of need.

## Persistent Gaps in Africa's Health Systems

### 1. Weak Infrastructure and Funding Constraints

Many healthcare facilities struggle to function under poor conditions. Roughly half of primary healthcare facilities in sub-Saharan Africa lack access to clean water and sanitation, making infection control difficult (AfDB, 2022). Electricity shortages are another major challenge, with at least 25,000 facilities operating with no power supply and 68,350 relying on unreliable electricity (Seforall, 2023). Financial limitations make these challenges worse. The $4.5 billion in capital expenditure from African governments each year is far below the estimated $26 billion needed annually to meet growing health demands. Hospitals remain underfunded, with shortages of staff, equipment, and essential medicines.

### 2. Dependence on Imported Medicines and Supply Chain Failures

Africa still relies heavily on foreign pharmaceutical products. Between 61% (WEF, 2023) to 90% of pharmaceuticals are imported, leaving many countries unable to secure essential medicines when global supply chains are disrupted. The COVID-19 pandemic highlighted these weaknesses as wealthier nations secured vaccine supplies while many African countries waited.

While companies like Aspen Pharmacare in South Africa and Biopharma in Morocco are increasing local drug production, many factories still depend on imported raw materials (Narsai, & Abudu, 2024). Active Pharmaceutical Ingredients (APIs) remain a major weakness. Without stronger API production capacity and coordinated supply chains, pharmaceutical self-sufficiency will remain out of our reach.

### 3. Workforce Shortages and Migration of Health Professionals

The continent is facing a critical shortage of trained healthcare workers. The WHO estimates that the continent needs 6.1 million more health workers to meet basic healthcare needs by 2030 (WHO, 2022, Ahmat et al., 2022). With only 300,000 doctors and 1.2 million nurses across the continent, the gap is widening.

Many professionals, including doctors and nurses, migrate abroad in search of better pay and working conditions, leaving hospitals in their home countries struggling. Even well-equipped facilities cannot function effectively without enough trained personnel. Retaining health workers requires better pay structures, improved working conditions, and incentives for professionals to stay and serve their communities.

## 4. Weak Disease Surveillance and Response Systems

Detecting and containing outbreaks remains a challenge due to fragmented disease surveillance systems. Many African countries lack the infrastructure needed for real-time disease tracking, leading to delays in identifying public health threats. Factors such as weak data-sharing networks, insufficient diagnostic facilities, and underfunded epidemiology units contribute to the vulnerability of African nations to recurrent health crises (Ashenafi, Aytenew, et al., 2024). Strengthening real-time surveillance and community-led outbreak monitoring could allow faster responses, reducing the spread of infectious diseases before they escalate into full-scale health crises. Regional collaboration is also necessary to prevent the rapid spread of diseases across borders.

## 5. Poor Health Spending and External Aid Dependence

Funding problems in African healthcare are compounded by mismanagement, with health budgets often affected by inefficiency, corruption, and poor planning. The absence of performance-based health financing, where funds are allocated based on outcomes, further exacerbates these issues. Over-reliance on external aid also poses a risk. Cuts to funding, such as those to U.S. PEPFAR, can disrupt critical programs like HIV/AIDS treatment, highlighting the vulnerability of depending on donor contributions.

Efforts to enhance vaccine independence face obstacles, such as the freeze on U.S. aid, which has stalled the USAID Malaria Vaccine Development Program and delayed crucial research. The inequitable distribution of mpox vaccines, with Africa being the hardest-hit region but left waiting, further underscores the need for local production capabilities. While the proposed African Epidemic Fund aims to improve financial resilience (CGDEV, 2024), it must be structured to ensure accountability and avoid political interference.

## 6. Malnutrition and Non-Communicable Diseases (NCDs)

Africa's healthcare systems have historically focused on infectious diseases; however, there is a concerning rise in non-communicable diseases (NCDs) such as diabetes, hypertension, and cancer (Kassa et al., 2024). According to the World Health Organization (WHO), NCDs accounted for 37% of deaths in Africa in 2019, up from 24% in 2000 (WHO, 2021). Unfortunately, many health policies have not adapted to this shift, leaving large populations without access to specialized care for chronic conditions.

At the same time, malnutrition continues to be a significant issue, particularly among children. Africa has the highest prevalence of childhood stunting globally, a condition linked to long-term cognitive impairment and poor health outcomes (Seretew, Wullo Sisay, et al., 2024). This dual burden of malnutrition is exacerbated by urban populations experiencing an increase in obesity-related diseases due to changes in diet and lifestyle. The African region faces a unique challenge as it grapples with both undernutrition and rising obesity rates, driven by urbanization and sedentary lifestyles.

Without adapting healthcare strategies to address these emerging challenges effectively, Africa's disease burden is projected to continue expanding. The Africa CDC warns that by 2030, NCDs and injuries may cause more premature deaths on the continent than all other conditions combined (Africa CDC, 2022).

## What Needs to Change

Africa's health challenges are not new, yet the same weaknesses persist. Solutions exist, but implementation remains slow. African universities and research institutions cannot remain in the background, analyzing crises after they happen. They must be central to the work of building stronger disease surveillance, supporting pharmaceutical self-sufficiency, and ensuring that research drives policy.

### 1. Universities Must Lead in Health Foresight and Anticipation

Health crises do not appear without warning. Disease patterns are shaped by climate, migration, urbanization, and infrastructure. Yet, much of Africa's health research remains reactive. Universities should invest in early-warning models, community-based surveillance systems, and better disease tracking tools rather than waiting for crises to unfold. Health faculties should work with data scientists, climate researchers, and local health workers to develop real-time monitoring systems. Training programs should also prepare future public health leaders to anticipate threats and act before outbreaks escalate.

### 2. Health Research Must Move Beyond Academia

Many research findings remain within academic circles, disconnected from the spaces where decisions are made. Governments, hospitals, and pharmaceutical companies rarely engage with university researchers, while many researchers focus on publication without translating their work into practical impact.

African universities need stronger networks with decision-makers to ensure that research shapes policy, funding priorities, and industry practices. Medical schools and public health departments should focus on research that leads to real-world interventions rather than studies that remain in journals.

### 3. Strengthening the Pharmaceutical Supply Chain with Local Production

Africa remains dependent on external supply chains for medicine and vaccines. Universities should work directly with local pharmaceutical companies to address this vulnerability. Strengthening pharmaceutical production requires more than drug research. It involves developing expertise in manufacturing, improving infrastructure, and supporting regulatory changes that allow domestic production to expand.

One of the biggest gaps is in Active Pharmaceutical Ingredient (API) production. Most African drug manufacturers still rely on imported ingredients. Universities should focus on R&D for local alternatives, testing new approaches and providing scientific backing for policies that support domestic manufacturing.

Collaboration should also extend beyond national borders. Regional research hubs, where institutions across Africa work together on pharmaceutical innovation, could make local production more sustainable.

### 4. Fixing the Health Workforce Crisis at the Root

Africa's shortage of health workers is not only about migration. It is also about how professionals are trained and retained. Universities should rethink their approach to medical and public health education, ensuring that training aligns with actual health system needs rather than producing graduates who seek opportunities abroad.

Medical and nursing schools should expand mid-level health worker training programs so that healthcare remains accessible in underfunded regions. Governments and institutions must also rethink incentives to retain skilled professionals. Scholarships, subsidized education, and training programs should be tied to service commitments in underserved areas.

### 5. Improving Health System Financing

Many health systems in Africa struggle due to poor planning, inefficient spending, and external dependency. Universities should take a more active role in health finance research, tracking where money goes and designing better models for funding healthcare sustainably.

Public-private partnerships should be more than a way to secure funding. They should ensure that investments lead to meaningful improvements in healthcare delivery. This requires greater transparency in health budgets, better performance-based funding mechanisms, and financial models that reduce reliance on external donors.

## Conclusion

Africa's health systems will not be transformed by external interventions or short-term aid. The real work lies within. The institutions that train the next generation of doctors, nurses, and policymakers cannot remain detached from the systems they are meant to strengthen. Our universities must recognize that they are not only places of learning but also engines of change.

They shape the people who will decide health policies, develop medicines, and build the research foundations that guide public health strategies. If they remain passive, those who lack the necessary expertise / vision will continue making decisions that affect millions.

*The problems are clear.*
*The responsibilities are, too.*
*The question is no longer what needs to be done, but who will step up and do it.*

**Azeez Adewale Hamzat**
Africa Initiative

# Healthcare and well-being in Africa

Aufrica is one of the largest continents with a total population of 1,536,400,829 (Worldometers, n.d.) which is equivalent to 18.3% of the world's population. The total population has been growing steadily with the highest yearly growth rate of 3.08 in 1982.

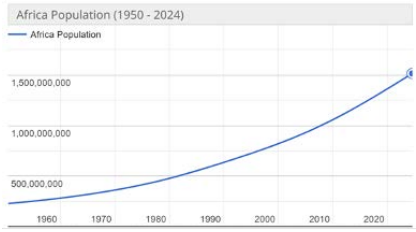



*Figure 1: Africa's total population. source: worldometer 2024*

Eastern and western Africa are the most populated regions in the continent making up 30% each of Africa's total population. Northern and middle regions are the second most populated regions, with 18% and 14% of the total population respectively. The most populated country in Africa is Nigeria with over 230 million people (2025 estimate), while the Seychelles with 100,000 people is the least populated country. Now taking the total population and surface of countries into account, we look at population density (People per square kilometer), we find that Mauritius – 630/km² and Rwanda – 550/km² lead the list of the most densely populated countries in Africa, and Namibia – 3/km² and Mauritania – 5/km² are the least densely populated.

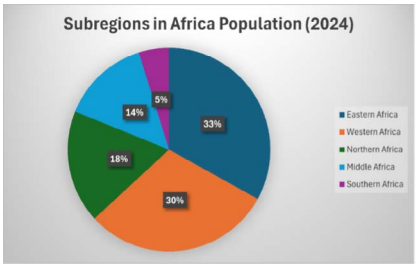



*Figure 2: Subregions of Africa population in 2024. source: worldometers.*

As a continent, Africa has been battling high mortality rates in the past decade, due to lack of proper infrastructures and health services, and the spread of various infectious diseases and viruses. Therefore, most health interventions and initiatives in Africa focused more on reducing mortality rates.

Since the 1960s, the introduction of national census systems in many African countries, supported by international organizations, lead to the implementation of effective birth and death records that helped in monitoring and controlling population and health conditions. Disease surveillance systems and programs were also introduced to control diseases like HIV/AIDS, malaria and tuberculosis. These programs and systems played a significant role in fostering better health conditions and combat infectious diseases and improving maternal and child health.

Example of the most effective health programs in Africa:

**Expanded Program on Immunization (EPI) – 1974 Onward:** which ensured universal vaccination of children against major infectious diseases (measles, tuberculosis, polio, diphtheria, pertussis, and tetanus). Countries that benefited most are Ghana, Tanzania, Kenya, and Uganda as they achieved high vaccination coverage by the 1990s.

**HIV/AIDS Control Programs – 1980s to Present:** prevent and manage HIV/AIDS through awareness campaigns, antiretroviral therapy (ART), and improved testing and monitoring. Countries That Benefited Most are Botswana, South Africa, and Rwanda have some of the most successful ART programs. Uganda was a pioneer in HIV prevention in the 1990s with its "ABC" campaign (Abstinence, Be faithful, Condom use).

**GAVI (Global Alliance for Vaccines and Immunization) – 2000 Onward:** improve access to new and underutilized vaccines, such as those for rotavirus, pneumococcal disease, and meningitis. Countries That Benefited Most: Sierra Leone, Senegal, and Malawi reduced child mortality with GAVI-supported vaccination campaigns.

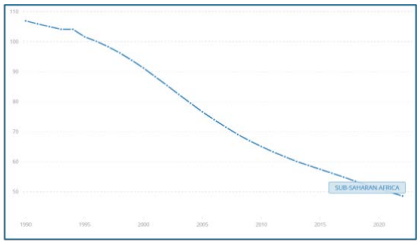



*Figure 3: Mortality rate, infant (per 1,000 live births) - Sub-Saharan Africa. source: World Bank 2022*

The development of health facilities' infrastructure, safer and reliable transportation systems and national security and stability in the African region play an important role in improving health conditions. While health conditions improved significantly in many African countries during the post-colonial period, these gains were closely linked to the development of health infrastructure, transportation systems, and national stability. Countries that experienced political stability and sustained investments in infrastructure (e.g., Botswana, Ghana, Rwanda, South Africa) achieved the most progress in health outcomes. However, regions affected by conflict and weak infrastructure still face major health challenges today.

**Imane Bouayad**
Student at Faculty of Governance, Economics and Social Sciences

# UM6P Community Engagement and Mental Health

At University Mohammed VI Polytechnic (UM6P), community well-being is more than just a priority—it is a core value embedded in the university's culture. Understanding that both personal and collective experiences shape mental health, UM6P fosters an environment that promotes psychological resilience, social interaction, and holistic development. Through structured programs and inclusive policies, the university integrates mental health awareness into its broader commitment to community engagement.

For students, active participation in extracurricular activities plays a crucial role in enhancing academic learning and fostering personal growth. At UM6P, a diverse range of student-led initiatives provide opportunities for social and emotional development. Student clubs and organizations serve as platforms for peer support, leadership development, and creative expression. Whether joining advocacy groups, cultural associations, academic societies, or sports teams, students build essential social skills and forge meaningful connections.

Beyond campus life, UM6P encourages civic engagement through service-learning programs and community outreach projects. These initiatives allow students to apply their academic knowledge in real-world settings while contributing to social progress. By engaging in hands-on experiences that address societal challenges, students develop a sense of purpose and responsibility.

To support overall well-being, the university also offers wellness programs (offered by the Health Center), mindfulness sessions, and sports activities aimed at helping students manage stress and maintain a balanced lifestyle. Access to comprehensive mental health resources ensures that students have the necessary tools to navigate both academic pressures and personal challenges.

By integrating mental health awareness into student life, UM6P fosters a supportive environment that enables students to thrive academically and socially. The university's holistic approach underscores the idea that success is not solely measured by grades, but also by well-being and active community participation.

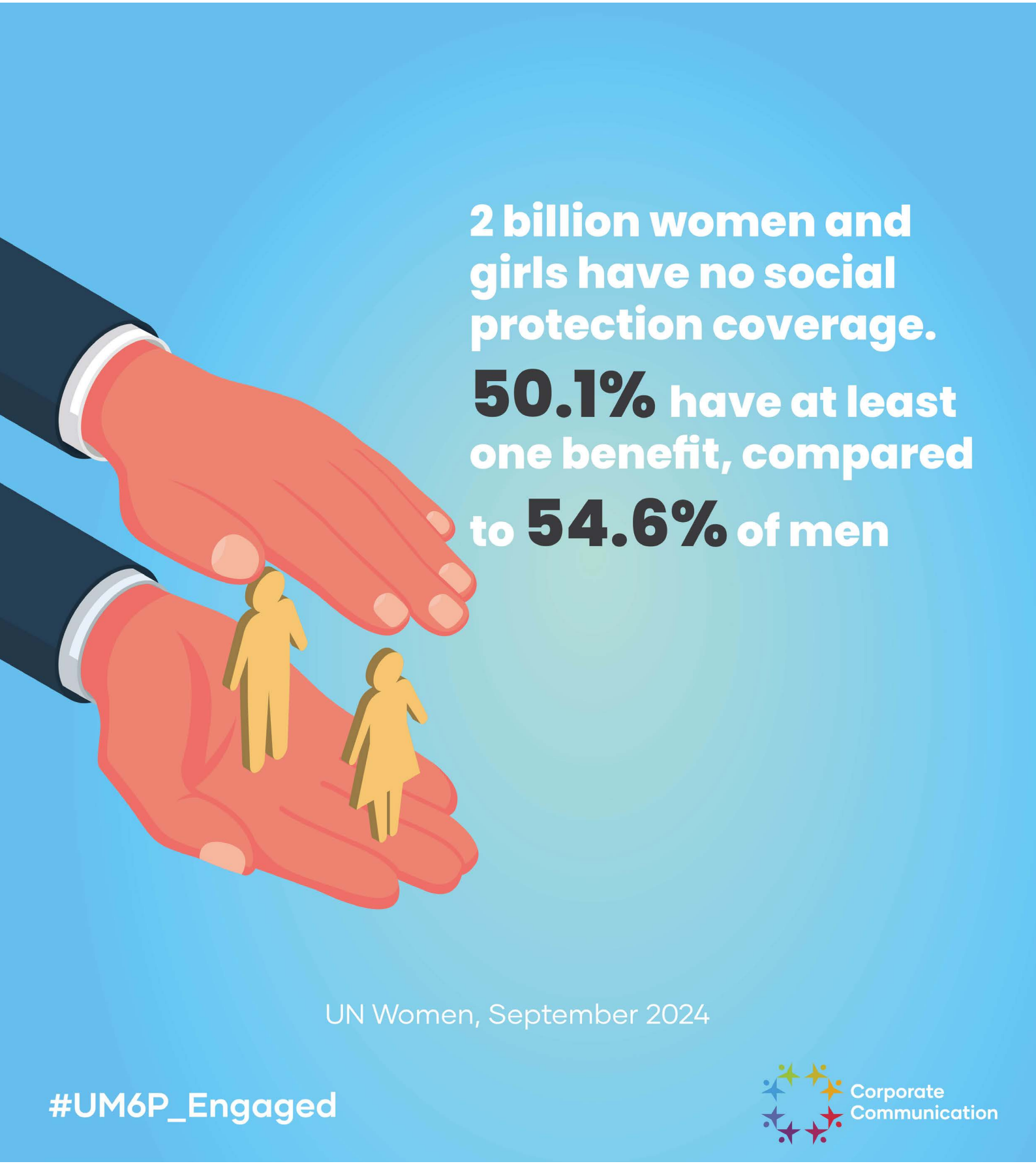
At UM6P, the commitment to mental health extends seamlessly from students to the dedicated staff who form the backbone of the university's vibrant community. Recognizing that staff well-being is essential for fostering an environment of innovation and support, UM6P has implemented a series of comprehensive initiatives tailored to address the unique challenges and responsibilities of its employees. Central to these efforts is the launch of the Psychological Support Unit for UM6P Staff—a dedicated resource that offers confidential counseling, stress management workshops, and personalized guidance aimed at nurturing resilience and promoting mental wellness.

In addition to the Psychological Support Unit, UM6P has introduced an array of wellness programs designed specifically for staff members. These programs encourage a balanced approach to work and life by incorporating activities such as mindfulness sessions, physical fitness initiatives, and periodic wellness workshops. By offering these resources, the university ensures that every staff member has access to the tools necessary to manage work-related pressures while maintaining optimal mental and physical health. This proactive approach not only helps in mitigating stress but also reinforces a culture of care and community within the workplace.

Furthermore, UM6P encourages staff members to engage in activities that promote the well-being of the communities, with the knowledge that a well-supported team contributes greatly toward the institution's success. This holistic strategy is designed to spur personal development, collaboration and mutual support, by offering staff the opportunity to conduct actions in proximity with UM6P's community. In living up to its vision of not limiting the measure of success to academic and research achievements but instead expanding it to include the holistic wellness of its members, UM6P has undertaken this exercise. These continued efforts ensure UM6P is a nurturing, dynamic workplace, where every member can flourish professionally and personally.

UM6P's unwavering commitment to community well-being is reflected in its approach to mental healthcare, which is designed to be holistic for both students and staff. This comprehensive strategy not only strengthens ties within the UM6P community, but also sets a benchmark for fostering resilience, collaboration and growth in all facets of academic and professional life.

**Hiba Bouazza**
Policy Center


2 billion women and girls have no social protection coverage.
50.1% have at least one benefit, compared to 54.6% of men
UN Women, September 2024
#UM6P_Engaged
Corporate Communication

# Violin Heals

Have you ever wondered how a simple melody can stir your emotions, bring back old memories, or even boost your performance ?

Music has the ability to reduce stress, improve memory, and enhance sleep quality. A 2022 systematic review and meta-analysis of 47 studies involving 2,747 participants highlights how personalized music therapy can effectively reduce stress. Additionally, a study published in Frontiers in Medicine in 2020 investigates the effects of music therapy on individuals with dementia and suggests that it can significantly improve cognitive function and quality of life. Furthermore, a range of studies on the effects of music on mental and physical health has shown that music can enhance memory, improve problem-solving skills, boost physical performance, and increase endurance.

While all forms of music offer therapeutic benefits, The violin has unique healing properties due to its ability to engage both hemispheres of the brain. The right hemisphere is associated with creativity and emotions, while the left hemisphere typically handles logic and language. Playing the violin requires complex coordination and mental processing, which activates both sides of the brain. As a result, violinists tend to develop stronger neural connections between the two hemispheres. These enhanced connections are beneficial for brain plasticity, enabling the brain to adapt and reorganize itself.

For patients dealing with neurological conditions, such as Alzheimer's or Parkinson's, this process of strengthening connections is crucial.

When the brain suffers damage, it has the ability to form new neural pathways in a process known as neuroplasticity. Engaging in violin playing can stimulate this process, helping to restore lost abilities. The violin's complex physical demands and intricate melodies promote the development of new neural pathways, which are essential in rehabilitation.

Beyond its impact on cognitive function, the violin's therapeutic potential extends to emotional and psychological healing. Its profound ability to engage both the mind and emotions


makes it an invaluable tool in psychiatric therapy, offering an exceptional approach to treating mental health disorders and fostering emotional resilience.

Its expressive nature and versatility make it a valuable tool for individuals experiencing conditions such as mania, psychosis, and dissociation.

These applications are based on the violin's distinctive characteristics and its ability to meet various psychiatric needs. For patients who are overstimulated or hypersensitive, the violin's small size and soft playing techniques, such as pizzicato or gentle bow strokes, make it a less overwhelming instrument compared to larger options. This controlled level of stimulation can help create a sense of calm and security.

On the other hand, for individuals experiencing detachment, where verbal communication is challenging, the violin's rich, melodic voice can serve as an emotional bridge, offering a means of connection when words fail.

Its ability to carry emotion through sound makes it a powerful tool for engaging clients who struggle to express their feelings.

Additionally, for patients experiencing psychosis or dissociation, where reality may feel fragmented or overwhelming, leading to hallucinations, memory gaps, or a distorted sense of time, the violin's clear and resonant sound can serve as an external anchor, helping clients regain focus and a sense of grounding. Through its gentle yet expressive qualities, the violin emerges as both a soothing and guiding force, making it an exceptional instrument in psychiatric therapy.

Research suggests that playing an instrument may be more effective in treating childhood psychological problems than medication. Children who play musical instruments are more focused, emotionally controlled and less anxious. Furthermore, brain scans reveal that playing music alters the motor areas of the brain, enhancing cognitive function. Professor of psychiatry James Hudziak of the University of Vermont College of Medicine said the findings bolstered his hypothesis that a violin might help a child battle psychological disorders even better than a bottle of pills.


He states, “We treat things that result from negative things, but we never try to use positive things as treatment.”

The violin has long been a vital part of African culture. In Morocco, musicians use it in Chaabi, Andalusian, and Malhoun music, where it plays a central role in creating rich, emotional melodies. Unlike the classical Western technique of holding the violin under the chin, Moroccan musicians often place it on the knee while playing, producing a unique sound. This style of playing is deeply embedded in Moroccan traditions, bringing people together in moments of joy.

Even in times of sadness, Moroccan violin music has the power to uplift, evoking deep emotions and creating a sense of connection. It is more than just an instrument, it is a voice of tradition, storytelling, and healing. So why not introduce this culturally significant style into African schools? Teaching students to play the violin the Moroccan way would not only preserve our musical heritage but also enhance emotional wellbeing and creativity. For a healthier Africa, integrating music into education could be a powerful step forward.

Thanks to University Mohammed VI Polytechnic, I began learning the violin this year at the Student Music School, and it has already made a profound impact on me. After a long, intense day flled with coding and problem-solving, picking up the violin and playing for just a few minutes brings me a sense of calm and relaxation like nothing else. The soothing sound of the violin creates a therapeutic space where I can unwind and reset. It’s a reminder that we humans need moments of peace and harmony to thrive.

As I refect on my experience, I see the immense value that learning the violin could bring to many, not just as a way to cultivate talent, but as a path to better mental well-being. I truly believe that if more people in Africa could experience the joy and healing power of the violin, it could make a meaningful impact on both individual lives and our collective culture. It’s more than just an instrument, it’s a tool for mental health, emotional resilience, and a brighter future for us, for Morocco and for Africa.

**Anas Bounit**
Student at College of Computing

# Junior Explorer

## Rhamna Youth at the Heart of Innovation

### Empowering Local Youth for an Innovative Future

Firmly focused on applied research and innovation, UM6P plays a central role in educating the researchers and leaders of tomorrow. Acting as an incubator of talent, the university provides a vibrant environment for learning, experimentation, and the exploration of new ideas. In this spirit, the Junior Explorer project, launched by OMAC, aligns perfectly with UM6P's vision by placing local youth at the core of continuous progress.

Junior Explorer offers young people in Rhamna a dynamic setting where they can dream, innovate, and express themselves freely. Through visits to UM6P's laboratories, children discover the wonders of science and technology, meet inspiring researchers, and learn to use state-of-the-art equipment. They also have the opportunity to attend programming workshops, gain essential coding skills, and participate in astronomy discovery sessions, artistic expression activities, and other playful learning experiences.

### Diverse and Stimulating Educational Activities

In addition, boot camps in robotics help children develop their problem-solving abilities and prototype-building skills. These camps focus on Arduino, LEGO robot programming, Artificial Intelligence (AI), as well as 3D modeling and printing. By immersing themselves in cutting-edge technologies, children gain hands-on experience with the tools shaping our future.

To further broaden their intellectual horizons, reading circles allow them to explore a wide range of topics and develop critical thinking skills, all while encouraging personal reflection.

### Exploring Beyond the Planet

Junior Explorer also takes children beyond Earth's borders. Through space camps, they learn about the mysteries of the universe by observing constellations, launching model rockets, attending planetarium sessions, and observing the sky with telescopes. Virtual reality enriches their experience, immersing them in space environments and allowing them to step into an astronaut's shoes.

### Fostering Excellence and Team Spirit

To cultivate teamwork and excellence, we organize international competitions such as the FIRST LEGO League in Benguerir. We have initiated and mentored several local teams, enabling them to participate in this prestigious event and compete with top talents in the region, with the goal of helping them reach the highest level.

### Empowering Teachers for Lasting Impact

Responding to educators' requests for better support in guiding students, Junior Explorer also offers specialized training sessions for public school teachers. These workshops introduce them to STEAM disciplines, including Arduino, robotics programming, AI, and 3D modeling and printing. The aim is to equip teachers with the tools and knowledge to effectively mentor students and incorporate these technologies into their classrooms, thereby amplifying the program's educational impact.

### Becoming Active Contributors to the Future

Our dedicated team provides personalized guidance for each participant, ensuring their needs and aspirations are met. Junior Explorer goes beyond mere technical training; it is a transformative experience, encouraging young people to see themselves as key players in driving innovation and change. Alongside technical skills, they gain opportunities to explore, express themselves, and grow their creativity.

By equipping the local youth with STEAM knowledge, Junior Explorer empowers them with the skills and confidence to become tomorrow's leaders and innovators. Through this commitment, we not only invest in their personal development but also in the advancement of the community, nurturing a new generation of innovators and engaged citizens.

**Open Minds**

**Artificial Intelligence is reshaping labour markets: 3.7% of women hold jobs that could be replaced by the technology, compared to 1.4% of men**

UN Women, September 2024

#UM6P_Engaged

Corporate Communication

# Africa's Efforts to Combat Antimicrobial Resistance

As Africa continues to grow across various sectors, antimicrobial resistance (AMR) has emerged as a major obstacle to this progress and a critical subject of discussion and research. According to Africa CDC, AMR is "becoming a more significant threat to Africa than HIV/AIDS, tuberculosis, and malaria," with a mortality rate of 27.3 deaths per 100,000. The human cost of AMR has driven many efforts to control and combat resistant infections. Music has the ability to reduce stress, improve memory, and enhance sleep quality. A 2022 systematic review and meta-analysis of 47 studies

## What is AMR?

In simple terms, and as defined by the World Health Organization, "AMR occurs when bacteria, viruses, fungi, and parasites no longer respond to antimicrobial medicines", rendering antibiotics, antivirals, antifungals, and antiparasitic drugs ineffective. AMR has been recognized as a global threat since the discovery of penicillin, as it can affect humans, animals, and agriculture alike. Resistant pathogens resulting from the misuse of antimicrobials can be transmitted to humans through the consumption of contaminated food and water. This makes common surgeries, organ transplants, and cancer treatments highly risky and jeopardizes public health.

## Africa's Actions

African countries have actively contributed to global efforts against AMR through research and participation in various international initiatives. In 2023, a regional meeting was held to review AMR country programs, followed by a high-level meeting on AMR in 2024, where Morocco demonstrated its commitment by sending a representative. Given that AMR knows no borders, international cooperation is essential. Several strategies have emerged to address this growing issue, many of which align with the One Health Approach, integrating human, animal, and environmental health sectors. As the WHO Director-General stated, "We have made progress; we have strengthened global governance, and most countries have developed and are implementing national action plans to tackle AMR."

Indeed, 96% of African countries have developed National Action Plans (NAPs) for AMR, with 76% of them validated by national authorities. These plans focus on several key areas, including quality control of vaccines and other pharmaceuticals, enhancing laboratory capabilities to detect and study resistant pathogens, improving hygiene and sanitation to reduce the spread of resistant germs, and strengthening surveillance systems, with 79% of African countries participating in the WHO Global AMR/Use Surveillance System (GLASS) to track antibiotic usage and report AMR data. In South African hospitals, the National Antimicrobial Stewardship (AMS) Strategic Framework has been introduced to oversee antibiotic use, with similar programs being implemented in Kenya, Ghana, and Egypt.

Awareness campaigns play a crucial role in combating AMR. African nations have formed partnerships with their students to spread knowledge. Egypt and Morocco have involved healthcare students from universities such as UM6P in AMR awareness initiatives. In Tunisia, the organization Associa-Med Tunisia encourages students to participate in the World Antimicrobial Awareness Week (WAAW). In Sudan, peer-to-peer education programs on antibiotics have been introduced. Ghana and Nigeria have implemented specialized training programs to prepare pharmacists to combat AMR.


## Studies conducted in Africa on AMR

African researchers continue to explore ways to mitigate AMR, particularly in infectious disease control. Studies have investigated African swine fever, waterborne diseases, and other infections linked to AMR. Some research focuses on sustainable agricultural solutions, such as the "Impact Assessment of Push-Pull Technology in Eastern Africa," which aims to reduce pesticide use that contributes to AMR. Other studies explore methods for removing antimicrobial resistance genes (ARGs) from water sources, including surface flow constructed wetlands and oxidation processes as researched in Nigeria.

To sum up, as diverse and interesting as these strategies are, the danger remains imminent due to the limitations of these studies and regulations. However, Africa's future generations will be safer if we continue these efforts and commitments.

**Amine Touti**
Student at Faculty of Medical Sciences

# The Prosperity Paradox

## How Entrepreneurship Transforms African Communities and Youth Well-Being

Africa's potential has long been at the center of global conversations, but what truly unlocks prosperity? Some may argue that prosperity can stem from top-down development, focusing on existing markets, or relying on foreign-led projects. However, these approaches often fail to address the localized needs of communities, and they ignore local economic realities, leading to short-term fixes rather than lasting growth. According to the book, The Prosperity Paradox by Clayton M. Christensen, the late Professor of Business Administration at Harvard Business School, and his co-authors, the key lies not in aid but in the creation of markets where none existed before. This bold idea challenges traditional development models and offers fresh hope for addressing some pressing health sector challenges in Africa and, notably, in Morocco, such as bridging the rural-urban divide in access to healthcare facilities and medical assistance.

This article will briefly review the central ideas of the above-mentioned book. Moreover, I will share my experience as an Entrepreneurship Project Coordinator at UM6P and highlight the "Massarates Rhamna" program, an initiative targeting the youth of the Rhamna region and aiming at equipping them with the tools and mentorship needed to navigate innovation-driven markets. We will shed light also on the benefits of such economic opportunities for the psychological well-being of young people, who find purpose and meaning in bringing their ideas to life while also contributing to the transformation of their communities.

### The prosperity paradox

To reveal the central idea of the book abovementioned, we need to define two important terms: innovation and market creation. Regarding the first, innovation in this context is not necessarily related to "high tech" but rather "a change in the processes by which an organization transforms labor, capital, materials, and information into products and services of greater value." In this sense, the innovation we seek aims to make products or services affordable and accessible to a whole new segment of people. This cannot be achieved without what the authors refer to as "market-creating innovation." This economic approach differs from the widespread efficiency and sustaining innovations in its effect on job creation, profit generation, and cultural transformation within a region. This is genuinely proven by studies and examples the authors delve into, showcasing entrepreneurs who identified gaps in their markets and transformed them into opportunities, henceforth lifting people out of poverty and demonstrating how local solutions can yield global lessons. Prosperity is, therefore, driven by local efforts, not external influences.

### Market-Creating Innovation in Healthcare

Healthcare is one of the sectors where market-creating innovation can make a significant impact. In a continent such as Africa where health disparities and infrastructural gaps persist, market-creating innovations have a fertile field to grow and thrive by promoting medical material sales and delivery, facilitating access to healthcare structures, and making essential medicines and vaccines accessible to everyone.

And because seeing is believing, we highlight the project of one of our beneficiaries from the Massarates Program, which involved "the importation and commercialization of medical materials and consumables in Benguerir city". Despite its growing population, the city still imports all its medical supplies from Marrakech and Casablanca, which cause delays in delivery and negatively impacts the quality of health services. Through this startup, delivery times will be shortened, local hospitals and laboratories will be able to access medical materials and consumables quickly, and, ultimately, the community will benefit from better healthcare services.

## Entrepreneurship as a Path to Well-Being

Beyond economic growth, entrepreneurship—through market-creating innovations—has a profound impact on individual and community well-being. It has been shown through several studies—as noted in the aforementioned book—that reducing unemployment, engaging youth and helping them bring their ideas to life has indirectly reduced crime. As the authors state, "The more legitimate opportunities people in a community have to solve the problems that engaging in crime enables them to solve, such as providing the resources necessary to live a comfortable life, the less likely they are to engage in crime".

Through my work at UM6P, I've seen firsthand how entrepreneurship transforms lives. In the "Massarates Rhamna" Program, we witness how youth actively engage in developing their project ideas into not only income-generating businesses but also employment opportunities for other youth in the region. These programs, therefore, not only stimulate economic development but also create social mechanisms through which the entrepreneurial mindset is instilled, helping young people stay away from riots that some may engage in as a response to unemployment and the struggle to secure basic necessities. Moreover, these initiatives contribute to psychological well-being, as young people find purpose and fulfillment in creating transformative solutions for their communities.


**Inssaf Bahnini**
Project Coordinator of Community Based Learning Program

# Why Everyone's Talking About Health Investments in Africa

In recent years, Africa's healthcare sector has drawn increasing attention from governments, private investors, and global organizations, especially in the aftermath of the COVID-19 pandemic. The crisis exposed critical vulnerabilities in healthcare systems, prompting a surge in investments to strengthen infrastructure, enhance supply chains, and expand research capabilities. As Africa prepares to host a quarter of the global population by 2025—and a significant share of the world's children—its healthcare systems must rapidly evolve to meet growing demands.

Key investments have targeted essential areas such as hospital and clinic expansion, local pharmaceutical manufacturing to reduce import dependency, and the integration of digital health technologies, including telemedicine and AI-driven diagnostics.

## Driving Innovation in Healthcare

One landmark initiative is IRCAD Africa, a cutting-edge center for minimally invasive surgery training and research in Masaka, near Kigali, Rwanda. Inaugurated in October 2023, IRCAD Africa is dedicated to enhancing surgical expertise across the continent. Backed by a €22.3 million investment from the Rwandan government and €12 million in equipment from donors and industry partners, the center has already trained 300 students from 27 African countries in its first year alone.

Similarly, the Smart Healthcare City project, led by Mohammed VI University (UM6P), aims to integrate advanced technologies into healthcare services. This futuristic healthcare hub will enhance care quality, efficiency, and sustainability by leveraging telemedicine, AI-driven diagnostics, and data analytics. More than just a medical facility, the Smart Health Care City envisions hospitals as innovation hubs where healthcare professionals receive top-tier training and modern health challenges are actively addressed.

## Strengthening Local Pharmaceutical Production

Africa has made significant strides in expanding pharmaceutical manufacturing to enhance healthcare resilience and reduce reliance on imports. The Partnership for African Vaccine Manufacturing (PAVM), launched by the African Union, aims to produce over 60% of Africa's vaccine doses domestically by 2040, with an interim target of 30% by 2030. This initiative, supported by up to $3 billion in investments from the African Development Bank, is a crucial step toward healthcare self-sufficiency.

In Morocco, SENSYO Pharmatech, a state-of-the-art vaccine manufacturing facility in Benslimane, is set to play a key role in achieving vaccine sovereignty for Africa. With an initial investment of €200 million, the facility will operate three production lines capable of manufacturing 116 million vaccine units by 2024, including pre-filled syringes, liquid vials, and lyophilized vials. A public-private partnership drives the project, which aims to produce more than 20 vaccines and biotherapeutic products locally by 2025. Looking ahead, the long-term vision (2023–2030) is to establish Benslimane as an African hub for biopharmaceutical innovation, integrating research, clinical development, and advanced cell and gene therapy production—solidifying Morocco's leadership in biotechnology.

## Investing in Medical Data Digitalization: A Key to Africa's Healthcare Transformation

A major yet often overlooked investment opportunity in Africa's healthcare sector is the digitalization of medical data. The efficient collection, storage, and utilization of health data are crucial for informed decision-making, predictive healthcare, and policy development. However, Africa faces a significant challenge due to the lack of comprehensive medical data on its population. Without robust health information systems, tracking disease patterns, optimizing resource allocation, and developing personalized treatments remain difficult.

To address this gap, several African nations are making strategic investments in national health databases, aiming to establish centralized repositories that enhance healthcare planning and policy decisions. Currently, 38 African countries have developed national digital health strategies, reflecting a growing commitment to leveraging technology for better health outcomes. For example, Rwanda's national digital health platform integrates electronic medical records across public health facilities, improving access to patient history and streamlining care. Similarly, South Africa's Health Information Exchange is designed to connect different healthcare systems and facilitate data interoperability.

Investing in healthcare data digitalization is not just a technological upgrade—it is a transformational step toward achieving universal health coverage, improving disease surveillance, and strengthening healthcare resilience. By prioritizing robust data infrastructure, public-private partnerships, and innovative digital solutions, Africa can unlock a more efficient, predictive, and inclusive healthcare system, ultimately driving economic growth and better health outcomes for millions.

## The Economic and Social Impact of Healthcare Investment

Investing in Africa's healthcare sector is a catalyst for economic growth and social development. Modern infrastructure, life-saving technologies, and access to quality healthcare not only save millions of lives but also foster economic prosperity. A healthier population is more productive, earns higher incomes, and contributes to overall economic expansion. Robust healthcare systems also attract foreign direct investment, drive pharmaceutical and biotech industry growth, and create job opportunities, fueling sustainable economic development.

Moreover, strengthening healthcare systems reduces the financial burden of illness, improves living standards, and accelerates progress toward global health targets, including the Sustainable Development Goals (SDGs) and Millennium Development Goals (MDGs). Universal health coverage, maternal and child health, and disease prevention efforts all stand to benefit from sustained investment.

Ultimately, healthcare investment is not just about improving health outcomes—it is a foundational pillar for long-term economic and social transformation across Africa.

**Fatima Zahra EL Hajji**
Phd Student at Faculty of Medical Sciences

# Health in Transition

## How UM6P Students Adapt and Stay Well

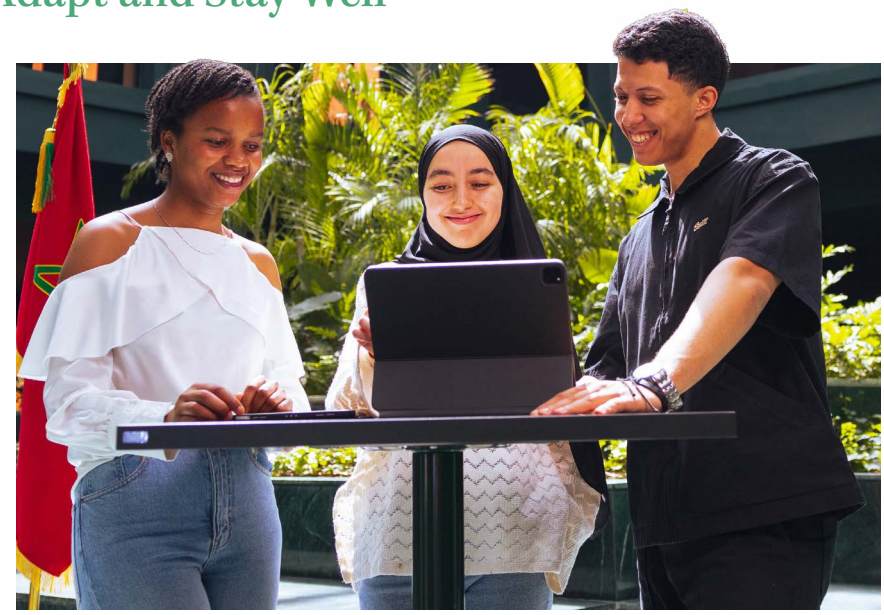
When in elementary school or middle school, university feels like a utopic world, where everything is permitted. We get to study what we love, enjoy countless activities, and, after graduation, land our dream job and live the life we always wantedan vision starts to slowly fade away as the step to hop into university gets closer and closer. With a high school diploma in pocket and college only a mile away, anxiety starts to build up.

Overthinking becomes one's best friend. A flood of questions fills our minds: How will I be able to live far away from my family? How can I adapt when I literally change countries to pursue my degree? Will I be able to start and keep friendships? Could I keep track of my mental and physical health?

Changing environments is never easy, especially when it's the complete opposite of your comfort zone. Humans naturally seek routine, even if it's as simple as seeing familiar, trustworthy faces every day. However, a little change can often do more good than harm. That is why many choose universities that will shape their personalities and pave the way for a brighter future.

Universities are a gateway to positive change. UM6P is a wonderful example. On both campuses, the university is home to Moroccan as well as international students from all corners of the world: France, Nigeria, Senegal, Ghana, Netherlands, Egypt... It's the symbol of multiculturalism and diversity. Offering a wide range of majors and research opportunities, from green hydrogen studies to behavioral economics, UM6P fosters a rich academic environment that makes it one of the leading universities in Morocco and Africa as a whole.

Students feel the thrill when seeing their acceptance email into UM6P, but a small apprehension may creep in as they anticipate the changes ahead. For Moroccan students, it means leaving their home cities for a small town like Benguerir (unless you're from Benguerir then lucky you, 50% of your worries are gone!). They say goodbye to their friends, families, pets, and all the memories tied to their hometowns, ready to build new ones in Benguerir. For international students, the transition comes with a different set of challenges. Their families aren't just a train or taxi ride away. They're a whole flight away, across borders and time zones. They pack their lives into, at most, three suitcases and leave everything behind to start anew in a country with entirely different customs and traditions to pursue their degree.



Adapting to a new environment is no easy feat, but students find different ways to navigate the changes. Joy, a first-year master's student in Collective Intelligence at UM6P, recalls the challenges of adjusting to life far from home. "The biggest challenge was getting used to the fact that I was no longer in my home country. Accepting that reality was difficult," she shares. The differences in academic structure also caught her off guard. Unlike in Nigeria, where master's students attend classes only a few times a week and can balance other commitments Morocco's rigorous daily schedule felt overwhelming at first.

But adaptation is about finding strategies to cope, and for Joy, staying physically and mentally well was key. She turned to small habits that made a big difference. For instance, hitting the gym after long, draining lectures, watching comedy videos to unwind and taking hot showers to reset after a stressful day. Food, friendships, and personal motivation also played a major role. "At first, I was living off noodles because they're my favorite, but later I started paying more attention to my diet," she laughs. Socializing, whether through movie nights or just venting to a friend, helped lighten the ambiance: "We need people. Staying alone in your room doesn't help. Even if someone doesn't have the perfect solution, just talking makes things better.

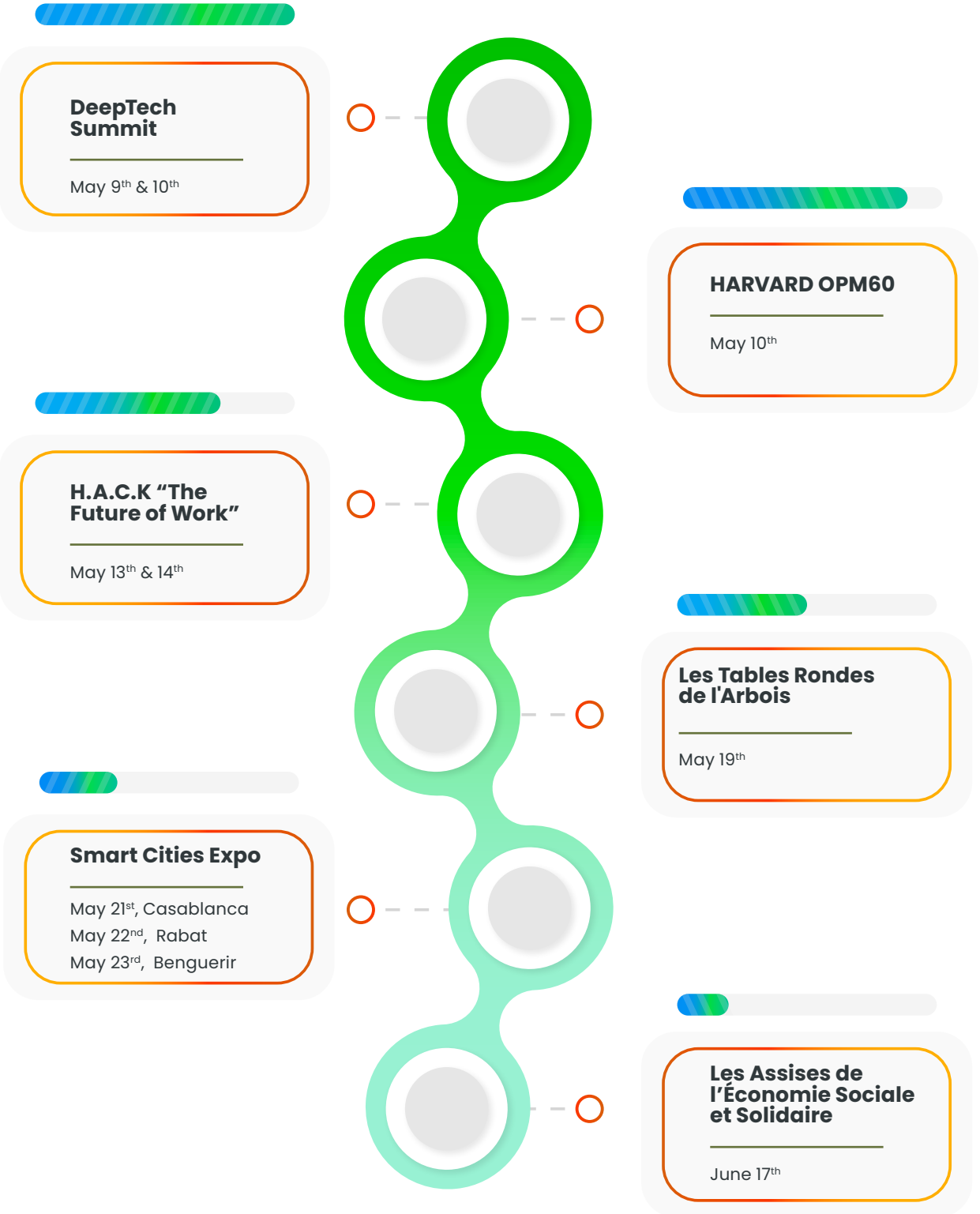
Beyond academic stress, cultural and environmental differences also impact well-being. Joy, for instance, found that the water irritated her sensitive skin, forcing her to adjust her skincare routine. Others might struggle with the cold winters or unfamiliar food options. The key takeaway? Adaptation takes time. For incoming students, Joy's advice is simple yet powerful:

*"Don't forget why you're here. Burnout will happen but allow yourself to go through it. Take breaks, cry if you need to, but always keep your goals in mind."*

Despite the hurdles, UM6P students gradually find their rhythm. Some take up sports, others dive into student clubs, and many rely on close friendships to keep them grounded. At its core, the university experience is a transformative journey—one that challenges, shapes, and ultimately strengthens those who embrace it.

**Widad Meskine**
Student at Africa Business School

# Stay Tuned !




**Walid Lamrini**

# UM6P Highlight

## Defining moments of innovations and impacts

### UM6P ranked among top 500 universities worldwide by Times Higher Education

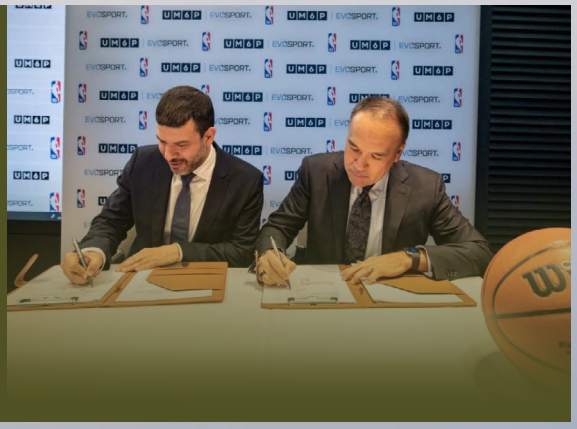
The Times Higher Education World University Rankings 2025, unveiled in Manchester on October 9th, place University Mohammed VI Polytechnic among the top 500 universities globally. UM6P stands out for its research impact, global outlook, student support, and commitment to industrial innovation.

As the leading university in Morocco and North Africa, UM6P strengthens its reputation in African research and education. The rankings evaluate universities based on teaching, research, industry innovation, and global engagement.

### NBA Africa and Evosport Launch Youth Basketball Initiative in Morocco

On January 24th, **NBA Africa** and UM6P, through its subsidiary Evosport, announced a partnership to expand youth basketball development in Morocco. This collaboration establishes UM6P as an official NBA Africa partner, launching four Jr. NBA leagues and the country's first NBA Basketball School in Khouribga, Gantour, Laayoune, and El Jadida.

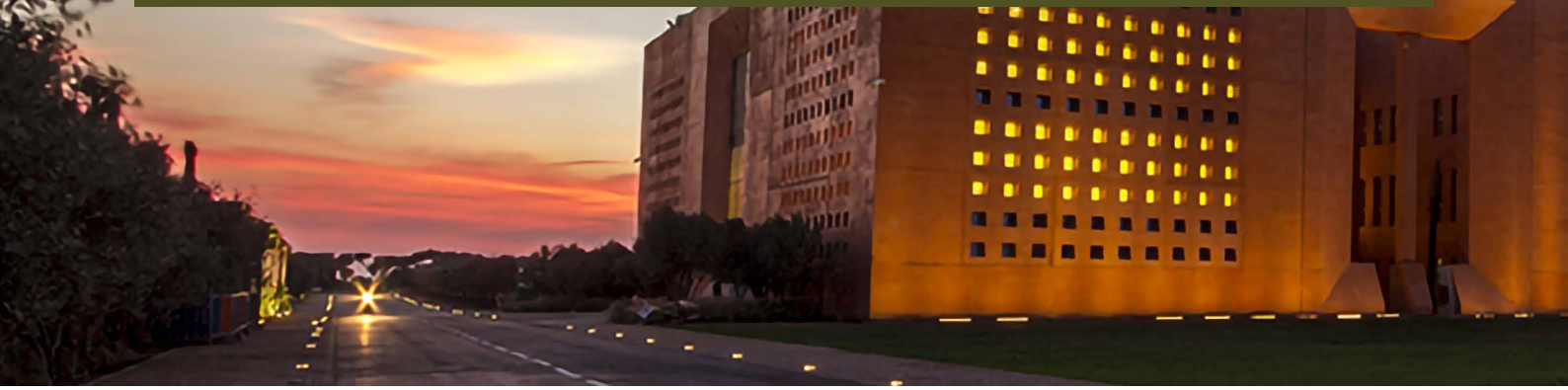
Implemented by Evosport and Act4Community, the initiative will engage 2,000 young players annually and train 200 local coaches. The announcement took place at UM6P France in Paris, with key figures including UM6P President Hicham El Habti, NBA Deputy Commissioner Mark Tatum, NBA Africa CEO Clare Akamanzi, and Basketball Africa League President Amadou Gallo Fall.



### The 5th Edition of UM6P Science Week fostered discussions on shaping global development of the future

From February 17th to 23rd, UM6P hosted the 5th edition of Science Week, uniting the scientific community and students under the theme "Shaping the Future." The event featured workshops, panels, and case studies on technological advancements, climate change, AI, sustainable development, and future trends. A Science Village showcased research projects and innovations from various UM6P departments.

The week fostered dialogue and collaboration, encouraging participants to explore scientific challenges and propose solutions to global issues. During the closing ceremony, the theme for the next edition, "Convergence(s)," was announced, aiming to promote interdisciplinary perspectives and collaborative exchanges in s cience and technology.



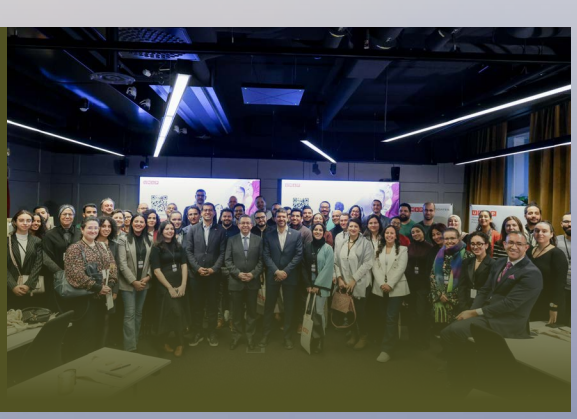
## UM6P Partners with STATION F to Drive Europe-Africa Innovation

On the 27th of February, UM6P expanded its global footprint by establishing a presence at STATION F, the world's largest startup campus in Paris. With a dedicated space featuring 40 stations, UM6P aimed to accelerate its NextAfrica program, fostering innovation and collaboration between Europe and Africa.


## UM6P Associates engaged with Moroccan competencies in Brussels and Stockholm

UM6P Associates organized the Moroccan Competencies Meeting during Ramadan, with events in Brussels (March 13th) and Stockholm (March 15th), following past editions in London, Boston, and Montreal.

With UM6P leaders, including President Hicham El Habti, discussions focused on innovation and global connections. Engaging 100+ Moroccan diaspora professionals, the initiative strengthens collaboration between Moroccan talents abroad and national progress, fostering a powerful network for socioeconomic development.



## Official launch of the National Program to support Research, Development and Innovation 2025-2035 (PNARDI)

On **April 7th**, the **Ministry of Higher Education, OCP Foundation, UM6P**, and **CNRST** officially launched **PNARDI**, Morocco's 2025–2028 National Program for Research, Development, and Innovation.

The initiative, backed is by **1 billion MAD** joint fund, including **200 million MAD** for Moroccan talent abroad, aims to strengthen R&D across strategic sectors through three sub-programs: **IBN BATTOUTA, IBN ALBANNA,** and **NEFZAOUIA**, aligning research with national priorities ,with the goal of enriching Morocco's scientific and technological efforts and accelerating its transition towards a knowledge-based economy.


**Isaac Asirifi Boakye**
Student at Africa Business school


UM6P
University
Mohammed VI
Polytechnic
ISB-P
Institut Supérieur des Sciences
Biologiques et Paramédicales
Corporate
Communication

# Crossword, Techxit

## Across:

1. The science that explores the mind and behavior, helping doctors understand the invisible wounds that medicine alone cannot heal.

2. A silent guardian in healthcare, stopping diseases before they have the chance to take hold.

3. The medical detective that sees through the body without a single incision, revealing secrets hidden beneath the skin.

4. A crucial step in medicine, where the unseen threats are caught before they grow stronger.

5. The art of uncovering the hidden truth behind symptoms, guiding doctors toward the right treatment.

6. The fusion of biology and technology, shaping the medicines and treatments of tomorrow.

## Down:

1. A place where time, science, and compassion work together to turn pain into healing.

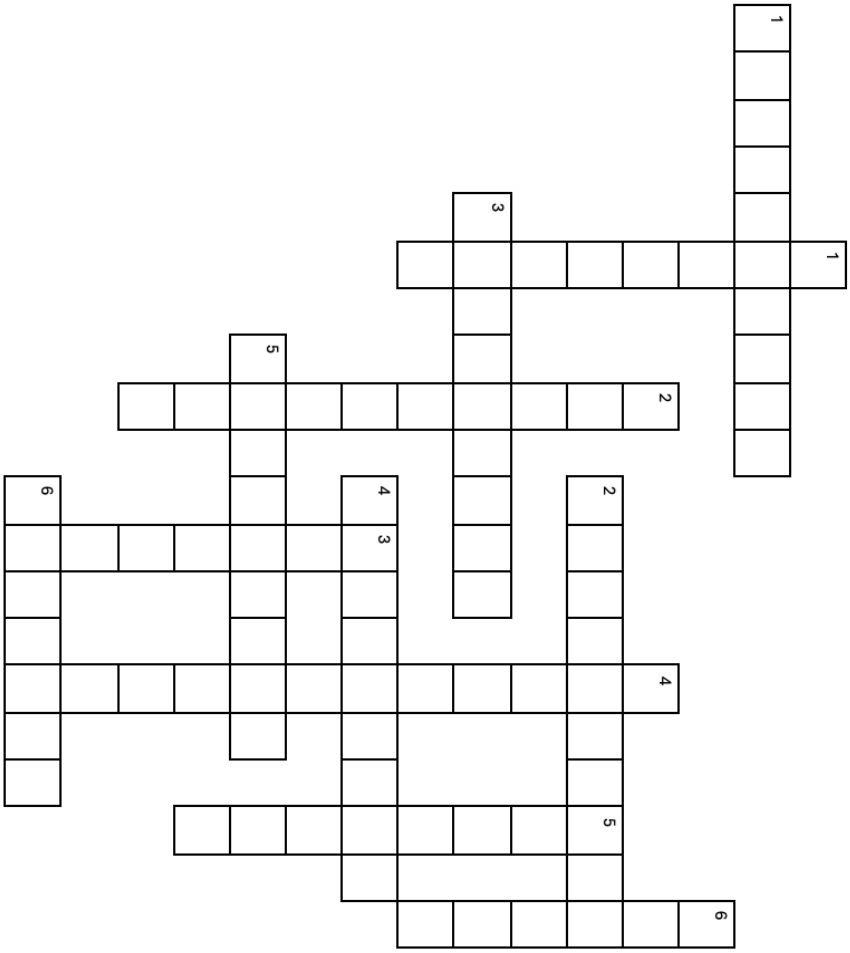
2. The driving force behind medical breakthroughs, turning ideas into life-saving solutions.

3. A disease that disguises itself as normal cells, making the body its own worst enemy.

4. Healing from a distance, where doctors and patients connect beyond physical borders.

5. The body's invisible shield, defending against invaders without a single battle cry.

6. A health aspect often overlooked, yet as vital as the heartbeat in shaping overall well-being. available to anyone, often free.
(5 letters)




**Walid Lamrini**

## Techxit

Scan the QR code and tell us how this picture inspires you. The most relevant, authentic and interesting reflections and interpretations will be featured in the “Take a Break” section of the next edition of In Momentum.

UM6P | Corporate Communication

Communication@um6p.ma