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# State of Public Health in the Eastern Mediterranean: Challenges and Opportunities

An Analysis

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## Introduction

The year 2024 was filled with major health challenges in the Eastern Mediterranean Region, where crises exacerbated due to conflicts and wars, in addition to a more frequent occurrence of environmental events accelerated by climate change. Based on published reports, not a month went by without news about serious health concerns, whether it was new epidemic outbreaks, the worsening performance of health systems, or the rise of new diseases that called for a quick and effective response. Despite the clear facts and data available, that same year also saw us confronting “forgotten crises,” which may have emerged due to emotional fatigue caused by the overwhelming volume of information, often diverting attention from more immediate priorities. With the rapid pace of events both regionally and globally, it has become crucial to reassess these health challenges, bring them to the forefront, and explore possible solutions. As we look ahead to 2025, we hope for a year that will bring comprehensive and sustainable responses to these pressing health issues.

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## Eastern Mediterranean Region: Diversity and Shared Challenges

[The Eastern Mediterranean region](#) includes 22 countries with a total population of approximately 676 million, representing about 9% of the global population. In 2018, Djibouti had the smallest population, with fewer than one million people, while Pakistan’s population reached 208 million. Population growth rates vary widely, from 1.1% in Morocco to 10.8% in Kuwait, reflecting significant differences in demographics and economic conditions across the region.

The region is shaped by complex historical, geographical, social, and economic factors. Political instability and ongoing conflicts have displaced millions, placing enormous strain on national health systems and reversing progress in key health indicators. By 2018, one in every six people in Lebanon and one in every fourteen in Jordan was a refugee, adding pressure to already overstretched healthcare systems.

[Economic and social inequalities](#) further define the region. Some countries continue to struggle with chronic developmental challenges, while others have substantial resources but face difficulties in distributing them equitably. In several countries, more than a quarter of the population lives below the poverty line, reaching nearly 50% in Yemen. Urbanization is also uneven, with around 70% of the region’s population living in cities. Education remains another major area of disparity—literacy rates exceed 40% in some countries, and in others, primary school enrollment does not surpass 60%. Gender gaps in education persist, further deepening social divides.

On the [Human Development Index \(HDI\)](#), regional rankings range from 30th (United Arab Emirates) to 172nd (Afghanistan). In addition, Somalia, South Sudan, and Sudan were excluded from the 2011 Human Development Report, reflecting the challenges they face in improving human development indicators.

The region’s [political landscape](#) is shaped by ongoing conflicts, geopolitical shifts, and economic instability, all of which have disrupted development and weakened stability. Over the past decade, and even earlier, political, economic, and social upheavals have significantly influenced the region’s trajectory.

Despite these differences, the countries of the Eastern Mediterranean share important commonalities. Many are geographically connected, and Arabic serves as a cultural and linguistic link for most. They also have overlapping historical, political, and economic experiences that continue to shape their present realities. These shared factors extend to health, where countries face common challenges, including infectious diseases, poverty-related health burdens, and gaps in healthcare resources. Addressing these issues requires a collective response to strengthen health systems and improve outcomes across the region.

# Humanitarian Crises and Political Conflicts: The Biggest Share of Health Challenges

The region is experiencing complex humanitarian crises, with healthcare systems suffering widespread destruction due to ongoing conflicts. From Gaza to Yemen, and from Sudan to Syria, populations struggle with limited access to essential healthcare as hospitals are destroyed, medical supplies run short, and medical teams and international relief efforts face immense challenges.

In **Gaza**, [healthcare system was destroyed](#), with extensive damage to hospitals, clinics, medical centers, and other health facilities. The most recent attack targeted the Kamal Adwan Hospital at the end of 2024. This situation has sharply reduced the ability to provide basic healthcare services, exacerbating the pressure on a system already suffering from resource scarcity. Patients are facing significant difficulties accessing medical services, particularly due to shortages of essential supplies and frequent power outages, which cast a heavy shadow over intensive care units and emergency departments. In these harsh conditions, medical staff find themselves facing enormous challenges, including psychological and physical exhaustion from continuous work in a hazardous environment. The situation is not limited to Gaza in Palestine; in [the West Bank](#), restrictions on the movement of patients and healthcare workers have further complicated access to health facilities. The escalation of violence and tensions has also led to an increase in casualties and injuries, adding additional pressure on a healthcare system already suffering from resource shortages. This crisis has serious repercussions on preventive and therapeutic services, including vaccination programs and maternal care, putting the lives of thousands at great risk. In this context, humanitarian efforts face significant obstacles due to restrictions on the movement of medical supplies and international support, further worsening the humanitarian situation in the affected areas.

Ten years into the conflict in **Yemen**, the country's crisis has been labelled as one of the "forgotten crises" according to UN statements. This crisis has led to significant economic and social consequences, resulting in numerous health and humanitarian problems, from widespread malnutrition and strain on the healthcare system to recurrent disease outbreaks. The most notable of these outbreaks this year was the cholera epidemic, with Yemen continuing to bear the largest burden of cholera cases globally. In 2024, Yemen [accounted for 35% of the global](#) cholera burden and 18% of the reported cholera-related deaths worldwide, with nearly 250,000 suspected cases and 861 associated deaths recorded by December 1, 2024.

Another humanitarian crisis, unfortunately also referred to as "forgotten," is Sudan, where food security and famine have emerged as one of the greatest challenges. A year of ongoing conflict, following decades of internal instability, has deepened the food crisis in the country. [A recent UN report](#) indicated that famine has spread in at least five states, with five more states expected to face famine by May. The report described this crisis as "horrific" and stressed the need for "unprecedented" international response. This is not merely a food shortage issue but a profound crisis with serious implications for public health. Malnutrition leads to disease outbreaks and weakened immunity, especially among children and pregnant women, making them more vulnerable to health complications. In this context, the pressure on the healthcare system, which has faced significant challenges over the decades, is multiplying.

In **Syria**, the urgent health needs of Syrians affected by years of ongoing conflict are increasing. Today, Syria faces complex health and humanitarian conditions after more than a decade of conflict that has severely weakened the healthcare system. [UN statements](#) indicate that the country is at a turning point that requires an urgent response to alleviate the suffering of millions and lay the foundation for sustainable recovery, ensuring the continuation of essential services, combating the spread of epidemics, and enhancing coordination between health agencies.

In **Lebanon**, the healthcare system has been severely damaged, with healthcare infrastructure and workers targeted due to attacks on healthcare facilities since October 7, 2023. [Fifteen out of 153 hospitals were forced to shut down](#), and the attacks resulted in the deaths of 226 healthcare workers

and patients, seriously affecting the healthcare system's ability to provide care in critical times. Additionally, the situation worsened due to the large numbers of displaced people, increasing the pressure on the country's limited healthcare resources.

## Disruptions of Humanitarian Efforts

In the face of these unprecedented crises, urgent response has been intensified to support national systems in ensuring the provision of necessary medical care and resilience of health facilities amidst ongoing crises. However, these efforts face significant challenges. Humanitarian workers, across various specialties, are increasingly being targeted in conflict zones, putting their lives at risk, which limits the ability of relief teams to reach the most affected areas and provide emergency healthcare and essential services. This has become a nightmare for response organizations. During a session of the Security Council dedicated to discussing ways to protect humanitarian workers and the UN in armed conflicts, Lisa Doughten, [Director of the Funding and Partnerships Division at the UN Office for the Coordination of Humanitarian Affairs \(OCHA\)](#), stated that in the past two years, the death toll among relief workers had risen at an “alarming rate,” with many being kidnapped, detained, attacked, or injured in several countries, including Afghanistan, Lebanon, Palestine, South Sudan, Sudan, Syria, and Yemen.

At the end of this year, there was a stark example of such targeting. The world woke up to an incident condemned by international and humanitarian law, where airstrikes hit the location of WHO Director-General Tedros Adhanom Ghebreyesus and his team near Sana'a International Airport, making this incident a harsh reminder of the challenges faced by humanitarian efforts.

## Children and Women: The Most Vulnerable in Times of Conflict

In conflict zones, children fall victim to both physical and psychological health impacts, many of which may be irreversible. [The United Nations Children's Fund \(UNICEF\) described 2024 as a tragic year for children](#), with UNICEF Executive Director Catherine Russell stating that 2024 was “one of the worst years ever for children in conflict zones.” Millions are suffering from the consequences of fighting and instability, with 473 million children living in conflict areas. These children face the risk of death and injury, are deprived of education and basic healthcare services, and suffer from severe malnutrition.

Women, particularly in conflict areas, suffer devastating impacts on their health and well-being. According to [Médecins Sans Frontières \(MSF\)](#), insecurity in the Darfur region of Sudan has caused pregnant women to flee in search of safer shelter, often ending up in refugee camps where resources are scarce and access to maternal healthcare is either non-existent or severely limited. In parts of South Darfur, 114 maternal deaths were recorded from January to mid-August 2024, with a more than 50% increase in maternal deaths in medical facilities during the same period.

In Syria, [the UN Nutrition Cluster](#) that at least one in four children in Syria suffers from anemia, and one in four women aged 15 to 49 is affected by anemia, with higher rates among adolescent girls—one in two girls suffers from anemia. Additionally, one in ten women suffers from wasting, increasing risks during pregnancy. Diarrhea cases among children have also increased, affecting one in four children, amid an outbreak of acute watery diarrhea in 2023-2024.

According to [the UN Population Fund, Yemen](#) has one of the highest maternal mortality rates in the world, with an estimated 5 million children in need of health services that are unavailable in the country. Among every five functioning health facilities, only one provides maternal and child health services.

In Gaza, [estimates](#) indicate that about 183 women give birth daily, and 15% of them are expected to require additional medical care due to complications related to pregnancy or childbirth caused by

the current crisis. Health providers in Gaza have reported that some surgical procedures, including cesarean sections, are being performed without anesthesia and sometimes without electricity, and with infection prevention and control severely compromised. Moreover, many mothers are discharged from the hospital shortly after childbirth (within only three hours), due to the reduced number of beds caused by damage to hospitals. Since the beginning of the war, women have been unable to access postpartum care, as hospitals are unable to provide even the most basic hygiene supplies, threatening severe physical and psychological health complications.

## Injuries

In conflict zones across the Eastern Mediterranean, the severity of injuries resulting from ongoing wars and conflicts has dramatically increased [over the past few decades](#), revealing a critical need for targeted public health interventions. Studies have particularly emphasized the need to address the significant burden of lower limb injuries, especially in countries like Syria, Yemen, and Afghanistan, which have been deeply affected by prolonged conflict.

[Traumatic injuries](#) in these regions are primarily caused by shrapnel from explosives and gunshot wounds, which are direct consequences of ongoing violence and civil wars. Many patients suffering from traumatic vascular injuries are victims of these types of attacks. Furthermore, [eye injuries](#) have become increasingly common in modern warfare, underscoring the urgent need for rapid surgical intervention to improve treatment outcomes and minimize long-term complications.

The year 2024 has seen a significant rise in such injuries across the region. In Gaza, for instance, [analysis](#) indicates that approximately 25% of the injured—around 22,500 people—will require intensive healthcare and long-term rehabilitation. This includes patients with limb injuries, amputations, head and spinal cord injuries, and severe burns. Limb injuries are the most common, with nearly 15,000 cases reported. Additionally, it is estimated that between 3,000 and 4,000 amputations have occurred, along with more than 2,000 cases of severe head and spinal injuries, and over 2,000 major burn cases.

In Sudan, [Médecins Sans Frontières \(MSF\)](#) reported that, since January 2024, nearly one in every six patients treated for war-related injuries at the Bashair Teaching Hospital in South Khartoum has been under the age of 15. Many of these young patients have sustained gunshot wounds, shrapnel injuries, and blast wounds.

Similarly, in [Yemen](#), the ongoing conflict has caused severe injuries, leading to disabilities, especially among children, many of whom have lost limbs. These children require prosthetics to regain mobility and return to daily activities.

## The Growing Crisis of Displacement and Refugees

Amid these emergencies, the refugee crisis has worsened, with millions being forced to leave their homes in search of safety in neighboring cities or countries. Refugees are facing harsh conditions, including a lack of shelter, food, healthcare, and psychological health crises. According to the [United Nations Economic and Social Commission for Western Asia](#), internally displaced persons (IDPs) in the Arab region make up more than a third of the total IDPs globally.

Here are some examples. According [to the International Organization for Migration \(IOM\)](#), the number of IDPs in Sudan has reached over 10 million, and more than two million others have fled the country, most of them to Chad, South Sudan, and Egypt. In [Yemen](#), tens of thousands of displaced Yemenis are living in harsh conditions that worsen with the onset of winter due to a lack of heating supplies like blankets and clothes, as well as a severe food shortage, while tents offer insufficient protection against the cold. In Gaza, the United Nations reported that nine out of ten people have been displaced at least once, and in some cases, displacement has occurred more than ten times.

Migrant populations are also facing challenges in mental health. Since events beyond their control disrupt their livelihoods and communities, many migrants suffer from fear, sadness, suspicion, and helplessness. Reports and studies document alarming numbers, such as [as a study](#) in Gaza, which found that 96% of children in the region feel that death is imminent, while 87% exhibit severe fear, and 79% suffer from persistent nightmares. [In Sudan](#), Sudanese medical teams continue to provide psychological care to deal with various levels of stress and disorders faced by displaced persons due to the ongoing war, which has entered its second year. In Yemen, according to [the World Health Organization](#), a quarter of Yemen's population is suffering from psychological trauma.

## Accelerating Pace of Climate Change Threatens All Countries in the Region

Last year, the effects of climate change became more evident, manifesting in severe weather fluctuations such as heatwaves, increased flooding, and droughts, along with other variations that directly impact human health. Some Arab countries experienced unprecedented temperature rises, leading to an increase in heat-related illnesses, such as heat exhaustion and heatstroke. For instance, North African countries like [Egypt](#) and [Morocco](#) were among the most affected by extreme heatwaves, which caused the deaths of many people, particularly the elderly and those with chronic illnesses. Additionally, Saudi Arabia experienced a heatwave during the Hajj season in June 2024, with temperatures reaching 51.8°C, resulting in the deaths of [over 1,300 people while performing Hajj rituals](#).

Climate change has also had a clear impact on agriculture, leading to a decline in food production. In [Iraq](#) and [Syria](#), droughts caused a significant reduction in crop yields, negatively affecting food security and increasing rates of malnutrition, especially among children. [Algeria](#) suffered from prolonged droughts throughout 2024, which led to deteriorating crop production and worsened food security, a situation similar to what flood survivors in [Pakistan](#) and communities affected by flooding in Libya are experiencing in terms of food insecurity.

In addition, the arid and semi-arid climate in the region, exacerbated by rising temperatures and pollution, is worsening water scarcity and increasing the intensity of extreme weather events. Water shortages in fragile countries such as Sudan and Yemen are [undermining agricultural production](#), further exacerbating vulnerabilities. The scarcity of water linked to climate change is expected to result in [economic losses](#) of up to 14% of the GDP in the Arab world. Additionally, by 2050, water availability and agricultural production are predicted to decline by 30%.

Moreover, climate change has contributed to the spread of infectious diseases, such as dengue fever, malaria, and cholera, due to changes in rainfall patterns. In [Sudan](#) and [Yemen](#), annual floods have led to the contamination of water sources, resulting in outbreaks of waterborne diseases, including cholera.

Despite the fact that natural and climate-related disasters, including earthquakes, strike the region with alarming frequency, disrupting the lives of millions, most countries in the Region lack comprehensive strategies to adapt to climate change, leading to poor coordination between government agencies and health organizations in addressing these challenges. Additionally, there is a significant lack of data and statistics related to the impact of climate change on health in the region, making it difficult to assess the true effects of climate change on public health.



# Emerging and Infectious Diseases

We must discuss in detail the profound effects that armed conflicts and environmental changes have on the spread of diseases, as these conditions contribute to creating fertile environments that accelerate the spread of infectious diseases and increase the complexity of the health landscape, exacerbating pressure on health systems. Recent weather fluctuations, including heavy rainfall, have contributed to the spread of vector-borne diseases in a notable example of increasing emerging diseases in Arab countries that were not previously affected by them or where their spread was not widespread. Since the beginning of 2024, [Yemen](#) has reported 1,051,287 suspected cases of malaria and 13,739 suspected cases of dengue fever. [Saudi Arabia](#) is facing a rise in dengue fever cases, prompting health authorities to emphasize the need for intensified efforts to control the outbreak and raise awareness of preventive measures. Following the heaviest rainfall recorded in the [United Arab Emirates](#) in April 2024, the country witnessed a rise in dengue fever cases. Countries such as [Lebanon](#) and [Syria](#) have also experienced limited outbreaks of cholera, despite efforts to reduce its spread through vaccination campaigns and improvements in water and sanitation services. Limited access to basic healthcare and medical resources has contributed to the increase in cases.

Regarding polio, despite vaccination efforts, some areas in [Afghanistan](#) and [Pakistan](#) are still witnessing new cases. In Sudan, the Federal Ministry of Health had to implement a [polio vaccination campaign](#) in April 2024 in response to the emergence of a new strain of circulating [vaccine-derived poliovirus type 2 \(cVDPV\)](#), which was reported in January 2024. It is also worth noting the confirmation of the circulation of cVDPV in the Gaza Strip in June 2024.



EMPHNET ChampNet's during the polio campaign, Gaza, Palestine – 2024.



Heavy rainfall in Jeddah, Saudi Arabia – November 2022. (AFP)

## Antimicrobial Resistance

The rates of antimicrobial resistance (AMR) in the region are among the highest and fastest-growing in the world, due to the widespread misuse and overuse of antibiotics. A global study published in [The Lancet](#) reports that over 39 million deaths from antibiotic-resistant infections are estimated between now and 2050. It is predicted that antibiotic resistance-related deaths will gradually increase in the coming decades, with an expected 1.91 million deaths annually directly due to antimicrobial resistance by 2050, a 67.5% increase from 1.14 million deaths in 2021. There will be a 72% increase in deaths among individuals aged 70 years or older in high-income countries compared to a 234% increase in North Africa and the Middle East, a relatively large increase.

Instead of putting millions of lives at risk, the rising rates of antimicrobial resistance significantly hinder health efforts, making healthcare provision more complex and costly. Therefore, to effectively address AMR, we must adopt a coordinated, multisectoral approach that integrates human, animal, and environmental health, strengthens laboratory capacities, promotes the responsible use of antibiotics, improves surveillance systems, ensures sustainable funding, and enhances international cooperation.

## The Region Faces the Highest Rates of Non-Communicable Diseases

Beyond conflict zones, countries in the region, including conflict-affected areas, are witnessing a growing rise in non-communicable diseases such as heart disease, diabetes, cancer, and chronic respiratory diseases. In the [UAE](#), these conditions account for about 55% of total deaths, with heart disease being the leading cause at 32%, followed by cancer at 12%. Diabetes contributes significantly to early mortality, leading to one in five deaths before age 70. Similarly, in Egypt, 46% of deaths are due to [cardiovascular diseases](#). Additionally, [diabetes](#) rates in the region are among the highest globally. [Obesity](#) is also a prominent health issue, with many Arab countries reporting high levels compared to global averages. Smoking rates are notably high in the region, with [six countries](#), including Jordan, Egypt, and Oman, seeing a rise in tobacco use. Cancer is a major cause of death in several Arab countries, and [regional reports](#) predict that the number of cancer cases in the region will double by 2045, from about 788,000 to 1.57 million.

## Substance Use

[Substance use disorders](#) have significantly increased in many countries in the region between 1990 and 2019, contrasting with the global trend. Studies show that the region's drug control policies have proven ineffective, emphasizing the urgent need for more robust international cooperation and effective strategies to address this growing burden. While 5.6% of people worldwide used drugs last year, [the region's percentage is higher at 6.7%](#). The Eastern Mediterranean has some of the highest drug usage rates globally, with substances like cannabis, opium, qat, and tramadol leading. Over the past decade, [captagon](#) use has spread, becoming cheaper and more accessible than alcohol. In war-torn areas, captagon helps civilians cope with food shortages and daily hardships. The region remains the largest global market for captagon, primarily produced in Syria and Lebanon.

Additionally, worsening public services, rising youth unemployment, economic decline, and deteriorating public health have contributed to the spread of [methamphetamine](#) use.

The Middle East is experiencing a significant increase in the production, trafficking, and consumption of illicit drugs, raising risks to governance, the rule of law, public health, and human security.



# Occupational Health in the Region: A Unique Situation

## Health Risks Faced by Humanitarian Workers: A Neglected Aspect of Occupational Health

Occupational health for humanitarian workers remains a largely overlooked topic in many studies, which often focus on psychological aspects such as stress, anxiety, and depression. What is neglected in research is the physical risks faced by these workers, who operate in environments fraught with health challenges, such as waterborne and foodborne diseases, exposure to toxic chemicals in conflict zones, and risks posed by harsh environmental conditions. Ignoring these physical aspects in research leads to an incomplete picture of the reality of humanitarian work and prevents the development of comprehensive strategies to address the health challenges faced by workers in this field. In addition, research tends to focus heavily on international humanitarian workers, while the health of local workers and community volunteers, whose role has become increasingly important due to the rising demands of unprecedented and prolonged crises, is often inadequately investigated.

Therefore, there is a pressing need for [comprehensive research](#) that considers all humanitarian workers, whether international, local, or community volunteers. By utilizing community-based approaches and training local volunteers to collect data, we can gain deeper insights into the occupational health risks these individuals face in different environments. Research must be directed towards developing tailored strategies, based on local data, to improve occupational health for all workers in this field, and provide safe and healthy work environments that align with the risks they face.

## Biological Security from the Perspective of Occupational Health

Biological safety and biosecurity pose significant occupational hazards for health workers, especially in conflict-affected areas. [The 2021 Global Health Security Index](#) highlights that all countries are still “dangerously unprepared” to face potential threats from future pandemics or outbreaks. Among the vulnerabilities identified are biological safety and biosecurity, which are critical components of health security efforts. Within the “prevention” category of the index, which includes biosecurity and biological safety indicators, countries in the Eastern Mediterranean region, particularly those affected by conflict such as Afghanistan, Iraq, Libya, Syria, and Yemen, score much lower than the global average. Research indicates that low- and middle-income countries face major challenges in developing sustainable biosecurity and biological safety capabilities, especially when these aspects are viewed as occupational risks for health workers operating in such challenging environments.

## Occupational Risks: Health Challenges Beyond the Boundaries of Conflicts and Political Crises

The occupational risks faced by workers in various sectors are not limited to countries affected by conflict or political crises. On the contrary, many national studies, including those conducted in [Gulf Cooperation Council \(GCC\) countries](#), show that occupational health problems are significantly widespread in various work environments, even in politically stable countries. These studies have shown that health risks, whether physical, chemical, or biological, are not confined to conflict zones, but are prominent in work environments with difficult conditions in Gulf countries. This highlights the need for the activation of preventive policies and regulatory frameworks to ensure the safety of workers, regardless of the surrounding security or political conditions.

## Investment in Health Systems Severely Weakens

Countries in the region face significant challenges regarding investment in health systems. While some countries have made progress in improving this investment, the overall situation indicates a weakness in healthcare funding, which greatly affects the ability of health systems to confront increasing challenges, whether related to communicable diseases, non-communicable diseases, or responding to health emergencies. In some Arab countries, for instance, a small portion of the national budget is allocated to the health sector compared to other countries globally. In some cases, this allocation does not exceed 5-6% of GDP, which is far lower than the global rates of 10% or more in some developed countries. Among the main reasons for this funding gap are the economic crises faced by some Arab countries, as well as the rising costs associated with security challenges. Additionally, some governments struggle to balance health needs with other priorities such as security and defense, which they may consider more urgent than health issues.

A study of [the Middle East and North Africa \(MENA\) region](#) highlights the positive relationship between government spending and universal health coverage. It shows that the majority of MENA countries have not yet achieved universal health coverage, and there is a need to expand healthcare services, especially primary care, while adopting strategies to improve financial protection (ensuring that health services do not lead to financial hardship). Undoubtedly, there is a significant disparity in universal health coverage across the region. The study indicates that Somalia achieved a score of 48.2, while the UAE scored 90.3.

Country	Population (in thousands)	UHC legislation	Service Coverage (SC) index	Financial protection (FP) index	UHC index
Afghanistan	40,099	No	40.9	80.9	57.5
Bahrain	1,463	Yes	76.0	97.5	86.1
Djibouti	1,106	No	43.9	98.4	65.7
Egypt	109,262	No	70.2	82.3	76.0
Iran, Islamic Republic of	87,923	No	74.3	91.9	82.7
Iraq	43,534	No	58.5	88.8	72.1
Jordan	11,148	Yes	64.9	96.5	79.1
Kuwait	4,250	Yes	77.8	95.9	86.4
Lebanon	5,593	No	72.6	79.0	75.7
Libya	6,735	No	62.1	72.0	66.9
Morocco	37,077	No	69.5	95.5	81.4
Oman	4,520	Yes	69.9	99.7	85.5
Pakistan	231,402	No	45.2	95.8	65.8
Palestine (Occupied Territory)	5,133	No	61.0	96.1	76.6
Qatar	2,688	No	76.4	99.2	87.0
Saudi Arabia	35,950	No	74.4	99.1	85.9
Somalia	17,066	No	26.8	86.7	48.2
Sudan	45,657	No	43.5	90.4	62.8
Syrian Arab Republic	21,324	No	64.1	96.4	78.6
Tunisia	12,263	Yes	67.1	91.2	78.2
United Arab Emirates	9,365	Yes	81.8	99.8	90.8
Yemen	32,982	No	42.5	87.2	60.9

Table: [Results from a Study Measuring Progress Toward Universal Health Coverage in 22 Countries in the Middle East and North Africa](#)

We must recognize that government spending should be well-planned and within the scope of a strategic financing plan. Studies on the impact of healthcare spending on health outcomes in the Middle East and North [Africa indicate a lack of a positive relationship between healthcare spending and life expectancy](#). This leads to the conclusion that health resources are not allocated effectively. Other [studies](#) suggest that spending on medical equipment and technology is also excessive and reinforces the dominance of a treatment-oriented approach in health systems in the region. This makes the region's health systems reliant on a treatment model, especially for managing non-communicable diseases, rather than adopting a preventive approach. This results in increased healthcare costs, with the primary focus on treatment rather than preventive medicine or broader public health agendas, further increasing the pressure on limited available resources. Finally, there is a focus on developing healthcare in urban areas, which negatively impacts health equity indicators.

## The Brain Drain Crisis and Health Workforce Migration

Health professionals, including doctors, nurses, public health workers, and others, are migrating from our region in search of work environments that offer job stability, better financial incentives, and greater professional recognition. This poses a significant challenge that fundamentally threatens the quality and efficiency of health systems, as these professionals are a cornerstone of strengthening health systems in any country. This was highlighted by experts at the Global Population, Health, and Human Development Conference held in Cairo, Egypt, in late 2024. According to the latest list by the World Health Organization supporting and ensuring health workforce guarantees, 55 countries face the most urgent health workforce challenges related to universal health coverage. These countries experience a lower density of doctors, nurses, and midwives than the global average (49 per 10,000 people), as well as a lower coverage of services in the pursuit of universal health coverage. This list includes Afghanistan, Djibouti, Pakistan, Sudan, and Yemen from the region.

[National statistics](#) also raise concern, particularly with the unprecedented migration of doctors from [Tunisia](#), where the number of migrating doctors exceeds the number of medical school graduates each year, multiplying concerns about Tunisia's future health prospects. According to the Medical Council, 1,500 doctors left the country in 2023 to work in European and Arab countries, while medical schools graduate about 1,000 doctors annually. This migration surge, which began in 2011, coincides with signs of an aging workforce in the health sector currently overseeing the treatment of Tunisians. This phenomenon is also evident in Maghreb countries. In [Morocco](#), more than 600 medical professionals migrate each year, and the Algerian government recently announced an "urgent plan" to curb the migration of doctors, particularly to Europe, especially France, in search of higher salaries and better working conditions. Last year, 1,200 [Algerian](#) doctors left for work in French hospitals, according to statements by the President of the "Union of Public Health Physicians," Elias Merabet. In [Lebanon](#), the number of doctors who migrated increased to more than 3,500 from various specialties, along with around 3,000 nurses who have left in recent years.

This may have prompted the first [Arab conference on the role of emigrant Arab health](#) professionals in supporting health systems in Arab countries. The conference highlighted the importance of retaining Arab health professionals and encouraging them to return to their home countries. The conference reflected Arab countries' commitment to combatting the brain drain phenomenon, resulting in important proposals. Among them were the adoption of a comprehensive Arab strategy to organize health migration, enhance cooperation between Arab countries to benefit from emigrant skills, create an electronic platform linking health workers in the Arab sector to provide job and training opportunities, support scientific research and publishing in this field, adopt exchange programs for health professionals, fellowship programs, and reciprocal training between Arab countries, and develop a unified legal framework to regulate health migration and ensure the rights of workers in this sector.



## Despite Significant Challenges, Continuous Efforts and Health Achievements in 2024

Despite the successive challenges faced in the past year, including both emerging and ongoing issues from previous years, UN reports, national statistics, and independent documents indicate progress in efforts and achievements, as well as improvements in individuals' health outcomes. These accomplishments should be carefully considered, as they represent valuable lessons that can be shared with other countries for broader benefit, opening doors to opportunities for enhancing response efforts and strengthening health systems.

### Routine Immunization and Infectious Diseases

One of the most significant achievements was documented by the latest estimates from the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) regarding [national immunization coverage \(WUENIC\)](#). These figures bring optimism, as despite a substantial decline in vaccination coverage in several countries across the Middle East and North Africa, some countries in the region have maintained progress, while others have made notable advancements. Thirteen out of twenty countries in the region achieved coverage rates of no less than 90%, and recovery from the COVID-19 pandemic was evident in at least five middle-income countries, putting them on the right track to meet the Immunization Agenda 2030 targets.

There are related achievements worth mentioning. Iraq completed its transition phase for polio eradication, and Egypt made significant and global strides in combating hepatitis C. Additionally, Egypt recently declared itself free from malaria. Kuwait became the first country in the Middle East to offer respiratory virus vaccines for children.

Regarding the eradication of infectious diseases, Oman succeeded in eliminating the transmission of HIV and syphilis from mother to child. Similarly, the World Health Organization certified the elimination of trachoma as a public health problem in Pakistan and Saudi Arabia. Finally, the WHO announced that Jordan became the first country in the world to verify the elimination of leprosy. These achievements are not limited to a single year but reflect a long-term commitment to health reforms and the implementation of effective policies and programs that address major health challenges. They also demonstrate the capacity of these countries to creatively utilize both national and international resources, as well as the continuous collaboration between the public and private sectors to achieve sustainable health outcomes.



## Regional Solidarity in Responding to Health Emergencies

What was observed last year is that wealthy countries have shown clear commitment by supporting communities affected by health crises and emergencies, utilizing their financial resources to alleviate the suffering of vulnerable populations and mitigate the impacts of the crises. A prominent example of this is [the Kuwait Fund for Arab Economic Development's](#) contribution of \$1.5 million to UNICEF to support essential primary healthcare services in Yemen. Additionally, the significant contributions of the [King Salman Humanitarian Aid and Relief Center](#) in providing assistance to UNRWA and refugees in the region and beyond were noteworthy, offering a diverse and inclusive range of aid, from emergency relief to sustainable development. It is also important to mention the recent efforts by this center to intensify support for Syria.

We also highlight the UAE's donation of \$5 million to support the emergency polio vaccination campaign in Gaza, as part of the ongoing relief efforts provided by the UAE to the Palestinian people. Furthermore, the Hashemite Kingdom of Jordan played a key role in offering medical assistance through its field hospitals in Gaza and the West Bank, which have been receiving thousands of patients and conducting specialized surgeries. Additionally, Jordan is preparing to send the "Obstetrics and Neonatology/Khan Yunis" field hospital to Gaza soon.

## One Health

Governmental and political commitment is a fundamental pillar on the path to achievement, and this has been recently observed in the effectiveness of public health strategies implemented to achieve these results. One of the most notable strategic achievements at the regional level is the advancement of the "One Health" concept, which integrates cooperation among the health, environmental, and agricultural sectors. Within this collaboration, tangible achievements have been made, such as the establishment of joint programs to combat zoonotic diseases and environmental pollution. Countries are investing in institutionalizing the One Health approach through various methods and enhancing multi-sectoral coordination among entities responsible for human, animal, and environmental health.

The application of the [One Health approach in the Eastern Mediterranean region](#) has seen significant progress through initiatives aimed at enhancing coordination among sectors, developing national frameworks, and strengthening workforce capacities. Countries such as Jordan, Egypt, Iraq, Sudan, Tunisia, Qatar, the UAE, and Somalia have established various coordination mechanisms. National frameworks, operational plans, and roadmaps have been put in place with support from programs such as the IHR-PVS bridge program in Jordan, Morocco, Somalia, Bahrain, and Lebanon. Furthermore, national consultative workshops related to these efforts have been held in countries like Egypt, Sudan, Somalia, Lebanon, Yemen, Bahrain, Qatar, and Iraq.

The process of prioritizing zoonotic diseases (OHZDP) was implemented by the CDC in Jordan, Sudan, Somalia, and the UAE. Workforce capacity development has also been a key focus for many countries, involving risk assessments in multiple countries, including Jordan, Egypt, Pakistan, Afghanistan, Qatar, Sudan, the UAE, Tunisia, Morocco, and Libya. Foodborne disease outbreaks have been investigated, and One Health approaches have been developed in Jordan and Egypt.

In Jordan, one of the main achievements was the integration of disease surveillance systems, where the Jordanian CDC developed a comprehensive One Health surveillance system that combines human, animal, and environmental health data. In Egypt, significant efforts were made to strengthen governance mechanisms for the One Health approach, starting with participation in joint international activities and culminating in Egypt's national One Health strategy, which focuses on zoonotic diseases, vector-borne diseases, antibiotic resistance, and environmental health.

In Pakistan, the One Health approach was promoted through an event-based surveillance project aimed at developing early detection systems and coordination among sectors.

## Artificial Intelligence and Technology

The region, particularly the Gulf countries, has witnessed significant improvements in the use of technology [and artificial intelligence in the healthcare sector](#), across several areas such as medical image analysis, early disease diagnosis, the development of telemedicine services, the implementation of digital solutions to improve medical record management, and the analysis of health data to identify disease patterns and predict epidemics.

For instance, investment is increasing in the use of genetic technologies to identify genetic conditions and predict potential risks, which aids in early prevention and improving public health management. This is critically important as the Gulf Cooperation Council (GCC) countries face significant challenges due [to the high rates of genetic diseases](#) in many of their populations.

Another example of technology being applied to healthcare is in Bahrain, where doctors are developing a platform for remote medical imaging services for radiological analysis and diagnosis. Additionally, the Bahraini health tech startup “Doctori” provides services to over 30,000 users worldwide through 400 healthcare providers. Robotics have already been integrated into patient treatment in Bahrain as well.

In the UAE, the “Tabeeb” platform, the largest digital health platform in the region, based in the UAE, has conducted over five million remote medical consultations and recently launched a subscription plan “Wiqaya” for men’s health, promoting preventive healthcare and primary care. At Jaber Hospital in Kuwait, artificial intelligence is used in surgical operations, endoscopic procedures, heart monitoring tools, and to enhance the performance of robots. In 2023, surgeons in the country began using 3D devices to create advanced visualizations of patients’ internal organs, which can be used during operations. This was the first time the “Olympus” device was used in the Gulf region. The country also conducted its first endoscopy using artificial intelligence to detect colon and stomach tumors that would otherwise remain invisible to the naked eye.

Saudi Arabia is collaborating with the health data platform provider “Orion Health” to create the world’s largest health information exchange, which will aggregate data from 5,000 public and private healthcare institutions and benefit from the data of 32 million individuals.

## Highlights of Further Achievements in 2024

In light of the increasing health challenges, some Arab countries have begun taking tangible steps to improve their healthcare systems and enhance investments in this vital sector. For example, Egypt has strengthened its universal health insurance program to provide healthcare for all, and has launched a national project for the collection and manufacturing of plasma, aiming to achieve self-sufficiency in [plasma derivatives](#) in Africa and the Middle East. The project aims to ensure adequate and safe blood and blood product supplies, which is a key element in achieving universal health coverage.

Moreover, in 2024, Egypt implemented massive campaigns for early disease detection as a proactive measure to enhance prevention. [More than 3 million citizens benefited from](#) the national cancer early detection initiative, while 2.39 million women were screened as part of the “Mother and Child Health” initiative, and approximately [4.9 million students were screened for](#) conditions such as anemia, obesity, and stunting.

In terms of regulatory progress, the World Health Organization announced the accreditation of [the Egyptian Drug Authority at the third level of regulatory](#) maturity, a milestone that reflects the Egyptian government’s efforts to elevate the pharmaceutical sector and strengthen national institutions to gain international recognition, thereby enhancing Egypt’s competitiveness in the pharmaceutical industry.



## Challenges and Opportunities Ahead

While the region faces significant public health challenges, there is reason for hope. By adopting a positive mindset and relying on the power of science, we can harness both human and material resources through regional and international partnerships to strengthen health systems and increase their resilience. Key to this effort is investing in healthcare infrastructure and embracing new technologies in prevention, diagnosis, and treatment. In parallel, we must focus on achieving universal health coverage and mobilizing resources to ensure that health systems are equipped to address the mounting challenges posed by climate change, forced displacement, migration, and the cascading consequences of ongoing humanitarian crises.

Health systems in the region must also see more sustainable investment, with particular attention to balancing prevention and treatment. Investments in public health programs, such as awareness campaigns and vaccination initiatives, are vital to reducing the burden on hospitals and mitigating the long-term costs associated with chronic diseases. Furthermore, investing in medical training and the development of a skilled health workforce is essential for driving sustainable improvements in healthcare quality and responsiveness.

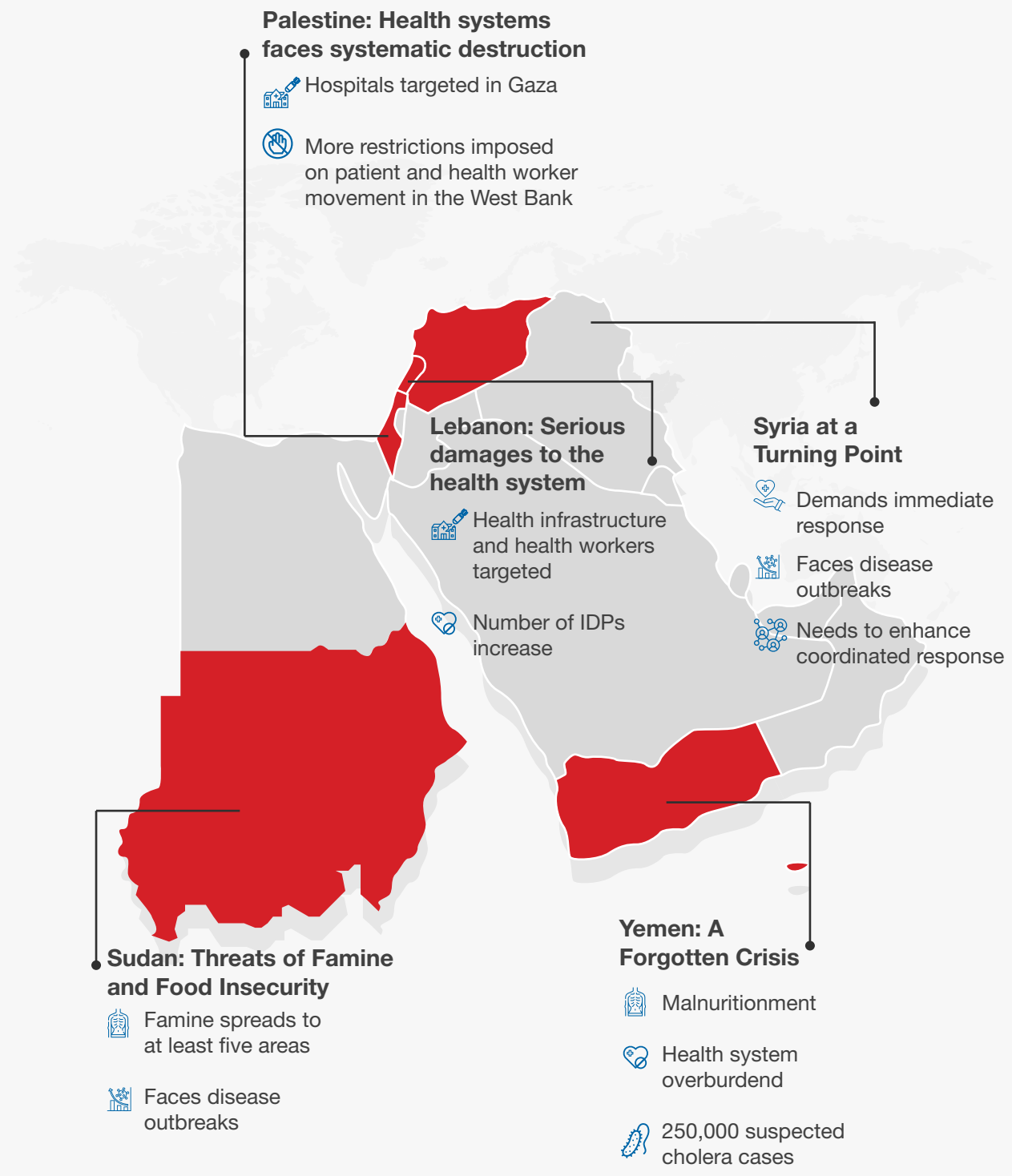
To address the urgent and unprecedented health needs of the region, we must adopt innovative healthcare models that are aligned with the reality of limited resources and existing constraints. These models must prioritize prevention, improve the management of non-communicable diseases (NCDs), and ensure continuous, coordinated care for individuals across all health stages. A critical component of this shift involves expanding community-based public health approaches, especially in resource-constrained emergency settings. In places like Gaza, strengthening the community health workforce and engaging young people as health volunteers is an effective strategy to enhance service delivery.

At the same time, systematic data collection and documentation are essential for informed decision-making and resource planning, laying the groundwork for future health interventions. The sustainability of community health initiatives hinges not only on securing adequate financial support but also on a deep understanding of local cultural contexts. This approach fosters trust and ensures that health programs are both relevant and effective, ultimately promoting active community engagement.

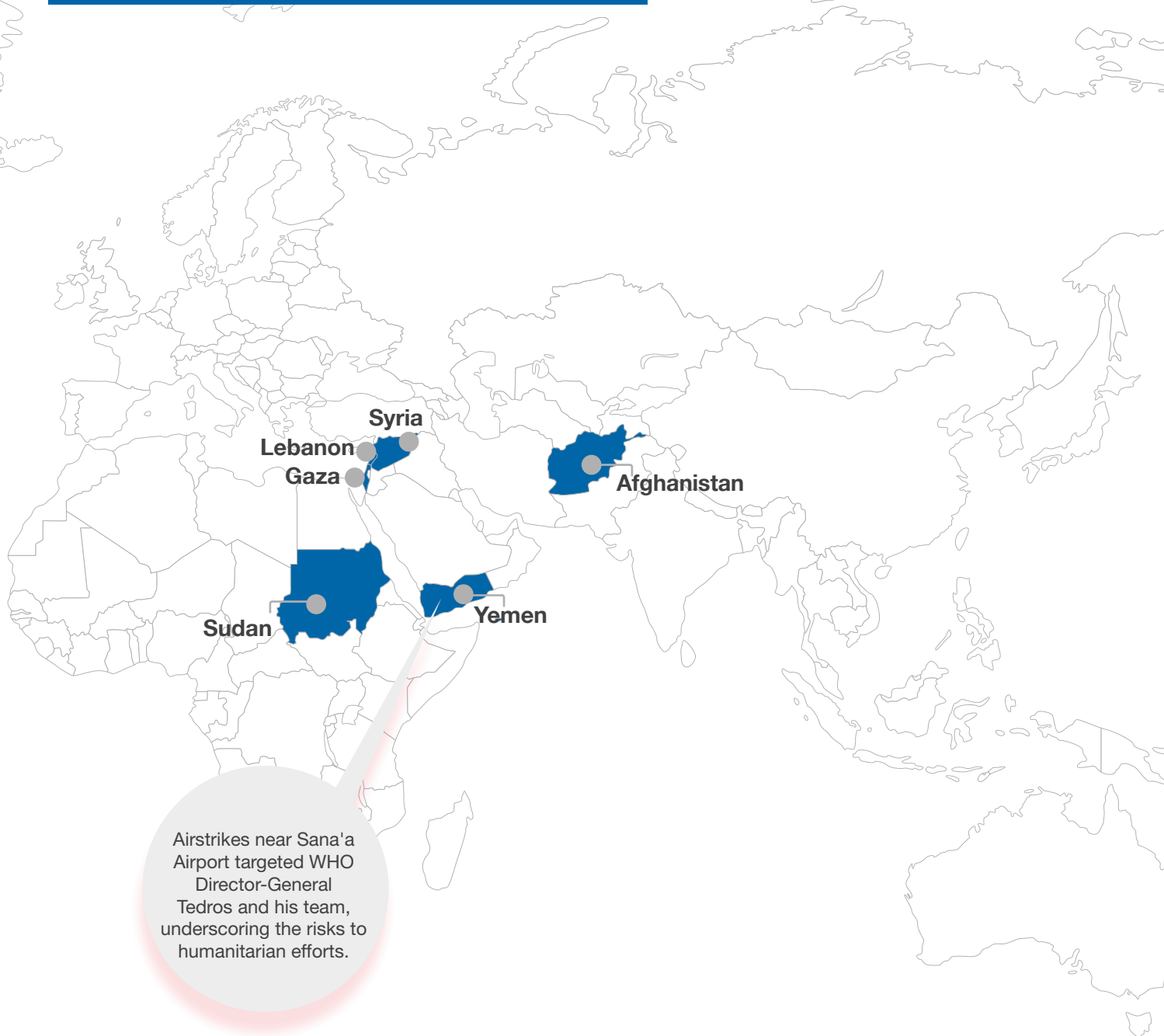
Regional collaboration must extend beyond financial aid, focusing on the exchange of expertise, facilities, technologies, and capacity-building programs between countries. This collaborative effort should emphasize cross-border cooperation in disease surveillance and emergency response, which will enhance the resilience and sustainability of the regional health system. By taking a comprehensive and cooperative approach, the region can make significant progress in strengthening healthcare infrastructure, ultimately leading to improved health outcomes for all.

# Humanitarian Crises and Political Conflicts: The Biggest Share of Health Challenges

The region is experiencing complex humanitarian crises, with healthcare systems suffering widespread destruction due to ongoing conflicts. From Gaza to Yemen, and from Sudan to Syria, populations struggle with limited access to essential healthcare as hospitals are destroyed, medical supplies run short, and medical teams and international relief efforts face immense challenges.



# Disruptions of Humanitarian Efforts



”

in the past two years, the death toll among relief workers had risen at an “alarming rate,” with many being kidnapped, detained, attacked, or injured in several countries, including Afghanistan, Lebanon, Palestine, South Sudan, Sudan, Syria, and Yemen.



# Children and Women: The Most Vulnerable in Times of Conflict



**114**

maternal deaths were recorded from January to mid-August 2024 with a more than 50% increase in maternal deaths in medical facilities during the same period in South Darfur.



**1 out of 4**

children in Syria suffers from anemia.



**1 out of 4**

women aged 15 to 49 is affected by anemia.



**Yemen**

has one of the highest maternal mortality rates in the world.



**183**

women give birth daily, and 15% of them are expected to require additional medical care due to complications related to pregnancy or childbirth caused by the current crisis.

# The Growing Crisis of Displacement and Refugees



**10 million**

and more than two million others have fled the country, most of them to Chad, South Sudan, and Egypt.



**Tens of thousands**

of displaced Yemenis are living in harsh conditions that worsen with the onset of winter.



**9 out of 10**

people have been displaced at least once, and in some cases, displacement has occurred more than ten times.



**96%**

of children in Gaza feel that death is imminent.



**Sudan**

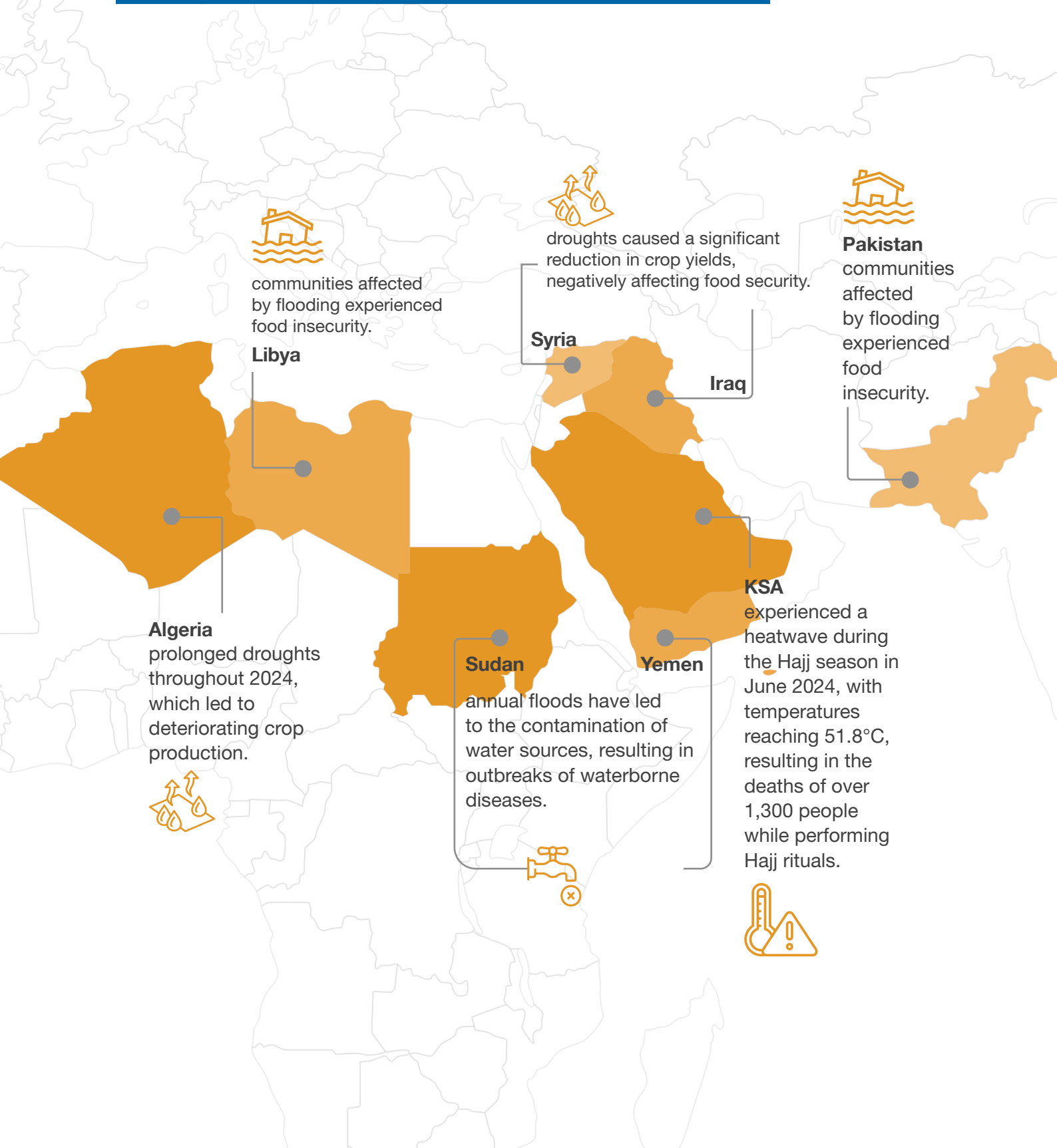
Sudanese medical teams continue to provide psychological care to deal with various levels of stress and disorders faced by displaced persons due to the ongoing war.



**25%**

a quarter of Yemen's population is suffering from psychological trauma.

# Accelerating Pace of Climate Change Threatens All Countries in the Region





# Emerging and Infectious Diseases



**1,051,287**

suspected cases of malaria and 13,739 suspected cases of dengue fever.



## Dengue Fever

facing a rise in dengue fever cases.



## Water Pollution

Following the heaviest rainfall recorded United Arab Emirates in April 2024, the country witnessed a rise in dengue fever cases.



## Cholera

experienced limited outbreaks of cholera.



**35%**

Yemen accounted for 35% of the global cholera burden and 18% of the reported cholera-related deaths worldwide, with nearly 250,000 suspected cases and 861 associated deaths recorded by December 1, 2024.



## Polio

despite vaccination efforts, some areas in Afghanistan and Pakistan are still witnessing new cases.



## Poliovirus Type 2

circulating "vaccine-derived poliovirus type 2 (cVDPV) reported in Gaza and Sudan.



**93 million**

72% increase in antimicrobial deaths among individuals aged 70 years or older in high-income countries compared to a 234% increase in North Africa and the Middle East, a relatively large increase.

# Non-communicable Diseases



## UAE

NCDs account for about 55% of total deaths, with heart disease being the leading cause at 32%, followed by cancer at 12%.



## Egypt

46% of deaths are due to cardiovascular diseases.



## Obesity

is also a prominent health issue, with many Arab countries reporting high levels compared to global averages.



## Smoking

rates are notably high in the region with six countries, including Jordan, Egypt, and Oman, seeing a rise in tobacco use.



## Cancer

is a major cause of death in several Arab countries, and regional reports predict that the number of cancer cases in the region will double by 2045, from about 788,000 to 1.57 million.

# The Brain Drain Crisis

## Health Workforce Migration



**Tunisia:**  
1,500 doctors  
left the country  
in 2023 to work  
in European and  
Arab countries.

**Morocco:**  
more than  
600 medical  
professionals  
migrate each year.

**Algeria:**  
1,200 Algerian  
doctors left for  
work in French  
hospitals.

**Lebanon:**  
the number of doctors  
who migrated increased  
to more than 3,500 from  
various specialties,  
along with around 3,000  
nurses who have left in  
recent years.

- According to the latest list by the World Health Organization supporting and ensuring health workforce guarantees, 55 countries face the most urgent health workforce challenges related to universal health coverage. These countries experience a lower density of doctors, nurses, and midwives than the global average (49 per 10,000 people), as well as a lower coverage of services in the pursuit of universal health coverage. This list includes Afghanistan, Djibouti, Pakistan, Sudan, and Yemen from the region.

# Health Achievements in 2024



**13**

countries in the region achieved coverage rates of no less than 90%, and recovery from the COVID-19 pandemic.



**Iraq**

completed its transition phase for polio eradication.



**Egypt**

made significant and global strides in combating hepatitis C. Additionally, Egypt recently declared itself free from malaria.



**Kuwait**

became the first country in the Middle East to offer respiratory virus vaccines for children.



**Oman**

succeeded in eliminating the transmission of HIV and syphilis from mother to child.



**Pakistan and Saudi Arabia**

certified the elimination of trachoma as a public health problem.



**Jordan**

became the first country in the world to verify the elimination of leprosy.

## Artificial Intelligence and Technology

The Middle East, particularly the Gulf countries, has witnessed significant improvements in the use of technology and artificial intelligence in the healthcare sector, across several areas such as medical image analysis, early disease diagnosis, the development of telemedicine services, the implementation of digital solutions to improve medical record management, and the analysis of health data to identify disease patterns and predict epidemics.



# Regional Solidarity in Responding to Health Emergencies



## \$1.5 million

provided by the Kuwait Fund for Arab Economic Development's to UNICEF to support essential primary healthcare services in Yemen.



## Generous support

provided by the King Salman Humanitarian Aid and Relief Center in providing assistance to UNRWA and refugees in the region and beyond were noteworthy, offering a diverse and inclusive range of aid, from emergency relief to sustainable development.



## \$5 million

provided by the United Arab Emirates to support the emergency polio vaccination campaign in Gaza.



## Field Hospitals

the Hashemite Kingdom of Jordan played a key role in offering medical assistance through its field hospitals in Gaza and the West Bank, which have been receiving thousands of patients and conducting specialized surgeries.

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*Figures and numbers are based on the content within the main sections of the report, where references have already been cited.*