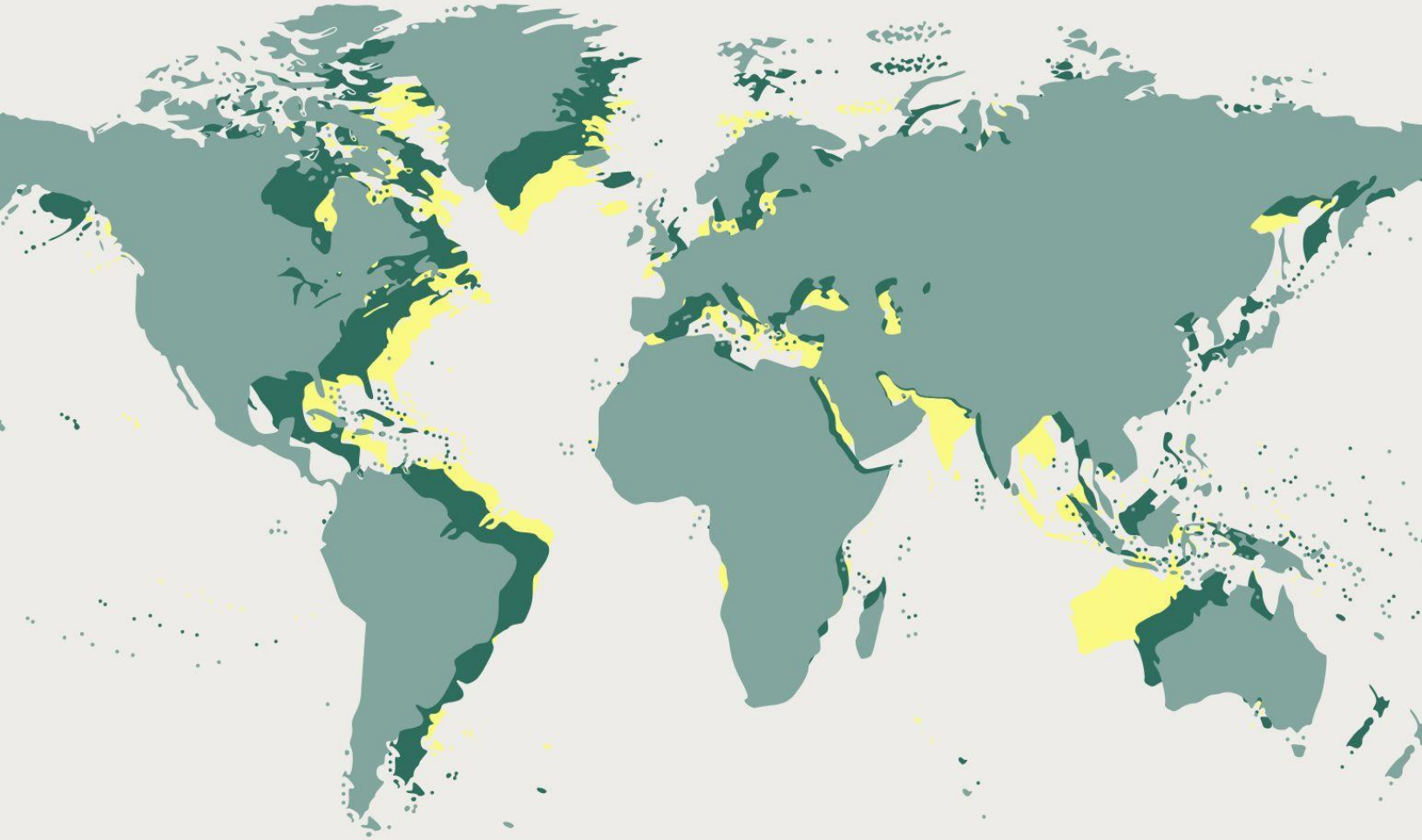
REGIONAL GUIDE
SEARO/WPRO REGION



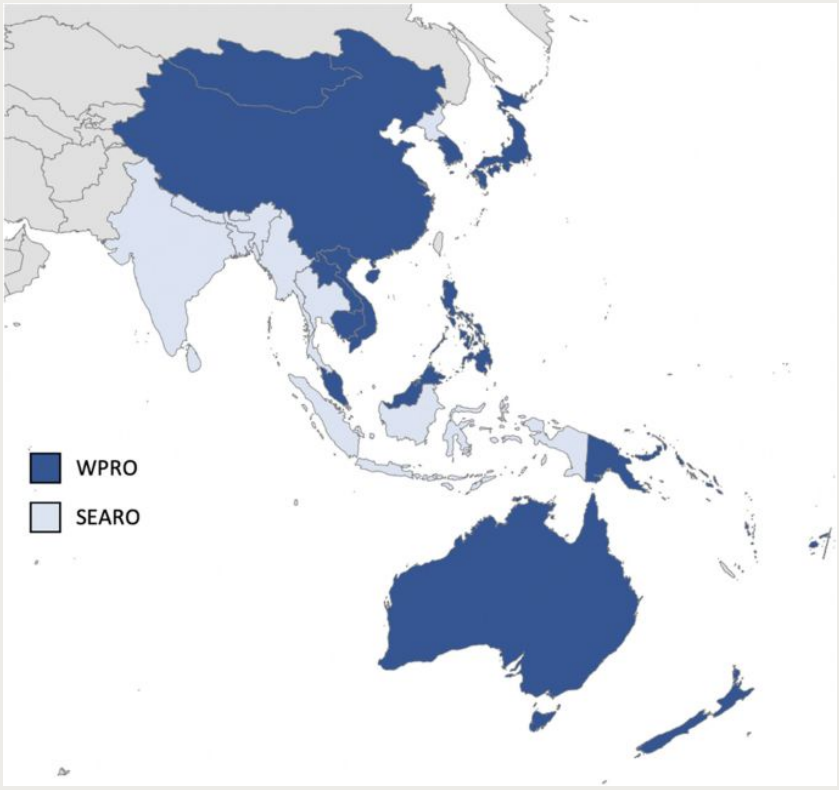
AMWHO

2025 AMWHO INTERNATIONAL CONFERENCE

Bridging Health and Healthcare Disparities between Low, Middle, and High-Income Countries to Achieve Universal Health Coverage

Introduction

The World Health Organization's (WHO) South-East Asia Region (SEARO) and Western Pacific Region (WPRO) comprises 49 countries and territories and covers a vast geographical area, with significant variations in economic development, healthcare infrastructure, and public health challenges.[1,2]



BMC Proceedings Map of the Asia–Pacific region.[3]

A key underlying goal is to improve health outcomes and address ongoing health inequities in groups like rural and socioeconomically disadvantaged populations.[4,5] In these regions, health inequities within and between countries are especially prevalent.[4,5] Geographic barriers, limited infrastructure, and poverty prevent equitable access to essential healthcare services.[4,5] This results in higher rates of preventable diseases and poorer health outcomes that disproportionately affect vulnerable populations.[4,5] Strengthening primary care systems, investing in services focused on increasing access, and creating community-based initiatives are crucial strategies for achieving equity and improving health outcomes for all.[4,5]

Subtheme 2: Disparities in Access to Quality Care

As breakthroughs in healthcare occur continuously in the modern world, it is important to ensure that healthcare access is equitable. In the SEARO/WPRO region, significant disparities in healthcare availability, quality, and outcomes remain, often influenced by socioeconomic status, rural versus urban divide, and limited healthcare infrastructure.[4,5] Populations in remote or underserved areas frequently lack access to essential medical services and face higher rates of preventable diseases.[4,5] Meanwhile, populations facing barriers such as financial hardship have difficulty affording necessary care.[4,5] Economic struggle, geographic isolation, and a lack of trained healthcare providers, ultimately lead to poorer health outcomes and a widening gap in life expectancy.[4,5]

CASE STUDY 1: MATERNAL-CHILD HEALTH SERVICE INEQUALITIES IN INDONESIA

Maternal-child health (MCH) is crucial to public health and improving outcomes and is heavily emphasized in the United Nations Sustainable Development Goals (SDGs).[6] Proper MCH care includes services like prenatal care, nutrition support, and childbirth assistance, but access to such services is limited by factors like geography and socioeconomic status.[6] Countries in Southeast Asia have experienced improvements in maternal, neonatal, and child mortality over the past few decades, but the benefits have not been equally distributed amongst groups.[7] The persistence of disparities in Indonesia must be addressed to ensure equitable health outcomes for all.

A study evaluating five MCH services (antenatal care (ANC), births attended by skilled health personnel, diphtheria, tetanus and pertussis (DTP3) immunization, measles immunization, and polio immunization) in ASEAN member states from 1993 to 2021 investigated such inequities.[6] In particular, results showed that the mean coverage of MHC services in Indonesia was relatively high (78.52%) in 2021.[6] In addition to achieving decent overall coverage, indicator metrics such as maternal mortality rate are reflective of promising improvements. In particular, Indonesia's maternal mortality rate decreased from 450 to 249 per 100,000 live births between 1990 and 2020.[6,8] Despite this, the rates in Indonesia are among the highest in Southeast Asia, falling short of SDG goals, and significant disparities across regions and demographics persist.[6,8]

One determinant of such disparities hinges upon urban-rural differences in access to care. For example, women in urban Indonesia were 1.255 times more likely than women in rural areas to make 4 or more ANC visits.[9] Similarly, women in urban areas were more likely (2.44 times greater odds) to deliver their child at a healthcare facility compared to those living in rural areas.[9] Health facilities are typically concentrated in urban areas, but the majority of people in Indonesia reside in rural locations.[8] This greatly limits access to proper healthcare, especially in an archipelago like Indonesia. For instance, the average distance to hospitals ranges substantially between islands, being 0.5 km on Java island and 29 km on Sulawesi island 29 km (60 times greater).[8] These geographic differences likely contribute to the differences observed in MCH outcomes.

Multiple studies have also shown disparities in maternal health service use across socioeconomic groups.[6,10] In particular, one study based on data from the International Demographic and Health Survey (DHS) in Indonesia revealed those categorized as being in the richest, rich, middle, and poor groups were 5.93, 3.04, 2.07, and 1.87 times more likely, respectively, to have adequate ANC visits, respectively, compared to those in the poorest category.[10] Furthermore, those who were in the richest, rich, middle, and poor were 9.22, 3.44, 2.57, and 2.14 times more likely, respectively, to deliver at a healthcare facility respectively than those in the poorest category.[10] Lastly, mothers in the middle and rich categories were 1.30 and 1.29 times more likely to use prenatal care (PNC), respectively, than those in the poorest category.[10] These findings underscore the need to address differences in maternal-child care in Indonesia. In particular, they show that socioeconomic status plays a significant role in determining access to adequate maternal health services, with wealthier groups having a clear advantage over poorer ones.

Overall, while Indonesia has made significant strides in maternal-child health over the past few decades, substantial inequalities persist throughout the region.[6–10] The examples highlighted here show how disparities in access depend on both geographic and socioeconomic factors.[6–10] Targeted interventions are needed to bridge these gaps, ensuring that every mother and child has equitable access to quality healthcare.[6–10] In particular, possible solutions include increasing investments in rural healthcare infrastructure, expanding mobile health units, and providing financial assistance to low-income families.[6–10] Additionally, improving healthcare workforce distribution and utilizing community health workers to promote education and outreach can help address barriers and ensure that no group is left behind.[6–10]

CASE STUDY 2: SOCIOECONOMIC DETERMINANTS OF HEALTHCARE ACCESS IN CAMBODIA

Throughout the 21st century, health outcomes in Cambodia have improved significantly as advances in technology and health access have increased the quality of care for many Cambodians.[11,12] Despite these improvements, the benefits of better healthcare have not been equitably distributed across society. Socioeconomically disadvantaged groups living in rural areas have not experienced the same improvements in health outcomes as their wealthier counterparts – in fact, as health outcomes improved, disparities have worsened.[12] The differential access to quality healthcare services remains a critical issue.

While urban areas have better access to hospitals, specialized care, and modern treatments, rural populations often face significant barriers to care, including inadequate infrastructure, long travel distances, and a shortage of skilled healthcare professionals.[13,14] These inequities in healthcare access have contributed to growing disparities in health outcomes.[13,14] Rural populations, in particular, continue to suffer from higher rates of preventable diseases, malnutrition, and maternal mortality.[13,14] Even as urban areas improve health services, rural populations may not be able to access transportation to the city.[14] Regional differences in lifestyle are a key contributor to this issue – rural residents are more likely to drink alcohol and smoke tobacco.[13] The lack of financial resources, combined with limited access to education about health and wellness, has exacerbated these challenges.[15] The vast majority (84%) of the wealthiest Cambodians live in the capital city, Phnom Penh, which leaves rural areas both under-resourced and under-funded.[13] In urban areas, occupational hazards may cause health issues as well. Garment factories have become increasingly common in urban areas, but workers in these factories are at risk of developing mental health problems due to the stressful nature of the work.[16] While Cambodia has made strides in improving its public health system, the persistence of poverty and underdevelopment in many areas limits the effectiveness of these efforts in reaching the most vulnerable groups.[13]

As a result, inequities in health outcomes have worsened over time, with socioeconomically disadvantaged groups experiencing slower gains and continuing to face significant health risks. Bridging these gaps in access and outcomes will require targeted policy interventions, investments in rural healthcare infrastructure, and a commitment to reducing the socioeconomic barriers that perpetuate health disparities.

Subtheme 3: Sustainable Community-Based Initiatives

Implementing sustainable community-based healthcare initiatives is critical in addressing public health challenges throughout the SEARO and WPRO regions.[17,18] By decentralizing healthcare delivery and relying more on local leaders, we can better serve communities who have historically faced injustice and inequity in regard to access to services, quality of care, and health outcomes.[17,18] Through the following two case studies, we can see specific examples of how community-driven models have successfully improved health outcomes and advanced equity in countries of the SEARO/WPRO region.

CASE STUDY 1: COMMUNITY-BASED MANAGEMENT OF TUBERCULOSIS IN BANGLADESH

Tuberculosis (TB) is an infectious bacterial disease that most often affects the lungs. Worldwide, TB causes the most deaths due to a single infectious agent.[19] The WHO South-East Asia region contributes disproportionately to this burden.[20] Specifically, the region contains one-fourth of the world's total population but carries 45% of the burden of annual TB incidence.[21] In 2021-2025, 30 high-TB burden countries are defined by the WHO and comprise the top 20 countries in regard to incidence in 2019 in addition to the 10 countries with the most severe burden in terms of the incidence rate and the absolute number of cases.[21] Several South-East Asia regions are on this list, including Bangladesh.[20] As a result, tuberculosis management throughout the country remains a key public health priority and can help us achieve better outcomes for TB, which is both preventable and curable.

Bangladesh has made strong progress through its National Tuberculosis Control Program (NTP).[22] However, significant challenges remain in achieving universal access to TB diagnosis, treatment, and prevention.[22] Community-based TB interventions can address these gaps effectively by leveraging grassroots-level engagement and addressing socio-economic and healthcare system barriers.[23,24] One interesting example to look at is the the handling of drug-resistant tuberculosis (DR-TB) cases which are a growing issue throughout Bangladesh.[23,24] Officials have implemented community-based programmatic management of DR-TB (cPMDT) to combat this.[23,24] Treatment for DR-TB is very limited and currently only available to less than ¼ of all cases globally.[23,24] There have been efforts to switch from a hospital approach to cPMDT–a decentralized, community-based approach.[23,24] Moving to decentralized measures is intended to expand patient access to treatment by optimizing personnel and infrastructure at healthcare sites.[23,24] Over a 3-year period, researchers tested this approach by carrying out a study examining TB patients before and after transitioning from hospital-initiated treatment to community-based care.[23] The study enrolled TB-DR patients and assessed outcomes before and after the transition to community-based care. The results of the study demonstrated significant improvements in patient outcomes.

After transitioning to community-based care, the time it took for patients to start treatment after being diagnosed was dramatically reduced, going from 69 days to 6 days.[23] The overwhelming majority of patients (95%) were able to complete all their required follow-up tests during the three-year period, showing a high level of adherence to the program.[23] Additionally, nearly all patients showed no signs of the infection in their test results by the sixth month of treatment.[23] These positive findings emphasize the effectiveness of a community-based approach in enhancing care for TB-DR patients.[23] Another study evaluating the efficacy of cPMDTs showed that such programs were feasible and positively regarded by citizens.[24] These improvements and the positive reception of cPMDT programs highlight the potential of community-based TB care in Bangladesh in enhancing treatment accessibility, reducing delays, and improving patient outcomes.[23,24] By addressing systemic barriers and leveraging local engagement, these interventions offer a scalable and sustainable model for tackling drug-resistant TB and achieving broader public health goals.

In addition to increasing access to treatment for TB through cPMDTs, early TB screening is also crucial for improving outcomes and ensuring equity.[25,26] Researchers note particular challenges with vulnerable groups like sexual minorities, who are at the highest risk for TB/HIV co-infections and are also less likely to visit healthcare facilities because of stigma.[25] One study showed that community-based peer-led TB screening could combat this and enhance TB testing among such populations. These findings emphasize the importance of tailoring community-based approaches to assist marginalized groups and address their unique needs.[26]

In summary, tuberculosis is a persistent public health challenge, particularly in high-burden regions like Southeast Asia, where countries such as Bangladesh are disproportionately affected. Shifting from state-run to community-based initiatives, like the examples described here, is promising, in regard to their ability to improve patient outcomes, promote equity, and increase access to care in a sustainable way. Progress should continue to be made toward strengthening existing programs and creating similar efforts.

CASE STUDY 2: MISSION INDRADHANUSH IN INDIA

Through vaccination, populations become protected from disease.[27] At an individual level, the vaccines help improve the immune response to disease, as well as lessen the chance of transmission. In India, vaccines are a crucial measure for a government tasked with preventing the disease spread within a densely populated country. For children especially, it is important to vaccinate before they become exposed to disease; in India, 500,000 children die each year from vaccine-preventable diseases.[28] To combat this issue, in 2014 India launched Mission Indradhanush (MI), an initiative that uses community members and volunteers to improve vaccine rates across the country.[29] In 2017, they started Intensified Mission Indradhanush (IMI) to continue the efforts of MI.[29]

Across India, vaccination rates lagged behind public health program goals despite the availability of vaccines. In 2015, only 62% of full immunization coverage had been reached for infants in their first year of life; in this case, full immunization coverage refers to the portion of a population that has received all recommended vaccines.[30] The reasons for this lack of vaccination are various. In some regions, populations were too isolated or rural to have ready access to necessary vaccines.[29,31] In other places, residents did not receive vaccines because they did not understand the importance of vaccination.[29,31] Along with a lack of information, vaccine misinformation also played a role in preventing vaccination.[29,31] As MI was launched, its intention was to boost vaccination rates among both unvaccinated and partially vaccinated children. To achieve the goals of MI, the initiative focused primarily on underserved areas with low vaccination rates, as recorded by WHO monitoring statistics.[32] High-risk areas with a greater proportion of migrants, such as construction sites and brick kilns, were targeted for MI.[31] Additionally, urban slums and peri-urban areas were also included in the MI campaign.[31]

Integral to MI and IMI was its inclusion of community members within vaccine and information delivery. In order to increase the credibility of vaccine truths, local community leaders and stakeholders were involved in the process of disseminating information and debunking myths.[31,33] ASHAs (Accredited Social Health Activists) are community health workers who serve a number of public health roles.[31,33] Given that they had built trust within a community, they were tasked with going door-to-door to encourage vaccination and identifying children and mothers who had missed vaccination schedules.[31,33] Additionally, community members were involved with designating dates and times for vaccination sessions; locals with knowledge of their specific community knew when mothers and children were available to receive vaccines.[31,33]

The success of MI and IMI can be seen in the increase in immunization coverage across India. Among 1-2-year-olds, full immunization coverage increased from 14.4% in 2016 to 76.4% in 2021.[31] As MI progressed, data on these coverage rates was continually monitored to identify areas of improvement.[31] Doing so effectively allowed them to address issues that arose during implementation.[31] The prevalence of vaccine-preventable diseases decreased significantly as well. The number of pertussis, measles, and diphtheria cases decreased by 98.7%, 65.6%, and 71.0%, respectively, from 2014 to 2021.[31] The presence of MI certainly played a role in increasing these vaccination rates, as one study found that districts without MI had lower vaccination rates than those with MI when controlling for confounders. Mission Indradhanush should serve as a global model for improving vaccination rates in underserved populations by leveraging community engagement, targeted outreach, and data-driven strategies to effectively combat vaccine-preventable diseases.[34]

Subtheme 6: Primary Health Care to Reduce Non-Communicable Diseases (NCDs) Through Prevention

Non-communicable diseases (NCDs) such as stroke, heart disease, cancer, and diabetes are a crucial public health challenge in the SEARO/WPRO region.[35,36] Addressing these challenges through strengthened primary health care (PHC) systems is essential to reducing this burden, especially in disadvantaged populations, including rural, socioeconomically disadvantaged, and minority groups, among whom access to preventive care is limited.[35–37] Implementing effective PHC models enhances healthcare access and also reduces the long-term costs associated with managing chronic diseases.[35–37]

CASE STUDY 1: STROKE PREVENTION THROUGH PRIMARY HEALTH CARE IN CHINA

82% of China's burden of disease is due to non-communicable diseases (NCDs), and since 2015, stroke has been the leading cause of death and disability in China.[38,39] Thus, it is crucial to bring the focus to NCDs to address this growing health challenge effectively.

Utilizing primary care-based prevention is a key component of this.[35–37] The integration of technological tools in our increasingly digital world holds an interesting approach. One example of this is the System-integrated and Technology-enabled Model of Care (SINEMA), which has been implemented in China to prevent secondary stroke. SINEMA addresses healthcare challenges faced by Chinese people who live in more rural areas by utilizing mobile health technology.[40,41] In particular, SINEMA empowers patients to actively engage in their own health management.[40,41] For example, it utilizes voice call features to combat health illiteracy.[40,41] It also helps patients maintain healthier lifestyles by providing health education resources in a variety of accessible formats.[40,41] SINEMA intervention supports the power of local healthcare to intervene on a primary-case basis.[40,41] Specifically, village doctors receive training and tools to provide guideline-based care for stroke management, conduct monthly follow-up visits with the assistance of the mobile phone application, participate in sessions with other village doctors, and receive compensation for their work.[40,41] A randomized trial was carried out to assess this initiative's efficacy.[40,41] Researchers revealed that SINEMA was effective in regard to reducing systolic blood pressure and secondary stroke occurrence, hospitalization, and mortality, as well as improving other health metrics in resource-limited rural settings.[40,41] Additionally, studies on the economic efficacy of SINEMA also show promising results, with program delivery costing only $24 per person annually.[40–42] Overall, research shows that by leveraging primary healthcare workers in rural China and advanced mobile health technologies to address stroke prevention, SINEMA is an initiative that addresses the need for a cost-effective, sustainable way to address the high burden of stroke in China.[40–42]

The continuation of its use and implementation of similar efforts will be crucial to reducing the burden of stroke in rural China and other under-resourced areas in the SEARO/WPRO region.[40–42]

In conclusion, SINEMA demonstrates a sustainable and cost-effective model for addressing the high burden of stroke in rural China by integrating mobile health technologies with primary care.[40–42] Its success in improving health outcomes, empowering patients, and supporting healthcare providers highlights its potential as a scalable solution for other resource-limited settings in the SEARO/WPRO region.[40–42] Expanding initiatives like SINEMA will be critical in reducing the burden of non-communicable diseases and improving healthcare equity in under-resourced areas.

CASE STUDY 2: DIABETES PREVENTION IN THE PHILIPPINES

Diabetes is a chronic disease characterized by high levels of blood glucose, a condition known as hyperglycemia.[43] The implications of diabetes are severe: blindness, kidney failure, heart attacks, and stroke can all result from diabetes.[43] Affliction with diabetes is a pervasive issue in the Philippines specifically–in 2021, it was estimated that over 7 million Filipinos had diabetes, with more than two-thirds of deaths being attributed to hypertension and/or diabetes.[44,45] Diabetes treatment can be expensive and inaccessible, especially within lower and middle-income countries like the Philippines. Not only have the efficacy of diabetes prevention programs been proven, but their cost-effectiveness in comparison to diabetes treatment makes them much more favorable.[46] Because of this, it is essential that diabetes prevention is at the forefront of diabetes management.

Although Filipinos have universal health coverage, there are many more barriers to access that leave the preventative and primary care access pipeline lacking. The issue of poverty is one of the major barriers to diabetes prevention. Integral to diabetes management and prevention is diet, but without the proper financial means, it becomes impossible for Filipinos to afford to eat nutritiously, as eating for sustenance becomes the priority. In 2023, 22.4% of Filipinos lived in poverty, and approximately 9% identified as being food insecure.[45] The state of the primary care system is also to the detriment of diabetes prevention.[45] As it currently stands, the healthcare systems are highly decentralized and fractured, due to physician shortages.[44–46] As a result, the patient volume for each physician is high, and many in rural areas have a difficult time being seen.[44–46] Attempts to improve health access are hindered by a lack of financial resources from the government, which has little ability to derive funds from rural residents with low incomes.[44–46]

To address these challenges, the Philippines could focus on strengthening its primary health care system, leveraging community-based programs to enhance diabetes prevention.[47] By integrating diabetes education into PHC, communities can benefit from early risk detection and guidance on lifestyle changes tailored to local dietary and cultural norms.[47] *Barangay* (i.e. village) health workers are employed by the government and work directly within the communities they serve; utilizing the barangay, who are already trusted within their communities, to provide outreach and monitor at-risk populations can ensure that interventions are accessible even in remote areas.[47] Not only can they assist in diabetes screening, but they can also aid in teaching community members about healthy lifestyle choices to prevent diabetes.[47]

Another critical component is addressing food insecurity by aligning public health strategies with agricultural policies.[47,48] Initiatives such as subsidies for local farmers to grow nutrient-rich crops, community gardens, and food voucher programs can promote affordable access to healthier options.[47,48] Public-private partnerships could also play a role in making nutritious food more accessible by reducing costs and increasing availability in rural markets.[47,48] With a coordinated approach, integrating health and socioeconomic strategies, the Philippines can mitigate the prevalence of diabetes and other non-communicable diseases.

Conclusion

Despite the diversity in the countries across the SEARO and WPRO regions, disparities in healthcare access remain a prevalent issue throughout. These disparities are often influenced by factors such as geography, economic status, and social determinants of health, which can create significant barriers to care. Additionally, unequal distribution of healthcare resources further exacerbates these challenges, particularly in rural or underserved areas. As the developing countries within SEARO and WPRO address issues such as this, employing proven and evidence-based strategies remains paramount. Collaboration between governments, international organizations, and local communities can also help foster sustainable solutions. Utilizing these strategies, including primary care access and centering community members in interventions, is the first step in the journey to bridging healthcare disparities and achieving equitable health coverage for all. By prioritizing these efforts, countries in the region can move closer to a healthcare system that serves everyone, regardless of socio-economic background or geographic location.

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