WHO delivering results and making an impact: stories from the ground
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ISBN 978-92-4-006466-9 (print version)

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WHO delivering results and making an impact: stories from the ground
Foreword

Delivering on WHO’s mission to promote health, keep the world safe, and serve the vulnerable, stands or falls on our ability to deliver a measurable impact in countries. Even before the COVID-19 pandemic, the world was off-track for the health targets of the Sustainable Development Goals and WHO’s “triple billion” targets for universal health coverage, health emergencies, and healthier populations. The pandemic set things back even further, severely disrupting health systems, economies, and societies around the world. In the face of these challenges, WHO has continued to support countries in their progress towards the goal of a healthier, safer, and fairer future.

This new report, “WHO delivering results and making an impact: stories from the ground”, presents a snapshot of how WHO has delivered on its mission in countries and contributed to health outcomes across a wide range of issues during 2020-2021. Of course, a major part of WHO’s work in this period was supporting countries to respond to COVID-19. The ACT Accelerator delivered more than 1 billion COVID-19 vaccines over 12 months, alongside tests, treatments and other tools. Supporting this work, WHO listed ten COVID-19 vaccines for emergency use, following which 101 countries authorized their use within fifteen days, indicating the degree to which countries rely on WHO’s stamp of approval. Alongside these efforts, we worked through our network of 154 country offices to support continuity of essential health services.

There are many other achievements to be proud of in other parts of our work. For example, in 2021 WHO recommended widespread use of the world’s first and only malaria vaccine, which could save tens of thousands of lives each year. We also coordinated the global effort to implement mandatory policies prohibiting the use of trans fatty acids, which covered more than three billion people in 58 countries with the potential to save hundreds of thousands of lives from cardiovascular disease every year. And the eradication of polio is tantalizingly close.

For the five years of my second term, I have outlined five priorities for WHO, as the Secretariat and Member States together: promoting health; providing health; protecting health; powering health; and performing and partnering for health. It’s important to emphasize that these “five Ps” do not replace the General Programme of Work or the “triple billion” targets; they are aligned closely with those targets and describe what we need to do to achieve them. Importantly, they will guide our work to strengthen our country offices to deliver results where it matters most - in the lives of the people we serve.

Dr Tedros Adhanom Ghebreyesus
Director-General
World Health Organization
Acknowledgements

This publication has been prepared jointly by WHO country teams, regional country support units and the Department of Country Strategy and Support (CSS) at headquarters. CSS coordinated the consolidation and finalization of the publication. Colleagues across multiple headquarters teams contributed to case study development. The valuable inputs and three level collaboration were greatly appreciated.
Delivering measurable impact in countries is at the core of WHO’s mission to promote health, keep the world safe, and serve the vulnerable. The Thirteenth General Programme of Work (GPW 13), 2019-2023, extended for two years until 2025, provides strategic direction to WHO’s work and includes ambitious but achievable Sustainable Development Goal-based triple billion target outcomes and indicators for healthier populations, universal health coverage, and health emergencies. We measure progress based on the WHO results framework, which tracks the joint efforts of the WHO Secretariat, Member States, and partners. As a mainstay of GPW13 reporting, country stories form one of three integral components of the WHO results framework. Qualitative impact stories give narrative texture to annual reporting of results. *WHO delivering results and making an impact: stories from the ground* presents over 90 stories across WHO’s six regions. The stories provide insight into how WHO provided support to countries to detect and respond to the COVID-19 pandemic and support continuity of essential health services during the COVID-19 response from 2020-2021.
1.1 Improved access to quality essential health services
Taking action to strengthen family planning services in Afghanistan

Increased availability of family planning services

Postpartum family planning addresses the needs of women and couples who wish to delay having children, as well as the needs of those who have reached their desired family size and wish to avoid future pregnancies. The first year postpartum is a crucial time to provide a wide range of family planning counselling and modern contraceptive methods to women, in line with WHO's Medical eligibility criteria for contraceptive use and Selected practice recommendations for contraceptive use.

In Afghanistan, the modern contraceptive prevalence rate is 17% (2020). However, the unmet need for family planning is 25%. As per WHO's definition, women with unmet need are those who are fecund and sexually active but are not using any method of contraception and report not wanting any more children or wanting to delay the next child. The Ministry of Public Health's target was to increase the modern contraceptive prevalence rate to 30% and reduce the unmet need for family planning to 15% by 2021. Although half of women want to either space their next pregnancy by at least two years (24%) or limit childbearing (26%), only 22% of women use modern contraceptives at six months postpartum. The low postpartum family planning uptake indicates a need to promote the use and ensure the availability of modern contraceptives during the postpartum period. The Ministry of Public Health, jointly with WHO under the WHO Family Planning Accelerator project, established dedicated postpartum/post-abortion family planning corners within the delivery rooms of 25 targeted health facilities in the provinces of Kabul and Herat to improve opportunities for postpartum family planning, as 49% of women deliver in a health facility. Under the Family Planning Accelerator project, WHO supports partners and ministries of health to accelerate quality and rights-based family planning services within the broader frameworks of the Sustainable Development Goals (SDGs), universal health coverage (UHC) and the WHO Thirteenth General Programme of Work (GPW13). The project contributes specifically to the achievement of SDG targets 3.1, 3.7 and 5.6, and to the GPW13 goal of 1 billion more people benefiting from UHC.

How did Afghanistan, with the support of the WHO Secretariat, achieve this?

- Revision of national family planning guidelines: Upon the Ministry of Public Health's request, WHO and its partners updated the national family planning service delivery guidelines based on the most up-to-date WHO guidelines on family planning. WHO also supported document translation into two local languages, conducted training sessions for 300 participants.
on the use of the updated guidelines and training materials and distributed 3000 medical eligibility criteria wheels to doctors and midwives in order to support the safe and effective use of contraceptives at different levels of health-care delivery.

- Establishment of postpartum/post-abortion family planning corners: The established family planning corners in 25 targeted health facilities in Kabul and Herat have the highest institutional delivery rate and utilization of family planning services in the country. In 2020, WHO supported the training and orientation of management-level staff and health service providers in Kabul and Herat on the importance of postpartum/post-abortion family planning corners and services. Thirty-three service providers from the two provinces were trained in intrauterine device (IUD) and implant insertion and removal. All 25 health facilities were equipped with IUDs, implants, the WHO decision-making tool for family planning and medical eligibility criteria wheels. A technical working group developed a checklist based on WHO guidance to regularly monitor and supervise the family planning corners to ensure quality family planning services. Three supportive quarterly project monitoring and provider supervision missions were conducted in both provinces. A baseline assessment of the 25 health facilities, conducted in 2019, showed that IUD and implant insertion kits were available in only 50% of the facilities, implants were available in 13% and counselling tools were available in 20%. With WHO support, both provinces showed an increase in uptake of implants in 2021 compared with in 2019; in Kabul, uptake increased from 118 in 2019 to 1169 in 2021, and in Herat, from 28 in 2019 to 306 in 2021. Moreover, 85% of health-care providers demonstrated knowledge and skills of postpartum and post-abortion family planning services, and 80–90% met the standards as outlined in the family planning service quality improvement checklist. Although the coronavirus disease (COVID-19) pandemic had significantly stunted implementation in 2020, followed by a change of government in 2021, a midterm evaluation of the family planning corners was conducted between June and September 2021. The implementation data from 2019 to September 2021 analysed in the fourth quarter showed that the corners were effective in reaching women and improving contraceptive uptake. The United Nations Population Fund, in consultation with WHO and the Ministry of Public Health, agreed to scale up the family planning corners within 40 additional health facilities in two additional provinces in Afghanistan.

WHO continues to support the Ministry of Public Health in implementing and monitoring postpartum/post-abortion family planning corners with the aim of accelerating quality and rights-based family planning services within the broader frameworks of the SDGs, UHC and the GPW13 strategic priority to ensure that 1 billion more people benefit from UHC.
Outcome 1.1 Improved access to quality essential health services
Improving access to noncommunicable disease services for Rohingya refugees and immediate host communities in Cox’s Bazar, Bangladesh

Access to noncommunicable disease services for Rohingya refugees

Noncommunicable diseases (NCDs) account for 70% of all deaths in Bangladesh, with nearly one in five people aged 30 years at risk of dying from any of cardiovascular diseases, cancer, diabetes or chronic respiratory disease before reaching the age of 70.² NCDs disproportionately affect the poor, leading to a vicious cycle of disease, poverty and non-productivity. In August 2017, when there was a mass influx of Rohingya refugees into Bangladesh, the refugees living with NCDs were vulnerable to deterioration of health owing to difficult living conditions and interrupted access to health-care services. The WHO Country Office in Bangladesh established a coordination mechanism, supplied medicine kits for NCDs and supported the establishment of basic services for care and management of NCDs as part of essential health services for Rohingya refugees and immediate host communities (approximately 1.4 million people). As at February 2022, more than 95% of health facilities provided care for people living with NCDs, with the support of 908 primary health-care workers trained by WHO.

How did Bangladesh, with the support of the WHO Secretariat, achieve this?

The WHO Country Office supported the Government of Bangladesh with technical expertise to adapt the WHO package of essential noncommunicable (PEN) disease interventions for primary health care³ to the specific context of primary health care facilities in Bangladesh, and to develop guidelines, protocols and tools to support implementation and integration with other essential health services delivered in health facilities. Early detection and appropriate management of NCDs through a primary health-care approach are high impact interventions, preventing premature death and disability.

To support the implementation of WHO PEN in Bangladesh, the WHO Country Office rolled out training sessions for health-care providers in 65 primary care facilities that delivered care to Rohingya refugees and immediate host communities. A total of 321 medical doctors, nurses and medical assistants were trained on risk-based management of NCDs, motivational counselling and tobacco cessation. WHO, in collaboration with the Civil Surgeon Office in Cox’s Bazar, continued to provide supportive supervision to trained health personnel. WHO extended support to include on-site, hands-on technical support at the facility level to accelerate field-level implementation of WHO PEN. The managerial staff in charge of the health facilities were also oriented on WHO PEN.
Outcome 1.1 Improved access to quality essential health services

Among WHO PEN training participants in September 2020, Sarmin Nahar, a midwife, is concerned about the impact of NCDs on the health of pregnant women. Photo credit: WHO Bangladesh/Tatiana Almeida

In addition, WHO trained 427 community health workers on the identification of NCD risk factors and the promotion of healthy lifestyle among Rohingya refugees with a view to strengthening preventive interventions, especially at the community level. The trained workforce offers behavioural interventions and motivational counselling to community members for the modification of behavioural risk factors, including tobacco cessation, adoption of healthy diet and regular physical activity. WHO developed risk communication flipcharts to promote healthy lifestyle, which were distributed to 1400 community health-care workers to equip them to engage with communities and individuals. Regular group counselling sessions and courtyard meetings were arranged in refugee camps to reinforce NCD-related messages, with the help of the flipcharts. Innovative risk communication activities, such as drama or audio messages on the use of tobacco and betel nut, were conducted in line with WHO guidance.

WHO filled the gap in the supply of essential commodities for the diagnosis and management of NCDs. Various modules of NCD kits with diagnostic equipment – including stethoscopes, blood pressure machines, glucometers with strips, anthropometric equipment, essential medicines, insulin, X-ray films and electrocardiogram (ECG) machines – were donated to health sector
partners, which facilitated more than 95% of primary care centres providing standard NCD services in the camps.

To promote the streamlining of NCD services in accordance with national guidance, eliminate coverage gaps and avoid duplication, WHO established a coordination mechanism involving the Ministry of Health and Family Welfare, specialized agencies of the United Nations system, international and national nongovernmental organizations and philanthropic institutions to collaborate through an NCD core group led by WHO. The core group provides technical guidance and develops recommendations for health sector partners, at both the policy and the implementation levels. The group also carries out advocacy work with the government and relevant stakeholders to promote risk-based management of NCDs and develop the local capacity of health facilities in order to ensure uninterrupted care for people living with NCDs.

As a result of those efforts, the number of Rohingya refugees and people from the adjacent host communities (total population 1.4 million, of which 45% are adults) who accessed NCD services increased from 3.7% of the population in 2018 to 27.3% in 2021.¹ WHO supported five key integrated public health interventions for Rohingya refugees: capacity-building of health-care providers to deliver NCD services using WHO PEN; gap-filling support for essential NCD medicines and equipment; health promotion; risk communication; and stakeholder coordination. These resulted in a significant increase in the uptake of NCD services among beneficiaries. The interest and support of key stakeholders, including donors, played a vital role in improving access to NCD care for Rohingya refugees. Although the coronavirus disease (COVID-19) pandemic and associated restrictions in the early days had compromised essential NCD service delivery, the integration of infection prevention and control measures into NCD service delivery design enabled the maintenance of NCD care as part of essential health service delivery. With the Rohingya refugee crisis becoming a protracted situation, it is timely to shift the focus of NCD-related interventions from a short-term to a more sustainable approach, which can also be translated into routine care to strengthen NCD services.

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Strengthening health workforce towards ensuring equitable and efficient primary health care in Bangladesh

Advancing primary health care in rural Bangladesh

Having a competent, well motivated, responsive and accessible health workforce is critical to achieving WHO’s triple billion target on universal health coverage (UHC). Bangladesh faces health workforce shortages. Health workforce strengthening at the primary care level is pivotal to putting the country on course to meet its UHC targets by 2030. To support the Government of Bangladesh in taking targeted action to address the shortfall of health workers, WHO provided technical assistance in the development of evidence-based policy. This included conducting a survey in 2019 that resulted in detailed data collected for the first time on health worker density and composition in Bangladesh. Published in a report, Assessment of healthcare providers in Bangladesh 2021, the data provide information needed for health workforce planning and decision-making, with emphasis on the need to fully account for and optimize the primary health care (PHC) workforce. Highlighted issues necessitating urgent action included the shortage and inequitable distribution of trained doctors, nurses, midwives and other key occupations, particularly at the PHC and district levels in rural areas, and the need to strengthen and integrate the Health Human Resource Information System and use.

Findings were discussed with senior policy-makers across health and education sectors, and funds were attained from domestic resources and development partners. In line with the report’s recommendations, recruitment rules and staffing norms of different public sector health facilities at the district level and below were revised in 2020–2021 to improve the skill mix and supply of health workers at the subnational level. In 2020–2021, an additional 18 000 doctors, nurses, midwives and medical technologists were recruited in the national health system.

How did Bangladesh, with the support of the WHO Secretariat, achieve this?

- Improving understanding of the composition, distribution and density of health workers in Bangladesh: In 2019, the WHO Country Office in Bangladesh partnered with the Ministry of Health and Family Welfare of Bangladesh to commission a household survey to estimate the density and composition of recognized and unrecognized health-care providers. The Ministry formed a technical support group, including representatives from WHO. The WHO Country Office assigned an external firm to conduct data collection and provided technical input to design a semi-structured survey and train enumerators. The Bangladesh Bureau of Statistics provided a
list of 133 primary sampling units for the survey, from which 6700 health workers were identified with technical input from the technical support group, including from all three levels of WHO. Quantitative data were extrapolated to generate estimates: in Bangladesh there were 531 454 recognized health workers (government and non-government), of which 184 691 were health professionals, 276 684 health associate professionals and 53 204 personal care workers. More data can be found in the Assessment of healthcare providers report.

- **Developing recommendations and aligning stakeholders for coordinated action:** Both quantitative and qualitative data were collected during the survey. To turn the data into recommendations for action, the Health Services Division of the Ministry of Health and Family Welfare and the WHO Country Office worked together to engage stakeholders and invite their input. A series of key recommendations were agreed upon, which increased stakeholder investment and alignment on the Human Resource for Health Strategy. The report was shared with policymakers, development partners and private sector stakeholders through consultation meetings. Decision-makers were urged to adopt specific health workforce policies and regulations. These included (a) reforming the distribution of the health workforce and supply of additional health workers; (b) strengthening the regulatory system to ensure both availability and quality of human resources for health, and to eliminate false medical treatment by unrecognized and unqualified health workers; (c) reducing workload through careful and compassionate workforce planning and redefining the roles and responsibilities of primary care workers; (d) introducing additional health workforce cadres to shoulder administrative responsibilities; and (e) raising awareness and building capacity on infection prevention and personal protective equipment.
Bangladesh's success in obtaining funds and transforming health worker recruitment to build a robust, resilient and sustainable health system was only possible owing to the coordinated efforts of diverse stakeholders. Having reliable information about the existing health workforce was crucial to aligning efforts and increasing investment.

The Government of Bangladesh plans to further increase the employment, upgrading and retention of health workers in the country. WHO is committed to working closely with Bangladesh, its people, and public and private partners to support the development of a strong health workforce. The 2019 survey and other recent health workforce analyses\textsuperscript{1–3} conducted by the Government of Bangladesh and WHO constitute strong baseline data on which evidence-informed decision-making can be based. Further data collection will be crucial to enabling targeted and corrective actions that will further strengthen the health workforce in the coming years and move the country towards meeting its UHC targets by 2030.

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1 Application of the Workload Indicators of Staffing Need (WISN) in Barisal and Mymensingh districts in Bangladesh. Dhaka: Ministry of Health and Family Welfare/WHO Country Office in Bangladesh; 2021.
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Scaling up suicide prevention in Bhutan during the pandemic

Addressing suicide during a pandemic

Suicide is a global phenomenon that affects all regions of the world, taking the lives of more than 700,000 people each year. Each death is a tragedy that has a far-reaching impact on families, friends and communities. In 2019, about 77% of global suicides occurred in low- and middle-income countries.¹

In Bhutan, concern over the number of suicide deaths and the limited mental health support available to the population has been growing for many years. The coronavirus disease (COVID-19) pandemic heightened the crisis; the Ministry of Health anticipated that it would lead to poor mental health outcomes for many and disrupt available mental health services, which were already in short supply. In early 2020, only two psychiatrists and a handful of trained psychiatric nurses and clinical counsellors were practising in the country.

In 2020–2021, WHO supported the Ministry of Health in bolstering mental health services. Links between mental health services and referral pathways were re-established through the development of a helpline that enabled callers to access clinical treatment and care. Staffed by trained mental health professionals, the helpline has already reached more than 3000 people dealing with mental health problems, alcohol and drug use issues, domestic violence and self-harm.

How did Bhutan, with the support of the WHO Secretariat, achieve this?

• Establishing strong evidence-based strategic plans: In 2015, the Ministry of Health established a three-year action plan on suicide prevention.² This was followed by a five-year action plan.³ Because of WHO’s ongoing technical support to the Ministry of Health, based on the 2014 report Preventing suicide: a global imperative,⁴ the plan is in line with WHO’s 2021 LIVE LIFE suicide prevention implementation guide.⁵ The guide was
designed to support countries in implementing a comprehensive national suicide prevention strategy. It recommends four key strategies for reducing suicide deaths: limiting access to means; interacting with the media for responsible reporting of suicide; fostering socio-emotional life skills in adolescents; and early identification, assessment, management and follow-up of anyone affected by suicidal behaviours.

- **Strengthening mental health and psychosocial response leadership:** With funding support from WHO, the Ministry of Health instituted the National COVID-19 Mental Health and Psychosocial Response Team to address mental health and psychosocial needs across the country during the pandemic. The Team strengthened the existing helpline by establishing counselling helplines at the national level in Thimphu, as well as at the district level.

- **Building mental health capacity in the health-care workforce to enable the early identification, assessment, management and follow-up of anyone affected by suicidal behaviours:** The WHO Country Office provided financial support to the Ministry of Health to adapt WHO’s Psychological First Aid+ modules to the Bhutan context. The modules formed the backbone of training programmes for front-line workers and community volunteers. In 2020–2021, Bhutan’s Mental Health and Psychosocial Response Team conducted over 200 webinars on suicide prevention, mental health and substance abuse management. Participants shared that following the training not only were they able to identify risk factors among community members, but also they had learned to recognize signs of stress in themselves and when to seek help. The Team trained more than 20 000 front-line workers and community volunteers across Bhutan to identify risk factors for suicide, to provide basic psychosocial support to community members in distress and to make referrals. In 2020–2021, WHO also funded a training-of-trainers programme on suicide prevention and management, with a focus on strengthening Bhutan’s national suicide case registry. Twenty-five mental health providers including psychiatrists and clinical counsellors were trained as core trainers. They then trained 140 district doctors, mental health workers and clinical counsellors to manage self-harm and suicide effectively.

The pandemic provided a unique opportunity to adopt new policies and implement mental health programmes that hadn’t been attempted before, enabling mobilization of human resources for mental health. Moreover, increased accessibility, convenience and the anonymity provided through telephone counselling encouraged many people to seek help and follow up with treatment – opening the door for scaling up online and telepsychiatry services and suicide prevention in the country.

Dr Chencho Dorji
Psychiatrist, Bhutan
• Encouraging responsible reporting of suicide by the media: The National Suicide Prevention Program conducted a participatory workshop with the media to develop the *Media guidelines for the responsible reporting of mental illness and suicide,* prior to the COVID-19 pandemic. To aid its enforcement during the pandemic, the National COVID-19 Mental Health and Psychosocial Response Team organized an online refresher course for media representatives to encourage responsible reporting of suicide.

The call centre represents one element of the Government of Bhutan’s comprehensive approach to improving the mental health and well-being of the people of Bhutan. Improving linkages between mental health services and referral pathways is crucial for enabling people to access mental health care. Bhutan continues to strengthen the mental health system through coordinating multisectoral collaboration and partnership. Recently, the Pema Centre was inaugurated to improve coordination and leadership of Bhutan’s national response to mental health. The Ministry of Health and WHO are in discussion to strengthen the Pema Centre and provide further support to its activities, focusing on advocacy at the grass-roots levels.

Botswana fulfilling the promise of an AIDS-free generation in Africa

Elimination of mother-to-child transmission of HIV

Botswana’s programme for the elimination of mother-to-child transmission (EMTCT) of HIV builds on the country’s strong foundations of public health and primary health care, a commitment to quality sexual and reproductive health services and 20 years of strong national response to one of the highest HIV epidemics in the world. In 1999, Botswana initiated its prevention of mother-to-child transmission programme, which rapidly achieved national coverage, and successively implemented more effective treatment regimens based on WHO guidance. HIV prevalence among pregnant women was estimated at as high as 37% in 2003, and the age-adjusted HIV prevalence among pregnant women in a 2020 study was 18.6%. With programme implementation at scale, the first elimination impact indicator, the estimated mother-to-child transmission rate, reduced to 1.9% in 2019, below the less than 5% needed for EMTCT. High HIV prevalence, however, made it impossible in 2019 to reach the second elimination impact indicator of less than 50 incident paediatric cases per 100 000 live births. Nevertheless, Botswana is now on the path to elimination.

How did Botswana, with the support of the WHO Secretariat, achieve this?

WHO’s work in Botswana was based on the WHO country cooperation strategy 2014–2020, which included, among others, two strategic priorities: to reduce the country’s high burden of HIV (Strategic Priority 1); and to reduce morbidity and mortality and promote health through the life course (Strategic Priority 3). The work of the WHO Country Office in Botswana, supported at the regional and headquarter levels, focused on the following areas: (1) strengthening HIV/AIDS response through the provision of normative guidance on legislation, policy and the implementation of quality services, surveillance, monitoring and evaluation; (2) improving maternal, newborn, child and adolescent reproductive health while promoting active and healthy lives through evidence-based policies, guidelines and strategies; (3) strengthening capacity for programme planning, organization and the implementation of quality reproductive, maternal, newborn, child and adolescent health (RMNCAH) interventions; (4) strengthening health promotion, disease prevention, universal health coverage, and entrenching Health in All Policies; and (5) strengthening policy strategies and guidelines to address environmental risks to health and climate change, including improved information systems and mapping.

With strong commitment and openness from the Ministry of Health and Wellness, the Botswana National Validation Committee led a validation assessment of the EMTCT programme and its beneficiaries and developed
Dora, a 37-year-old living with HIV, playing with her 3-year-old son at their house in Serowe, November 2021. Photo credit: WHO Country Office in Botswana

a national report to describe the results. The assessment was supported by WHO in collaboration with the Joint United Nations Programme on HIV/AIDS (UNAIDS), the United Nations Children’s Fund (UNICEF) and additional partners, including the United States Centers for Disease Control and Prevention. The national report was reviewed by the WHO-led Regional Validation Secretariat and team, which included independent experts and representatives of women living with HIV. In-depth review and validation of national programme data and spectrum-modelled estimates determined that Botswana had met the required elimination impact and process indicators to be on the “silver tier” on the path to HIV elimination. As the 16th country to have undergone the review and validation process, Botswana became the first African and first high-burden country to have been validated for EMTCT of HIV, in October 2021.

The success of Botswana’s HIV EMTCT programme is attributed to factors including: strong national leadership and commitment to EMTCT, with political commitment exemplified by regular presentations of the EMTCT
situation in parliament; policies, guidelines and strategic plans consistent with WHO recommendations; a well implemented EMTCT service delivery model integrated within both reproductive and child health, and HIV services at all levels; data-collection systems that provide aggregate monthly data, with more detailed data increasingly being collected; a laboratory system that participates in regular external quality assurance and proficiency testing, with algorithms and testing done according to international standards; domestic financing of both national and public health systems including free HIV services; and the inclusion of strong policies to promote respect for human rights, informed consent, confidentiality, gender equality and community engagement.

While those accomplishments are recognized, there are areas for improvement and recommendations made that will support Botswana in reaching the near or full EMTCT. WHO is supporting the country to address the recommendations, by strengthening and updating (1) programme management, policies and implementation strategies; (2) the national data monitoring and analysis system; (3) laboratory testing and quality assurance; and (4) human rights protections including increasing meaningful engagement with women living with HIV at all levels. Botswana is strongly encouraged by WHO and partners to continue its commitment to strengthening its EMTCT programme and begin planning for EMTCT of hepatitis B virus, with a view to applying for the validation of “triple” EMTCT of HIV, syphilis and hepatitis using guidance released by WHO in 2021.5

Addressing socioeconomic hardship associated with tuberculosis in Brazil

Towards reducing catastrophic costs due to tuberculosis

In Brazil, people with tuberculosis (TB) often incur substantial costs related to seeking and receiving diagnosis, treatment and care. Such costs may create barriers to accessing care which affect health outcomes adversely and increase the risk of disease transmission. Eliminating catastrophic costs for people with TB and their households using effective mitigation strategies and policies is crucial. The end TB strategy\(^1\) includes a target to ensure that no TB-affected household faces catastrophic costs as a result of the disease. To support and monitor the achievement of this strategic ambition, WHO established standard methods for conducting national surveys to assess the direct and indirect costs faced by TB patients and their households.\(^2\) Since 2015, WHO has provided survey implementation guidance to national TB programmes and local research teams. The Global Tuberculosis Programme\(^3\) provided direct technical assistance to the national TB patient cost survey in Brazil and participated in postsurvey events organized by the Pan American Health Organization (PAHO)/WHO (October 2021 and March 2022) to discuss the use of survey evidence for health and social policy change.

How did Brazil, with the support of the WHO Secretariat\(^4\), achieve this?

The National TB Programme of Brazil – in collaboration with the Federal University of Espírito Santo (in Vitória) and with technical assistance from the Global Tuberculosis Programme – conducted a national survey between 2019 and 2021. A total of 603 people diagnosed with TB across the country participated. Although data collection was severely disrupted on many occasions owing to the coronavirus disease (COVID-19) pandemic, the survey was successfully completed. Extensive support to implement the survey and address COVID-related bottlenecks was provided by the three levels of WHO: the Global Tuberculosis Programme based at headquarters, which provided technical support and contributed to the development of policy recommendations; the WHO Regional Office for the Americas; and the PAHO/WHO Country Office in Brazil, which secured survey funding, monitored survey implementation and hosted postsurvey events to highlight research leading to policy development.

The survey found that on average, patients incurred costs (direct and indirect) amounting to US$ 1573 throughout the episode, from onset of symptoms to treatment completion. The largest component of this cost resulted from reported household income losses (indirect costs) amounting to US$ 1030 over the course of the TB episode. Episode-related expenses for nutritional

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\(^{1}\) PAHO was established in 1902 as the specialized health agency of the Organization of American States within the inter-American system. In 1949, through an agreement with WHO, PAHO agreed to serve as the WHO Regional Office for the Americas.
supplements required to increase immunity and compensate for severe weight loss, as well as travel costs incurred for clinic visits and other nonmedical costs, were on average US$ 422. Out-of-pocket medical spending amounted to US$ 122 per episode. Overall, about half (48%) of TB-affected households in Brazil had faced catastrophic total costs due to TB, defined as direct medical expenditures, non-medical expenditures and income losses jointly exceeding 20% of their annual household income during their TB episode. While this incidence rate is high, empirical evidence is missing to assess if it is larger than for other chronic conditions, but it shows that people with TB and their households are experiencing major economic and financial barriers to diagnosis and treatment.

Findings from the survey further revealed that to mitigate such costs, one third of TB-affected households in Brazil had had to borrow or sell assets to cope with economic hardship. In addition, poverty levels had almost doubled in households as patients entered TB care, with one in ten TB-affected patients living below the international poverty line (US$ 1.90 a day at 2011 international prices). The ability of TB patients to secure jobs was also affected, with employment falling from 68% to 48%, probably owing to insufficient levels of protection from job losses when affected by TB. For every month of TB treatment, a patient in Brazil lost on average US$ 115. The survey also found that the risk of households facing unaffordable costs increased for those with HIV coinfection, the self-employed and people with lower levels of education.

Although TB care in the Brazilian public health sector is free of charge, the survey showed that the availability of free diagnosis and treatment services had not prevented a high financial burden for people with TB. It also showed
that TB had social consequences, ramifications for income, employment and poverty, and potential long-lasting effects and social sequelae that require a multisectoral response.

The survey findings and suggested policy recommendations are being disseminated in various forums, participated or co-hosted by the three levels of WHO. An event in October 2021 for the ministries of citizenship and health was attended by all TB programme coordinators across the country. The findings were presented at the 57th Congress of the Brazilian Society of Tropical Medicine (MEDTROP), where the translation of evidence into policy was discussed. On 29 March 2022, the Ministry of Health and the PAHO/WHO Country Office in Brazil co-hosted a one-day national event on addressing socioeconomic hardship associated with TB in Brazil. The event brought together a wide range of stakeholders, including local TB programme staff, health service managers, researchers, and intersectoral and civil society partners. The event was supported by the Global Tuberculosis Programme, and the Programme Director and key technical staff delivered presentations on policy and survey methods. The PAHO/WHO Regional Adviser for the TB programme also gave a presentation on TB and the social determinants.

Further dissemination of the findings in a scientific journal and at national meetings is planned for 2022. The evidence collected from the survey is being used to design measures to alleviate the burden of disease on TB patients and their households, which will also promote multisectoral collaboration beyond health in Brazil.

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Building context-specific tools to act on hypertension in primary care in Burkina Faso

Burkina Faso scales up cardiovascular disease interventions

In Burkina Faso, the proportion of the population at high risk for cardiovascular disease or with existing cardiovascular disease was 8% in 2013, which represents approximately 1.5 million people based on 2016 total population figures.² The disease is responsible for approximately one in three NCD deaths, or about 19 000 each year.² Thirty-one per cent of the 2019 population aged 30-79 years (1.8 million people) lived with raised blood pressure (hypertension).³ However, only about 21% were treated, and less than 9% had their hypertension under control.³

The Ministry of Health of Burkina Faso has been proactive in tackling the burden of NCDs and has even created a directorate dedicated to working on preventing and controlling NCDs. In addition to an integrated NCD strategic plan, several national strategies have been launched, including actions on cancer, eye and oral health, mental illness and tobacco control. However, several challenges persisted, including a lack of standardized and context-specific medical protocols, as well as inconsistent access to basic equipment, essential medicines and consumables needed to diagnose and manage hypertension in primary health-care facilities. For Dr Arthur Seghda, a cardiologist at the Centre Hospitalier Universitaire de Bogodogo, health worker capacity-building is vital. As he elaborated, “Learning to assess high blood pressure and a person’s risk of heart attack or stroke can enable health workers to provide quality care, and behaviour change counselling to patients locally”.

In Burkina Faso, few health workers have adequate equipment to monitor individuals living with hypertension. In addition, primary health-care centres do not routinely assess for cardiovascular risk, a process to identify those most vulnerable and tailor their treatment, because practical guidelines on screening, diagnosing and treating heart conditions are lacking. Integrating NCDs into existing health services requires the right policies, guidance and training designed for the context of the local health system.

How did Burkina Faso, with the support of the WHO Secretariat, achieve this?

To address those challenges, it was beneficial to adapt the HEARTS technical package⁴ to the local context in order to facilitate the management of cardiovascular diseases. WHO worked with the Ministry of Health, in conjunction with other key partners, such as the country’s Society for Cardiology, Society of Internal Medicine and patient associations, to create a context-specific training manual for health-care staff to diagnose, treat and manage hypertension. This involved equipping and training health workers in urban and rural settings to use the new tools.
The Kombissiri Health District, located in Bazèga Province (Centre-Sud Region), was chosen as the pilot site. In Kombissiri, almost two thirds of outpatient consultations at the district hospital are for either hypertension or diabetes. Dr Sandrine Comparé, a physician in the Kombissiri Health District, believes that the new tools and training provided at the district’s health and social-promotion centres will help to improve care for the local community. She said:

Previous, managing hypertension was impossible at the local health centre level. Many patients who were referred to the district hospital can be now managed in primary health centres, with any diagnosis, treatment and medication of hypertension delivered closer to home.

Within a few months, a new protocol and training manual were developed for health-care workers on the management of hypertension. Thirty-two health-care workers across the Kombissiri Health District, including head nurses and midwives, were trained, thus giving them the building blocks to embed hypertension management into their health systems. Moreover, 10 local primary health clinics across the Kombissiri Health District were supplied with blood pressure monitors, blood glucose meters, weighing scales and tape measures. According to Dr Marie Emmanuelle Zouré, Director of Prevention and Control of NCDs at the Ministry of Health, the pilot project was a real opportunity for Burkina Faso:

Hypertension is the main cause of morbidity and mortality for NCDs in Burkina Faso. Improvements are already visible at the end of training we have conducted. We hope that the implementation of the hypertension protocol will happen more widely, so that the entire population of Kombissiri can benefit from better NCD care.

As Dr Zouré hoped, work will now be undertaken to further strengthen and standardize hypertension care across primary care services, including scaling care to other health districts. This will include setting up data-collection systems to capture data on NCD management in primary care. Looking forward, to ensure that the tools and training remain helpful and effective, the team will continue to work with those 32 trained nurses and midwives in order to learn from their experiences.

Moving towards malaria elimination amid the COVID-19 pandemic in Cambodia

Historically low malaria burden

In recent years, Cambodia has made impressive progress in malaria control and elimination. No malaria-related deaths have been reported in Cambodia since 2018, and incidence has decreased to historically low levels. This achievement has taken considerable effort, but challenges remain to achieve malaria elimination. Since the 1970s, Cambodia has been the epicentre of emerging malaria multidrug resistance, including resistance to artemisinin combination therapies. The high failure rates of artemisinin combination therapies used in Cambodia constituted a regional and global threat to malaria control and elimination efforts. That is why WHO and its partners (including the Global Fund, the Bill & Melinda Gates Foundation, the United States Agency for International Development/the President’s Malaria Initiative, the United Nations Office for Project Services and several civil society organizations) are focused on supporting the National Malaria Programme, which aims to eliminate malaria in Cambodia as part of the...
regional effort to elimination of malaria in all countries in the Greater Mekong Subregion by 2030. In response to an appeal by the WHO Country Office in Cambodia to place the elimination of malaria at the highest level of the country’s health agenda, the Government of Cambodia has strengthened its engagement to eliminating malaria with most recently a commitment to make malaria a notifiable disease in 2023.

The WHO Western Pacific Region set out its long-term goals and new ways of working in the For the future vision. WHO support in Cambodia was in line with the thematic priority of “reaching the un-reached”, as the Organization works to target specific populations for malaria control and elimination interventions. Given that most malaria transmission (greater than 90%) occurs in forested areas among migrant and mobile populations and forest goers, an intensified approach to reaching those populations was deemed a priority. In 2017, Cambodia experienced a significant increase in malaria cases. Discrepancies between the typical site of transmission (forested areas) and the location of available human and technical resources, primarily at the central and district levels, required Cambodia to reorient malaria control and elimination efforts in order to reach the un-reached.

How did Cambodia, with the support of the WHO Secretariat, achieve this?

The For the future vision outlines how WHO, its Member States and its partners can work to achieve the thematic priorities outlined therein. In Cambodia, innovation, “grounds up” approaches and partnerships are just a few ways of working that supported the country’s malaria control efforts. An innovative anthropological approach (including focus groups with forest goers and brainstorming for tailored solutions) was piloted by the WHO Country Office in collaboration with the National Center for Parasitology, Entomology and Malaria Control (CNM), provincial health departments and partners in several provinces in Cambodia. Working with forest goers to understand behaviours and identify community-based interventions was a grounds-up approach that improved planning and implementation to address local challenges.

WHO deployed epidemiologists and health staff from the Regional Office for the Western Pacific and the Country Office in Cambodia to the provincial level. Technical support was provided to malaria staff in provincial health departments, operational districts and civil society organizations in order to strengthen programming and coordination of case detection and management, surveillance, vector control measures and supply chain in the six targeted provinces where the majority of cases occurred. Additionally, village malaria workers were recruited in targeted areas, and 120 mobile malaria workers were deployed in areas close to the forest in order to reinforce case management by performing active case detection in the forests and passive case detection at home; distributed forest packs to forest goers, including long-lasting insecticide-treated hammock nets, boots and backpacks; and reinforce information education communication. With
a problem-solving and evidence-based approach, WHO epidemiologists performed routine epidemiological analyses and mapping of cases and areas where malaria transmission occurred so as to guide and reinforce malaria activities where and when needed. WHO, with all partners from provincial health departments, operational districts, health facilities and the village level, organized joint visits every three to six months to assess progress and identify gaps and challenges to be addressed.

The emergence of the coronavirus disease (COVID-19) in 2020 posed a risk to health systems all over the world, including in Cambodia. WHO worked closely with the National Malaria Programme and partners to conduct risk assessments of the potential impact of the COVID-19 pandemic on malaria elimination efforts and to tailor malaria interventions in the context of COVID-19. Community engagement was a key intervention used to share messages for malaria elimination strategies, while also conveying COVID-19 risk and prevention measures. In this way, COVID-19 served as a window of opportunity to cement the commitment to malaria elimination in Cambodia.

The Royal Government of Cambodia set the elimination target to 2023 for *Plasmodium falciparum* and to 2025 for all other species. To accomplish these targets, with support from the WHO Country Office, intensive elimination operations are in place countrywide to detect, investigate and clear all cases and foci. Once a locally acquired case is identified, a focus investigation is carried out to determine what interventions are necessary to interrupt transmission. Targeted vector control measures, rigorous case management and more localized approaches – such as targeted drug administration for at-risk populations and intermittent preventive treatment for travellers to malaria-risk areas – are implemented in villages where local malaria transmission is identified. In addition, monitoring of antimalarial drug resistance is routinely implemented through therapeutic efficacy studies and integrated drug efficacy surveillance.

WHO plays a critical role in supporting Cambodia to identify, develop and implement adapted and evidence-based strategies towards malaria elimination. Through continued partnerships and technical, strategic and operational support to the Ministry of Health, the CNM and malaria partners, Cambodia is on track to achieve the malaria elimination targets. With an engaged and motivated network, early diagnosis, treatment and vector control measures are ensured for at-risk populations. Malaria control and elimination strategies are delivered hand in hand with the community, the government and partners through tailor-made, innovative interventions to reach the un reached and work towards the *For the future* vision of the broader WHO Western Pacific Region.

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Central African Republic

Improving notification of drug-susceptible tuberculosis

Increased notification of drug-susceptible tuberculosis

For several years, the Central African Republic has reported only about half of the tuberculosis (TB) cases estimated by WHO. Limited access to laboratory services was the main cause of the reporting gap. Since 2019, WHO has increased its support to the country to strengthen its network of laboratories.

During the coronavirus disease (COVID-19) pandemic, and despite the humanitarian challenges the country was already facing, WHO mobilized resources to build laboratory capacity and to help to address the country’s underreporting. WHO purchased 11 GeneXpert machines from 2020 to 2021. GeneXpert is an easy-to-deploy platform for peripheral laboratories which detects the presence of TB bacteria as well as resistance. The platform provides results within two hours. WHO also supported the country in developing a strategy for transporting sputum and other biological samples in 16 health districts. The strategy has been successfully implemented in two of the districts (Bangui II and Bimbo). As a result of the pilot implementation of the sputum transport strategy and the installation of additional GeneXpert machines, the country significantly increased the notification rate of drug-susceptible TB cases in only two years, from 43% in 2018 to 48% in 2020, and to 50.8% at the end of 2021.

How did the Central African Republic, with the support of the WHO Secretariat, achieve this?

On 14 March 2020, the Central African Republic confirmed its first case of COVID-19. Prior to the pandemic, the country was already ravaged by decades of civil unrest, armed conflict and underdevelopment. Challenges to the health system include chronic shortages of trained health workers, medical equipment and basic medicines, and many citizens travel more than one hour to reach their nearest health facility. The costs of accessing health care are not affordable for many households. The situation is further exacerbated by thousands of internally displaced persons, who often live in overcrowded shelters with limited access to water, sanitation and health services.

The COVID-19 pandemic continues to have a negative impact on the provision of essential services, including TB diagnosis and treatment, particularly in the laboratory area, which was already suffering from a chronic shortage of skilled human resources. Before the pandemic, there were only 13 GeneXpert machines in the country and no functional sample referral system. Given the risk from both COVID-19 and TB and the importance of laboratories, the country was provided with 23 new WHO-recommended molecular rapid diagnostic tests, namely the GeneXpert machines, in 2020–2021 to strengthen its network of laboratories.
WHO contributed to the purchase of 11 of the 23 machines, including fan, battery, solar panel, inverter and APC inverter, made available to the country by its various partners. WHO contributed to the installation of the GeneXpert machines and to the training of staff for machine installation, use and maintenance. The machines are used in an integrated manner for the diagnosis of TB, resistant TB and COVID-19, and for viral load testing of people living with HIV and early diagnosis of HIV in exposed children. The machines are also used for suspected cases of Ebola.

In addition, WHO put in place an adapted and functional strategy for the transport of sputum samples and other biological samples (TB, HIV, COVID-19) in order to bring them from the collection site to laboratories as quickly as possible. For the implementation of this strategy, WHO developed sample transport micro-plans for 16 health districts. Each micro-plan includes targets and reporting gaps; mapping of available and accessible health facilities and laboratories; inventory of transport and communication facilities; inventory of required human resources; inventory of potential support partners; identification of costed and noncosted specimen transport activities; and a defined timeline for the implementation of specimen transport activities.
The additional GeneXpert machines and the implementation of the transport of samples helped the country to further decentralize TB diagnostic services. As a result, suspected cases had improved access to laboratory services and limited travel time. WHO supported the country and developed tools (technical sheets for the preparation and transport of samples, sampling protocols and training modules for actors, including community members), as well as sample transport kits using materials found locally to constitute triple packaging (sampling tube, ziplock bag, plastic jar, ice box).

The results have been encouraging during these two years of the pandemic. Despite the challenges faced by the Central African Republic, the Ministry of Health has been able to significantly improve patient access to TB diagnosis, thanks to the financial and technical support of partners and WHO. Prior to 2019, there had been only one laboratory that tested for TB in the country, which performed 1345 tests (337 positive for TB and 99 multidrug resistant). With the additional laboratories decentralized across the country now having GeneXpert machines, commutatively 4690 tests were performed in 2021 (1270 positive and 127 multidrug resistant).

The pilot implementation of the sputum sample transport strategy for suspected TB patients has led to clear improvements in the notification of drug-susceptible TB cases. By using the sputum specimen transport network for TB, the country has provided laboratory access to more people with suspected TB and has thus demonstrated a successful practice in providing TB diagnosis to its population. Owing to the efforts of the Ministry of Health and with the support of WHO, the laboratories were able to test and diagnose more people throughout 2021.
Bringing people-centred care to the fore in China

From policy recommendations to practice

WHO has been a long-standing partner of China, supporting the country’s health system reform ambitions and journey towards universal health coverage (UHC). Since 2009, China has embarked on a new round of health reforms to provide basic health care to its entire population. In 2019, WHO and the Government of China organized a joint review of health reforms undertaken in the previous 10 years. The joint review found that, despite making great strides in improving access to health care and health system capacity, there was an urgent need to develop people-centred integrated care (PCIC) service systems based on strong primary health care (PHC). The joint review report was submitted to the Vice Premier of the State Council, and it has informed the development of the 14th Five-Year Plan on health reform priorities in China, including highlighting the priority to accelerate the development of PCIC systems.

How did China, with the support of the WHO Secretariat, achieve this?

Building on the policy recommendations of the joint review, in 2021 WHO and China jointly launched a flagship pilot programme, entitled “Translating the ‘For the future’ vision into local pilots in China – building a high-quality and value-based service delivery system towards UHC”, also known as the “People-centred integrated care (PCIC) pilot”, at a critical juncture of China’s health system transition.

The programme aims to build PCIC service delivery systems through local pilot projects to test pathways and models in order to effectively respond to the challenges of noncommunicable diseases (NCDs), ageing and infectious diseases. The pilot projects will provide models for developing resilient and effective health systems during the 14th Five-Year Plan and contribute to the development of national PCIC policies and guidelines. This work also aims to put the WHO Western Pacific Region’s For the future vision into action in China by advancing the thematic priorities of NCDs and ageing. The pilot also utilizes one of the For the future operational shifts, adopting a systems reform approach to UHC, including coordinated measures on governance, financing, payment, organization of service delivery and information integration with the goal of improving population health.

The PCIC pilot is being implemented in six counties within three provinces, which represent different levels of socioeconomic development and varying progress made on health reform and UHC. A three-year programme (2021–2024) was designed with adequate time in the first year allocated to piloting system-level changes, notably situation analysis and the design of tailored reform actions fit for local contexts. Applying a “grounds up” approach (a key
operational shift in For the future) allows countries to use feedback from the ground to adapt and refine programme interventions. During its first year of implementation, the project achieved noticeable policy impact with emerging models from the pilot sites for future scaling up and dissemination.

In 2021, the PCIC pilot was listed as one of the priorities of the country’s health system reform in a policy circular issued by the central government (State Council), demonstrating the government’s strong political commitment to the pilot work and PCIC systems in partnership with WHO. WHO supported the concept and underlying principles, and the approaches of the PCIC pilot informed the development of related national polices and guidelines on PCIC and quality service delivery systems in 2021.

In formulating the reform plans for the six pilot counties, WHO worked with implementing partners to ensure that reform interventions reinforce a stronger role for PHC in service organization and delivery, and the principle of prevention first, as well as a whole system approach to managing local health challenges. The approach resulted in the development of interventions, such as the following:

- Promoting PHC through innovative solutions: In Changxing County, Zhejiang Province, a digital “health profile” was developed, which integrates all sources of health data with real-time tracking of health
status for residents based on health check-up, medical records and big data. The profile enables community care workers to implement precise management of chronic diseases such as hypertension and diabetes, as well as targeted interventions on risk factors through multisectoral collaboration. Changxing County also reformed the payment methods for diabetes and hypertension to incentivize community practitioners to focus on prevention and disease management, which has reduced hospitalizations and NCD complications.

- **Community support group as a new model of social governance:** Addressing the low participation of farmers, the county of Gongcheng, in Guangxi, piloted a community support system, which establishes a health management system targeting key populations living with or affected by chronic conditions. The community support system supports the building of community leadership, interaction between health teams and the community, and vertical integration of service networks to provide life course services.

The 14th Five-Year Plan laid out a clear transition of its health service delivery model to address ageing, combat NCDs and “reach the unreached” in order to ensure that no one is left behind. The PCIC pilot contributes to the evidence and practice in building a PCIC model in a large, high-middle-income country, which may merit both domestic scale-up and regional/global learning.

The significance of the PCIC pilot, combined with WHO’s input, is its direct contribution to China’s transition in health service delivery system. For WHO, the initiative represents an orchestrated multilevel, cross-team effort to test the *For the future* vision in the Chinese context. At a critical juncture of transition and reform in China’s health system, as the country combats the coronavirus disease (COVID-19) pandemic, WHO’s voice to champion UHC and PHC sends a positive signal for global health.

Certifying the largest malaria-endemic country as malaria-free

Coordinated effort ends malaria in China

WHO’s malaria elimination certification process guides countries to achieve malaria elimination and to sustain their malaria-free status. To prepare for certification, WHO supports countries in building a resilient health system with strengthened malaria surveillance and response, as well as improved and equitable provision of malaria diagnostic, treatment and prevention services. After a country’s government submits an official request to WHO, WHO initiates the certification process. The process is completed through coordinated efforts between the Ministry of Health, independent technical advisory committees and all three organizational levels of WHO.

In June 2021, WHO officially announced that China was certified malaria-free. From a malaria burden of 30 million cases annually in the 1940s to zero indigenous cases, the elimination of malaria in China is a notable feat. Formerly the largest malaria-endemic country in the world, China successfully completed the certification process in the midst of the coronavirus disease (COVID-19) pandemic, a testimony of the effective coordination and collaboration of the National Health Commission of China and the three levels of WHO.

The WHO evaluation team visiting village health clinics in Guoyang County, Anhui Province. Photo credit: National Health Commission/Anhui Health Commission
How did China, with the support of the WHO Secretariat, achieve this?

- **Building momentum for malaria elimination**: Guided by WHO’s *Global technical strategy for malaria 2016–2030*[^2], adopted by the World Health Assembly in May 2015 and updated in 2021, the WHO Global Malaria Programme launched the E-2020 initiative of 21 malaria-eliminating countries to support country efforts in eliminating malaria[^3,4]. To keep malaria elimination high on the agenda in China, the country was invited to join the E-2020 initiative and co-host the third Global Forum of malaria-eliminating countries.

- **Strengthening malaria surveillance in border areas**: One of the biggest challenges for the elimination of malaria in China was cross-border transmission from malaria-endemic countries. Myanmar is endemic for malaria and shares a border of over 2000 km with China. To strengthen malaria surveillance and response along the border, the WHO Country Office in China collaborated with the Mekong Malaria Elimination programme[^5] to provide supervisory support and training to local health workers in the border areas of Yunnan Province. To support cross-border collaboration, WHO coordinated meetings at the national and subnational levels and established a regional data platform. In 2016, Yunnan Province successfully interrupted transmission and reported its last indigenous case, the last indigenous case in China.

- **Building capacity for diagnosing malaria and monitoring antimalarial drug resistance**: To detect and prevent the potential spread of drug-resistant parasites, WHO built the country’s capacity to monitor the efficacy of antimalarial drugs. To support the establishment of a quality-assured malaria diagnosis reference laboratory network, WHO experts conducted external competency assessments on microscopy. This served to identify competent national microscopists, who then served as the backbone for quality-assured diagnostic programmes in their provinces.
• Following a rigorous malaria elimination certification process, including actions to prevent re-establishment: The WHO Global Malaria Programme, the WHO Regional Office for the Western Pacific and the WHO Country Office in China participated in subnational verification activities in four provinces. They then provided recommendations to China on the elimination certification process and on preventing re-establishment. In response to the recommendations, China established a technical committee on the management of severe cases, analysed the cause of every malaria death and rectified identified weaknesses in the surveillance system. During the COVID-19 pandemic, WHO provided technical support through virtual conferences. The Global Malaria Programme helped to translate global guidance into the context of China’s health system to enable its uptake. The Global Malaria Programme then provided training to the national malaria programme, provincial malaria programmes and members in the national certification committee on the prevention of malaria re-establishment. These efforts enabled China to train health workers to prevent re-establishment at all levels of the health system, following WHO recommendations, which will help to ensure continued malaria-free status. In addition, WHO provided technical support to improve data quality in the national elimination report compiled for submission for elimination certification.

Eliminating malaria in China is a significant public health achievement. Despite challenges, including the COVID-19 pandemic, WHO was able to coordinate the independent certification mission, which comprised several independent international experts; international confirmation of malaria elimination in China was completed successfully. Following rigorously defined and internationally recognized standard operating procedures and global criteria, coupled with successful collaboration and coordination with countries and across the three levels of WHO, has been key to the success.

Launching an interagency strategy to reduce maternal and neonatal mortality in indigenous communities in northern Colombia

Reducing maternal and neonatal mortality in indigenous populations

In Colombia, inequalities persist in maternal mortality, with high rates occurring in segments of the population that have poor access to health services. In 2021, 183.6 maternal deaths occurred for every 100 000 live births in indigenous women, compared with 76.1 per 100 000 live births in the general population. This represents a 38% increase in maternal mortality since before the coronavirus disease (COVID-19) pandemic in 2019, with the biggest impact experienced in the territories and populations that already lagged furthest behind.

In 2015, an interagency strategy was launched by several signatory agencies to the Global Action Plan for Healthy Lives and Well-being for All, which promotes collaborative actions to improve health outcomes. The Pan American Health Organization (PAHO), the United Nations Children’s Fund (UNICEF), the United Nations Population Fund and the World Food Programme committed to working together to reduce maternal and neonatal mortality in indigenous people in Colombia, with the Ministry of Health and Social Protection, indigenous authorities and local governments. The strategy bore fruit during the last biennium when links between traditional birth attendants (parteras) and health facilities were strengthened. The number of health facilities providing culturally adapted services increased, policies were developed to regulate the work of traditional birth attendants and community engagement increased in all steps of project development and implementation. In the department of Chocó (western Colombia), where there is an extensive network of traditional birth attendants, improved access to health care has resulted in fewer reported maternal deaths at the community level.

How did Colombia, with the support of the WHO Secretariat*, achieve this?

- **Facilitating intercultural dialogue:** PAHO technical officers participated in six joint missions to indigenous communities in 2020–2021 to facilitate intercultural dialogue with traditional birth attendants, traditional medicine practitioners and community leaders. This helped to develop the technical capacities and knowledge of the health teams. In 2021, six traditional birth attendants completed an internship in Bogotá to strengthen their technical capacities and exchange knowledge on the differential and ethnocultural care of pregnant women.

* PAHO was established in 1902 as the specialized health agency of the Organization of American States within the inter-American system. In 1949, through an agreement with WHO, PAHO agreed to serve as the WHO Regional Office for the Americas.
In Colombia, some communities do not have access to institutional care … we fight tirelessly to lower the maternal mortality rate in our department and in Colombia. We risk personal harm to save the lives of women who live in violent areas.

A traditional birth attendant who participated in the internship

- **Advocating for the needs identified by traditional birth attendants and local and indigenous authorities:** To strengthen and intensify collaborative efforts, the WHO Country Office in Colombia provided funding support for interagency participation in national and local-level working groups on improving communication, eliminating access barriers, sensitizing communities to identify emergencies and training traditional birth attendants. The working groups were guided by the *WHO recommendations on antenatal care for a positive pregnancy experience* and PAHO technical guidelines on promoting culturally safe childbirth for indigenous women.

*This analysis of health gaps and inequities, and of indigenous beliefs, was key in terms of setting priorities to develop emergency obstetric capacity and life-saving practices and adapting health services from a sociocultural perspective.*

**Dr Gina Tambini Gómez**
PAHO/WHO Representative to Colombia

- **Increasing women’s access to culturally adapted maternal and neonatal services:** The WHO Country Office provided seed funding to develop technical guidelines, tools and communication materials on culturally adapted delivery and the integrated care of pregnant women. Informational materials for three ethnic groups were distributed in three districts to communicate the availability of culturally adapted health care. A total of 115 traditional birth attendants were trained to identify obstetric emergencies and provided with informational materials on prenatal care from the Latin American Center for Perinatology/Women’s Health and Reproductive Health (CLAP/WR). Health facilities made subsequent changes including adapting delivery room installations: for example, replacing beds with hand-woven hammocks or Chinchorros that the women used at home.

The interagency approach has made progress in increasing access to culturally appropriate maternal and neonatal health care in Colombia. Nationally, it is seen as a model worth following to improve maternal health for indigenous people, and in the future this model may benefit other areas of women’s health, such as gender-based violence and family planning. To refine the approach, sharing successful experiences and good practices with other communities, health districts and countries has proved particularly fruitful.
1. Improved access to quality essential health services


Using an evidence-based information system to strengthen maternal and child health services in Dominica

Elimination of mother-to-child transmission of HIV and syphilis

The Government of Dominica prioritized the elimination of mother-to-child transmission of HIV and syphilis as a strategic policy initiative to improve the quality of maternal and child health services. In 2021, the combined efforts of the Ministry of Health of Dominica, the Pan American Health Organization (PAHO)/WHO Office for the Eastern Caribbean Countries in Barbados, and the PAHO/WHO Office of the Caribbean Subregional Program Coordination, also in Barbados, paid off when Dominica was certified by WHO for the elimination of mother-to-child transmission of HIV and syphilis amid the coronavirus disease (COVID-19) pandemic. Having received dual validation, Dominica joined the ranks of seven other Caribbean countries. Critical to achieving the certification was the introduction and roll-out of the Perinatal Information System (SIP), developed by the PAHO Latin American Center for Perinatology/Women’s Health and Reproductive Health (CLAP/WR), which consolidates health information on pregnant women and newborns.

Technical and financial support for SIP was provided by the PAHO/WHO Office for the Eastern Caribbean Countries, in collaboration with CLAP/WR, for in-country training, monitoring, software installation, consultations, design of the antenatal record, updating data in the system and discussions on the roll-out strategy.

_Eliminating mother-to-child transmission of HIV and syphilis as a public health concern requires the strengthening of primary prevention and treatment services for HIV and syphilis for pregnant women within an established and successful maternal, perinatal and child health service._

Roosevelt Skerrit
Prime Minister of Dominica

The inadequate quality, timeliness and reliability of health information on pregnant women and newborns hindered the elimination of mother-to-child transmission of HIV and syphilis. The Ministry of Health and the PAHO/WHO Country Office put in place SIP Plus (the most recent web version) to improve the monitoring of maternal and child health data. Ten countries in the WHO Region of the Americas have used SIP Plus, allowing health administrators to learn more about the factors associated with maternal and neonatal deaths and follow up to improve maternal and neonatal health.

How did Dominica, with the support of the WHO Secretariat, achieve this?

• _National-level commitment:_ A commitment to no child being born with HIV or congenital syphilis must be rooted in antenatal care, equitable access to care for women with HIV, and human rights. As the WHO Country Office’s main partner, the Ministry of Health took ownership of SIP Plus to derive benefits in the area of perinatal care.
• Roll-out of SIP Plus: The roll-out enabled maternal and child health data to be collected in a systematic way, and used to inform planning and programming and to monitor and improve care for maternal and child health. SIP Plus is now used as the medical record for prenatal, delivery, intrapartum and neonatal periods. It is low-cost and easy to use.

• Health worker capacity-building: Training on the use of SIP Plus involved health workers in data collection and analysis, which enabled them to improve maternal and child health through monitoring and evaluation, quality of care assessment and diagnostic procedures.

• Strengthened maternal and child health services: The Ministry of Health's commitment to rolling out SIP contributed to the certification for the elimination of mother-to-child transmission of HIV and syphilis.

The Perinatal Information System allows for the automatic collection and consolidation of data to analyse the health situation and make informed decisions about strategies and policies that can save newborn lives.

Dr Jose Luis Diaz Rossello
Training instructor

Challenges encountered in rolling out SIP and solutions included:

1. Unreliable Internet connection, which can be solved by nurses updating information at clinics. In response, the Ministry of Health outlined a plan to have all clinics connected to Internet services.

2. Regular rotation of health-care workers, which can be solved through continuous training.

3. Absence of a unique identification number in SIP Plus, which was addressed by developing a coding system. Moreover, the Ministry of Health started developing and using an electronic immunization software on an open platform. SIP Plus will be added to this electronic system using one unique identifier for all services accessed per patient.

Dominica’s success in ensuring that no child will be born with HIV or syphilis brings the country one step closer to achieving an AIDS-free generation and ending the diseases. The success was the result of strong government leadership and the technical and resource contributions of PAHO/WHO, particularly in developing, implementing and ensuring the smooth operation of SIP Plus.


* PAHO was established in 1902 as the specialized health agency of the Organization of American States within the inter-American system. In 1949, through an agreement with WHO, PAHO agreed to serve as the WHO Regional Office for the Americas.
Scaling up the integrated care for older people approach in France

About 50 000 older people receiving integrated care

In 2021, the number of people in France over 60 years of age was 18 million (27% of the population), and this is expected to grow to 20 million by 2030.\(^1\) Although in France life expectancy continued to increase (male 79.8 years, female 85.1 years in 2019), there is a gap between life expectancy and healthy life expectancy (male 71.1 years, female 73.1 years in 2019).\(^2\) In 2015, it was estimated that 15% of people aged 60 or over in France (2.5 million) experienced loss of autonomy in activities of daily living.\(^3\) In response to increased public spending on loss of autonomy in recent years (1.2% of gross domestic product; €23 billion\(^4\)), the French Ministry of Solidarity and Health aims to prevent loss of autonomy through integrated care approaches. As a result of the successful implementation of integrated care for older people (ICOPE) pilots in the Occitania region, with WHO technical support, 50 000 older people in France are going to receive integrated care, including follow-up care for three years.

How did France, with the support of the WHO Secretariat, achieve this?

WHO provides support to countries to adopt the ICOPE approach\(^5\) to prevent declines in intrinsic capacity (physical and mental capacities). WHO’s package of tools provides guidance\(^6\) for health and care workers on how to identify, prevent, delay and slow declines in intrinsic capacity in older people through evidence-based interventions.\(^7\) WHO has supported policy-makers

Nurses from Gérontopôle providing information on ICOPE at the Occitania Seniors Fair organized by Toulouse Métropole, October 2021, Pierre Baudis Congress Centre. Photo credit: Toulouse Gérontopôle
to transform health and social care services and systems and build towards an integrated continuum of care for older people by providing the ICOPE implementation framework. Embarking on the United Nations Decade of Healthy Ageing (2021–2030), countries across all regions have shown political commitment to implementing the ICOPE approach, including high-income countries such as France.

Since 2017, WHO has worked closely with the WHO Collaborating Centre for Frailty, Clinical and Geoscience Research, and Geriatric Training, at Toulouse University Hospital, to develop the WHO ICOPE implementation tools and pilot an ICOPE programme in the Occitania region. The initiative, called the INSPIRE ICOPE-CARE programme, tested the feasibility of the ICOPE approach and adapted it to local health-care settings. Locally adapted ICOPE digital tools (the ICOPE MONITOR app with its database, and the ICOPEBOT conversational robot) were developed by the WHO Collaborating Centre for screening, routine data collection and the remote monitoring of the physical and mental capacities of older people. Early identification of declines in physical and mental capacities using ICOPE tools enables the provision of timely and effective interventions to manage such declines.

Since January 2020, the pilot programme has enrolled more than 20 000 people aged 60 and over, trained more than 2700 health and care workers from different disciplines, raised awareness among older people through targeted communications, and collaborated and coordinated with local stakeholders, including primary care staff, regional health insurance funds and communities to provide ICOPE.

The implementation of the ICOPE pilot in France has provided many lessons from the field. The main challenge was to change the current paradigm of clinical practice and shift the focus from disease management to integrated person-centred care with prevention and management of declines in physical and mental capacities. Financial sustainability, in particular developing the mechanisms to remunerate and incentivize health and care workers for integrated care, will remain key to sustaining and rolling out the initiative nationally. The use of digital tools has proved to be an important asset to facilitate implementation and scale-up.

Although the long-term impact on preventing care dependency is still to be evaluated, this first large-scale pragmatic implementation of the ICOPE approach in Occitania has mobilized political commitment from the Ministry of Solidarity and Health. A high-level decision by the government led to the expansion of the ICOPE pilot to five regions for three years, providing integrated care to 50 000 older people. Learning from the national scale-up of the ICOPE pilot in France, WHO has extended its support to other Member States in adopting and implementing the ICOPE approach. WHO currently supports Chile in piloting the ICOPE approach; provides national training on the approach in Qatar; and supports Mauritius in developing an ICOPE national strategic plan. This will contribute to the vision of the Decade of Healthy Ageing: a world in which all people can live longer and healthier lives.


3 Larbi L, Roy D. 4 millions de seniors seraient en perte d’autonomie en 2050 [4 million seniors will lose their autonomy in 2050] [website]. Paris: Institut national de la statistique et des études économiques (INSEE); 2019 (in French) [https://www.insee.fr/fr/statistiques/4196949, accessed 7 July 2022].


10 ICOPEBOT [website]. Toulouse: Toulouse University Hospital; n.d. (in French) [https://icopebot.botdesign.net, accessed 7 July 2022].

Eliminating trachoma as a public health problem in the Gambia

Trachoma is no longer a public health problem in the Gambia

On 20 April 2021, the Gambia was validated by WHO as having eliminated trachoma as a public health problem, making it the second country in the WHO African Region to achieve this milestone.

For a long time, trachoma was recognized as a major public health problem in the Gambia. A survey conducted in a rural village of the Gambia in 1959 showed that trachoma was present in 91% of children aged 5 to 9 years.\(^1\) A population-based survey of blindness and eye diseases conducted across the country in 1986 further revealed that trachoma was responsible for 17% of blindness.\(^2\)

The WHO Country Office in the Gambia provided support to the country to conduct a nationwide blindness survey, establish a national eye care programme, develop a national plan for trachoma elimination, establish partner coordination and build programme capacity. The Gambia Trachoma Elimination Programme implemented the WHO-recommended SAFE strategy, which comprises surgery for advanced disease, antibiotics to clear *Chlamydia trachomatis* infection, facial cleanliness and environmental improvement to reduce transmission. The fight against trachoma had taken decades, but in 2021 it ended when WHO validated the Gambia as having eliminated trachoma as a public health problem.

How did the Gambia, with the support of the WHO Secretariat, achieve this?

- **Nationwide blindness survey:** In order to establish baseline data on the prevalence of the major blinding diseases, the WHO Country Office provided support for a national survey of blindness and low vision. The Gambia was one of the first countries in sub-Saharan Africa to undertake a nationwide blindness survey in 1986. The survey was undertaken as part of the first phase in the development of a national eye care programme in the country.

- **Creation of a national eye care programme:** Based on the results of the national survey, response from the WHO Country Office included support for the establishment of the National Eye Care Programme in 1986. The aim was to provide an integrated approach to reducing the national burden of blindness and low vision in the country.

- **National plan for trachoma elimination:** The WHO Country Office supported the National Eye Care Programme to develop a national plan of action for the elimination of trachoma as a public health problem using the SAFE strategy for trachoma. The implementation of five-year plans successfully led to the elimination of trachoma in the country.
• **Coordination:** Through the establishment of a national multisectoral task force, the WHO Country Office engaged several partners to implement the SAFE strategy at the country level, including the Department of Community Development, the Department of Water Resources, the International Centre for Eye Health, the Medical Research Council, the Ministry of Basic and Secondary Education, and Sightsavers International. Significant support and funding were provided by the British Council for Prevention of Blindness, the International Trachoma Initiative, the London School of Hygiene & Tropical Medicine, the Medical Research Council, Sightsavers International and the WHO Country Office.

• **Capacity-building to deliver trachoma interventions:** The WHO Country Office provided regular training and capacity-building for National Eye Care Programme staff. In addition, standard training for community field workers, ophthalmic nurses and trichiasis surgeons were ensured by the use of WHO training guidelines and the WHO manual for trichiasis surgery for trachoma.³

• **Process towards validation of elimination of trachoma as a public health problem:** In order to assess the impact of the SAFE strategy, the WHO Country Office in the Gambia provided support for several surveys including pre-validation surveillance surveys. Subsequently, when the prevalence estimates fell below the WHO threshold for elimination, the country was encouraged and facilitated to submit a trachoma elimination dossier. The WHO Country Office supported the external review of the dossier by the WHO Regional Office for Africa, which convened a regional ad hoc Trachoma Dossier Review Group. Based on the evidence provided in the dossier and the recommendations of the Dossier Review Group, the country was validated as having eliminated trachoma as a public health problem.

Currently, in the post-elimination period, the WHO Country Office continues to provide support to the country to ensure that the results achieved are sustained. More importantly, the country has been encouraged to use the trachoma experience for the elimination of other neglected tropical diseases and health problems.

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Assessing mid-level health workers to support integration in health and wellness centres to deliver primary health-care services

Scaling up capacity for primary health-care delivery

WHO recognizes primary health care (PHC)\(^1\) as the most cost-effective and equitable means to achieve universal health coverage (UHC).\(^2\) In India, the National Health Policy 2017 and the ongoing operationalization of Ayushman Bharat Health and Wellness Centres aim to bring comprehensive PHC closer to the country’s 1.4 billion population. Fundamental to the success of this initiative is the addition of a cadre of mid-level health-care workers in the form of community health officers to lead the PHC team.

To date, more than 115,000 health and wellness centres are functional and nearly 90,000 community health officers have been added to the health workforce. The WHO Country Office in India provides technical and implementation support in select states and aspirational districts towards achieving the goal of the Ministry of Health and Family Welfare of 150,000 functional health and wellness centres by the end of 2022. A recent WHO-led assessment of the role and performance of community health officers in health and wellness centres in two states in India indicates that community

Administering COVID-19 vaccines at a health and wellness centre. Photo credit: WHO Country Office in India/Kumar Gaurav
health officers make a noticeable addition to the public sector’s capacity to manage the noncommunicable disease (NCD) burden, as well as addressing common ailments, thereby representing a primary care response to the epidemiological transition in India. The results of the assessment informed recommendations to further strengthen the contribution of community health officers to deliver PHC services.

How did India, with the support of the WHO Secretariat, achieve this?

WHO provided technical and financial support for studies in the states of Assam and Chhattisgarh, which account for a cumulative population of 60 million people, to assess the role and performance of mid-level health-care workers within primary care settings and identify opportunities to further enhance their contribution in health and wellness centres.

The studies used mixed methods. The quantitative component included data from health and wellness centres to evaluate service utilization patterns. The qualitative methods captured information from in-depth interviews, focus group discussions and community surveys to assess the range and quality of health-care services provided by the community health officers in the health and wellness centres.

According to a 2018 UHC technical brief on mid-level health workers,² mid-level health workers are those who have received shorter training than physicians but perform some of the same tasks as physicians. The role of mid-level health-care workers in Assam and Chhattisgarh is provided by two cadres of community health officers: nursing graduates trained in a new six-month bridge programme; and a pre-existing cadre of diploma clinicians who have undergone a three-year training programme in modern medicine.

Given the scope of services and functions managed by community health officers, it was critical to assess their performance, including community perception. Assessment results were favourable and led to important recommendations to further strengthen the contribution of community health officers. They provide services during pregnancy and childbirth, neonatal and infant health care, in addition to diabetes and hypertension screening, monitoring and continuum of care. Concurrently, they are also involved in the management and referral of trauma and emergency cases and conduct minor surgical procedures. During the coronavirus disease (COVID-19) pandemic, most mid-level health-care workers were involved in contact tracing and community surveillance to identify, isolate and manage suspected cases.

In Assam, there is high community acceptance of community health officers, and most respondents (61%) agreed that the range of health services improved after such providers were posted at health and wellness centres. In many instances, the survey participants preferred seeking health services at health and wellness centres to visiting higher-level centres because of ease of access and shorter waiting times. In Chhattisgarh, community health officers
scored well on provision of hypertension, diabetes and malaria services, and their scores for those diseases were close to those of medical assistants and medical officers. About 80% of prescriptions written by community health officers for hypertension and diabetes were found to be correct. However, there were gaps identified for other disease conditions, such as diarrhoea, vulvovaginal candidiasis and pre-eclampsia (mean score <50%). This demonstrated that community health officers performed better on diseases for which algorithm-based protocols were available.

Diseases commonly understood to be lifestyle-related were found to be common among the poor, and chronic ailments figured significantly in health-care needs as perceived by communities, including in tribal and rural areas. Health and wellness centres have made a noticeable addition to public sector capacity to manage the NCD burden, as well as addressing common ailments, thereby representing a primary care response to the epidemiological transition in India. How mid-level health-care workers perform has a huge bearing on PHC and some of the important lessons and recommendations for improving their performance, including (a) scaling up regular training sessions and mentoring; (b) developing standard treatment protocols for non-physician cadres; (c) improving infrastructure and availability of drugs and diagnostic facilities; (d) strengthening referral systems and use of technology for continuum of care; and (e) providing clear career pathways.

Community health officers play a pivotal role in augmenting the capacity of health and wellness centres for screening and managing NCDs, as well as reproductive, maternal and child health services. Assam and Chhattisgarh have shown a clear commitment to advancing PHC with dedicated community health officers at health and wellness centres, although implementation challenges exist. WHO-supported operational research enables those states to strengthen PHC delivery through refining implementation approaches to supply and demand. On the one hand, it is equipping health and wellness centres to complement the functioning of community health officers and the PHC team; on the other, it is increasing demand and greater utilization of primary care services by improving awareness in the community about the range of health services rendered at health and wellness centres.

Strengthening the prevention and management of cardiovascular disease risk factors in Jordan through primary health care

Strengthened response to cardiovascular diseases

In Jordan, noncommunicable diseases (NCDs) account for nearly 80% of total deaths, with cardiovascular diseases (CVDs) the leading cause of NCD deaths. Cardiovascular diseases constitute 34% of deaths in Jordan.1 The Jordan national STEPwise survey (STEPS) for noncommunicable diseases risk factors 20192 showed significant prevalence of hypertension, diabetes and high CVD risk among adults (45–69 years), at 52%, 20% and 25%, respectively.

The Ministry of Health of Jordan, in close collaboration with WHO, has been implementing the WHO HEARTS technical package.3 HEARTS aims to strengthen the prevention and control of CVDs at the primary care level through a comprehensive care package delivered to patients by health facility teams (doctors, nurses, technicians), which includes healthy lifestyle counselling, evidence-based treatment protocols, access to medicines and technology, risk-based CVD management, team-based care and systems for monitoring.

How did Jordan, with the support of the WHO Secretariat, achieve this?

The HEARTS initiative comprises a multi-phase programme that aims to improve access to quality essential health services. It enables countries to strengthen their health systems to deliver on disease-specific service coverage results. The programme comprises a preparatory (pre-implementation) phase, which leads into an implementation phase followed by a scale-up of the programme. Effective implementation of the package has been shown to improve early detection and control of patients with CVD risk factors (i.e. hypertension, diabetes and high CVD risk).

Since 2019, the Ministry of Health, with technical and financial support from WHO, has completed several activities towards the implementation of the HEARTS programme. A steering committee and a technical committee were established to oversee programme implementation. Later, consensus-based, evidence-based clinical guidelines on CVD risk assessment, hypertension and diabetes management at the primary care level, tailored to the local context, were developed. This was followed by capacity-building of health-care providers on the implementation of HEARTS, which was initiated in Jordan in 2021. The programme expanded in 2022 in order to include all physicians and nurses in health-care centres across the country: almost 1500 health-care professionals in 500 centres. This effort was preceded by the development of a comprehensive training package based on the HEARTS technical package, in
both Arabic and English. The training package details patient counselling on lifestyle modification, clinical management of CVD risk factors, team-based care, monitoring of patient outcome and service delivery. WHO supported the Ministry of Health in training 18 physician and six nurse trainers, who are rolling out training on the HEARTS programme across the country.

Furthermore, WHO conducted baseline assessments of pilot health-care centres to evaluate their readiness for implementing the HEARTS programme, exploring the availability of health-care workers, equipment, laboratory investigations, medicines, health-care services, patient records and other necessary prerequisites. Multiple gaps were uncovered through the assessments, and the Ministry of Health is working to address them effectively, with technical support from WHO. Interventions include enhancing task sharing and role distribution among medical team members. Initially, the assessments were conducted in six centres, but in 2022 they will expand to comprise all centres that will implement the HEARTS programme (more than 100 centres in total).

Other areas of intervention that are receiving attention include improving the availability and maintenance of essential equipment and amending patient care pathways within clinics to enhance early detection of CVD risk factors. In addition, optimizing clinical management, monitoring of patients

and ensuring effective health-care service delivery, as well as strengthening existing patient records and health information systems, are being addressed.

One of the key success factors to implementing the HEARTS programme has been the strong commitment of the Ministry of Health, as well as the continuous monitoring of the programme’s implementation at the facility and national levels. Therefore, WHO is supporting the Ministry of Health in developing clinical and programme performance monitoring indicators. These will be deployed to periodically assess the impact of the programme on the early detection and management of hypertension, diabetes and CVD risk. The results from the assessments will be used to further inform the implementation and scale-up of the programme throughout the country.

Strengthening response to CVDs is a national health priority in view of the heavy burden of those diseases. The successful implementation of the HEARTS programme is expected to improve the early detection and management of patients with CVD risk factors. Since it is provided at the primary care level, the HEARTS package enhances the integration of NCDs into primary care services, contributing to a better coverage of a wider population of those living with NCDs. A key factor to the initiative’s success was political will contributing to the continuous supervision and monitoring of implementation, which allowed assessment of the situation at the time, identification of gaps and making of informed recommendations to address the root causes of the gaps and to reform care.


Making progress in cervical cancer control in Liberia by establishing screening centres in public health facilities

Increased awareness, early detection and saved lives

After years of conflict, the health system in Liberia faces a vast array of challenges. The Ebola outbreak has had a devastating effect on the population’s health. Consequently, efforts to address other essential services and public health concerns, including the growing cancer burden, have significantly lagged behind.

It is estimated that more than 469 women in Liberia died of cervical cancer in 2020, making up to 18.6% of all cancer deaths among women in Liberia. Cervical cancer is the first leading cause of death among women diagnosed with cancer and the most frequent cancer among women in Liberia.¹
Approximately 656 new cases were diagnosed in the same year, with an age-standardized rate of 40.8 per 100,000 women. The WHO cervical cancer elimination strategy provides the basis for accelerating action in Liberia. With support from the Gavi Alliance, human papillomavirus (HPV) vaccinations were introduced within the national immunization programme with limited coverage – 42% and 18% for first and second doses, respectively, focusing only on 9-year-old girls. For secondary prevention, national screening programmes have yet to be established, leading to missed cases and late detection. Further, management and supportive care have been negatively affected by shortages in radiotherapy, commodities and staff, including surgeons. A mission of the International Atomic Energy Agency in 2018 drew attention to the urgent need to rebuild and train the country’s much-depleted health workforce following the Ebola crisis.

How did Liberia, with the support of the WHO Secretariat, achieve this?

The National Cancer Control Policy was developed in 2018 by the Ministry of Health of Liberia with the support of WHO and other technical partners. WHO responded through its technical expertise by introducing a cost-effective comprehensive training programme to provide screening services in two centres established in two catchment areas. This was followed by the introduction of HPV vaccines into the national programme in 2019.

However, resources to establish the basis for screening are required to save lives and to achieve the goals of the WHO Global strategy to accelerate the elimination of cervical cancer as a public health problem worldwide by 2030. In 2021, WHO provided funding and technical support to the Ministry of Health to organize a three-phase pilot project that trained national trainers and service providers in cervical cancer screening and to establish pilot centres in two geographical zones out of five areas in Liberia (Redemption Hospital, Montserrado County; and C. B. Dunbar Maternity Hospital, Bong County). The project focused on comprehensive quality services for early detection and treatment of precancerous lesions.

An integrated health-system-based approach was used to introduce health staff to a screening and treatment technique of cervical and breast examination for early detection of cancers, its equipment and safe use. A national training and service provision manual was developed, which was used for clinical on-the-job training in secondary care settings for three days, covering 20 medical staff, nurses and paramedical staff. This was followed by training on data collection and monitoring and evaluation, without causing extra burden to medical staff. It is anticipated that the resulting data would be used in decision-making and for monitoring purposes. In addition, part of the training enabled the health facilities and environment to offer the services required. Two national senior consultants were trained to be
trainers to support the scale-up in the future. As part of the continuum of care, 12 community health assistants were trained to be able to provide the necessary sensitization and raise awareness with a view to empowering women. Furthermore, the training module will be included in the pre-service curriculum at the University of Liberia and the School of Midwifery.

The model was established to reach 140,000 women of reproductive age and enrol 15,000 women in 2022. From total visits since December 2021, seven women have been diagnosed with cervical cancer, while three women have precancerous lesions and have received treatment. Three women have been detected as having stage IV cancer and referred to a specialist hospital for treatment.

A monitoring system will be put in place as part of a series of activities by the government to follow up with community awareness activities to ensure the optimal impact of the training on staff knowledge. Even though the government is planning to reach all 15 counties in the next three years, the current focus is on prioritizing the full setup of the screening and treatment centres in the two counties, before moving on to other regions of the country.

A health-system-based approach to piloting the introduction of a screening service could be a successful model, even in areas with no experience and low resources. Developing a comprehensive cervical cancer training module has been instrumental in achieving the desired results: increased awareness, early detection and saved lives.

Providing essential life-saving services during the humanitarian crisis in Myanmar

Lives saved during the humanitarian crisis

Essential life-saving services continue to be severely disrupted following the coronavirus disease (COVID-19) outbreak and the subsequent military takeover of the legislative, judicial and executive powers of Myanmar on 1 February 2021. In order to provide the much needed basic humanitarian help involving health support, the WHO Country Office in Myanmar designed and developed a model for the strategic purchasing of services, engaging with three partners (a national professional association, the Myanmar Red Cross Society and a private hospital entity) to ensure that life-saving essential health services were provided for people in dire need.

How did Myanmar, with the support of the WHO Secretariat, achieve this?

In Kalay Township, Sagaing Region, the WHO Country Office contracted with a tertiary care hospital to provide COVID-19 treatments when the third wave of COVID-19 started in Chin State. For primary care services, the WHO Country Office partnered with the Myanmar Medical Association and the Myanmar Red Cross Society volunteers helping to transport a patient in labour to hospital around curfew hour. Photo credit: WHO/Myanmar Red Cross Society
Red Cross Society to act as a strategic purchasing entity to coordinate the provision of life-saving essential reproductive, maternal, newborn, child and adolescent health services and emergency referral services in selected townships of Yangon Region, targeting the urban poor. For secondary and tertiary care, together with the private Wesley Hospital, the WHO Country Office purchased essential reproductive, maternal, newborn, child and adolescent health services and emergency services, as well as services to treat severe and very severe cases of COVID-19. A total of 2568 cases were supported by the strategic purchasing programme in the initial six months.

Key details

- The average volume of patients per day was reported to be seven, ranging from three to 18 patients per day depending on the type of facility and services provided.
- Two thirds of the patients were female, of whom nearly 40% were in the reproductive age group; they received support in reproductive, antenatal and maternal care, as well as emergency obstetric services.
- Children aged under 5, 15% of the served population, received child care, neonatal care and emergency referral services.
- The average cost per patient was 123 664 kyats (roughly US$ 70).
- Antenatal care cost was reported to be 33 647 kyats (US$ 19) for new visits, 13 898 kyats (US$ 8) for follow-up antenatal care, 2589 kyats (US$ 1.40) for child care, 384 956 kyats (US$ 215) for caesarean delivery, 17 050 kyats (US$ 9.50) for medical emergencies and 185 035 kyats (US$ 103) for normal vaginal delivery.

Key findings from the strategic purchasing programme

- In the initial six months of the pandemic, it was observed that low utilization of health services led to missing planned targets of the population accessing contracted services.
- The applicable prices differed significantly across health facilities.
- The contracted purchasers were not experienced in strategic purchasing and outcomes-based performance payment mechanisms.
- Capacity issues with human resources and data information systems were reported.
• Claims processing remain a bottleneck when considering scaling up the programme.
• Volunteers conducted exit interviews, which highlighted that over 75% of respondents answered positively to dimensions of patient satisfaction including with regard to infrastructure, responsiveness, discrimination, affordability, knowledge of provider, respectful care and future visitation.

Numerous challenges were found during implementation: Different purchaser organizations reported different volumes of cases. Health providers struggled to report data using the required format. The medical record system is not strong in private clinics and some private hospitals partnered with the Myanmar Medical Association to collect data and report to WHO, which delayed the submission of data to WHO for analysis. Low compliance was noted regarding data security and confidentiality in reporting and sharing data. Those challenging issues relating to data quality and timely reporting, as well as cash flow transfer on banking services, hindered programme implementation. Further, there was no suitable monitoring system to track patient claims on treatment – neither for the established provider payment mechanisms nor for performance payment. Human resource shortages had a negative impact on the allocation of designated staff for data monitoring and reporting. Such challenges will need to be addressed before the programme is expanded nationwide.

Effective partnership with local organizations, including professional associations and private facilities, ensured the programme successfully delivered life-saving services to thousands during the acute humanitarian crisis. Based on the lessons learned from this initiative, gaps and challenges will be addressed to achieve a more efficient purchasing strategy with harmonized costing moving forward. An exchange of knowledge has been gained from the strategic purchasing programme, which has been shared with development partners. This innovative approach in providing essential services should be customized to expand strategic purchasing functions and serve as cross-learning to other conflict-affected nations.
Integrating sexual and reproductive health and rights competencies in medical, nursing and midwifery education in Nepal

Integrating sexual and reproductive health and rights in pre-service curricula

Nepal is committed to achieving the Sustainable Development Goal targets related to sexual and reproductive health-care services and rights, which requires a competent health workforce. There have been concerns about the work-readiness of graduating medical, nursing and midwifery students due to a general lack of competency in providing quality sexual and reproductive health-care services as per the national protocols. Evidence suggests that high-quality pre-service education, for example through simulation-based methodology, helps to increase the confidence and competency of students and health-care providers.¹

How did Nepal, with the support of the WHO Secretariat, achieve this?

To understand the status of the sexual and reproductive health and rights (SRHR) component in pre-service medical, nursing and midwifery education, WHO carried out a comprehensive assessment in eight academic health professionals’ institutions in 2020, with support from the Institute of Medicine.
The eight institutions were the primary institutions running graduate medical, nursing and midwifery programmes across the country: four universities and four academies of health sciences. Assessment cut across several areas of SRHR, including contraception, fertility, sexually transmitted infections, abortion, sexuality, gender equality, quality of care and service provision. During the baseline assessment, 23 curricula were reviewed covering programmes for doctors, nurses and midwives for inclusion of SRHR. Results from the 2020 gap analysis showed inadequacies and inconsistencies in curriculum guidelines, as well as in course structure and content for selected areas of SRHR when compared with national and international competency frameworks. For family planning and safe abortion services, for example, the availability of teaching and learning resources, including skills labs and faculty capacity, was found to be insufficient to impart skills and simulation-based education.

Based on the findings of the recent assessment, it was determined that strengthening the quality of pre-service education was necessary. Thus, with the facilitation of WHO under the leadership of the Family Welfare Division and the Medical Education Commission, with technical support from Laerdal and in consultation with relevant stakeholders, a project was developed on striving towards integration of SRHR competencies in pre-service medical, surgical, nursing and midwifery education in Nepal.

The project aims to integrate comprehensive and well defined SRHR-related competencies into existing medical, nursing and midwifery pre-service curricula; develop high-quality skills through simulation labs; and build capacity of faculty in simulation-based education.

The implementation plan was developed in close consultation with the Family Welfare Division, the Medical Education Commission and the eight selected health professionals’ academic institutions. All the institutions have expressed strong commitment and support for project implementation.

Within the framework of WHO’s Sexual and reproductive health core competencies in primary care, and job descriptions of respective cadres, the required competencies for medical, nursing and midwifery professionals were agreed upon, curricula reviewed, and training modules on skills and simulation-based methodology focusing on SRHR developed. The competencies-based curriculum was integrated, skills labs strengthened through simulation exercises, and faculty members trained on skills related to SRHR. The WHO Country Office in Nepal provided funds to support the equipping of the skills labs with manikins and other equipment, as per the requirement of each institution.

A one-day orientation package was developed for sensitizing the faculty and senior officials of the institutions about sexual and reproductive health-care services and rights competencies and their relevance in the curricula, along with skills and simulation-based methodologies. A five-day training package
on skills and simulation methodology for faculty was also developed; by July 2022, 141 medical, nursing and midwifery professionals in seven institutions had been trained.

The project has been met with great enthusiasm by the Ministry of Health and Population, provincial governments, university leadership, administration and faculty, who were able to impart their knowledge to students and practitioners after receiving training. The Minister for Health of Bagmati Province announced at the inauguration of one of the training sessions that Kathmandu University would serve as the provincial health-care training hub and that health-care-related training would be delivered, where appropriate and possible, using simulation-based methodology.

A competent and confident health workforce is key to delivering quality health services. WHO is proud to have supported this initiative which will ultimately result in greater access to sexual and reproductive health rights for the people of Nepal.

Dr Rajesh Sambhajirao Pandav
WHO Representative to Nepal

This is a landmark initiative, which aims to improve the quality of medical, nursing and midwifery education and may directly and indirectly improve delivery of quality people-centred health services, thus improving the health indicators of Nepal. To measure progress, a baseline assessment was conducted, and a midline assessment was scheduled for the end of July 2022. Government ownership and stakeholders’ engagement throughout implementation are critical for sustaining the gains made and further scaling up best practices. Standard guidelines, tools, skills labs, mentoring and experience-sharing by trained faculty will support the expansion of the initiative and creation of greater impact moving forward.

Transforming Nepal’s health workforce using an evidence-based approach

Transforming Nepal’s health workforce using evidence

Having the right number of health workers, in the right places, at the right times, is crucial to meeting population health needs and achieving and sustaining progress towards health-related goals, WHO’s triple billion target on universal health coverage and the Sustainable Development Goals. In Nepal, human resources for health (HRH) challenges include the over and underproduction of different cadres of health workers, unequal distribution of workload and geographical disparities in health worker density: staff turnover is particularly high in primary health-care facilities in remote and rural areas.

The importance of a strong health workforce in Nepal, with focus on production, distribution and retention, was emphasized in the 2019 National Health Policy, the 2015–2020 Nepal Health Sector Strategy, and the 2021–2030 National Human Resources for Health Strategy. The National Human Resources for Health Strategy was disseminated in November 2021 by the Ministry of Health and Population and WHO, in line with WHO global and regional strategies on HRH, the Sustainable Development Goals, and Nepal’s national health policies, laws and regulations. Nevertheless, an information system containing digitalized data for HRH was lacking in Nepal. There was a need to improve access and use of data for effective evidence-based workforce management and for monitoring progress. Therefore WHO is providing technical support to the Government of Nepal to develop the HRH strategy, conduct HRH studies, as well as updating the HRH information system that would enable evidence-based decision-making for HRH strategies and policies. This resulted in concrete recommendations to distribute and retain health-care workers and strengthen advocacy efforts, which are expected to contribute to a sustained transformation of HRH in Nepal through better production and development, deployment, and distribution and management of health workers.

How did Nepal, with the support of the WHO Secretariat, achieve this?

- **Gaining a better understanding of health worker incentives and decision-making:** To address the drivers of poor retention of health workers in rural and remote areas of Nepal, the WHO Country Office in Nepal provided technical support to the Ministry of Health and Population to conduct a study on the factors influencing health worker decision-making. Starting in April 2021, 21 case studies were developed through personal interviews and focus group discussions with front-line health workers working in remote health-care facilities (including medical officers, staff nurses, health assistants and auxiliary nurse midwives) in 14 districts selected by the Ministry of Health and Population, in coordination with provinces representing various geographical terrain in Nepal. The study aimed to
explore which approaches would be most appropriate and impactful for the retention and deployment of qualified professionals in rural and remote areas, in accordance with government strategies. A review of the case studies was carried out between April and December 2021. The identified factors that influenced health worker decision-making included remuneration and incentives, opportunities for career development (such as training, job fit and personal characteristics), social considerations, cultural values, health governance and the work environment, and national acts and laws.

Timely identification of these [decision-making] factors is crucial to manage and retain health workers in remote areas as health services should be made easily available to every citizen through a qualified health professional.

Bhim Prasad Sapkota
Senior Public Health Administrator, focal point for HRH
Ministry of Health and Population

- Using established methodology to determine optimal staffing: The WHO Workload Indicators of Staffing Need (WISN) is a human resource management tool that enables staff requirements to be calculated on the basis of workload by staff category and type of health facility.
Implementation of the tool was led by the Ministry of Health and Population, with technical and financial support from WHO and the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ). The WISN tool was reviewed by national experts for its feasibility in the national context, with support from WHO and GIZ. A WISN training of trainers was carried out in Nepal in 2019. Trainers were identified from various provinces and health-care facilities. To understand the feasibility of the WISN tool in the national context, it was piloted in nine primary health facilities across three provinces in 2021. Standards for workload indicators were developed and validated for five health cadres (Medical Officer, Staff Nurse, Health Assistant, Auxiliary Nurse Midwife and Auxiliary Health Worker) through group discussions and interviews in primary health-care settings and health posts. Health Management Information System records were analysed by the Ministry of Health and Population, with technical support from WHO and GIZ, to extract health service information. Analysis across various domains of the WISN tool identified duplication in responsibilities of health workers in primary health-care settings and a need to improve number, skills and distribution of health workers based on workload and geographical distribution. Findings support a mechanism for task shifting and sharing, teamwork and synergy for various skill mixes. The findings from the pilot study were disseminated in November 2021, alongside the National Human Resources for Health Strategy. WHO will continue to work with the Ministry of Health and Population to roll out the WISN methodology in different cadres and health facilities and support the development of appropriate policy guidelines that ensure task shifting and sharing, teamwork and synergy for various skill mixes.

As delivery of quality health services is linked with adequate, skilled and competent workforce and appropriate workload, WHO will continue to work with [the Ministry of Health and Population] to explore most appropriate and impactful approach to retain skilled health and care workers so that they can serve the most needy in even the hardest to reach areas.

Dr Rajesh Sambhajirao Pandav
WHO Representative to Nepal

Close collaboration between WHO and the Government of Nepal has been crucial to ensuring that actions taken to improve HRH were aligned with global best practice guidelines and methodologies. The WHO Country Office in Nepal continues to work with the Government of Nepal to improve the availability, accessibility, acceptability and quality of health services across the country through an evidence-informed approach.


Preventing rabies deaths through improved access to postexposure prophylaxis in Nepal

Preventing rabies deaths in Nepal

Rabies is a zoonotic, vaccine-preventable viral disease that is spread to people through bites or scratches of rabid animals. In up to 99% of cases, domestic dogs are responsible for rabies virus transmission to humans. Once clinical symptoms appear, rabies is almost always fatal. Rabies vaccines are usually recommended for people in high-risk occupations, or for travellers going to remote locations with high rabies risk. When a person is bitten, timely administration of postexposure prophylaxis (PEP) prevents disease. PEP includes washing the wound, administering rabies vaccine and, for category III exposures, administering rabies immunoglobulin (RIG). Every year, more than 29 million people worldwide receive a post-bite vaccination. This is estimated to prevent hundreds of thousands of rabies deaths annually. Over 95% of human rabies deaths occur in Asia and Africa. Rabies is one of many neglected tropical diseases endemic to Nepal. Many lives are lost in the country through lack of awareness about rabies and lack of timely access to rabies vaccines and RIG. On the pledge to achieve the target of zero human deaths from dog-mediated human rabies by 2030, the concerned governmental and nongovernmental agencies in Nepal are working together using the “One Health” concept.

WHO provided technical and financial support to Nepal to increase access to vaccines and RIG and strengthen capacity for their administration. In November 2021, the Minister for Health and Population announced that the
availability of free RIG had been expanded to 10 secondary- and tertiary-level hospitals in the country’s seven provinces. Although free rabies vaccines were available in all the provinces, previously RIG had only been available at one centrally located national-level hospital. As it is estimated that more than 50,000 people seek PEP every year in Nepal,² tens of thousands of people are expected to benefit annually from WHO’s support to the Government of Nepal in increased access to PEP.

**How did Nepal, with the support of the WHO Secretariat, achieve this?**

- *Developing new national guidelines:* In 2018, WHO headquarters released a new position paper,³ which updated the Organization’s 2010 position on rabies vaccines based on new evidence. Updates focused on improving programmatic feasibility, simplification of vaccination schedules and improved cost-effectiveness. In response to the recommendation, the WHO Country Office in Nepal supported the national programme to develop Nepal’s 2019 national guideline for rabies prophylaxis.⁴ This guideline adopted the intradermal route for rabies vaccine administration – a dose sparing, cost saving, yet highly effective regimen. The change in policy from the previous intramuscular regimen to an intradermal rabies vaccine not only provided an opportunity to expand access of rabies vaccine to a wider population, but also reduced the costs of rabies vaccine procurement. Currently, the government supplies the vaccine up to the primary health-care level. Vaccines are made available at the primary health-care level after ensuring that there are trained personnel for intradermal infiltration of anti-rabies vaccine. Sensitization training of primary health-care workers has been provided and is ongoing.

- *Strengthening the capacity of health workers to enable the policy to be translated into practice:* To expand access to RIG beyond the central hospital, health workers from selected secondary- and tertiary-level hospitals across the country were trained to provide PEP services to bite victims in line with the new recommendation on rabies prophylaxis. The WHO Country Office in Nepal provided technical, financial and material support for a series of training sessions in 2020–2021, including training slides and training facilitators. Over 100 front-line health workers dedicated for animal bite case management, such as medical doctors and paramedics, from across the country were trained on rabies and PEP, despite the frequent lockdowns during the coronavirus disease (COVID-19) pandemic. Following two days of intensive training, health-care workers from major hospitals in the provinces reported feeling more confident about practical administration of both the intradermal route for rabies vaccine administration and about RIG infiltration for rabid animal bite cases.
WHO’s support has been crucial in accelerating the national programme’s goal to ensure wider access to rabies vaccine and rabies immunoglobulin among its population. The Ministry of Health and Population’s decision to expand provision of free rabies immunoglobulin to hospitals across the country’s seven provinces is a great outcome of our collaboration. We are committed to … contributing to the national programme to achieve the goal of zero rabies [deaths] by 2030.

Dr Rajesh Sambhajirao Pandav
WHO Representative to Nepal

In Nepal, there is a high turnover of health workers and many new health workers join the workforce every year. Providing ongoing and annual training will be necessary for Nepal to continue to move towards the elimination of dog-mediated human rabies in the country. Training sessions are currently conducted through the Epidemiology and Disease Control Division and are also conducted by provincial health directorates and health offices under the federal budget. WHO provides technical and logistics support for the training sessions. The WHO Country Office in Nepal will continue to provide technical and financial support to the national programme to accelerate its effort in achieving zero deaths from rabies in Nepal, not only by joining hands with the national programme to improve timely access to rabies prophylaxis, but also by adopting the One Health approach, so that both the animal health and human health sectors can collaborate and coordinate rabies control activities.

Delivering patient-centred tuberculosis care during the COVID-19 pandemic in the Philippines

Improved time to tuberculosis diagnosis

Until the emergence of the coronavirus disease (COVID-19), tuberculosis (TB) was the leading single-agent infectious cause of mortality worldwide. Although the number of people falling ill with TB has steadily declined in recent years, disruptions caused by the COVID-19 pandemic have reversed years of progress in the fight against TB, according to the Global tuberculosis report 2021.¹

In 2020, the estimated incidence of TB was 591 000 in the Philippines. However, only 44.5% of cases were notified. The number of notifications dropped by 37% compared with the previous year (from 419 102 cases in 2019 to 263 300 cases in 2020), reflecting how COVID-19 affected the continuity of TB services.

In 2020–2021, the Philippines stepped up efforts to curb the spread of COVID-19 by implementing lockdown measures and repurposing health-care personnel. Simultaneously, the health authorities collaborated with key stakeholders, including the WHO Country Office in the Philippines, to ramp up and adopt easy-to-implement solutions to mitigate the impact of COVID-19 on TB services. The priorities were to (a) ensure that TB diagnostic networks remained functional and (b) maintain access to anti-TB treatment. WHO supported the Philippines with this work in line with WHO’s For the future vision² and thematic priority of improving health security. The vision provides an outline of how the WHO Western Pacific Region will achieve global strategic priorities and includes new ways of working, such as using innovation and partnerships to achieve its long-term vision.

How did the Philippines, with the support of the WHO Secretariat, achieve this?

In line with activities outlined in the Updated Philippine strategic TB elimination plan – Phase 1: 2020–2023³ and the For the future vision of using innovation as an operational shift, the WHO Country Office in the Philippines collaborated with the Department of Health and other partners to develop and launch a package of digital solutions, the End TB App Suite.⁴ The applications aim to improve the efficiency of specific tasks and help to address challenges, particularly data collection and under-notification of TB cases. In addition, the App Suite helps to monitor and improve TB treatment adherence and assists in keeping patients on their treatment plan.

Efforts to strengthen the laboratory network followed recommendations obtained from several WHO missions working through a one-team approach, a WHO-led study tour of mid-level managers from the Philippines to South Africa, and TB diagnostic network optimization in collaboration with the...
Foundation for Innovative New Diagnostics (FIND) and Llamasoft. In addition to being involved in discussions with numerous partners to improve data collection, WHO provided technical support to Specimen Transport Riders (STRiders) and is leading the STRider initiative’s impact assessment.

In the early stages of the COVID-19 pandemic, the country expanded molecular technologies for rapid and simultaneous detection of TB and rifampicin resistance to cover all presumptive TB cases as the primary diagnostic test. In parallel, the Department of Health pushed to maximize the use of the STRider network. The Department of Health co-manages the network with the Philippine Business for Social Progress through a Global Fund TB grant. This network is a specimen referral and transportation system established to address the lack of reliable transport mechanisms between TB laboratories and rural health units and was designed as part of the patient-centred diagnostic network. The country heightened its efforts to expand the network, initially introduced in 2018, following the emergence of COVID-19.

At the beginning, the STRider network relied on 138 motorcycle riders to connect 1048 rural health units with 127 expert sites in seven of the 17 regions in the Philippines. Between 2020 and 2021, the network expanded to cover all regions comprising 350 STRiders assigned to 2705 rural health units, including health centres and barangay health stations, 281 government hospitals and 202 private hospitals. STRiders played a critical role in transporting biological specimens to diagnose HIV and support the provision of treatment for those living with HIV by covering 117 HIV treatment hubs and social hygiene clinics. The STRider network also covered 24 facilities providing COVID-19-related services.

Since the onset of the pandemic, STRiders have transported approximately 300,000 specimens for the diagnosis of TB. STRiders have helped to reduce the turnaround time from specimen collection to treatment initiation. They have provided more than 10,000 packages of TB medicines to patients, enabling them to take their medications at home rather than travelling to overburdened health-care facilities.
The STRIder network has helped many TB, HIV and COVID-19 patients who otherwise would have faced significant challenges and costs to access care or would have delayed or missed care entirely. In other words, STRIders have contributed to keeping patients within their care pathway, ensuring that the health system provided timely diagnosis and treatment despite the stresses and strains caused by the COVID-19 pandemic.

A recently published TB patient cost survey showed that 42.4% of TB-affected households in the Philippines faced catastrophic total costs (which includes direct medical expenditures, non-medical expenditures and income losses) due to TB. The total TB patient costs in the Philippines were primarily due to direct nonmedical costs such as transportation expenses and the economic burden expressed in terms of time lost travelling to and from health facilities as well as time spent at the facilities. By collecting sputum specimens from the nearest sputum collection centres and delivering treatment packages to patients at home, STRIders help to bring down catastrophic costs.

Presently, the WHO Country Office in the Philippines continues to work with the Department of Health to assess the impact and scale-up of the STRIder network and determine how to progressively include other disease programmes into the network to implement the country’s Universal Health Care Act.

The COVID-19 pandemic posed unprecedented threats and further exacerbated challenges related to ensuring access to TB testing and detecting TB cases. Although TB notifications decreased compared with previous years and the long-term effects of COVID-19 on TB outcomes are yet to be unveiled, the Philippines, with support from WHO, identified approaches for sustainable operations (e.g. leveraging existing networks to keep essential services operational) and for helping to build resilient health systems. Improving access to TB testing services and supportive care remains a priority and will continue in order to keep advancing the For the future vision.

HIV self-care and innovative testing approaches in the Philippines

Increased HIV self-testing

The Philippines is one of a few countries globally that have a rapidly growing HIV epidemic among key populations, in particular men who have sex with men. In 2020, it was estimated that nearly one third of HIV-positive people in the Philippines were unaware of their HIV status.¹ HIV testing in the Philippines is available free of charge through government clinics and community-based organizations, yet uptake among key populations remains low. To reduce the gap in HIV diagnosis and treatment uptake, new and innovative approaches are needed.

In 2020–2021, WHO provided technical support to the Global Fund-funded Sustainability of HIV Services for Key Populations in Asia (SKPA) programme, through the Australian Federation of AIDS Organisations and the Differentiated Service Delivery Strategic Initiative. The support provided by WHO included developing protocols for an HIV self-testing demonstration project; establishing an online platform to order self-test kits; creating demand through virtual channels such as social media; and aiding the adoption of service delivery models. During the demonstration project, more than 4000 people expressed interest in HIV self-testing and 2543 eligible clients registered online. Despite measures and movement restrictions related to the coronavirus disease (COVID-19), 66% of registered clients received blood-based HIV self-test kits and 76% of them reported their test result. Of those who reported results, 94 (7.3%) had a reactive test result; as at March 2021, 56 (60%) of those with a reactive result had been linked to confirmatory testing and care. The high HIV positivity rate, with nearly one third of those

The virtual platform on HIV self-testing. Photo credit: LoveYourself Inc.
with reactive results being first-time testers, suggests that HIV self-testing effectively reached key populations who had not previously been reached for testing.

How did the Philippines, with the support of the WHO Secretariat, achieve this?

- **Creating an HIV self-testing project:** In 2020, an HIV self-testing demonstration project was developed for men who have sex with men and transgender women in Manila under the SKPA programme. The project received technical support from across the three levels of WHO. The Department of Health of the Philippines provided confirmatory testing, treatment and care through government health facilities; a community-based organization, LoveYourself, implemented the project.

- **Conducting a survey to better understand people’s knowledge and attitudes about self-testing:** A survey and interviews were conducted among men who have sex with men and transgender women to understand their knowledge and attitudes towards HIV self-testing. Half of survey respondents were aware of HIV self-testing and 57% were aware of its availability. Nearly all respondents were interested in using self-testing, although some had concerns about conducting the test correctly and the steps to take if they had a reactive result. Most expressed a preference for a blood-based self-test, and 70% said that they would prefer to order the test kit online and have it delivered. The findings were used to inform the design of the HIV self-testing distribution model and mobilization activities.

- **Implementation through a virtual platform:** In March 2020, an HIV self-testing demonstration project was launched. SelfCare was developed to enable people to order HIV self-test kits. Clients could choose to conduct the test at a time and place of their preference and report their test result via a virtual assistant (chatbot), text message or phone. They could talk to a LoveYourself peer counsellor by calling a hotline. If the test result was non-reactive, the client would be linked to appropriate prevention services. If reactive, they would be encouraged and supported to go for confirmatory testing. This included assistance with finding the nearest health facility that offered confirmatory testing, providing a transport subsidy if required or offering to accompany the person to the facility (although the last was affected by COVID-19 restrictions).

- **Creating demand:** Owing to COVID-19 restrictions, online platforms and social media were primarily used for creating demand for HIV self-testing. Social media and Internet usage is high in the Philippines (68% of the Philippine population use the Internet, and 99% have a Facebook account). Therefore these are effective ways to raise awareness and promote HIV self-testing. Messages about HIV self-testing were also integrated into other social media campaigns promoting HIV testing and raising awareness about prevention.
• **Replicating results:** In 2020, another HIV self-testing project, using a similar approach, was implemented in the city of Iloilo by the Family Planning Organization of the Philippines, with technical support from the WHO Country Office in the Philippines. More than 1000 kits were distributed. Similar success was achieved in reaching previously undiagnosed men who have sex with men and first-time testers.

Findings from these projects suggest that HIV self-testing and use of virtual approaches for generating demand and distributing HIV self-testing kits can be effective in reaching key populations who otherwise would not test for HIV. They can also facilitate continuity of services when access to health facilities is limited, such as during COVID-19. The projects will inform the update of national guidelines to include HIV self-testing and support scale-up and routine availability of HIV self-testing to key populations.

Counting every breath: leveraging the COVID-19 response to increase access to medical oxygen in Somalia

Solar-powered oxygen systems save lives in Somalia

In mid-2020, when the first wave of the coronavirus disease (COVID-19) pandemic hit Somalia, the fragility of the health system to manage patients with severe symptoms was brutally exposed. Lives were needlessly lost owing to a lack of medical oxygen and supplies. On the basis of the WHO Biomedical equipment for COVID-19 case management – inventory tool,1 the WHO Country Office in Somalia assessed the availability of oxygen sources and planned for a surge in demand for oxygen as COVID-19 cases spiked. The inventory survey revealed that 26% of the surveyed health facilities had at least one oxygen source, while 4% had oxygen concentrators and only 22% had access to oxygen cylinders. The gaps in the available supply of medical oxygen were alarming. To bridge them, WHO developed a data-driven strategy to scale up access to and availability of medical oxygen in Somalia.

How did Somalia, with the support of the WHO Secretariat, achieve this?

The first phase of WHO’s strategy was to equip all 1200 primary care centres with oxygen concentrators and distribute pulse oximeters to over 3000 community health workers. As only one in four health facilities in Somalia had access to uninterrupted electricity, WHO also set up solar-powered oxygen concentrators in remote health centres across the country. In settings where access to electricity is neither consistent nor guaranteed, installing solar-powered medical oxygen equipment in paediatric hospitals was one of the most innovative and cost-effective solutions for providing secure access to oxygen. In the 11 months following the installation of the solar-powered medical oxygen systems, 476 care seekers presenting with very low oxygen saturation levels received medical oxygen. Of those, 95% (452 care seekers) were discharged without complications following normalization of oxygen levels. Children aged under 5 years comprised 62% of those who received oxygen from the solar-powered systems. In most cases, mean oxygen saturation levels improved from 40% to over 98% within one to two days. Although the solar-powered medical oxygen systems were initially set up to support case management of COVID-19 patients, children with neonatal asphyxia, pneumonia and other acute respiratory diseases soon represented the majority of patients.

A child with pneumonia receiving oxygen in De Martino Hospital, Mogadishu, Somalia. Photo credit: WHO/Fouzia Bano
The introduction of solar-powered medical oxygen systems in Somalia has demonstrated the power of innovation to accelerate impact in fragile settings. The solar-powered systems in Somalia were financially supported by Grand Challenges Canada and the University of Alberta. WHO worked across the three levels of the Organization – headquarters, regional offices and country offices – to set up the systems in Somalia. Other specialized agencies of the United Nations system and implementing partners provided support to turn the idea into reality on the ground. WHO is working with the multi-partner collaboration, Global Action Plan for Healthy Lives and Well-being for All (SDG3 GAP), to match the demand and supply of life-saving oxygen in the country. The implementation of this innovative solution is coupled with research supported by the United Nations Children’s Fund (UNICEF), the United Nations Development Programme, the World Bank and the Special Programme for Research and Training in Tropical Diseases to gather evidence of the systems’ feasibility, utilization, cost-effectiveness and survival in complex contexts such as Somalia.

As a smart investment for Somalia, the WHO Country Office aims to facilitate scaling up the solar-powered oxygen systems, as well as pressure swing adsorption (PSA) plants, to bridge gaps in access to medical oxygen in the country. Replicating the systems can save many more lives and help Somalia to inch closer to attaining WHO’s triple billion targets and the health-related Sustainable Development Goals. In 2018, pneumonia killed an estimated 15,165 children under 5 in Somalia (about 21% of child deaths); this is approximately two children every hour. Global evidence indicates that up to 35% of childhood deaths from pneumonia are preventable with the use of simple medical oxygen. Therefore, the WHO Country Office in Somalia is hopeful that strategic partnerships forged with innovators, funders, SDG3 GAP agencies and the private sector will increase demand for medical oxygen and innovation and accelerate the public health impact of the initiative. As at December 2021, WHO had delivered and installed two containerized PSA oxygen plants in two central locations as part of the drive to scale up the availability of oxygen. Each plant can deliver bedside oxygen to 25 intensive care unit patients through a pipeline and can refill 100 40-litre oxygen cylinders per day. By leveraging the COVID-19 response, WHO aims to increase access to medical oxygen in Somalia to reverse the gross health inequities observed in one of the most disadvantaged countries in the world. Furthermore, such innovative solutions could be exemplary in other settings.

Strengthening primary health care in fragile settings: South Sudan

Partners aligned to primary health-care priorities

South Sudan has experienced protracted conflict, both before and since the country gained independence in 2011. In 2021, more than 8 million people of South Sudan’s population of 13 million needed humanitarian assistance because of conflict and violence, major flooding and the coronavirus disease (COVID-19) pandemic. With poor access to health services due to an acute health workforce shortage, inadequate health infrastructure and poor health service utilization, the country has poor health indicators.1,2 Its maternal, infant and child mortality rates are some of the highest in the world and life expectancy is low, at 56.5 years.3

The Global Action Plan for Healthy Lives and Well-being for All (SDG GAP)4 brings together 13 multilateral health, development and humanitarian agencies, including WHO, to better support countries in accelerating progress towards the health-related Sustainable Development Goals (SDGs).5 Together, they work to advance the targets of SDG 3 (Good health and well-being) and collectively channel about one third of global development assistance for health annually. In South Sudan, development assistance is
crucial as government funding for health is low, at less than 2% of the national budget, and out-of-pocket spending accounts for about 54% of total health expenditure, putting many South Sudanese people at risk of catastrophic health costs. Since 2020, SDG3 GAP agencies, including WHO, have been working with the Government of South Sudan to progress towards universal health coverage and the health-related SDGs. Despite some delays to progress due to COVID-19, key health sector coordination mechanisms have already been revitalized and SDG3 GAP agencies and other partners have begun to align more closely with the country’s primary health care (PHC) priorities.

**How did South Sudan, with the support of the WHO Secretariat, achieve this?**

- **Identifying priority challenges**: WHO, in collaboration with the United Nations Children’s Fund (UNICEF), supported South Sudan’s Ministry of Health in identifying priorities. These included strengthening leadership and governance, health commodity and supply-chain management, equitable service delivery and community systems strengthening. In December 2020, priorities were presented to agencies in the GAP PHC accelerator working group.  

- **Developing an evidence-based strategic plan**: The Government of South Sudan aims to transition from humanitarian relief to longer-term health sector development, as is reflected in the country’s strategic plans and health initiatives. In 2021, to inform the next health sector strategic plan, WHO collaborated with the Ministry of Health to conduct a health sector performance review. The resulting policy dialogue on national priorities led to a commitment from the Government of South Sudan to anchoring the COVID-19 recovery strategy in PHC, plus consensus among development partners.

- **Coordinating stakeholders**: To foster PHC as the path to universal health coverage and ensure health partner interventions are harmonized and aligned with national health sector priorities, WHO advocated among partners to revitalize South Sudan’s health development partners forum secretariat. Now up and running, WHO co-chairs the committee and manages the secretariat. WHO also provides technical expertise to the secretariat of South Sudan’s Health Sector Steering Committee, a coordination platform that enables government and development partner leaders to discuss key policy and strategic sector issues. In 2021, WHO provided funding support to the secretariat of the Health Sector Steering Committee to cover staff incentives, transportation and basic operational costs such as for information and communications technology (ICT) equipment.

- **Developing an action plan for implementation**: In February 2021, the GAP PHC accelerator working group created a South Sudan working group. As a member of this working group, WHO collaborated at the global and country levels to develop an action plan. The plan is being used to map available financing, identify gaps and advocate for additional resources.
- **Building capacity:** WHO deployed facilitators to the Ministry of Health to conduct leadership and management training on key health sector leadership and governance structures, principles and skills. Delivered to 48 senior national and state-level leaders in Juba in August 2021, the training resulted in key recommendations being made to improve health sector leadership and governance. These were endorsed as key declarations during the inaugural Ministerial Advisory Board, facilitated by WHO and convened and chaired by the Minister for Health.

WHO continues to work alongside the Ministry of Health as part of the SDG3 GAP partnership in South Sudan, advocating for resources and building the leadership capacity necessary to strengthen the health system.

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Introducing and extending oxygen therapy to COVID-19 patients in the Plurinational State of Bolivia

Improved access to medical oxygen

On 11 March 2020, the first case of the coronavirus disease (COVID-19) was diagnosed in the Plurinational State of Bolivia. Two years later, the total number of cases reached nearly 900 000. The country has witnessed four waves of COVID-19, each having a higher peak than the previous one. This situation has caused bed occupancy to increase with each wave, despite a substantial increase in hospital intensive care unit (ICU) beds. The health system now has a total of 2473 hospital beds and 508 ICU beds, more than triple the figures prior to the pandemic.

On 20 January 2022, the day the country registered its all-time highest daily number of new COVID-19 cases (n=1011), the hospital bed occupancy in the public health-care system reached an average of 43% and ICU bed occupancy reached 65%. Santa Cruz de la Sierra, the country’s largest city, and Oruro, a city 200 km south of La Paz (the seat of the government), experienced an alarming average of 81%. In the previous three waves of the pandemic, the hospital and ICU capacity rapidly reached 100% bed occupancy in all nine departments of the country. Oxygen therapy in the first level of referral provides early oxygen support to COVID-19 patients, as well as reducing the
number of patient referrals to secondary- and tertiary-level hospitals and ICUs, thereby avoiding overburdening capacity. Moreover, there is the social and psychological benefits of keeping patients relatively near to their family and community, as stricter regulations in hospitals due to COVID-19 prevent family members from providing such support.

In mid-May 2021, the Ministry of Health, within the framework of the Bolivian universal health strategy, the Sistema Único de Salud, with the technical assistance of the Pan American Health Organization (PAHO)/WHO, announced the implementation of a comprehensive plan aimed at providing oxygen therapy for all levels of care in the public health system.

**How did the Plurinational State of Bolivia, with the support of the WHO Secretariat*, achieve this?**

Focusing on the first level of care, PAHO/WHO donated 260 oxygen concentrators to the government to reinforce its COVID-19 response. A further 360 hand oximeters, 592 finger oximeters and other supplies, worth US$ 365 304, were also donated. A second set of 50 oxygen concentrators was provided in early February 2022.

By the end of November 2021, the Ministry of Health’s strategy to cope with moderate COVID-19 cases had been reinforced with the support of high-flow oxygen therapy. PAHO/WHO donated 20 high-flow oxygen therapy devices, which were distributed by the Ministry of Health to four large urban hospitals: El Alto Sur, Cochabamba Norte, San Juan de Dios Oruro, and Santa Bárbara.

In addition, practical and technical support was given to those hospitals. Hands-on training for the correct use of high-flow oxygen therapy devices was given to 120 health-care professionals (specialists, general doctors and nurses). Furthermore, the Ministry of Health acquired 150 additional high-flow oxygen therapy devices, and PAHO/WHO has promised to provide a second round of training on the use of the additional equipment.

With the support of PAHO/WHO, the country has strengthened its capacity to provide oxygen in a sustainable way, both in primary-level health-care facilities and in key secondary- and tertiary-level hospitals. It is expected that the benefits of this strategy will reach beyond the COVID-19 pandemic, as Bolivians now have better access to oxygen for a wide array of needs. With this comprehensive multilevel approach, it is more likely that fewer patients will need intubation and ICU in the future.

* PAHO was established in 1902 as the specialized health agency of the Organization of American States within the inter-American system. In 1949, through an agreement with WHO, PAHO agreed to serve as the WHO Regional Office for the Americas.
Renewing the pledge to end tuberculosis in Timor-Leste

High-level commitment to end tuberculosis

Tuberculosis (TB) is one of the world’s deadliest infectious diseases. In Timor-Leste, TB affects an estimated 508 per 100,000 population annually. The country has the second-highest incidence rate of TB in the WHO South-East Asia Region and is in the top 10 for the highest incidence rates in the world. Although the burden of TB in the island country is not unknown or new, it is complex. In 2021, there were an estimated 18 new cases of TB each day. Malnutrition and smoking, both having historically been highly prevalent in Timor-Leste, are the top two known drivers of the TB epidemic. The coronavirus disease (COVID-19) pandemic has further affected TB services, leading to an over 20% decline in case notification, which is likely to lead to an increase in cumulative TB cases and cumulative deaths. Consequently, the immense efforts made in improving outreach of services and providing quality care over the past two decades are under threat of derailment. To stem the rising tide of TB and ensure fructification of efforts, Timor-Leste, with support from WHO, renewed its pledge to end the disease.
How did Timor-Leste, with the support of the WHO Secretariat, achieve this?

Noting that “business as usual” will not result in achieving the goal of ending TB, the Ministry of Health, with technical support from the WHO Country Office in Timor-Leste, organized a pledge signing ceremony, a first-of-its-kind initiative to address TB. The Prime Minister, Taur Matan Ruak, signed a pledge that envisions comprehensive support and actions to end TB in Timor-Leste. This high-level event was attended by the Minister of Health, the Vice Minister of Health, the Minister of State Administration and the Director General of Health Services, along with other senior officials from the Ministry of Health and other ministries, as well as the WHO Representative and the United Nations Resident Coordinator. The event was also attended by ambassadors of resident embassies and members of the diplomatic corps, including country representatives of the United Nations and international agencies, members of civil society and nongovernmental organizations, and national and international development partners. At the same time, the Prime Minister launched the National Plan for Accelerated Actions for Ending TB by 2025.3 The accelerated actions included the introduction of a one-stop mobile TB diagnostic van, portable digital X-ray with artificial intelligence, smart TB-medicated container kits and a transition towards a case-based electronic surveillance system.

*We are not satisfied with these figures in the Global tuberculosis report 2021 for Timor-Leste nor are we resigned to the results obtained in recent years. It is in this sense that today, as the Head of Government, we renew our unbreakable commitment to end tuberculosis.*

Taur Matan Ruak
Prime Minister of Timor-Leste

Investing in the fight against TB and other diseases with a high risk of contagion is not only an expense but also a wise decision by any government to enable the people and country to succeed.

*Investing in TB makes huge economic sense with a return of US$ 43 against US$ 1 and so it is prudent for me to advocate for higher allocation of domestic resources. WHO is committed to extending the most scientific and actionable technical assistance and partner with all stakeholders in supporting the Ministry of Health and people of Timor-Leste in realizing their vision of ending TB.*

Dr Arvind Mathur
WHO Representative to Timor-Leste

As the key technical partner and lead grant proposal developer for Global Fund funding requests, WHO convened country dialogues with community representatives and other stakeholders, during which recommendations were made for intensified TB control efforts through better community response and engagement. The recommendations are now among the guiding tools in the collective fight against TB, even during the COVID-19 pandemic.
I was diagnosed with TB during the pandemic, but I am under medical care and continuing the treatment. I do my best to persuade friends and families to visit the nearest health-care centre [to] seek medical help when they suspect they have TB. I also explain to them the symptoms and what to look out for.

Leandro Soares
TB warrior

Notwithstanding the COVID-19 pandemic, we plan to continue the outreach activity, i.e. to screen individuals and households. We are continuing with community outreach, sensitizing them so that we improve the screening rates.

Constantino Lopes
National Programme Manager, TB

This momentous milestone was preceded by progressive efforts from the WHO Country Office to fully activate high-level leadership in order to drive multisectoral action to end TB, in line with the WHO multisectoral accountability framework. The WHO Representative played a pivotal role in reinforcing the vital importance and necessity of high-level political engagement for ending TB in Timor-Leste. Following a series of meetings of key officials from the Office of the Prime Minister, the Minister of Health and the WHO Representative, the high-level pledge signing was strategically organized on 30 September 2021 to reaffirm the country’s commitment for concerted, cohesive and collaborative actions to accelerate progress in ending TB and to ensure the implementation of the accelerated plan of action.

Empowering communities to prevent and self-manage noncommunicable diseases in Trinidad and Tobago

Communities in Trinidad and Tobago empowered to improve their health

Trinidad and Tobago, like many countries around the world, is facing a growing burden of noncommunicable diseases (NCDs), such as heart disease, stroke, cancer, diabetes and chronic lung disease. These chronic conditions account for about 83% of deaths each year, with almost half occurring in people under 70 years of age. The probability of premature mortality from NCDs is 17%. The prevalence of NCD risk factors, such as physical inactivity (38% in adults aged 18+; 82% in adolescents aged 11-17), obesity/overweight (65% in adults aged 18+; 32% in adolescents aged 10-19; 42% in children aged 5-9), and harmful alcohol use (31% heavy episodic drinking in adults aged 18+) remains high among the country’s population, placing them at greater risk of developing a chronic illness. The country’s experience shows that empowering and equipping communities to take charge of their health through prevention and self-management of chronic conditions are effective ways to build healthier populations and achieve health for all.

Dr Michael Jaggernauth, a primary health-care physician working in the South-West Regional Health Authority in Trinidad, lives with diabetes. Despite being a medical professional, he had struggled to maintain and manage his own condition. This is not uncommon. Although people know in theory that adequate exercise and a healthy diet may help to improve their condition, they find it difficult to make the necessary lifestyle changes, where appropriate, to improve their health.

Then he took part in a training course that changed his perspective – Trinidad and Tobago’s chronic disease self-management course, implemented by the Pan American Health Organization (PAHO)/WHO, with the support of the Universal Health Coverage Partnership (UHC Partnership).

Chronic illnesses make you tired, with poor sleep and physical limitations. This programme has given me many more tools to work with, and I am seeing much improvement in my health. I am sleeping better, I am exercising better, and my weight is better controlled. Having realized the benefits of the programme, I see myself as an advocate or mentor to other people with chronic illnesses who may be struggling to manage their conditions. I would like to help train them and the wider community so that more people can benefit. It is going to expand, and illnesses will become less challenging for the population.

Dr Michael Jaggernauth
A lead trainer
Dr Jaggernauth was one of 25 people trained as lead trainers, from a range of state and non-state organizations across Trinidad and Tobago, who took part in this training initiative to either manage their own NCDs or become lead trainers to share knowledge in their communities. People are also referred to the training programme from local health centres. This community-based approach has increased the knowledge, skills and confidence of people to care for themselves and manage their condition effectively.

How did Trinidad and Tobago, with the support of the WHO Secretariat*, achieve this?

The Ministry of Health, with PAHO/WHO’s expertise, designed the chronic disease self-management course to ensure that people in communities are empowered. Using support groups, each person trained is encouraged to help each other to make healthy lifestyle choices and manage their own NCD conditions. The approach is also integrated into the health system so that people can get the appropriate type of support when necessary.

Over time, the initiative will be scaled up nationwide, with a plan to train more lead trainers over the next two years to reach all communities. Since its initial run of 25 people, the chronic disease self-management course has now trained 75 people living with NCDs. WHO is also working with several participants to document the impact of the course on their lives.

Achieving health for all begins with communities that are empowered to improve and protect their health. Trinidad and Tobago is among the 115 countries that the UHC Partnership helps to deliver WHO support and technical expertise in advancing universal health coverage with a primary health-care approach. The UHC Partnership is one of WHO’s largest initiatives for international cooperation on universal health coverage and primary health care.


* PAHO was established in 1902 as the specialized health agency of the Organization of American States within the inter-American system. In 1949, through an agreement with WHO, PAHO agreed to serve as the WHO Regional Office for the Americas.
Leaving no one behind: WHO spearheading health services for Syrian refugees in Türkiye

Spearheading a refugee health programme

Over a decade of conflict in the Syrian Arab Republic has pushed more than 3.7 million Syrian refugees into Türkiye. By 2016, the Turkish health system had been heavily strained. In response, a system was developed through which refugees could access free primary health-care services. Syrian refugees in Türkiye face multiple challenges: language barriers when seeking care, a lack of information on their rights to health-care services and limited knowledge of the modalities of the Turkish health-care system. In 2017–2021, the WHO Country Office in Türkiye supported the country in establishing the Refugee Health Programme, reaching over 2 million Syrian refugees through a three-dimensional approach: (1) promoting access to care; (2) training Syrian health workers in order to expand the workforce; and (3) enabling culturally sensitive health services in the native language of the beneficiaries.

Since 2017, the WHO Country Office, together with the Ministry of Health, has provided theoretical training to about 1200 doctors and 1100 nurses from the Syrian Arab Republic. Over 2000 patient guides have been distributed, including bilingual patient guides. Before working in the refugee health centres, doctors and nurses receive six weeks of practical training in seven refugee health training centres operated by WHO. Building on existing skills and talent, this offers a unique pathway for Syrian health professionals to enter the Turkish health workforce to serve their own people. The training centres came to serve as a model, providing a comprehensive service package, and the services have now been adopted in other similar centres established by the Turkish Ministry of Health. As a result of WHO support,
over 720,000 consultations have been provided to refugees and migrants, two thirds of whom women and children, in the seven training centres in seven project provinces. In the two years before the coronavirus disease (COVID-19) pandemic, the number of consultations increased by 20% owing to improvements in availability, access and quality of consultations. The increase reflected growing trust in the provided services. WHO has also trained more than 400 Syrian people, mostly women, to serve as community health support staff in the seven provinces; they now work in the field to provide home care services, conducting over 30,000 home visits annually to assist the more vulnerable (women, children, older adults and people with disabilities). Assistance includes individual care for bedridden patients, support for home hygiene, blood pressure monitoring, blood sugar monitoring and delivery of health messages especially relating to children and female reproductive health.

How did Türkiye, with the support of the WHO Secretariat, achieve this?

Establishing refugee health training centres: In late 2016, the WHO Country Office provided support to renovate and equip seven refugee health training centres in seven provinces to:

- provide training for Syrian health workers;
- alleviate stress on human resources; and
- enable cultural competence in health service provision.

- **Supporting migrants in the Turkish health-care system:** The Ministry of Health hired Syrian doctors, nurses, translators and community health service support staff (all trained in cooperation with the WHO Country Office) to serve in a network of 180 migrant health centres, supported by the European Union under its EU Facility for Refugees in Turkey programme. The WHO Country Office developed the training programme with academia and the Ministry of Health's technical units. In this capacity, the programme:
  - trained about 1200 Syrian doctors, 1100 Syrian nurses and 81 Syrian technicians;
  - trained more than 400 Syrian people (mostly women) to serve as community health workers;
  - developed more than 1300 bilingual patient guides; and
  - offered on-the-job training to over 5000 Syrian and Turkish health workers serving refugee populations to meet WHO standards of quality in care.

- **Adapting to the COVID-19 pandemic:** To prevent a standstill during the COVID-19 pandemic, in the second half of 2020, training sessions for health workers were adapted to be accessible via a distance-learning platform developed by the WHO Country Office. The platform was restructured to ensure a user-friendly e-learning experience. With the support of the Ministry of Health and funding from the European Union, this first-of-its-kind platform became operational in January 2021 and became the Ministry of Health/WHO Country Office’s reference training programme for health workers providing services to refugees and host communities in Türkiye.
• **Prioritizing mental health:** Refugees have faced war, persecution and extreme hardship. Upon migration they lose protective supports, face language and cultural challenges and numerous other realities that can affect their mental health. To address those needs, the refugee health centres have applied a holistic approach since the outset. The WHO Country Office has supported 42,688 psychosocial support consultations for refugees and set up a training programme for service providers to provide quality mental health and psychosocial support services. In 2018–2021, over 1,500 Syrian and Turkish doctors completed the training on the WHO mental health gap action programme, equipping them with skills to identify, diagnose, treat and refer cases needing mental health and psychosocial support in non-specialist health settings. A 2021 impact assessment revealed improved diagnosis of mental health disorders and high patient satisfaction with mental health and psychosocial support services from the trained doctors.

• **Providing home care consultations:** A total of 42,180 home care consultations have been provided to refugees with disabilities and elderly refugees.

• **Conducting research:** To increase knowledge about refugee and migrant health and support planning, implementation and evaluation, the WHO Country Office conducted 12 research projects in 2020–2021 covering areas such as mental health, pharmaceutical care, noncommunicable diseases and health worker satisfaction among the Syrian refugees.

Universal health coverage means that all people have access to the health services they need, when and where they need them, without financial hardship. It includes the full range of essential health services, from health promotion to prevention, treatment, rehabilitation and palliative care. Achieving universal health coverage for refugees requires addressing many barriers to health-care utilization as well as strong government support, demonstrated by the Government of Türkiye’s decision to ensure access to free primary health-care services for all registered refugees.

Humanitarian crises require responses to be adaptable to changing needs. Effective cooperation between the WHO Country Office, the Ministry of Health and other partners (the European Union; KfW Development Bank; the United States Bureau of Population, Refugees and Migration; the Norwegian Agency for Development Cooperation; and academic institutions) was key to the success.

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Integrating cervical cancer screening with HIV care in Zambia’s Eastern Province

Increased cervical cancer screening rates

Cervical cancer is the most common cancer among women in Zambia and accounted for 40% of incident cases of all cancers in females of all ages in 2020. In 2020, the country had the third-highest age-standardized incidence rates (65.5 per 100 000) and third-highest age-standardized mortality rates (43.4 per 100 000) globally for cervical cancer. Cervical cancer is caused by chronic human papillomavirus (HPV) infection. It progresses slowly from the pre-cancer stage to invasive cancer and is entirely curable if diagnosed and treated early. The country’s high incidence of cervical cancer is linked to the heavy burden of HIV/AIDS, with female adult HIV prevalence at 13.8% in 2018.

In 2020, WHO increased funding and investment in Zambia’s health system to expand cervical cancer screening service coverage and build health worker capacity to manage the screening and treatment of cervical abnormalities. Cervical cancer screening rates increased in WHO’s geographical area of focus: Eastern Province, one of the largest rural provinces in Zambia. More than 34 000 of the 60 000 WLHA in Eastern Province were screened between 2019 and 2021, potentially saving hundreds of lives.
How did Zambia, with the support of the WHO Secretariat, achieve this?

- **Taking a strategic approach informed by the latest evidence**: To eliminate cervical cancer, Zambia is implementing cost-effective interventions nationwide guided by international best practice, including the WHO Regional Committee for Africa’s framework for implementation, the WHO guideline for screening and treatment of cervical pre-cancer lesions, and the WHO guide to essential practice for comprehensive cervical cancer control. As new scientific evidence has emerged, recommended approaches to cervical screening have shifted. With WHO technical support, Zambia has kept abreast of the evidence. For example, HPV testing has been shown to be more cost-effective and impactful in reducing morbidity and mortality than visual inspection with acetic acid (VIA) screening. Therefore Zambia obtained financial support to transition from VIA screening to HPV testing as the primary screening modality.

- **Targeting cervical cancer screening towards WLHA**: The WHO Country Office in Zambia provided technical support to develop the national cervical cancer screening guidelines. The guidelines target WLHA, as they are the segment of the population with the highest unmet need. HIV and cervical cancer screening services are synergistic. To improve their joint provision, cervical cancer screening services were included in the outreach packages delivered by the HIV team, and HIV testing was included in cervical cancer screening clinics. In many cases, cervical cancer screening sites were relocated to operate from within antiretroviral therapy clinics. A data-based approach was taken to select clinics with the highest volume of WLHA seeking care. The number of screening sites increased from two to 27 in one decade, greatly expanding access for women living in hard-to-reach areas.

- **Strengthening care pathways**: Delivering effective cervical cancer screening and treatment to WLHA in Zambia involves clinicians, pharmacists, laboratory staff, community health workers and the community. To develop an effective referral system, regular interdepartmental meetings were held to strengthen linkages between services. To better connect the community with the health system, WHO developed and disseminated information about cervical cancer and its relationship with HIV through existing sociocultural communication channels, including traditional leaders. This increased community awareness and therefore demand for cervical screening. Community antiretroviral therapy groups were formed, where WLHA could remind peers of their screening and review appointments.

- **Expanding capacity for screening**: WHO costed Zambia’s National Strategic Plan on Prevention and Control of Cervical Cancer, and additional equipment was then procured by other partners for screening sites in Eastern Province. WHO also provided technical and financial support to build human-resource capacity for cervical cancer screening and treatment. Training sessions included alerting staff within HIV treatment
and care services to the importance of cervical cancer screening for WLHA, as well as coaching nurses to identify and triage WLHA for cervical cancer screening at entry points to antiretroviral therapy clinics. More than 50 health-care workers were trained using the WHO-recommended training materials for cervical cancer screening using VIA, adapted to the local context.

- Zambia’s success on the path to cervical cancer elimination has been driven by a strategic approach to deploying evidence-based, cost-effective interventions. Collaboration between two synergistic health programmes enabled the cost-efficient expansion of cervical cancer screening services to reach those women most in need.

Leveraging timely surveillance to support tuberculosis service recovery during the COVID-19 pandemic in Zambia

Real-time tuberculosis surveillance

Every year, approximately 10 million people fall ill with tuberculosis (TB) globally. TB is preventable and curable with antibiotics – despite this, 1.5 million people died from TB in 2020, making it one of the world’s leading causes of death from an infectious agent.\(^1\) In Zambia, TB is one of the leading causes of morbidity and mortality, especially for people living with HIV. Timely detection, linkage to care and adherence to the TB treatment regimen are critical to achieving successful treatment outcomes, controlling the spread of disease and preventing the development of drug resistance in TB. Disruptions to the provision of, and access to, TB services caused by the response to the coronavirus disease (COVID-19) pandemic had a major negative impact on people with TB in Zambia. Eight weeks after the first COVID-19 cases were reported, in March 2020, there was an 18% reduction in weekly TB notifications throughout the country.

WHO promoted the use of real-time data and indicators to monitor the impact of the pandemic on TB services and the country’s response. Notifications of TB increased consistently thereafter, resulting in the notification of more cases (7.5–10.8% increase) in 2020 than in 2019, 2018 and 2017. Using real-time surveillance, Zambia demonstrated that it was possible to adapt to challenges posed by the pandemic and to improve essential health services to levels exceeding pre-pandemic times.

How did Zambia, with the support of the WHO Secretariat, achieve this?

- *Establishing performance indicators to enable TB service monitoring:* The number of monthly or quarterly notifications of people diagnosed with TB reflects the capacity to provide TB services, as well as the continued ability of people to seek care. The COVID-19 pandemic led to movement restrictions, which resulted in reduced health-care-seeking behaviour among people with TB in Zambia. The Ministry of Health, with technical support from WHO, responded by establishing closer monitoring. Weekly performance targets (indicators) for TB services were established, including notifications of both drug-susceptible and drug-resistant TB at the national, provincial and district levels, and performance indicators shared electronically with all districts.

- *Instituting weekly data reviews at all levels of health-care systems:* To inform the response to TB and HIV interventions, progress was monitored weekly through data-driven reviews, with technical support from WHO. Weekly interactive discussions were set up virtually with at least 80 participants. Key performance indicators were summarized for weekly performance
targets and shared with all districts before the virtual discussions for validation and analysis and to prompt further action and response. The weekly meetings were used to track progress against set targets and to identify and address emerging challenges to the TB response, such as the availability of GeneXpert cartridges or anti-TB medicines. The data indicated gaps, allowing solutions to be rapidly identified to restore services. WHO responded to the gaps by providing technical and financial support for the procurement of GeneXpert cartridges and TB medicines.

- Developing strategies to improve diagnosis, initiation of care and reporting of people with TB: Where data revealed gaps, district and provincial officers were encouraged to discuss challenges and identify solutions. High-performing districts and provinces were given the opportunity to share best practices through webinars and in-person workshops, and low-performing districts shared their challenges and identified the support needed. All districts implemented best practices in case finding.

- Financing: This initiative was collaboratively financed through domestic resources, plus funding from the Global Fund, the United States Agency for International Development and WHO. Zambia has increased domestic funding sevenfold since 2015.²

As at August 2021, 130 countries and territories reported having in place a digital, case-based TB surveillance system. Country innovations that succeeded in mitigating or reversing the negative impacts of the pandemic have been shared in two WHO reports, published in 2021³ and 2022.⁴ WHO, together with partners, is supporting country implementation of digital packages for the collection, analysis, visualization and use of data from routine health facility information systems, as highlighted in a WHO toolkit.⁵

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Catalysing the global impact of projects to improve young people’s sexual health in Brazil and South Africa

Improving access to sexual health and PrEP services

Pre-exposure prophylaxis (PrEP) is the use of an antiretroviral medication by HIV-negative people to reduce the risk of acquiring HIV. Since 2015, WHO has recommended that people at substantial risk of HIV infection be offered PrEP as part of comprehensive HIV prevention. When used consistently, PrEP reduces the risk of HIV infection during sex by over 90%. Despite PrEP being an effective HIV prevention option, young people in many countries, particularly adolescents under 18 years old, have difficulty accessing it.

To improve young people's access to quality HIV prevention and to ensure that more adolescents and young people can access PrEP, WHO has provided technical support to South Africa’s Project PrEP and Brazil’s PrEP1519 since 2018. Financed by Unitaid, both projects aimed to generate much-needed implementation evidence on how to simplify PrEP service delivery, strengthen integration of services across health conditions and integrate new biomedical prevention options. Project PrEP targeted adolescent girls and young women, as they represent one third of new HIV infections in the country. PrEP1519 targeted adolescent men who have sex with men and transgender women, as incidence in those population segments had been increasing in Brazil since 2000. Project PrEP focused on four priority areas of South Africa, and PrEP1519 was implemented in three Brazilian cities.
The projects have contributed to improved provision of sexual reproductive health services for young people. More than 22,000 young people were initiated on PrEP in South Africa. In Brazil, the PrEP1519 project reached more than 4,500 adolescents with comprehensive sexual health services, and 1,200 young people were initiated on PrEP. Evidence generated from the projects has fed directly into policy. This has enabled the diverse health needs of PrEP users to be addressed on a large scale, improving their health outcomes and contributing to decreased HIV infections.

How did Brazil and South Africa, with the support of the WHO Secretariat, achieve this?

- **Mobilizing the community and generating demand**: PrEP will only be effective at preventing HIV if it reaches the people who will benefit from it, and if uptake and effective use are high. To achieve this, PrEP needs to be delivered to people in a way that is acceptable to them. The projects of Brazil and South Africa both aimed at young people. To ensure the projects were scientifically and ethically sound, WHO headquarters, the PAHO/WHO Country Office in Brazil and the WHO Country Office in South Africa collaborated with in-country partners to provide technical support for the design of the projects, and to gain ethical clearance from in-country institutional review boards and the WHO Research Ethics Review Committee. WHO’s technical support during implementation also enabled progress to be monitored to ensure corrective action and for results to be evaluated. Results showed that in South Africa, the MyPrEP website successfully reached over 100 million users. In Brazil, both online and in-person approaches were used to reach adolescents. These included the artificial intelligence chatbot Amanda Selfie, as well as informing adolescents about PrEP during in-person screening for sexually transmitted infections at nongovernmental health organizations working with lesbian, gay, bisexual, transgender, queer and intersex (LGBTQI+) people.

  *My relationship with [a peer navigator providing PrEP services] is amazing. … whenever I’m online and he’s online and I have something I need to ask and if he doesn’t answer right away he always answers as soon as he can.*

  Client of the PrEP1519 project, Brazil

- **Building capacity for service delivery**: Adolescent-friendly comprehensive sexual health services were developed in Brazil and South Africa. More than 8,000 service providers in four priority areas of South Africa and providers in more than 10 municipalities in Brazil were trained to deliver integrated PrEP services. Service providers were trained by the PrEP1519 and Project PrEP teams to ensure that a range of health issues would be addressed simultaneously. This included sexually transmitted infections,

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* Brazil: The Pan American Health Organization (PAHO) was established in 1902 as the specialized health agency of the Organization of American States within the inter-American system. In 1949, through an agreement with WHO, PAHO agreed to serve as the WHO Regional Office for the Americas.
contraception, mental health and gender-based violence. During the coronavirus disease (COVID-19), when access to facility-based services was limited, mobile and community-based services enabled continuity of care in South Africa, while in Brazil telehealth consultations and home-delivery of HIV self-test kits and PrEP ensured continued access.

**You can treat sexually transmitted infections and get PrEP and contraceptives from one person? You mean you don’t have to queue for each service?**

Student accessing Project PrEP services, South Africa

- **Learning across contexts:** The projects generated scalable tools and resources including digital platforms to create demand, such as the MyPrEP website and the MyPrEP mobile app. During COVID-19, with support from the WHO Country Office in South Africa, the MyPrEP app was adapted to broaden its use outside Project PrEP to support all PrEP users nationally. In addition, an online course for the delivery of PrEP, which is available on the MyPrEP website, ensured that health-care providers were capacitated in the effective delivery of PrEP. A close partnership was cultivated between the two projects, with WHO headquarters supporting frequent joint events, including webinars, in-country meetings and international conferences to facilitate cross-contextual learning. Lessons learned from PrEP delivery during COVID-19 were also synthesized and shared.4,10 WHO has used those to inform its guidance on maintaining essential health services.11
• **Translating learnings into policy and practice:** The WHO country offices in South Africa and in Brazil collaborated with the national authorities, the Ministry of Health of Brazil and the National Department of Health of South Africa, to ensure that the generated evidence fed directly into national programmes. In South Africa, the findings from Project PrEP fed into the South African national PrEP programme and the key learnings informed the national scale-up of PrEP in public health facilities. This led to the integration of PrEP with sexual and reproductive health services and catalysed the establishment of the national PrEP programme – one of the largest in the world. In Brazil, the results of PrEP1519 were critical to reducing the age of eligibility for PrEP in the national programme, to 15 years, thus removing a key barrier to access for adolescents. Implementation results and learnings were disseminated in WHO’s role as a convening body, through webinars, in-country meetings and regional and international conferences. Strong links were established with the WHO regional offices for Africa and for the Americas to support regional scale-up of PrEP by catalysing virtual space innovations in other PrEP services for adolescent girls and young women and young key populations: groups which increasingly have access to Internet-based platforms and use those for health information and health-care support. Findings from the projects also informed the WHO global guidance on differentiated and simplified PrEP service delivery. This new guidance, released at the 24th International AIDS Conference (AIDS 2022), gives extensive updates on how to provide PrEP in a people-centred and de-medicalized way to support more cost-effective and acceptable PrEP delivery for greater uptake and impact. The experience and data from Project PrEP and PrEP1519 supported the new approaches and innovations highlighted in this guidance.

• **Setting the scene for future PrEP:** During implementation of the two projects, two new long-acting PrEP products (a vaginal ring and injectable PrEP provided every eight weeks) became available. These offer additional options for people who find it difficult taking, or do not want to take, oral PrEP. WHO headquarters is working with Unitaid, Project PrEP and PrEP1519 to consider those long-acting PrEP options, alongside oral PrEP, as part of innovative implementation science.

Close collaboration with WHO at various levels ensured that the innovative approaches of the two projects translated quickly into changes in policy and practice, highlighting how WHO’s unique positioning and three-level structure can catalyse the impact of cutting-edge research at the national, regional and global levels. WHO has been closely involved in planning for the next phase of the projects, to ensure their local and global relevance.


8 Welcome to myPrEP.co.za [website]. Pretoria: Department of Health; 2022 [https://myprep.co.za, accessed 3 September 2022].


1.2 Reduced number of people suffering financial hardships
Supporting the national statistics bureau in generating data for indicator 3.8.2 of the Sustainable Development Goals

More data for informed policies

Angola is an upper-middle-income country in southern Africa. WHO provides technical support to Angola through five essential pillars: elimination of communicable and noncommunicable diseases; lifelong health; health systems strengthening; combating polio; and responding to emergency outbreaks and health crises. Good data enable health crises to be rapidly detected and responded to as they emerge, evidence-informed decisions to be made, targeted interventions to be designed, and resources to be mobilized. Steering health interventions effectively in Angola and monitoring progress are frequently challenging, as data are unavailable for many health indicators, including for many of the Sustainable Development Goals (SDGs).

The WHO triple billion targets1 were introduced in the WHO Thirteenth General Programme of Work as a mechanism to measure impact. The first triple billion target is 1 billion more people benefiting from universal health coverage (UHC), without financial hardship. Progress towards UHC is monitored on two dimensions (coverage of essential health services and financial hardship),2 and tracked via two UHC indicators out of the 15 indicators used to track the triple billion targets. The triple billion target indicators are aligned with the SDG indicators.

A front-line health worker providing health-care services in Luanda, Angola. Photo credit: WHO/Booming/Carlos Cesar
WHO provided support to Angola to strengthen its health information system and enable better data to be collected. Key data gaps were filled, and coordination mechanisms were strengthened to enable reporting. For example, data gaps were filled for SDG indicators 3.8.1 (Coverage of essential health services)\(^3\) and 3.8.2 (Proportion of population with large household expenditures on health as a share of total household expenditure or income)\(^4\). Angola is now among the 25% of countries worldwide, and 10% of countries in the WHO African Region, with recent (from 2018) data for SDG indicator 3.8.2.

How did Angola, with the support of the WHO Secretariat, achieve this?

- **Identifying key data gaps:** In 2018, WHO provided technical and financial support to Angola to enable the country to prepare its first report on baseline indicators for the SDGs. Data needed to estimate the triple billion target of UHC dated back to 2017 for the service coverage component (SDG indicator 3.8.1) and to 2008 for the financial protection dimension of UHC (SDG indicator 3.8.2) as it was based on a household income and expenditure survey conducted in 2008–2009.\(^5\)

- **Obtaining, validating and analysing data for SDG indicators:** Angola’s National Statistics Institute (Instituto Nacional de Estatística) oversaw a follow-up household income and expenditure survey between March 2018 and February 2019. The WHO Country Office engaged with government partners to first obtain the microdata and then, with technical guidance from the UHC team at WHO headquarters, conducted a preliminary analysis on SDG indicators 3.8.1 and 3.8.2. The UHC team then conducted a virtual data-validation session with a focus on financial protection. The session covered the key concepts, definitions, methodologies and data sources used for monitoring financial protection in health. Representatives from WHO headquarters, the WHO Country Office in Angola, Angola’s statistics bureau, the Ministry of Health of Angola and the World Bank were in attendance.

- **Reporting on progress:** The validated data were disseminated in the *Global monitoring report on financial protection in health 2021,*\(^6\) and were updated to 2019 and 2018 for SDG indicators 3.8.1 and 3.8.2, respectively, closing the gaps in information for both indicators. In 2021, Angola committed itself to the voluntary and participatory review of its implementation and follow-up, and presented for the first time its *Voluntary national review on the implementation of the 2030 Agenda for Sustainable Development.*\(^7\)

Collaborative working was essential for Angola to successfully strengthen its health information system, which was necessary to enable the country to report progress towards the SDGs and the triple billion targets. The WHO Country Office played a crucial role in fostering the collaboration of all major partners and in transferring critical knowledge to the national statistics bureau. This is expected to enable continuous monitoring of, and reporting on, those important targets. WHO continues to provide technical support to the Government of Angola to strengthen its health information system and enable better evidence-informed decisions to be made.
1. Outcome

Reduced number of people suffering financial hardships

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Ensuring sustainable financing for primary health care and universal health coverage in the Lao People’s Democratic Republic

Improving financial protection for vulnerable populations

The Lao People’s Democratic Republic has an ambitious agenda for achieving Sustainable Development Goal 3 – it seeks to ensure healthy lives and promote well-being across the life course, while undergoing economic, demographic and epidemiological transitions. The country is preparing to graduate from least developed country status by 2026, and with this it will experience a decline in development assistance in the coming years. While the Lao People’s Democratic Republic has worked hard to protect lives throughout the coronavirus disease (COVID-19) pandemic, the economic impact of the pandemic has been significant. The country’s gross domestic product is declining (it dropped from 4.7% in 2019 to −0.4% in 2020), debt burden is increasing and budgetary space for essential expenditures is constrained. Against this backdrop and the Government’s goal of achieving universal health coverage (UHC)\(^1\) by 2025, strengthening the resilience and sustainability of the health system is a priority.

A mother with her child from a remote village in Xiangkhouang Province. Photo credit: WHO Country Office in the Lao People’s Democratic Republic/ Yoshi Shimizu
How did the Lao People's Democratic Republic, with the support of the WHO Secretariat, achieve this?

Over the biennium, WHO supported the review and update of the Health Sector Reform Strategy to guide the country (and partners’ support) on its UHC journey over the next decade. Using “backcasting”, one of the operational ways of working from the WHO Western Pacific Region’s *For the future vision*, WHO facilitated a process of identifying future health needs and strengthening systems approaches. This process showed the need of strengthening the primary health care (PHC) system to future-proof the national health system for meeting the needs of an ageing population carrying a higher burden of noncommunicable diseases (NCDs). With the Government’s commitment to strengthening PHC in alignment with the decentralization policy (the Sam Sang directive), the Health Sector Reform Strategy provides strategic direction for strengthening PHC as a core foundation to reach hard-to-reach populations. Moreover, the Reform Strategy aims to improve the efficiency, resilience and sustainability of the health system in the context of donor transition and the pandemic in the country’s journey to achieve UHC. Through multisectoral action, the Reform Strategy also aims to empower subnational governments to strengthen health governance capacity and develop integrated health services with primary care and essential public health functions.

Recognizing the critical role that partnerships will play in facilitating implementation of the Reform Strategy, WHO supported the Ministry of Health to engage partners through a sectorwide coordination mechanism by co-chairing the Health Sector Working Group and supporting the alignment of development partners’ support with the Government’s priorities. WHO, the Gavi Alliance, the Global Fund, the United Nations Children’s Fund (UNICEF), the World Bank and other agencies that are signatories to the Global Action Plan for Healthy Lives and Well-being for All (SDG GAP), as well as members of the GAP sustainable financing for health (GAP SFH) accelerator working group, are providing coordinated support to the country in the area of health financing.

WHO supported the Ministry of Health in developing the Health Financing Strategy 2021–2025 for the transition from donor funding to domestic financing, which was adopted in October 2021 in close coordination with key partners, such as the Swiss Red Cross and the World Bank. The Health Financing Strategy aims to increase sustainability, accountability, efficiency and equity in the health system, explore innovative solutions to address health financing challenges and align development assistance more closely with the priorities of the Government. It provides a framework for support from signatory agencies to SDG3 GAP and other partners. In line with the priorities identified in the Health Financing Strategy, WHO worked with GAP SFH and other partners to explore how efficiency gains could be achieved across programmes, specifically at the PHC level, and how partners’ various efforts to introduce innovative financing mechanisms would help to address health financing challenges in the country’s context. The new Health and
Nutrition Services Access Project – jointly developed with the World Bank, the Global Fund, the Department of Foreign Affairs and Trade (DFAT) and other members of the GAP SFH accelerator working group – was an example of joint partnership to strengthen PHC through an innovative financing mechanism. WHO collaborated with GAP SFH partners and others to support the Ministry of Health in preparing the country for a smooth transition from external financing to domestic financing by enhancing investment in PHC in alignment with the Health Sector Reform Strategy and the Health Financing Strategy.

In addition, WHO provided technical support for the implementation of the National Health Insurance (NHI) scheme, which was rolled out nationwide in 2016 with the exception of Vientiane Capital. WHO played a significant role in facilitating the National Health Insurance Bureau in coordinating support from various partners for the NHI scheme. In 2019–2020,WHO conducted an assessment of the implementation of the NHI scheme, which identified key achievements, challenges and future priorities for improving the efficiency, equity and sustainability of the scheme. Further, WHO and multiple partners – including the International Labour Organization, the Swiss Red Cross and the World Bank – supported the National Health Insurance Bureau in conducting a costing exercise of the essential health services package and the NHI benefit package to provide critical data for the sustainability reforms of the NHI scheme. In line with the strategic direction of the Health Financing Strategy, WHO supported the Ministry of Health in updating the NHI Strategy 2021–2025, which was endorsed in September 2022, as well as is working to “reach the unreached” (a thematic priority of the For the future vision). WHO support aims to enhance governance and financing mechanisms and improve implementation of the NHI scheme, specifically in ensuring financial protection for vulnerable populations.

1.3 Improved access to essential medicines, vaccines, diagnostics and devices for primary health care
Increasing COVID-19 vaccination of indigenous populations in Colombia

Communicating on common ground

In 2021, the Colombian media reported that many indigenous people in the country would not accept being vaccinated against the coronavirus disease (COVID-19) on grounds of cultural practices and beliefs. The National Indigenous Organization of Colombia reported that the virus was present in 72 of the 115 indigenous communities, with 41,313 cases, and had caused 1,385 deaths.\(^1\) With 1.9 million indigenous people in Colombia, 82% of whom registered in the national Social Security and Health System, the challenge to change beliefs and behaviour was significant.

In August 2021, the Minister for Health stated that only 6% of the indigenous population had been vaccinated.\(^2\) To address the urgent situation, the Pan American Health Organization (PAHO) and the WHO Country Office in Colombia designed and rolled out a communications strategy tailored specifically for indigenous communities to promote acceptance of COVID-19 vaccines. Drawing from indigenous peoples’ customs, the strategy emphasized the use of oral communication: Vaccination brigades included indigenous translators. Training

![COVID-19 vaccination in the Colombian Amazonia. Photo credit: PAHO/WHO/Karen Gonzales](https://example.com/covid-vaccination-photography.jpg)
of trainers involving cultural leaders created a multiplier effect for dissemination of information. Moreover, free phone applications were distributed to vaccinators in remote areas to facilitate connectivity.

Before the end of the year, the communications strategy produced the desired results measured by increased vaccine uptake. In prioritized areas of the Amazonía region, for example, 34% of the indigenous population was vaccinated in 2021. By February 2022, one year after the initiation of vaccination against COVID-19 in Colombia, 36.7% of the indigenous population had been vaccinated.

How did Colombia, with the support of the WHO Secretariat*, achieve this?

- **Implementing a communications strategy with an ethnic approach and cultural adaptation**: The strategy included implementation of knowledge dialogues, risk communication workshops, development of actions, and communication pieces such as radio messages based on storytelling, video clips, billboards, etc.

- **Learning from research**: The ethnically appropriate communications strategy drew from the fields of medical anthropology and behavioural sciences and health education. Evidence from these two academic fields provided guidance on how to connect traditional and western science-based medicine to overcome vaccine resistance.

- **Mobilizing funds**: The Government of Colombia supported the initiative by financing the implementation of the strategy in the Amazonía region, within the framework of the Comunidad Andina de Naciones (Andean Community of Nations). Additional funds from the United Nations Central Emergency Response Fund and the Government of Canada were mobilized by the PAHO/WHO Country Office in partnership with the Government of Colombia.

- **Rolling out a tailored communications strategy**: By the end of 2021, the PAHO/WHO Country Office communications strategy had reached numerous indigenous communities in Tarapacá, Puerto Arica and La Chorrera in the Amazonía region; Barbacoas and Ricaurte in the Nariño province; municipalities near San Juan and the Atrato River in the Chocó province; and Sierra Nevada de Santa Marta in the Magdalena province.

- **Replicating through education and training**: The PAHO/WHO Country Office held a training workshop on intercultural health education and communication for 80 young people in the Nariño region and for leaders from 32 indigenous territories to confront the mass rejection of the vaccines by indigenous populations. Engagement of youth and indigenous leaders resulted in 5372 people accepting to be vaccinated.

- **Finding common ground**: Communication was established connecting western science-based and traditional medicine, and by promoting intercultural dialogue, common and shared beliefs and mutual respect.

* PAHO was established in 1902 as the specialized health agency of the Organization of American States within the inter-American system. In 1949, through an agreement with WHO, PAHO agreed to serve as the WHO Regional Office for the Americas.
To increase uptake of COVID-19 vaccines in indigenous communities in Colombia, it was necessary to demonstrate respect and recognition for indigenous cultures; understanding the relationship between health and disease; the system of knowledge; and appropriate ways to create dialogue respecting the perceived reality of the pandemic. The PAHO/WHO communications strategy to reach indigenous populations in Colombia proved effective for COVID-19 vaccine coverage and led to behaviour change because it included elements that appealed to both emotion and logic.

A key challenge in the near future will be to provide health workers in the indigenous regions with training in intercultural and ethnic approaches to COVID-19 vaccination and health. Similar strategies may be adapted for other populations and other health challenges, especially those facing the most vulnerable populations.


A first in the world: conducting a joint COVID-19 and HPV vaccines post-introduction evaluation in Maldives

Conducting field assessments of post-introduction evaluation

Maldives is one of the most geographically dispersed island nations in the world, consisting of 1192 islands grouped into 20 atolls, of which 187 islands are inhabited by a total population of 521 457 (as of 1 July 2021).¹

The roll-out of the coronavirus disease (COVID-19) vaccine programme in Maldives started in February 2021, applying the prioritization of WHO's Strategic Advisory Group of Experts on Immunization² and guidance from the Maldives Technical Advisory Group on Immunization (MTAGI). Eligibility for primary series vaccination was 12+ years of age, and for the booster dose 18+ years of age. Maldives achieved more than 80% coverage for the primary series of COVID-19 vaccinations among the eligible population.
In 2019, Maldives launched a human papillomavirus (HPV) vaccine campaign, introducing the vaccine into the routine vaccination schedule for girls from 10 years of age. Maldives performed a post-introduction evaluation of the deployment of COVID-19 vaccines in the country, together with a post-introduction evaluation of the HPV vaccine in the national immunization programme. The eight-day evaluation process was conducted in December 2021 in seven atolls and the Greater Malé region; it consisted of four steps:

- a desk review of key documents;
- field visits to vaccination sites, including observations of cold and dry storage areas and of vaccination performance;
- stakeholder interviews with health workers, teachers, students, prioritized groups and community members, facilitated by national technical advisory committees and operational groups involved in decision-making (also interviewed were members of MTAGI and the National Adverse Events Following Immunization Committee, immunization partners and developers of the COVID-19 vaccination web portal); and
- questionnaires administered to staff at the health-care-facility level and to beneficiaries and caretakers at island health centres.

**How did Maldives, with the support of the WHO Secretariat, achieve this?**

- **Evaluation teams:** The teams were composed of international and national experts from WHO headquarters, the Regional Office for South-East Asia, country offices in the South-East Asia Region, the United Nations Children's Fund (UNICEF), the Centers for Disease Control and Prevention, and MM Global Health Consulting. The teams also included programme managers from the Ministry of Health, national partners, and members of MTAGI and the National Adverse Events Following Immunization Committee.
- **Customization of the post-introduction evaluation tool:** The WHO Country Office in Maldives customized the post-introduction evaluation tool, integrating questionnaires for COVID-19 and HPV vaccines based on 10 thematic areas. A specific questionnaire was developed for resort islands.
- **Real-time data collection:** The WHO Country Office developed a web-based software package for real-time data collection during the assessment. Extensive Internet connectivity in Maldives allowed real-time data collection and dashboards with interfaces for computers/laptops, tablets and mobile phones.
- **Funding support:** The WHO Country Office secured funding for the joint COVID-19 and HPV vaccines post-introduction evaluation through Gavi COVAX.
The high coverage in both COVID-19 and HPV vaccination would not have been achieved without high-level political commitment, as demonstrated by the Minister for Health, Ahmed Naseem, who chaired the briefing and debriefing meetings, attended by all senior officials of the health department, members of technical advisory bodies and immunization partners. A review of the lessons learned revealed additional factors that contributed to the success, including multi-stakeholder collaboration; innovations in service delivery; equity in coverage by including expatriates and undocumented migrants; regulatory preparedness for emergency use authorization of COVID-19 vaccines; virtual training sessions; the online vaccination portal; real-time tracking of vaccine safety and coverage; multipronged communication strategies; vaccine transportation to islands by air/sea; and a strengthened vaccine cold chain.

Challenges to be addressed include strengthening human resources for immunization at all levels; monitoring and supervising the central team under the COVID-19 situation, particularly given the challenging island geography; and implementing a digital system for routine immunization.

Recommendations were provided for each thematic area and the real-time web portal4 is available as a global good.

Costing and budgeting Sierra Leone’s national action plan on antimicrobial resistance to expedite its implementation

Costed and budgeted actions to combat antimicrobial resistance

Antimicrobial resistance (AMR) is estimated to be a leading cause of death worldwide. In 2019, 1.27 million deaths globally were attributed to AMR, with the highest death rate estimated in western sub-Saharan Africa (27.3 deaths per 100,000).\(^1\) Like many sub-Saharan African countries, Sierra Leone developed a multisectoral national action plan to tackle AMR, in line with the 2015 *Global action plan on antimicrobial resistance*,\(^2\) which calls for a multisectoral “One Health” approach. Costing and budgeting of prioritized activities included in the national action plans is a critical step to ensuring that planned efforts are feasible and can be implemented sustainably. Therefore, WHO developed a costing and budgeting tool\(^3\) for AMR national action plans, which was piloted in six countries, including Sierra Leone. The successful development of a costed operational plan in Sierra Leone has facilitated the identification of available funding and of funding gaps for full implementation of the national action plan.

How did Sierra Leone, with the support of the WHO Secretariat, achieve this?

In 2017, Sierra Leone established a multisectoral coordination group to integrate the country’s various AMR initiatives into a single, concerted effort for fighting AMR based on the One Health approach. Ministries involved were the Ministry of Health and Sanitation; the Ministry of Agriculture, Forestry and...
Food Security; and the Environment Protection Agency. The coordination group developed Sierra Leone’s first national action plan on AMR – the National Strategic Plan for Combating Antimicrobial Resistance (2018–2022). The Plan had six strategic objectives: (1) to establish an AMR governance structure; (2) to improve AMR awareness and education; (3) to strengthen laboratory capacity and surveillance; (4) to reduce the incidence of infections through infection prevention and control; (5) to optimize antimicrobial use in all sectors; and (6) to ensure sustainable investment through research and development. Although the previous national action plan was well designed, implementation was slow partly because its activities were neither prioritized nor properly costed, and therefore adequate resources were not allocated.

Many countries face a similar issue – the 2020 tripartite country self-assessment survey results showed that only 20% of reporting countries had costed and fully budgeted their national action plans. To support countries in costing prioritized activities of their national action plan and identify existing funding and funding gaps, WHO developed the WHO costing and budgeting tool for national action plans on AMR and accompanying user guide. The tool adopts a modular approach, allowing different ministries or departments to independently cost relevant components of the national action plan and consolidate their inputs into a fully costed national action plan.

In December 2020, Sierra Leone became the first country to pilot the costing and budgeting tool supported by all three levels of WHO: headquarters, the WHO Regional Office for Africa and the WHO Country Office in Sierra Leone. Following an initial meeting with Sierra Leone’s AMR multisectoral governance mechanism, 12 costing coordinators, nominated by the Ministry of Health and Sanitation, the Ministry of Agriculture and Forestry, and the Ministry of the Environment through the Environment Protection Agency, attended a three-day training in January 2021. Given the existing coronavirus disease (COVID-19) restrictions, the training was delivered using a hybrid modality, with two trainers from WHO headquarters connecting virtually and trained staff from the WHO Country Office in Sierra Leone co-facilitating in person.

Following the training, the costing coordinators and the multisectoral coordinating committee met to prioritize activities for a two-year operational plan, which was then costed with support from WHO and the Food and Agriculture Organization of the United Nations (FAO). A total of 111 activities under 56 objectives were prioritized according to their expected impact and feasibility. Using the WHO costing and budgeting tool, the costing coordinators then developed a fully costed two-year operational plan with an estimated cost of US$ 2.15 million. Sixty per cent of the plan’s budget was for strengthening AMR surveillance, which was essential for helping to generate data for indicator 3.d.2 of the Sustainable Development Goals (Percentage of bloodstream infections due to selected antimicrobial-resistant organisms).
The training on the WHO costing and budgeting tool brought together costing coordinators across the human and animal health, agricultural and environmental sectors, promoting a multisectoral approach to costing Sierra Leone’s national action plan. As prioritized activities were needed for costing the plan, the training also provided impetus for the country to develop a two-year operational plan with priority activities. This was undertaken through a participatory approach involving various ministries, departments and agencies. Despite the challenges that COVID-19 brought, Sierra Leone succeeded in developing its costed operational plan and is now well positioned to mobilize resources for sustainable implementation of priority activities, including strengthening AMR surveillance. The lessons learned from Sierra Leone will be used by stakeholders to expand the use of the WHO costing and budgeting tool and to update or develop AMR national action plans for prioritization and resource mobilization, accelerating their implementation in the African region.

Scaling up COVID-19 vaccination rates in Viet Nam through vaccine diplomacy, efficient vaccine roll-out and effective service delivery

Rapid roll-out of COVID-19 vaccines

In early 2020, the international community widely recognized Viet Nam’s efforts in successfully controlling the first wave of the coronavirus disease (COVID-19) pandemic. As COVID-19 stretched into its second year in 2021, the country faced a significant challenge: how to rapidly roll out COVID-19 vaccination to a population of 98 million people amid surging cases and a global shortage of COVID-19 vaccines. Through a whole-of-society approach in coordination with WHO advocacy for vaccine access, technical assistance in developing national policies and plans, and support in vaccine implementation in hard-to-reach areas, Viet Nam quickly ramped up its COVID-19 vaccination programme within eight months. The vaccination coverage of fully vaccinated persons increased from less than 1% in May 2021 to 70% in December 2021.

Viet Nam faced a slow start in its COVID-19 vaccine roll-out. In May 2021, three months after starting the vaccination campaign among its priority groups – health workers, elderly people and those with underlying medical conditions – less than 1% of the total population had been vaccinated with a first dose. At that time, less than 30,000 individuals had received a second dose (about 0.3% of the total population). Moreover, a COVID-19 surge loomed in the second quarter of 2021, fuelled by the novel and more transmissible Delta coronavirus variant. It was a race against time to save lives and protect as many people as possible from severe illness and hospitalization. Therefore it was imperative to vaccinate the priority groups. At the same time, vaccination of the remaining population was an essential step towards curbing transmission.

How did Viet Nam, with the support of the WHO Secretariat, achieve this?

In 2019, Member States in the WHO Western Pacific Region adopted the For the future vision, which included strengthening health security as one of the thematic priorities. WHO supported Viet Nam in its COVID-19 vaccine supply and roll-out through a number of operational shifts outlined in the vision, such as taking a health systems approach with universal health

A 75-year-old receiving the first dose of COVID-19 vaccine at his home, observed by Dr Takeshi Kasai (WHO Regional Director for the Western Pacific) and Dr Kidong Park (WHO Representative to Viet Nam) Photo credit: WHO Country Office in Viet Nam/Loan Tran.
coverage as the foundation, using strategic communications and measuring country impact. WHO supported Viet Nam in reaching its COVID-19 vaccination targets by:

- **Securing a sustainable COVID-19 vaccine supply**: Viet Nam’s vaccine diplomacy efforts engaged all levels of the government, the National Assembly, line ministries and embassies to advocate for the timely delivery of vaccines and associated supplies. The private sector was also onboarded to augment human resources for the vaccination roll-out. The WHO Country Office in Viet Nam supported the country’s advocacy for access to vaccines through the COVID-19 Vaccine Global Access (COVAX) Facility, an initiative co-led by WHO that aims to guarantee fair and equitable access for every country in the world. The WHO Country Office coordinated with COVAX and donors on the urgent needs and on the absorption capacity of Viet Nam. By December 2021, Viet Nam had acquired more than 160 million vaccine doses, including 46 million doses from COVAX and 22.5 million doses from more than 30 donor countries.

- **Ensuring health system readiness and efficiency in the vaccination roll-out**: The Vietnamese government ensured an efficient health system to approve the use of new COVID-19 vaccines in the country, allocate doses, transport vaccines and rapidly deploy vaccination services in cities and communes. The WHO Country Office supported Viet Nam in ensuring that policies were in place for safe and secure vaccination roll-out, including developing the National Vaccine Deployment Plan and vaccination policies for various target populations, such as high-risk vulnerable groups (including elderly persons, health workers, lactating and pregnant women, adolescents and children).

- **Taking into account operational considerations**: The WHO Country Office in Viet Nam provided technical assistance in developing operational guidelines for the COVID-19 vaccination programme, as well as training for provincial and district supervisors on monitoring and supporting health centres during the implementation of the vaccination programme in all provinces, particularly in hard-to-reach areas. WHO support also included the provision of additional cold chain equipment.

- **Providing training on safe vaccination and vaccine safety surveillance**: WHO provided technical resource persons and financial support for the training of health workers on injection safety, managing anaphylactic reactions and syncope after vaccination, and strengthening vaccine safety surveillance, including monitoring for adverse events following immunization.

- **Communicating with the public to increase knowledge and influence vaccine uptake behaviour**: WHO supported efforts to generate vaccine demand through addressing pressing questions on vaccine safety and efficacy via media interviews and Facebook engagement. Furthermore, the WHO Country Office raised awareness about the importance of vaccination and reaching the “last mile”, via compelling video stories published on its Facebook Page.
• **Enhancing the information system for data collection and reporting:**
  A WHO consultant of the national immunization programme was recruited to support data collection, aggregation and analysis. WHO provided further support for the development of the guidelines and standard operating procedures for end users, and for cascading the training to hard-to-reach areas.

• **Supporting the country’s successful application as a recipient of the mRNA vaccine technology transfer initiative:** Specialized training will be provided to a vaccine company in Viet Nam on mRNA vaccine production, so that the country can start producing safe and effective vaccines, at scale and in accordance with WHO good manufacturing practices, as soon as possible.

Viet Nam demonstrated very high vaccine absorption capacity while ensuring safety of the vaccination process. At its peak, more than 2.4 million doses per day were administered. Viet Nam’s efficiency in vaccination roll-out highlights the country’s rational use of available vaccine supplies, raising the country’s profile to vaccine donors. By December 2021, the health-care sector had safely administered more than 152 million vaccine doses, with 70% of the population fully vaccinated. By achieving this milestone, Viet Nam reached the WHO goal of having 70% of the population fully vaccinated by mid-2022. High vaccination rates have played a pivotal role in Viet Nam, averting deaths, minimizing hospitalizations and limiting the burden on health-care facilities.

To date, Viet Nam has continued COVID-19 vaccinations, focusing on reaching the last mile and leaving no one behind. As at 27 March 2022, Viet Nam administered more than 200 million doses (81% of its total population received the first dose, 77% completed two doses, and more than 33% received booster shots). Political commitment, along with strong support from WHO and other international partners and country donors, was a key factor in Viet Nam’s successful implementation of the COVID-19 vaccination programme.

2.1 Countries prepared for health emergencies
Strengthening all-hazard health emergency and disaster risk management in a protracted humanitarian setting: experience from Cox’s Bazar, Bangladesh

All-hazard emergency and disaster risk management

Bangladesh is one of the most disaster-prone and climate-vulnerable countries in the world. The coastal district of Cox’s Bazar – where nearly 1 million Rohingya live in 33 camps – experiences frequent seasonal hazards, including floods, droughts, fires and cyclones. The refugees live in overcrowded living conditions made of temporary construction materials, which exacerbate the risk of health emergencies and disasters. WHO took an all-hazard approach to support the Government of Bangladesh in Cox’s Bazar, to improve health outcomes for thousands of people during the crises and to strengthen all-hazard health emergency and disaster risk management for the future.

How did Bangladesh, with the support of the WHO Secretariat, achieve this?

- Implementation guided by international regulations and frameworks: WHO Country Office technical experts guided the Government of Bangladesh’s activities for risk reduction, emergency preparedness, response actions and community recovery, in line with the International Health Regulations, the Sendai Framework for Disaster Risk Reduction, and the WHO Health Emergency and Disaster Risk Management Framework.

The fire incident of March 2021 directly affected three camps in Cox’s Bazar. Photo credit: WHO Country Office in Bangladesh/Irene Gavieiro Agud
WHO delivering results and making an impact: stories from the ground

- **Emergency response:** Through the Emergency Preparedness and Response Technical Committee, co-chaired by WHO and the International Organization for Migration, WHO responded to a large-scale fire in the refugee camps in March 2021, by dispatching six mobile medical teams from health sector partners, followed by a further seven teams after major floods and landslides in July 2021. Approximately 95,000 directly affected people received immediate life-saving health services and emergency referrals. Lessons learned were captured in a WHO-coordinated after-action review and used to improve coordination and decrease response time in further fire events. The mobile medical teams continue to serve as the front-line providers of emergency health care in the camps.

- **Coordinated action:** WHO, together with the Ministry of Health and Family Welfare and the Office of the Refugee Relief and Repatriation Commissioner, provided leadership, coordination, supportive supervision and collaborative support to all health partners and sectors for a comprehensive humanitarian health response, which was leveraged for responding to the coronavirus disease (COVID-19) and maintaining essential health services.

- **Early warning system for outbreak detection:** WHO launched its Early Warning, Alert and Response System (EWARS) to improve disease outbreak detection and facilitate a timely response. Mobile data-collection devices and Internet access were provided at 171 reporting sites in the 33 Rohingya camps, and Rapid Investigation and Response Teams were trained. In 2021, an upsurge of 1,474 dengue cases was rapidly detected – guided by WHO, the outbreak was notified and confirmed, and a multisector response was launched by September 2021. The outbreak was controlled within three months: only 53 cases occurred in the last week of December 2021. Similarly, an upsurge in diphtheria cases identified in August 2021 (30 cases compared with the 19 cases throughout 2020) was controlled with no confirmed cases registered in the last four weeks of 2021. WHO technical guidance on the uptake of the WHO Go.Data tool for outbreak responders was crucial to supporting contact tracing efforts. EWARS continues to serve as a well-established system that is now integrated with the District Health Information System (DHIS2) for the refugees and is being rolled out to other health subdistricts in Cox’s Bazar.

- **High vaccination coverage:** WHO collaborated with the government and partners to develop the National Deployment and Vaccination Plan for COVID-19, which included the Rohingya refugee population as a target group. Also launched was a campaign on a two-dose oral cholera vaccine, and the health facility-based transitional strategy to maintain routine immunization services. Oral cholera vaccine coverage reached 98% in people aged 1 year and above. COVID-19 vaccines were allocated to the Rohingya community from the WHO co-led COVID-19 Vaccine
Global Access (COVAX) Facility for Bangladesh. To enable vaccine roll-out, WHO provided support to train the existing health facility and community health workforce and repurposed staff from other programmes. To drive an evidence-informed COVID-19 vaccination communication strategy in the Rohingya refugee population, WHO designed a community preparedness assessment tool, which effectively supported tracking vaccine hesitancy and rumours in the field, aiding the provision of factual information and promoting community mobilization through a multichannel strategy, including community radio, interpersonal communication and digital media. Through the National Deployment and Vaccination Plan, COVID-19 vaccines have now been rolled out to all Rohingya aged 12 years and above, with 83% coverage.

- **Rapid and sustained clinical capacity-building:** WHO facilitated the establishment of a technical committee, which comprised technical officers from WHO and the International Organization for Migration, as well as partners who contributed to the mobile medial teams. The committee supported preparedness assessment of facilities, developed health sector preparedness and response plans (including operational deployment plans for mobile medical teams and community health workers), and implemented training workshops and simulation exercises for approximately 1400 community health workers. WHO coordinated and led the establishment of a network of 14 severe acute respiratory infection isolation and treatment centres, with a combined capacity of nearly 1200 beds; originally dedicated to COVID-19, some of the treatment centres are now being transformed into multipurpose treatment centres, with admission of over 7000 Bangladeshis and 13 000 Rohingya (with 6356 persons confirmed with COVID-19 as at 14 August 2022). The isolation capacity of some centres has been vital in the management of acute watery diarrhoea and the ongoing dengue outbreak.

Through a risk-informed, participatory approach, and by mainstreaming disaster risk management activities into early response and long-term health systems strengthening, WHO continues to provide technical expertise to ensure quality essential health services for refugees and their host communities in Cox's Bazar.
1 There were 34 camps during the 2020–2021 biennium. Currently, there are 33 camps in Cox’s Bazar.

2 The Government of Bangladesh refers to the refugee population in Bangladesh as “forcibly displaced Myanmar nationals”. In the United Nations system, they are referred to as “Rohingya refugees”, in line with relevant international frameworks.


Conducting an after-action review of the Ebola outbreak in the Democratic Republic of the Congo

Deconstructing the past to build a stronger future

Between May 2018 and May 2021, the Democratic Republic of the Congo experienced four consecutive outbreaks of Ebola virus disease (EVD) – the 9th, 10th, 11th and 12th EVD outbreaks. The response to the 10th outbreak was particularly challenging, as it occurred in an active conflict zone. Moreover, the 10th outbreak was declared a public health emergency of international concern, which resulted in 3470 cases and nearly 2300 deaths. Crucial recognition of the need to strengthen cross-sectoral preparedness planning and response to future health emergencies compelled the country to take action. The Ministry of Health, supported by WHO and partners, conducted an after-action review (AAR) of the response to the 9th–12th outbreaks. The review aimed to capitalize on best practices, identify areas and actions for improvement, and promote individual and collective learning. During the subsequent 13th outbreak, the lessons learned from the review enabled more timely response to the outbreak, culminating in only 11 cases compared with the 10th outbreak, which was much longer and had about 315 times the number of cases. When the 13th EVD outbreak occurred, all local capacities for EVD management, built during the 10th and 12th outbreaks in the North Kivu province, contributed to scaling up rapid response and containment of the outbreak, with the community playing a crucial role.

How did the Democratic Republic of the Congo, with the support of the WHO Secretariat, achieve this?

Using a mixed-method approach: The AAR included four phases – a desk literature review, an online survey, key informant interviews and focus group discussions. Focus group discussions were particularly helpful for triangulating the findings attained using other methods, analysing cross-cutting issues, conducting root cause analysis, identifying contributing factors and prioritizing activities needed to improve preparedness and response moving forward. WHO developed an AAR methodology in consultation with the Ministry of Health, as well as providing technical and financial support for conducting the AAR.

Considering all components of the response: The AAR covered all public health response pillars, including coordination, surveillance, laboratory, case management, infection prevention and control, vaccination, risk communication and community engagement. The AAR structure and pillars aligned with the Strategic Response Plan for the EVD outbreak in the provinces of North Kivu and Ituri,¹ which was developed by the Government of the Democratic Republic of the Congo with the support of WHO.
Prioritizing critical actions\(^2\) for improvement: Actions included improving coordination, leadership and procedures; building human resource capacity to conduct trials; developing strategies for health service continuity; enhancing cross-border disease surveillance; improving infection prevention and control; improving water, sanitation and hygiene; developing guidelines for the mandatory inclusion of traditional healers in community-based monitoring; strengthening capacity for water and waste management in high-risk areas; and enabling the rapid deployment of mobile laboratories with genome sequencing.

Enabling advocacy and resource mobilization to turn lessons learned into action: The planning and implementation of the AAR took six months, culminating in a meeting between technical and financial partners in June 2021. By facilitating advocacy and resource mobilization, this step in the AAR process was vital to ensuring that findings aimed at long-term health system strengthening were put into practice.

AARs contribute to building a culture of continuous improvement and can be a means of sharing innovative solutions for tackling emerging public health risks. The actions undertaken for EVD will inform better preparedness and response to potential future EVD outbreaks and other complex health emergencies in the country and beyond. The Ministry of Health and WHO have repurposed some of the capacities and resources available for EVD response in the country to respond to the 13th EVD outbreak and the coronavirus disease
(COVID-19) pandemic. The rapid response and contact tracing teams, local emergency coordination committees, and infection prevention and control measures that supported the EVD responses, among others, were repurposed for the response to the subsequent EVD outbreak and COVID-19.

WHO continues to support countries globally in capacity-building to prepare for, prevent, detect and respond to health emergencies through the use of AARs as continuous functional assessments, including through AARs following the response of real-world events.


Engaging meaningfully with community stakeholders: COVID-19 lessons in Guatemala

Community engagement for a disability-inclusive response to COVID-19

Over 1 billion people are estimated to experience disability worldwide, approximately 15% of the world’s population. Global data indicate that people with disabilities are, on average, two to four times more likely to die in emergency situations than the general population. People with disabilities have been disproportionately affected by the coronavirus disease (COVID-19) pandemic, partly owing to a lack of access to many essential services.

In 2020–2021, WHO provided direct financial and technical support to 54 grass-roots civil society organizations (CSOs) in 40 countries through the COVID-19 Solidarity Response Fund, serving over 80 million vulnerable people. In Guatemala, the focus of the fund was on leveraging and uniting government entities and CSOs to respond to health emergencies and disasters with a disability-inclusive approach. The Pan American Health Organization (PAHO), the WHO Regional Office for the Americas and the PAHO/WHO Country Office in Guatemala formed a tripartite agreement with the Latin American

A person with visual impairment accessing health care in Guatemala. Photo credit: PAHO/WHO Country Office in Guatemala
Network of Non-governmental Organizations of Persons with Disabilities and their Families (RIADIS)\(^5\) to create the first initiative focused on the inclusion of people with disabilities in Guatemala. The initiative increased understanding of the needs of, and challenges faced by, persons with disabilities from different social contexts during health emergencies, strengthening their participation in humanitarian response and risk management plans.

The initiative made the response against COVID-19 more inclusive at the local and national levels and built inclusivity for future emergencies. This is expected to improve access to health-care services for persons with disabilities and reduce the disproportionate level of death, injury or illness of such persons in emergencies and disasters, improving health outcomes in emergencies in the short and long term. PAHO/WHO continues to work to build a more enabling environment for people with disabilities in Guatemala.

**How did Guatemala, with the support of the WHO Secretariat\(^5\), achieve this?**

- *Creating a national coalition:* To enable coordinated efforts and the proposal of joint measures, the PAHO/WHO Country Office created a temporary mechanism called the National Coalition on Inclusive Risk Management. It included partners such as the Ministry of Health, 77 CSOs representing people with disabilities, and a range of public institutions and relevant development actors related to disability, health management and humanitarian aid. Moreover, three in-person meetings were held with 24 CSOs and decision-makers.

- *Creating a road map:* By organizing consultation meetings and field visits, and providing technical advice from experts of the Country Office and the Regional Office, PAHO/WHO supported the Ministry of Health in developing a permanent participatory governance structure: the National Technical Roundtable for Strengthening the Inclusion of People with Disabilities in Health Risk Management was led by the Ministry of Health and coalition partners. It aimed to unify various stakeholders to ensure that risk management plans comprehensively included the needs and experiences of people with disabilities and was the first of its kind in Guatemala. To ensure sustainability of the mechanism, a ministerial agreement was reached and approved. The Country Office provided technical expertise to hold six focus groups with people from various social contexts with different levels of disability, enabling information about their experiences and needs during the COVID-19 crisis to be gathered and systematic issues identified. Round-table discussions between people with disabilities and institutions were then held to develop a road map towards improving resilience, protection and fair inclusive treatment for people with disabilities during disaster response in Guatemala.

\(^5\) PAHO was established in 1902 as the specialized health agency of the Organization of American States within the inter-American system. In 1949, through an agreement with WHO, PAHO agreed to serve as the WHO Regional Office for the Americas.
• **Establishing strategic alliances**: To promote the initiative, PAHO/WHO supported and engaged with the Ministry of Health to coordinate meetings with strategic alliances, including decision-makers and representatives from human rights commissions and other ministries. People with disabilities were able to express their concerns directly to institutions. Conversations were based on the premise of the Convention on the Rights of Persons with Disabilities, article 11 (Situations of risk and humanitarian emergencies), which states that under international law, all necessary measures should be taken to ensure the protection and safety of people with disabilities in situations of risk, including humanitarian emergencies.

• **Evaluating health facilities**: To support the efforts of Guatemala’s health sector to comply with article 11, the disability inclusion in hospital disaster risk management (INGRID-H) strategy was used to foster inclusiveness in hospital disaster risk management, with a focus on the needs of persons with disabilities. As an evaluation/action methodology, the tool was rolled out in six selected hospitals in Guatemala. In addition, training workshops were organized, participated by 126 CSOs; 56 officials from the Ministry of Health, the Guatemalan Red Cross and the National Coordination for Disaster Reduction (CONRED); 56 representatives from the Guatemalan National Council for the Care of People with Disabilities; and 39 representatives from the Guatemalan Institute of Social Security.

Cross-sectoral cooperation has been crucial to delivering interventions that will positively affect the health of people with disabilities in emergencies. The developed sustainable mechanism enabled better understanding of the needs of people with disabilities during COVID-19 and other emergencies, identification of response gaps and inclusive development of objectives. Furthermore, the coalition and strategic alliances enabled knowledge to be translated into action.

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Addressing the looming threat of Ebola in Guinea-Bissau with expertise and care

Better prepared to respond to Ebola

The threat of potential Ebola outbreaks in Guinea-Bissau is not a new phenomenon. The country has had a long history of such threats due to its geographical location in a region predisposed to Ebola outbreaks. On 14 February 2021, an Ebola outbreak was reported in neighbouring Guinea, which was quickly declared as an epidemic by the Minister of Health of Guinea. The declaration sent shock waves through neighbouring countries, including Guinea-Bissau, which shares a 421 km border with Guinea. It was particularly worrying because the borders are porous and riddled with unregulated border crossings around the official points of entry. Frequent contact between fishers from Guinea-Bissau and those from other countries (such as Guinea, Nigeria, Senegal and Togo) without sufficient health controls was a major source of concern. Faced with such a high risk, Guinea-Bissau quickly mobilized to prepare for the Ebola outbreak in order to protect its population from yet another public health emergency.
How did Guinea-Bissau, with the support of the WHO Secretariat, achieve this?

- **Activate the core pillars**: Responding to this major health concern, the WHO Country Office in Guinea-Bissau promptly activated its five core pillars: risk communication; infection prevention and control; case management; laboratory; and surveillance.

- **Conduct an Ebola simulation exercise**: The WHO Country Office supported the Ministry of Health of Guinea-Bissau in organizing a national Ebola tabletop simulation exercise for the National Rapid Response Team and for health workers in the Bissau region. The simulation exercise was later replicated in six other health regions highly predisposed to Ebola: Bafatá, Biombo, Bolama, Gabú, Quinara and Tombali.

  *This simulation was very important as it allowed the team’s skills to be reviewed and gaps to be identified in the management and response to a possible suspected or confirmed case of Ebola in our region.*

Venâncio Cabral  
Member of the Regional Rapid Response Team of Bolama

- **Strengthen capacity**: To further bolster country preparedness, the WHO Country Office strengthened the capacities of the different pillars. For example, the WHO Country Office donated GeneXpert machines to the National Laboratory of Public Health, which enabled the testing of suspected Ebola cases. Moreover, the WHO Country Office, together with the National Institute of Public Health, trained more than 45 laboratory technicians in the use of GeneXpert during a one-day training.

- **Increase awareness and communication**: Recognizing the importance of timely and clear communication, the WHO Country Office deployed a team of professional staff to six regions (Bafatá, Bijagós, Bissau, Gabú, Quinara and Tombali) to raise awareness and sensitize communities about Ebola prevention. A total of 41 communities were sensitized, including religious leaders, women and youths, which resulted in enhanced understanding and sensitization about Ebola prevention measures. More than 2400 posters were distributed and interviews were conducted with the relevant authorities in the seven points of entry, as well as with community leaders to assess their knowledge of the potential severity of the outbreak.

- **Deploy experts to remote areas**: The WHO Emergency Team travelled on a mission to the Bijagós archipelago, which consists of 88 islands, to assess the level of preparedness. Many fishers from Guinea, Liberia and Sierra Leone travel frequently to those islands to do business, most of whom
travel from one country to another without undergoing any health control or checks at designated border points. Upon arrival at the islands, the WHO Emergency Team successfully prepared the health centres and communities for active surveillance and prevention of epidemic-prone diseases, particularly for Ebola and the coronavirus disease (COVID-19).

_I would like to congratulate WHO’s delegation who strengthened the capacity of the medical team in all 11 health centres._

Dr Ivansca Janira Carlos de Medina
Regional Health Director of Bijagós

The WHO Country Office effectively responded to the high degree of vulnerability, risk and fragility faced by the country’s public health system in preparing for and responding to potential epidemics. An important lesson learned is that strengthening the emergency response capacity of the country to respond to Ebola outbreaks requires joint effort.

The WHO Country Office continues to support the Government of Guinea-Bissau by investing in preparedness for future potential epidemics. The WHO Country Office is currently in the process of rehabilitating the Infectious Disease Unit at the military hospital in Bissau. Once fully operational, Guinea-Bissau will have a treatment centre for infectious diseases, including Ebola, which will provide the needed health safeguards for future health emergencies.
Preparing future generations of laboratory leaders in Kazakhstan through the Global Laboratory Leadership Programme

Increased capacity in disease detection, control and prevention

The coronavirus disease (COVID-19) pandemic has put extraordinary pressure on health services worldwide and clearly highlighted the importance of robust laboratory systems. Developing reliable and sustainable laboratory systems necessitates strong leadership and management. Laboratory leaders require meaningful education and training. The Global Laboratory Leadership Programme (GLLP) is a multisectoral collaboration of six leading organizations, which operate globally to identify professionals working in human, animal and environmental health laboratories and nurture them to become laboratory leaders. Already active in countries such as Burkina Faso and Pakistan, GLLP was implemented in Kazakhstan in 2020-21 under the leadership of the WHO Regional Office for Europe and co-funded by the European Commission foreign policy instruments and the Centers for Disease Control and Prevention; this was the first time the programme was implemented in central Asia.

A GLLP participant presenting a review of the current requirements for using personal protective equipment for COVID-19 in highly secured laboratories, Almaty, Kazakhstan, November 2021. Photo credit: WHO/Jeremy Ford
In October 2020, the Ministry of Health of Kazakhstan appointed the Scientific and Practical Centre for Sanitary and Epidemiological Expertise and Monitoring, at the National Centre for Public Health, to deliver GLLP. Quality management system and biosafety and biosecurity were selected as the priority areas for Phase 1, as they were considered the areas of highest need in Kazakhstan. Phase 1 was successfully completed and resulted in increased capacity in Kazakhstan for disease detection, control and prevention.

**How did Kazakhstan, with the support of the WHO Secretariat, achieve this?**

*Taking a “One Health” approach:* GLLP acknowledges the interrelatedness of human, animal and environmental health and follows the principles of the One Health approach, in which human, animal and environmental sectors communicate and work together to improve global health security. In Kazakhstan, programme participants were selected from human and animal health sectors.

*Following a strong framework:* The *Laboratory leadership competency framework* outlines the nine essential competencies needed for leaders to build and direct sustainable laboratory systems for disease detection, control and prevention. The framework forms the basis of the GLLP learning package, which aims to enable any region, country or educational institution in the world to plan, develop, implement and evaluate a laboratory leadership programme.

*Focusing on capacity-building in specific areas of competence:* GLLP coaches participants in nine essential competencies: laboratory system; leadership; management; communication; quality management system; biosafety and biosecurity; disease surveillance and outbreak investigation; emergency preparedness, response and recovery; and research. The Scientific and Practical Centre for Sanitary and Epidemiological Expertise and Monitoring chose to focus on quality management system and on biosafety and biosecurity in Phase 1, as they were recognized as being particularly relevant for COVID-19 response efforts in Kazakhstan.

*Encouraging ownership at the local level:* In April 2021, five national experts were selected as facilitators to train and mentor 15 laboratory staff. Working alongside and supported by WHO, the facilitators were responsible for preparing and adapting materials from the GLLP learning package to train and mentor participants. The approach gave significant autonomy to the facilitators, encouraging capacity-building at the country level and helping to ensure sustainability.

*Delivering a recognized programme:* Upon completion of Phase 1 of the programme, participants received their GLLP certification plus a national registered certificate, which counts towards continuous education. Phase 1 took place between June and November 2021. Participants completed
240 hours of face-to-face learning and prepared a thesis equivalent to 720 hours of learning. Regular online meetings were held between facilitators and participants to accompany the thesis writing.

**Monitoring programme progress:** Throughout Phase 1, facilitators provided continuous mentorship to participants and regularly met with WHO to exchange ideas and monitor programme progress.

Knowledge assessment was performed before and after the training, and the thesis defence took place in Almaty in November 2021, during which participants were assessed by a panel of GLLP facilitators and experts from WHO and the Centers for Disease Control and Prevention. The average score for the thesis oral presentation was 90% (76–98%). Participants and facilitators reported high satisfaction with the programme.

With Phase 1 completed and planning well under way for Phase 2, GLLP is clearly fostering a new and sustainable generation of laboratory leaders in Kazakhstan. Phase 1 competencies (quality management system, and biosafety and biosecurity) are paramount to improving the reliability and timeliness of laboratory procedures. As Kazakhstan’s capacity to build, strengthen and sustain national laboratory systems grows, so will clinician confidence in laboratory services and the general public’s trust in the health system. Owing to the project’s success, other countries have expressed strong interest in the GLLP model. Currently, 32 countries are either engaged in or discussing GLLP implementation within their own context.


2 Association of Public Health Laboratories, Centers for Disease Control and Prevention, European Centre for Disease Prevention and Control, Food and Agriculture Organization of the United Nations (FAO), World Organisation for Animal Health and WHO.


Building “One Health” preparedness capacities: implementation of the National Bridging Workshop road map for Kazakhstan

Long-term national “One Health” road map

Historically, Kazakhstan has had a well developed agricultural sector with an emphasis on livestock production. There are territories prone to endemic zoonotic diseases, as well as environmental issues such as that of the Aral Sea. The interactions between humans, animals and the environment increase the risk of public health threats and the spread of diseases. With relatively well developed vertical public health and veterinary systems, managed centrally at the national level, Kazakhstan aims to increase capacity and effectiveness in managing health threats at the animal-human-environment interface by strengthening vertical processes and the coordination of policies, plans and resource utilization.

How did Kazakhstan, with the support of the WHO Secretariat, achieve this?

In 2018, Kazakhstan started to explore the “One Health” approach to zoonotic diseases by conducting the National Bridging Workshop (NBW). NBWs are three-day events facilitated by WHO and the World Organisation for Animal
Health, bringing together public health and animal health participants. The objective is to analyse and improve collaboration between the two sectors in preventing, detecting and responding to zoonotic diseases and other health events at the animal-human interface (e.g. food safety, food security and antimicrobial resistance). As an outcome of the NBW, a comprehensive long-term road map was developed for Kazakhstan, covering priority areas identified by participants.¹

In 2020, WHO started a global initiative to establish a network of NBW Catalysts (One Health experts recruited at the national level to provide technical support for the follow-up and implementation of road maps) in countries that completed NBWs. Kazakhstan was the first country to have an NBW Catalyst position, at the beginning of 2021. By mid-2022, the network included 15 countries with NBW Catalysts.

In 2021, WHO supported Kazakhstan in reassembling the national adherence to adopting the One Health approach among government bodies to address zoonotic diseases, advocating for better intersectoral collaboration at all levels: national, regional and local. The initial focus was set on the health and agricultural sectors, with plans to expand involvement to other stakeholders at a later stage. A five-step process was developed to drive sustainable policy change:

- context evaluation
- stakeholder analysis
- development of One Health-friendly environment
- institutional change enablement
- paradigm shift.

Following the process, the WHO Country Office in Kazakhstan implemented the NBW survey pilot, aiming to rethink and reinforce the implementation of One Health activities and test the methodology for further implementation in other countries. The survey helped to assess progress in the implementation of the NBW road map, set new priorities and identify new activities. Owing to challenges related to the coronavirus disease (COVID-19), almost 70% of the activities are yet to be implemented. In view of this, an updated action plan for implementing the One Health approach, covering zoonotic diseases as well as food safety and biosafety, was developed to be implemented by 2025.

One of the most important activities included in the action plan was to establish a coordinated government One Health mechanism or platform in Kazakhstan, using the Multisectoral Coordination Mechanisms Operational Tool (MCM OT).² The collaborative government platform would allow ministries (or agencies) to interact on a regular basis to support improved preparedness and response for health challenges at the animal-human-environment interface, including zoonotic diseases. Therefore, the MCM OT pilot covered steps 2, 3 and 4 of the aforementioned five-step process.
In parallel, One Health-related actions, aimed at the development of a legislative basis for better collaboration and establishment of a cross-sectoral research programme, were promoted to be included in the national “Healthy Nation” project. Responsibility for those actions was shared among all main sectors: health, agriculture and environment. The national project was approved by a decree of the Government of Kazakhstan in October 2021, which was perfect timing for supporting the MCM OT pilot.

To streamline the development of the One Health-friendly environment, WHO implemented and supported several awareness-raising and capacity-building initiatives, reaching more than 800 Kazakh experts from clinical, public health, laboratory, veterinary and other settings. However, shifting paradigm also means to start from the roots: the development of One Health modules to be introduced into public health and veterinary curricula in undergraduate and graduate education was an important activity of the NBW road map; this has also been completed.

In 2021, One Health was recognized at the Seventy-fourth World Health Assembly as an important mechanism to protect public health and to prepare for and respond to health emergencies. Moreover, the Pan-European Commission on Health and Sustainable Development called for WHO Member States to operationalize the concept of One Health at all levels.

The Kazakh case highlights the importance and impact of the NBW Catalyst programme and clearly demonstrates the ways in which WHO contributes to the strengthening of collaborative capacities at the animal-human-environment interface.

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Call centre supporting risk communication, surveillance and beyond

Rapid dissemination of COVID-19 information

The first case of the coronavirus disease (COVID-19) was confirmed in Nepal in January 2020. An abundance of information – some accurate, some not – began to spread alongside the outbreak. The infodemic\(^1\) bred uncertainty, which risked fuelling scepticism and distrust. To curb the spread of misinformation, the WHO Country Office in Nepal provided technical and financial support to the Ministry of Health and Population’s Epidemiology and Disease Control Division to establish a call centre (1115),\(^2\) with a view to bridging the gap between the community and health professionals. In March 2020, the call centre became operational, providing timely and accurate information to the Nepalese people as they grappled with restrictions imposed to curb the spread of COVID-19. The centre served as a social listening tool to guide public health communications.

The call centre emerged as an essential communication platform during the pandemic. From its establishment until 21 August 2022, 431 572 calls were received. Pre-recorded Interactive Voice Response (IVR) messages providing automated responses to frequently asked questions (FAQs) were heard more than 114 500 times; an estimated 600 rumours were identified, and debunked and swiftly addressed if necessary. Owing to the success, WHO supported the Ministry of Health and Population in establishing a follow-up call centre in December 2020. Targeted towards infected people living in home isolation, more than 630 500 people who tested positive have been called for the purpose of case management.

The COVID-19 call centre guiding public health communications. Photo credit: WHO Country Office in Nepal
By May 2021, the call centre had expanded from a team of six operators to 46. Recognizing its value to addressing infodemics and misinformation in future emergencies, the Epidemiology and Disease Control Division proposed turning the helpline into a long-term early detection and emergency response mechanism. Expanding the call centre beyond responding to COVID-19 queries to being a tool for public health intelligence, to detect threats early while only emerging in the community, would strengthen Nepal’s resilience to future health emergencies.

How did Nepal, with the support of the WHO Secretariat, achieve this?

- **Crisis communication**: Call centres collected, logged and addressed rumours, inaccurate information and other concerns related to the prevention and treatment of COVID-19. A 24-hour IVR service was activated, enabling callers to listen to automated informational recordings when operatives were unavailable.

  *The COVID-19 pandemic has highlighted the role of crisis communication during health emergencies. [The call centre] is a good example of how providing timely, accurate and verified information can help save lives. WHO is proud to support this important intervention of the Health Ministry.*

  Dr Rajesh Sambhajirao Pandav
  WHO Representative to Nepal

- **Evidence-informed communication for information and education**: To inform the design of communication materials for information and education, and the selection of communication channels, the Ministry of Health and Population, the WHO Country Office in Nepal and other partner organizations conducted research on behaviour change. This included analysing the FAQs, community queries and concerns, and rumours and misconceptions logged by the call centre. During the surge of cases in the first and second waves, some of the FAQs were about the availability of treatment, medical supplies, lockdowns, and quarantine and isolation measures. Later in the pandemic, callers mostly asked about the Omicron variant and vaccination. Materials were developed in multiple languages, sign language and braille, and covered a range of COVID-19 topics including prevention, protection, home isolation, festival celebrations, and stigma and discrimination. This system was periodically tweaked on the basis of the analysis, and the frequently asked (and addressed) queries to be managed by the IVR system were updated. This reduced the number of calls that needed to be answered by call centre operatives, allowing them to address only those queries not covered by FAQs. Queries that could not be answered by trained operatives were escalated to designated public health/clinical personnel using a dedicated call number.
- **Case and quarantine management**: Forty call centre operatives collected case management data including demographic information, symptoms, vaccination status and travel history. Operatives also supported contact tracing efforts, identifying contacts needing quarantine, isolation and testing, as well as collecting data on symptoms and infection of family members. During quarantine and isolation at home, in hospitals or in isolation centres, individuals received phone calls from the call centre, along with in-person checks when needed.

- **Monitoring of communications**: To ensure that risk communication was effective, communication targets were set and communications were monitored.

The rapid implementation of a 24-hour call service to tackle widespread misinformation about COVID-19 was successful in communicating evidence-based information and educating the Nepalese population, as well as for case management. Expanding the call centre to detect other emerging health threats will strengthen Nepal’s ability to prevent and better control future health emergencies.

The call centre submits a daily and weekly report to the Epidemiology and Disease Control Division. If new queries, rumours and misinformation are recorded, they are sent to experts of the Epidemiology and Disease Control Division, the Family Welfare Division, WHO or other relevant agencies for confirmation and clarification; after the queries are addressed, the answers are conveyed back to the community through the call centre.

In addition, new FAQs, queries, rumours and misinformation are sent to the National Health Education Information and Communication Centre and other relevant agencies, and various infographics and knowledge materials are created to address them. They are also addressed through media briefings conducted regularly by the Ministry of Health and Population.

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1. Info

Making measured progress in building health emergency preparedness in Sierra Leone

Building preparedness to health emergencies

Sierra Leone has a long history of health emergencies due to natural disasters and disease outbreaks, including the 2014–2015 Ebola virus disease (EVD) outbreak and the ongoing coronavirus disease (COVID-19) pandemic. In the context of high poverty levels and a chronically underfunded health system, shocks from previous emergencies directly affect human, animal and environmental health, while making the country vulnerable to future crises. In the wake of the EVD and COVID-19 outbreaks, WHO provided technical support to the Ministry of Health and Sanitation to improve Sierra Leone’s level of preparedness to prevent, detect and respond to threats. Using a multisectoral One Health approach, Sierra Leone has made measured progress, based on the International Health Regulations State Party Self-Assessment Annual Report. The overall capacity score for the country increased from 38% in 2018 to 40% in 2019, 49% in 2020 and 51% in 2021.2

How did Sierra Leone, with the support of the WHO Secretariat, achieve this?

Developing an evidence-informed plan of action: In 2016, Sierra Leone launched its first WHO Joint External Evaluation (JEE) mission to assess country capacities to prevent, detect and rapidly respond to public health risks in the framework of the International Health Regulations. Undertaken by the Ministry of Health and Sanitation with technical and logistical support from WHO, the evaluation guided Sierra Leone’s 2018–2022 National Action Plan for Health Security (NAPHS), which promotes collaboration between human and animal health systems through a One Health approach.

Taking a multisectoral approach: To plan and implement the NAPHS, WHO engaged with the government, partner organizations, civil society and the private sector through formal coordination mechanisms and service-level agreements. In 2020, the national and district incident management systems were activated to respond to the COVID-19 pandemic using the One Health approach, which was guided by the Multi-Hazard Public Health National Emergency Response Plan. With the support of WHO and other development partners, the multisectoral and multidisciplinary national and district rapid response teams were re-trained using the One Health approach in 2020. The teams were deployed to respond to COVID-19 and demonstrated their competences in controlling it.

Building legislative capacity: In 2020 and 2021, WHO provided technical support and facilitated the mobilization of resources to the Government of Sierra Leone to advance its national legislation by updating the 1960 Public Health Ordinance and the 1949 Animal Health Ordinance. The Public Health Bill has since been enacted into law while the other is still in parliament awaiting enactment.
Improving the funding mechanism for health emergencies: In 2020 and 2021, WHO provided technical support to Sierra Leone and facilitated the mobilization of resources to deal with health emergencies such as the ongoing COVID-19 pandemic, the circulating vaccine-derived poliovirus outbreak of 2020/21 and the ongoing measles outbreak, as well as improving preparedness for the Ebola outbreak that occurred in Guinea in 2021.

Building communicable disease surveillance: In 2019–2020, WHO supported the adaptation and roll-out of the third edition of the Integrated Disease Surveillance and Response (IDSR) technical guidelines and reporting tools. Training of health workers in all 1464 health facilities in 16 districts was completed in June 2021. By December 2021, all public and major private health facilities were implementing the new guidelines with more than 95% of health facilities reporting for the weekly IDSR reports in all 16 districts. In 2020, WHO also supported the development of a pre-service and in-service IDSR training curriculum, which is being implemented in eight public health training institutions.

Monitoring and adjusting NAPHS implementation: Sierra Leone’s progress in implementing the NAPHS has been assessed annually since 2018, with the support of WHO. This is done using the State Party Self-Assessment tool and the JEE tool (self-assessment). In addition, a midterm evaluation was also done in June 2021, which showed that 52% of NAPHS activities had been implemented after three and a half years of implementation. The overall JEE self-assessment score for the human health sector was 44% in 2018,
51% in 2019, 57% in 2020 and 51% in 2021. The score for the animal health sector was 32% in 2018, 43% in 2019, 52% in 2020 and 51% in 2021 (a new JEE tool was used for the 2021 assessment). An annual operational plan was then developed from the NAPHS and the WHO benchmarks for International Health Regulations capacities tool, which comprises a list of benchmarks and corresponding actions at the subnational and national levels. WHO provided financial and technical support for the annual operational plan development workshops from 2018 to 2021. A web-based tool is used to track implementation of the annual operational plans in real time, and quarterly check-ins are used to identify gaps and enablers of NAPHS implementation.

**Combating antimicrobial resistance:** The Government of Sierra Leone prioritized combating antimicrobial resistance (AMR) through strengthening the AMR governance structure in the One Health approach, with focus on education and awareness of AMR, surveillance and research, and optimizing the use of antimicrobials in animals, humans and the environment. To reduce the incidence of infection, the country is implementing evidence-based infection prevention and control measures and effective hospital AMR stewardship programmes. The WHO Country Office in Sierra Leone is supporting interventions for the prevention of health-care-associated infections through the local production of alcohol-based handrub (ABHR). ABHR is a more preferred method of hand hygiene because of its wide microbial efficacy, time efficiency and improved skin tolerance. It is also widely used as an effective prevention measure during disease outbreaks such as COVID-19 and Ebola. Locally produced ABHR is a sustainable and affordable evidence-based intervention for the prevention of health-care-associated infections and AMR. In 2020, 17 120 L of ABHR was produced, and in 2021, 41 780 L was produced and packaged in branded containers (of 5 L and 500 mL) and distributed to health-care facilities. The locally produced ABHR is available in health-care facilities across the country.

Sierra Leone strengthened its AMR governance structure through establishing AMR technical working groups and sub-technical working groups for education and research, surveillance and laboratory, and antimicrobial stewardship; these embedded into the existing One Health structure. The technical working groups and sub-technical working groups provide technical guidance in the coordination and conduct of AMR-related activities using a systematic and comprehensive approach to allow for the achievement of the set strategic objectives of the national AMR action plan.

For Sierra Leone to progress, deploying a multisectoral, evidence-based One Health approach was vital. The Government of Sierra Leone and development partners are now much better aligned in their actions for emergency preparedness, prevention, detection and response, thus enabling the country to move towards its commitment to meeting the International Health Regulations.


Building subnational capacities and resilience through coordinated actions to strengthen South Africa’s COVID-19 preparedness and response

Building capacity for rapid response to health emergencies

The scale and magnitude of the coronavirus disease (COVID-19) crisis in South Africa were far greater than in other nations of the WHO African Region. By January 2022, over 3.5 million positive cases and more than 93,000 fatalities had been reported in South Africa – over 50% of the COVID-19 caseload on the African continent.

South Africa reacted early to the COVID-19 pandemic by rapidly deploying a comprehensive public health response that, in the early phase, included nationwide lockdowns. This prevented many infections and provided a window of opportunity to ramp up capacity in the health system and save many lives. To build capacity across the country’s health system, WHO
provided technical, strategic and coordination expertise. As WHO placed an emphasis on transferring skills and capacity to the workforce at the national and subnational levels, South Africa’s ability to respond to health emergencies was strengthened in both the short and longer term.

How did South Africa, with the support of the WHO Secretariat, achieve this?

- **Taking early preparedness measures:** In January 2020, the WHO Country Office in South Africa commenced work on preparedness measures with the National Department of Health, much earlier than the first reported case of COVID-19, on 5 March 2020. When the first case was confirmed, the measures enabled a rapid and comprehensive response at both the national and subnational levels.

- **Providing technical expertise in accordance with an established framework:** In March 2020, WHO repurposed its technical staff to support the response in accordance with the Emergency Response Framework. By end-2021, WHO had deployed 107 surge personnel, at the national level and in eight provinces, to support the National Department of Health. They included international and local experts in coordination, epidemiology and surveillance, case management, infection prevention and control, operations and logistics, and risk communication. As provincial emergency preparedness and response capacity strengthened and overall population immunity increased with vaccinations and natural infections, the overall number of COVID-19 cases and deaths declined. WHO then scaled down its surge team and transitioned towards broader health system strengthening for health security and universal health coverage.

- **Providing strategic support at the national level:** In July 2020, when South Africa was ranked fifth globally for cumulative cases, the President of South Africa requested technical support from WHO. WHO technical experts worked with the national Incident Management Team to synthesize global best practices and evidence to guide the COVID-19 response; provide technical support to the Office of the Director General of the National Department of Health and strategic support to technical working groups of the Ministerial Advisory Committee; and conduct technical reviews of the national response strategy and plans (e.g. vaccine introduction).

- **Supporting response coordination:** WHO undertook regular COVID-19 intra-action reviews at the national and provincial levels. These identified key gaps and challenges and provided concrete action-oriented recommendations to improve planning, preparedness and response. A total of 456 public and private health-care facilities were assessed using WHO’s infection prevention and control assessment framework. This led to the development of a plan of action for strengthening infection prevention and control and case management. WHO technical experts provided advice to strengthen the enhanced incident management system,
national response plan and national resurgence mitigation plan. The technical experts developed, implemented and monitored provincial and district resurgence plans, as well as providing supportive supervision to districts.

- **Comprehensive capacity-building:** WHO technical experts worked with public health partners at the provincial level to transfer skills and knowledge. WHO directly trained more than 1200 health professionals in infection prevention and control and case management, as well as 100 health promotion practitioners as COVID-19 champions on risk communication and community engagement. Moreover, WHO provided supportive supervision and on-the-job training in case investigation, immunization practices, safety surveillance, data-collection tools, data audit and quality control, as well as developing standard operating procedures for data management.

- **Introducing innovative models and tools:** WHO embedded five epidemiologists into district teams in Free State province and supervised and mentored them to fill critical skill gaps in epidemiology and surveillance. The intervention successfully built capacity; the National Department of Health and the National Institute for Communicable Diseases are now working with WHO to expand the model to other provinces. WHO introduced the Go.Data tool at the national and subnational levels to strengthen contact tracing through digitized data entry: 135 high-performing computers with outbreak data management software and other information technology equipment were provided, and staff of government health partners were trained on their use.

The support of WHO to strengthen the COVID-19 response in South Africa was well received by the Government. The Go.Data tool was a particular success. Accelerated data capture enabled the chains of COVID-19 transmission to be visualized and understood, and the data shared more quickly. More efficient team performance and improvements in data quality have been critical to guiding an evidence-informed response.

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Boosting influenza preparedness amid multiple crises in the Syrian Arab Republic

Coordinated preparedness and response

The influenza programme in the Syrian Arab Republic was established in 2009 in response to the influenza A (H1N1) pandemic. At the time, the Ministry of Health did not have a comprehensive preparedness plan covering all relevant sectors, and only instructions about preventive and preparedness measures had been circulated across health directorates. In addition, influenza surveillance was not systematic, and reporting was ad hoc. Laboratory capacity was very limited, testing an average of only 200 samples annually, and surveillance data were not representative of the entire population.

In 2011, after the start of the Syrian crisis, the health system was severely affected, increasing the risk of potential outbreaks of infectious diseases. The country suffered from deteriorated living and environmental conditions, health system collapse, decreased health workforce capacity and inadequate surveillance capacity. Concerns about the spread of infectious diseases, especially emerging influenza viruses with pandemic potential, highlighted the need to strengthen preparedness for influenza and other respiratory viruses.

In 2021, despite the compounded effects of the crisis and the ongoing coronavirus disease (COVID-19) pandemic, the Ministry of Health successfully launched its first comprehensive National Pandemic Influenza Preparedness Plan (NPIPP). Development of the new plan was overseen by the Syrian National Influenza Committee (SNIC), a new entity established by the Ministry of Health to ensure a whole-of-government and whole-of-society approach to influenza preparedness and response, coordinating action across all sectors and stakeholders.

How did the Syrian Arab Republic, with the support of the WHO Secretariat, achieve this?

A multisectoral venture

SNIC includes representatives from a range of government ministries and directorates, including health, communicable diseases, agriculture, education, interior and military medical services, as well as representatives from WHO country and regional offices. Together, the multisectoral committee is responsible for developing, maintaining, testing, evaluating and revising the NPIPP. Its work is supported by multiple partners, including WHO and WHO’s Pandemic Influenza Preparedness (PIP) Framework Partnership Contribution.1

Within PIP Framework Partnership Contribution activities, WHO contracted with an international expert to assist the country in developing the plan and support joint meetings with SNIC. In addition, WHO technical staff and experts, together with the Ministry of Health’s influenza programme,
conducted field visits, held technical consultations (both virtual and in-person) and considered lessons learned from the 2009 H1N1 pandemic and the ongoing COVID-19 pandemic.

The Ministry of Health aligned its plan with WHO guidance on pandemic preparedness and response, particularly with regard to integrating surveillance for multiple pathogens. To that end, in parallel with SNIC’s work on the NPIPP, the Syrian Arab Republic successfully established an integrated laboratory and sentinel surveillance system with enhanced detection and monitoring capacities for both influenza viruses and the COVID-19 virus.

In November 2021, a final draft of the NPIPP was agreed upon by all members of SNIC and endorsed by the Syrian government. The final plan includes a detailed operational component identifying time frames and responsibilities to guide preparedness and response capacity-building for influenza outbreaks in humans and animals.

Next steps

Throughout 2021, SNIC successfully developed the NPIPP despite huge operational restrictions and economic difficulties caused by the ongoing humanitarian emergency and the COVID-19 pandemic, as well as the unavailability of data on influenza burden and of information needed to develop the plan (e.g. number of health workers, people with chronic diseases and elderly persons). The process increased the commitment of both the Ministry of Health and the broader Syrian government to influenza preparedness and response. Through the PIP Framework Partnership Contribution, WHO will continue to support the country in testing, evaluating and refining the plan over the next two years. Planned activities include a simulation exercise in 2022 to test the plan and identify areas for further strengthening. In addition, the government is planning to use the NPIPP as a blueprint for enhancing preparedness, readiness and response to other priority health threats, including the COVID-19 virus and other respiratory pathogens.

Strengthening clinical management practices in Uzbekistan

Rapid readiness of front-line health workers

Clinical management of cases is fundamental for health systems’ response to a pandemic. The coronavirus disease (COVID-19) pandemic has highlighted the importance of having well trained front-line health workers to rapidly and appropriately provide care for patients with severe acute respiratory infections. The implementation of the Pandemic Influenza Preparedness (PIP) Framework in many countries has helped to prepare front-line health workers in advance of the COVID-19 pandemic, including in Uzbekistan. In recent years, Uzbekistan has made significant improvements in caring for patients with severe acute respiratory infections. These have been essential steps to strengthening national pandemic preparedness capacities, which were demonstrated during the response to the COVID-19 pandemic when existing courses were swiftly adapted to fully adopt the specificities of COVID-19 clinical care and a series of short courses were rapidly rolled out to ensure well trained front-line health workers.

How did Uzbekistan, with the support of the WHO Secretariat, achieve this?

Since 2015, under the umbrella of the PIP Framework Partnership Contribution, the Ministry of Health of Uzbekistan has been working with WHO to improve treatment of cases with severe acute respiratory infections caused by, for example, influenza through training front-line health workers. For several years, Uzbekistan has applied WHO’s critical care training short course to sharpen the skills of intensive care clinicians and thereby strengthening the country’s capacity to manage patients with severe acute

 COVID-19 clinical management protocols in print. Photo credit: WHO Country Office in Uzbekistan
respiratory infections. In 2018, with support from the PIP Framework, the Ministry of Health used the short course to develop and adopt its national guidance on management of patients with severe acute respiratory infections.

Two years later, in the face of a new global pandemic, the Ministry of Health and WHO leveraged the partnerships established under the PIP Framework implementation to form a collaborative group of experts and develop a new training programme on managing critically ill COVID-19 patients. The programme was developed in line with WHO recommendations on clinical management of patients with severe acute respiratory infections and was designed to enable front-line health workers to better manage severe COVID-19 cases. The new course, which can be delivered in just 36 hours and is thus optimally designed for ensuring rapid readiness of front-line health workers, was created by professionals from the National Advanced Training Center for Medical Doctors, in Tashkent, in collaboration with WHO country and regional offices, and with support from the United States Agency for International Development.

The new training in critical care, which is closely linked to the national COVID-19 clinical management protocol, has since been formally approved by the Ministry of Health. It provides a systematic approach to case management; highlights the importance of infection prevention and control measures for health workers; establishes new standards of care; emphasizes the importance of pandemic preparedness and ethics; and provides best practices for managing patients in intensive care units. The course materials are printed in three languages – English, Russian and Uzbek – before being launched for use across Uzbekistan.

The achievements in Uzbekistan demonstrate that health system preparedness and readiness to adjust to emerging threats are fundamental. Further strengthening of essential health system capacities remains a top priority as Uzbekistan reflects on the lessons learned from COVID-19 and how to leverage this experience to further strengthen systems and capacities in preparation for new pandemics and other health emergencies.

Mapping WHO resources to support the implementation of national action plans for health security in Liberia and South Sudan

Mapping resources for health security

Under the WHO Thirteenth General Programme of Work, the WHO Health Emergencies Programme contributes to the strategic priority of 1 billion more people better protected from health emergencies.1 WHO developed the resource mapping (REMAP) tool2 to advance this effort and support Member States in strengthening core health security capacities. The REMAP tool was first launched in 2018 to support country efforts to meet the requirements of the International Health Regulations3 through the implementation of the National Action Plans for Health Security (NAPHS).4

In 2021, the ministries of health of Liberia and South Sudan successfully mapped domestic and external health security activities using the REMAP tool and process. REMAP provided details of each health security activity mapped in both countries, including the funding source, timeline, geographical location, nature of activity, and technical area supported (i.e. surveillance, laboratory or risk communication). As a result, the countries and partners now know what is being supported in the countries and by whom, and which key technical and geographical areas are lacking support. By identifying needs and gaps, decision-makers can make evidence-informed decisions on resource allocation and re-allocation necessary to implement the countries’ health security plans.

How did Liberia and South Sudan, with the support of the WHO Secretariat, achieve this?

- **Implementing a strong collaborative effort:** Support was provided to the ministries of health of Liberia and South Sudan by all three levels of WHO: the WHO country offices in Liberia and South Sudan worked closely with government ministries and partners to facilitate data collection; the WHO Regional Office for Africa provided support in planning, coordination and implementation of REMAP; and WHO headquarters provided materials and guidance, as well as technical assistance such as data compilation and analysis.

- **Engaging in dialogue to assess the current situation and strategize for the future:** The REMAP process is multisectoral and inclusive. During REMAP workshops, several government ministries and partner organizations working in the countries would map health security together. The workshops held in Juba (South Sudan) and Monrovia (Liberia) involved approximately 60 participants each session. Participants engaged in dialogue, which enabled them to map the current situation in the countries, advance the countries' NAPHS, and better align their resources and priorities with the countries' financial and technical gaps and needs.
The 2021 mapping identified more than US$ 183 million in health security investments made at the national and subnational levels in South Sudan and more than US$ 78 million in Liberia. In South Sudan, extensive partner support was evident in areas such as rapid response and surveillance, whereas major gaps were found in areas such as immunization, antimicrobial resistance, and biosafety and biosecurity. In Liberia, it became evident that partner interventions were heavily weighted towards laboratory, surveillance and immunization, whereas there was less support in other areas including antimicrobial resistance, biosafety and biosecurity, and national legislation. In South Sudan, the REMAP tool was also used to track progress in the implementation of the country’s NAPHS. Participants measured progress in each of the 19 NAPHS technical areas and determined that 11% of NAPHS activities had been implemented at that time.

- **Mobilizing human resources**: The REMAP tool included human-resource mapping, which is necessary to identify human-resource needs for implementing the NAPHS of Liberia and South Sudan. By identifying needs for expert technical assistance in specialized areas, for example, the tool is designed to inform mobilization of technical assistance through a multisectoral partner network that WHO is establishing to support countries in implementing priority health security actions.

- **Recognizing that REMAP is an ongoing process**: The REMAP workshops in the countries were viewed as an invitation to partners to share information and become involved in a coordinated multisectoral approach to strengthening preparedness for health security. To better support ongoing REMAP, a new web-based version of the Excel-based REMAP tool was...
released in 2022. It facilitates data collection and analysis through real-time access to the tool and enhanced visualizations. Moreover, monitoring of national plans can be conducted through the REMAP tool, allowing countries to track and visualize their progress in implementing the plan’s activities.

The REMAP process in Liberia and South Sudan highlighted the importance of strengthened collaboration for preparedness. It was vital to bring together different ministries, partners and all three levels of WHO to map health security activities and investments, analyse the situation and engage in dialogue. A key challenge for the future will be to ensure continued momentum through sustained engagement of existing partners and bringing additional partners on board to support the efforts.

COVID-19 vaccination intra-action review: countries share learnings from COVID-19 vaccine roll-out through a global community forum

Optimizing COVID-19 emergency response through intra-action review

The world currently faces one of the most challenging health emergencies of modern times: the coronavirus disease (COVID-19) pandemic. As new variants continue to emerge, countries are racing to vaccinate vulnerable populations so that they can transition out of the pandemic's acute phase and towards long-term management of the virus. To optimize the efficient roll-out of different types of COVID-19 vaccines developed across the globe and protect the most vulnerable, it is pertinent for countries to review, reflect and fine-tune their vaccine implementation strategies.

Launched in April 2021, WHO’s COVID-19 vaccination intra-action review, also known as mini COVID-19 vaccine post-introduction evaluation (mini-cPIE), enabled countries to reflect and learn from the early phase of the vaccine roll-out.

In Ghana, vaccination cards contain metallic holograms to enable authentication of vaccination status. Photo credit: WHO/Blink Media/Nana Kofi Acquah
out. As of 31 December 2021, 34 mini-cPIEs have been conducted, enabling countries to rapidly identify challenges that needed addressing and expand upon good practices.

How did the countries, with the support of the WHO Secretariat, achieve this?

- **Identifying the need for a lighter post-introduction review process to support real-time adjustment of vaccine roll-out:** As the COVID-19 pandemic evolved, new COVID-19 vaccine products with unique characteristics were approved and made available. Early COVID-19 vaccine programme implementation planning was (and continues to be) complex. It also differed substantially from previous new vaccine introductions as regards the multiple vaccine products with unique characteristics and considerations around priority populations for vaccination. Countries needed a way to rapidly review best practices, as well as lessons learned from the introduction process, and adjust their strategies to ensure vaccines reached target populations efficiently and safely. With rapid roll-out, countries had little bandwidth to conduct the standard WHO post-introduction evaluation for new vaccines, which can be time and resource intensive. This prompted WHO to explore the development of a lighter process to review the COVID-19 vaccine roll-out.

- **Working together across WHO departments to co-develop tools and processes for country-level COVID-19 vaccination intra-action review:** To facilitate country-level COVID-19 vaccination programme reviews, WHO’s Health Security Preparedness Department and Department of Immunization, Vaccines and Biologicals joined forces. They leveraged the existing country COVID-19 intra-action review methodology to develop a new tool that enabled countries to conduct a quick but standardized review of specific aspects of their COVID-19 vaccine roll-out (i.e. the mini-cPIE). The mini-cPIE allowed countries to rapidly identify and address gaps, and expand good practices of the early phase. Collaboration across WHO departments enabled the mini-cPIE to be developed, in line with existing WHO guidance, materials and tools such as the National Deployment and Vaccination Plan for COVID-19 vaccines, the cPIE and the COVID-19 Strategic Preparedness and Response Plan. This ensured a coherent and streamlined approach.

- **Encouraging flexibility and adaptability to address the needs of different contexts with a country-owned and country-led approach:** To conduct a mini-cPIE, a small group of stakeholders (including decision-makers and front-line vaccination staff) knowledgeable about the vaccination programme are brought together in a country – ideally online if community transmission remains high. The group then reviews functional capacities at the national or subnational level to identify best practices, gaps and lessons learned, and collectively proposes corrective measures and actions. The countries can adapt the mini-cPIE using a “trigger question database”, which enables them to focus on specific aspects of the vaccine roll-out based on the unique challenges of their current context.
Bringing together countries, partners and other agencies of the United Nations system to create a virtual community forum to share country learnings: To enable countries to connect, share, benefit and learn from each other’s experiences during the early phase of COVID-19 vaccine deployment, WHO and partners hosted a virtual community clinic from July to December 2021. Extensive advocacy and outreach efforts prior to the five sessions included engaging with WHO regional and country focal points and advertising the clinics and registration links through social media, WHO’s networks and newsletters. The five sessions were attended by nearly 1000 participants from more than 125 countries, the United Nations and other partner agencies. Ten countries from four WHO regions presented on various emerging themes and pertinent aspects related to their COVID-19 vaccine roll-out. Thematic sessions included lessons from humanitarian contexts, risk communication and community engagement, and considerations to promote equitable uptake, particularly considering gender. Clinic sessions were interactive, with peer countries able to directly connect with presenting countries and ask questions. Simultaneous interpretation in Arabic, French, Portuguese, Russian and Spanish was provided to accommodate different presenters and participants of the clinic sessions. Furthermore, a group was established on Telegram to enable participants to continue the discussion after the sessions if they so wished.

[To increase COVID-19 vaccine uptake through risk communication and community engagement], coordinate and partner with people from the same community to help explain the correct information and its benefits, and correct misconceptions brought about by rumours and misinformation.

Participant at one of the WHO mini-cPIE clinics

Highlights from presenting countries

Presenting countries shared the importance of strong political commitment for mobilizing national resources, bilateral negotiations for donations to increase access to vaccines, and multisector engagement to mobilize human resources. Key highlights during the country presentation and question-and-answer sessions included the following: Bhutan illustrated how having the Prime Minister get the first and second doses of a heterologous regimen boosted public confidence, resulting in 95% coverage for the first dose and over 90% coverage for the second dose, following national vaccination campaigns. The Plurinational State of Bolivia reviewed uptake data disaggregated by geographical area, target population and gender to understand coverage disparities. They highlighted prioritizing the single-dose regimen for hard-to-reach rural and indigenous populations to minimize the risk of dropout and reduce vaccine access inequity. The Democratic Republic of the Congo described how interpersonal communication, pre-registration, monitoring of vaccination of pre-registered individuals and management of refusals were key to engaging and building confidence among
high-risk populations. The Gambia described using a “vaccine caravan” to facilitate vaccination and engage communities in remote areas. Ghana shared innovative approaches of affixing cost-effective metallic holograms on vaccination cards to enable authentication of vaccination status, as well as utilizing drones to distribute vaccines to hard-to-reach populations. Mozambique shared the use of multiple communication channels to create demand and implement regular monitoring and management of rumours through a digital platform and a technical group. Senegal shared its success in establishing adverse event following immunization (AEFI) committees and investigating all severe AEFIs, but also pointed out the challenge of addressing unavailability of free medical care for those experiencing serious AEFIs. Additional challenges were highlighted during the clinic sessions. South Sudan highlighted how rumours were dispelled using survey findings, media engagement, high-level advocacy meetings, radio programmes and talk-show jingles, especially when new variants of concern emerged and created a loss of confidence in current vaccines. Somalia described how forecasting tools were developed to increase vaccine management and distribution capacity following challenges experienced in the distribution of doses, given short expiry dates. Uganda shared how delays in fund deployment to the operational level were addressed by early and transparent communication with health workers to encourage them to continue offering vaccination services while administrative issues were being resolved.

While mini-cPIEs may have been effective within each country, WHO leveraged its convening role to enable cross-contextual learning in the global forum to enhance their value at the global level. This enabled countries, partners and other agencies of the United Nations system to benefit and learn from others’ experiences in the early phase of COVID-19 vaccine deployment. WHO’s unique structure and positioning enabled participants to attend
from across the globe, and from different levels of the health system. Registration information of the 852 attendees indicated that 40% worked in the immunization sector, 23% in emergency preparedness and response, and 18% in programme management. Moreover, 41% worked in the multinational context, 49% at the national level and 10% at the subnational level. COVID-19 coordination committee members made up 41% of the participants.

With countries still striving to vaccinate susceptible populations around the globe, the mini-cPIE clinic series offered a global experience-sharing forum for countries to inspire and learn from one another in order to improve the planning and deployment of COVID-19 vaccines in their own contexts.

2.2 Epidemics and pandemics prevented
Strengthening local preparedness for influenza and COVID-19 in Cambodia

Strengthening influenza and COVID-19 preparedness

The coronavirus disease (COVID-19) pandemic led to the global implementation of measures to reduce COVID-19 virus transmission. This affected other communicable diseases including influenza, whose circulation decreased worldwide in 2020. In Cambodia, fewer influenza cases were detected while COVID-19 restrictions were in place. The country experienced outbreaks of influenza from June 2020, after the Ministry of Health began to ease COVID-19 restrictions. This highlighted the importance of active surveillance systems for a broad spectrum of infectious respiratory diseases.1

Cambodia’s Master Plan for COVID-19 emphasizes strengthening local preparedness for any new outbreaks of COVID-19, influenza or other respiratory diseases. WHO provided technical and operational support to the Ministry of Health, including through the Pandemic Influenza Preparedness Framework Partnership Contribution,2 to deliver a package of activities at the provincial level. Activities were designed to strengthen local capacities for surveillance, risk assessment and rapid response. So far, preparedness activities have been delivered in 18 of the 25 provinces, with the remaining seven to be covered by late 2022. This puts Cambodia on the path to achieving strong provincial surveillance capabilities, which will help to ensure effective operational and strategic decision-making during the ongoing or in any future pandemic.

How did Cambodia, with the support of the WHO Secretariat, achieve this?

- **Training and coaching in multisource surveillance**: WHO Country Office experts conducted training sessions on surveillance concepts and the use of surveillance data. This enabled national and provincial focal points across the country to analyse multiple sources of information to monitor disease trends and elicit an appropriate response.

- **Webinars on the use of risk assessment within an incident management system**: WHO Country Office experts conducted 12 incident management system webinars to boost capacity at the provincial level and enable provincial health leaders to recognize the value of using risk assessments to inform decision-making. As a result, the country now aims to transition from nationally to provincially led risk assessments. This will better enable multilevel planning and decision-making in Cambodia.

- **Simulation exercises in contact tracing**: WHO experts conducted 16 simulation exercises with the Ministry of Health, provincial health departments, representatives from relevant sectors and the local authorities. As part of the simulation exercises, which took a multisource approach to rapid response, participants were tasked with going into the field to investigate cases, trace contacts and obtain health centre data.
Provinces reflected that the exercises greatly enhanced cross-sectoral collaboration for contact tracing between health and non-health sectors and strengthened the country’s whole-of-society approach to pandemic response.

- **Intra-action reviews:** Using WHO guidance materials, WHO Country Office technical experts guided the COVID-19 intra-action reviews (IARs) to enable reflection on Cambodia’s local COVID-19 response in 18 provinces. Representatives from non-health sectors, for example the police and local authorities, participated in the multisectoral IARs alongside health professionals. Provincial IAR findings will feed into a broader national IAR. The national IAR aims to identify key challenges and recommendations to inform the next National Workplan for Emerging Diseases and Public Health Emergencies. The National Workplan will be used to guide workplans at the provincial level.

Strong government leadership at the national and subnational levels has been crucial for strengthening local preparedness for influenza and COVID-19 in Cambodia: public health and social measures were designed to empower the community at the local level using participatory methodology, and strong leadership enabled decisive action to be taken for implementation. Experience gained while implementing local preparedness activities in Cambodia suggests that provincial capacities are best developed one step at a time: methods included follow-up meetings, and regular on-site coaching enabled confidence and capability to be built over time. An enabling environment was also critical to ensuring functionality of the local health security system. In Cambodia, this environment was created through advocacy, engagement and dialogue – particularly with the provincial administration under governors’ leadership.

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Expanding the network: a newly designated National Influenza Centre in Togo

A newly designated National Influenza Centre in Togo

WHO’s Global Influenza Surveillance and Response System\(^1\) was founded in 1952. Member States collaborate to protect people from the threat of influenza through monitoring, surveillance, preparedness, alerts and response. National Influenza Centres\(^2\) play a crucial role in the system by collecting virus specimens and performing preliminary analyses. These national institutions, designated by national ministries of health and recognized by WHO, ship representative clinical specimens and isolated viruses to WHO Collaborating Centres\(^3\) for advanced antigenic and genetic analyses. The results of these analyses form the basis for WHO recommendations on the composition of influenza vaccine each year, as well as relevant risk assessment activities of WHO.

In mid-2021, Togo’s influenza laboratory at the Institut National d’Hygiène obtained WHO recognition as a National Influenza Centre, one of only 14 laboratories recognized as such in the WHO African Region. This marks a major milestone for influenza surveillance and laboratory readiness for Togo and means that more data and more viruses are being represented in national, regional and global risk assessments. The National Influenza Centre designation paves the way to further enhance national capacity for influenza diagnostics and other respiratory viruses and boosts the country’s laboratory network development. Togo and the African Region are better prepared to detect and respond to a novel influenza virus.

**How did Togo, with the support of the WHO Secretariat, achieve this?**

- **Setting a path for readiness:** In 2018, an official request was filed by Togo’s Ministry of Health for the Institut National d’Hygiène to be recognized by WHO. After receiving the request, the WHO Regional Office for Africa...
commenced the recognition process\(^4\) to ensure that the prospective centre meets the National Influenza Centre terms of reference.

- **Assessments:** In 2018, influenza laboratory experts from Cameroon and Côte d’Ivoire visited the laboratory to conduct a gaps and needs assessment. The assessment formed the basis for a rigorous programme of capacity-building. After follow-up assessments in late 2020, this led to the laboratory meeting its requirements for National Influenza Centre designation and recognition by WHO.

- **Capacity-building:** Capacity-building through collaboration with experts across the region was critical for experience-sharing and has expanded the network so that other laboratories in the region could initiate the process and be recognized as National Influenza Centres.

- **Ongoing support:** Togo’s important achievement was a culmination of years of work and facilitated by the Pandemic Influenza Preparedness Framework Partnership Contribution\(^5\), including training sessions and assessments on specimen handling and transport, biosafety and diagnostic techniques.

The coronavirus disease (COVID-19) created many roadblocks for on-site engagement and for laboratories, as closed borders restricted access to reagents, as well as external support. The increasing burden of COVID-19 testing challenged the already overwhelmed health system, and diagnostic capacities were heavily prioritized for the COVID-19 response. Despite those pressures, Togo’s influenza laboratory at the Institut National d’Hygiène was able to maintain its influenza testing capacity with continuous support from WHO and regional experts.


2.3 Health emergencies rapidly detected and responded to
Enabling a rapid and coordinated response to COVID-19 in Bhutan

Rapid response saved lives

Bhutan’s first case of the coronavirus disease (COVID-19) was reported in March 2020. The government reacted quickly to contain the outbreak, but new cases remained a considerable risk. Bhutan shares sizeable land borders with India and China and has a relatively low density of health workers: only 370 medical doctors, 1500 nurses and 700 community health workers serve a population of about 760,000 people. A rapid transmission of COVID-19 would quickly and inevitably overwhelm the health system. Fortunately, years of infectious disease preparedness activities conducted by the government with technical and financial support from WHO had prepared Bhutan to detect and respond rapidly to COVID-19. Bhutan’s rapid and harmonized response to COVID-19 has prevented thousands of infections and saved hundreds of lives. In 2020–2021, 2660 COVID-19 cases and four related deaths occurred in Bhutan, a lower disease burden than reported in many other countries.

How did Bhutan, with the support of the WHO Secretariat, achieve this?

- **Investing in preparedness:** In the months before the first reported COVID-19 case in the country, WHO had provided financial and technical support to strengthen screening procedures at Paro International Airport. Thermal scanners were installed to monitor the body temperatures of arriving passengers, and COVID-19 simulation exercises were conducted to develop, assess and test functional capabilities of emergency systems, procedures and mechanisms to respond to COVID-19. In the years preceding the pandemic, the WHO Country Office in Bhutan had provided technical expertise to the Ministry of Health to develop the health emergency contingency plan, strengthen International Health Regulation core capacity and upgrade biosafety laboratory capacity from level 2 to level 3. WHO had also placed medical camp kits around the country to ensure continuity of primary health-care services. When COVID-19 arrived, the camps were quickly converted into flu clinics as part of the COVID-19 response.

- **Deploying a prompt, evidence-based response:** The WHO Country Office updated and shared technical guidelines and strategies with the Ministry of Health, enabling a response based on the latest evidence and daily epidemiological situation analyses. WHO was the only organization in Bhutan’s Technical Advisory Group for the COVID-19 response.

- **Assessing the readiness of the health system and ensuring the availability of COVID-19 trained health workers:** Bhutan assigned and trained workers to lead the front-line response using WHO protocols. WHO delivered gowns, gloves, goggles and medical masks to those on the front line. In June and
July 2020, WHO provided financial support for weekly training sessions on the proper use of personal protective equipment.

- Developing and delivering strong, coordinated strategic action through timely simulation exercises: In June and July 2020, the WHO Country Office and the WHO Regional Office for South-East Asia provided funding and technical expertise to the Government of Bhutan for nationwide tabletop simulation exercises. Conducted in strategically important areas (five high-risk border areas and the capital city), the exercises tested standard operating procedures for pandemic management and identified and addressed gaps to strengthen the pandemic response plan. The 70 national and subnational-level officials who attended were better equipped to implement COVID-19 protocols as a coordinated team. As one elected city council member expressed:

Attending the tabletop simulation exercise was an enriching experience. During the lockdown, I felt like I could easily communicate with other task force members and support my community. Before the exercise, I did not know how to work with others on the task force. We were ready with standard operating procedures but did not know exactly how to implement them.

Moreover, Thinley Norbu, Chief Programme Officer of the Department of Disaster Management, commented that:

The simulation exercise was carried out in a very timely manner. We tested the different roles and responsibilities needed for coordinating internal and external partners and the community. It helped us to identify gaps and fix them to strengthen our response. A clear understanding of logistics was necessary to ensure we could provide food, water and medical services to people during lockdown.

Bhutan’s successful response to COVID-19 stems from years of preparedness in addition to a rapid, strongly coordinated and well led response. The King of Bhutan has been at the forefront of the response since the emergence of SARS-CoV-2, building national solidarity through strong and invested leadership. WHO’s activities to support Bhutan by strengthening the country’s preparedness and coordination received praise from Bhutan’s Prime Minister and Minister of Health. Moreover, the WHO Country Office in Bhutan was recognized by the United Nations system in Bhutan and awarded a certificate for “Facilitating delivery in the time of COVID-19".
Building a health-care system that is better prepared for health emergencies in Bahamas

A stronger, more resilient health system

Bahamas is a small archipelago of 700 islands and 2400 cays situated 50 miles off the coast of Florida, United States of America. The Bahamian health system aims to provide equitable access to quality health care for approximately 389 000 people; however, fragmentation of service delivery within the public and private health sectors presents a challenge. Recent natural disasters and the coronavirus disease (COVID-19) pandemic have stretched the health system to its limits, exposing long-standing structural and systemic deficiencies. To strengthen the resilience of the Bahamian health system, the Pan American Health Organization (PAHO)/WHO provided technical support for capacity-building to the Government of The Bahamas, enabling the country to rapidly detect and respond to future health emergencies.

How did Bahamas, with the support of the WHO Secretariat*, achieve this?

- **Strengthening policy**: PAHO/WHO provided technical advice and operational support to develop policies relating to public health and COVID-19 outbreak prevention and control. This included policy and guidelines on clinical management, infection prevention and control, disease surveillance, case and contact management, mental health and psychosocial support, travel, employers, schools and social support for vulnerable groups.

- **Mobilizing funds**: PAHO/WHO supported the Ministry of Health and Wellness in mobilizing financial and technical support for the COVID-19 response from other specialized agencies of the United Nations system, foreign missions, the public sector and civil society. High-level discussions were held with the Prime Minister and Cabinet relating to the COVID-19 situation, its links with public health and the economy and the various options for strengthening the public health response. The main focus areas included coordination, planning, monitoring, surveillance, operational support, logistics, supply chains, the continuation of essential health services and risk communication.

- **Strengthening disease surveillance**: PAHO/WHO temporarily assigned epidemiologists to support the Ministry of Health and Wellness in surveillance and data management for COVID-19. PAHO/WHO guidelines on epidemiological surveillance, contact tracing, case isolation and

* PAHO was established in 1902 as the specialized health agency of the Organization of American States within the inter-American system. In 1949, through an agreement with WHO, PAHO agreed to serve as the WHO Regional Office for the Americas.
quarantine of contacts were adapted to the Bahamian context. PAHO/WHO conducted training and provided software to build capacity in data analysis and reporting, including the use of a contact tracing tool. The Ministry conducted a review of medical records to assist with the classification of COVID-19 deaths. PAHO/WHO provided financial support for an online contact tracing course, in collaboration with the University of Bahamas. A task force supported COVID-19 outbreak investigations and vaccine distribution, with the participation of PAHO/WHO staff. PAHO/WHO also provided technical support to develop a relational database integrating data collected from different stakeholders to improve data gathering, analysis and information generation. PAHO/WHO continued to provide support to the Ministry’s Emergency Operation Centre to monitor emergencies by providing equipment and developing reporting dashboards.

- **Increasing surge capacity:** Tools and guidelines prepared by PAHO/WHO facilitated planning for clinical and hospital surge capacities (hospital beds, human resources and supplies). Assistance was provided for the expansion of acute care services. PAHO/WHO provided modular units to expand isolation and triage capacity, as well as medical equipment and devices to strengthen clinical care for COVID-19 cases in the main
WHO delivering results and making an impact: stories from the ground

hospitals and primary health clinics. To minimize COVID-19 infections, improvements were made to patient and staff workflows. Guidance was provided to enable the development of clinical guidelines and updated for patient management according to severity classification. PAHO/WHO also supported the operations, logistics and supply chains by providing medical equipment and devices, laboratory equipment and supplies, personal protective equipment, nasopharyngeal swabs and hand sanitizers, an investment of over half a million United States dollars.

- **Enabling risk communication**: Risk communication and public education products on topics such as mental health, cyber safety for children, prevention of gender-based violence and substance abuse, parenting during COVID-19 and tips for isolation during quarantine were developed with support from PAHO/WHO. The communication materials were disseminated through the PAHO/WHO social media platforms and via local mass media and partner agencies, including press conferences, town hall meetings, radio/television interviews and social media. Logistical support was provided to the Ministry of Health and Wellness to prepare and print communication products, including in Haitian Creole for the Haitian migrant community, in collaboration with other agencies of the United Nations system.

  **The government spent US$ 250 000 in sourcing a COVID-19 vaccine through the Pan American Health Organization (PAHO). PAHO will not only assist Bahamas to obtain the COVID-19 vaccine but seeks to do so for each and every country in the entire Caribbean community and the region of the Americas.**

Renward Wells
Former Minister of Health

By overcoming multiple challenges – including human resource shortages, requisite multitasking and scarce financial resources – Bahamas significantly improved its capacities in key aspects of the health system, such as disease surveillance, clinical care services capacities and risk communication, to rapidly detect and respond to future health emergencies sustainably. The country’s strengthened ability to respond to, for example, COVID-19 surges is likely to have already prevented thousands of COVID-19 infections and deaths. Strengthening is still required in some key areas, including reinforcing the Ministry’s surveillance unit with additional trained human resources and further data-management and analysis support to sustain the progress made in the past two years. By building a more resilient health-care system, Bahamas is now better equipped to detect and respond to natural disasters and disease outbreaks in the future, which will save thousands of lives.

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Achieving the first-ever confirmation of visceral leishmaniasis and identification of leishmaniasis species by polymerase chain reaction in Chad

Rapid outbreak response

Visceral leishmaniasis, also known as kala-azar, is one of the world’s most deadly parasitic diseases. An estimated 50 000–90 000 new cases of visceral leishmaniasis occur worldwide annually, with only 25–45% reported to WHO; left untreated, visceral leishmaniasis is fatal in over 95% of cases.¹ Between 2016 and 2020, an average of 538 deaths per year were reported (from 604 in 2016 to 347 in 2020).² Visceral leishmaniasis is caused by protozoan parasites of the genus *Leishmania* and transmitted to humans through the bite of infected sandflies.

Sporadic cases of visceral leishmaniasis were reported in Chad prior to 2018. Countries such as Libya and the Sudan, which share borders with Chad,
report thousands of cases each year. Between January 2018 and May 2021, an outbreak of visceral leishmaniasis was reported by three provinces in Chad – Borkou, N’Djamena and Tibesti – resulting in 122 cases and six fatalities. In August 2020, there were rumours of a febrile illness affecting young gold miners in Borkou and Tibesti, hard-to-reach regions located in insecure areas partly controlled by self-defence militias. The suspected visceral leishmaniasis outbreak drew urgent attention to the need for intervention. Rapid public health action and WHO support aimed to strengthen surveillance, procedures for blood sample collection, storage and shipment, and laboratory testing of all suspected cases. In 2021, the outbreak was brought under control.

How did Chad, with the support of the WHO Secretariat, achieve this?

- **Investigation mission:** The Ministry of Public Health and National Solidarity, with technical support from the WHO Country Office in Chad, deployed a mission to Borkou and Tibesti. A total of 19 blood samples were collected from patients presenting with clinical signs and symptoms of visceral leishmaniasis. Environmental conditions were found to be suitable for sandfly vector development.

- **Polymerase chain reaction (PCR) analysis:** The WHO Country Office financed the shipment of blood samples to the Parasitology Reference and Research Laboratory (Centro Nacional de Microbiología - Instituto de Salud Carlos III), a WHO Collaborating Centre for Parasitology Research in Madrid, Spain. For each sample, a rK39 antigen rapid diagnostic test (RDT) and a PCR test were performed. Of the 19 samples tested by PCR and 16 by rK39 RDT, 13 were found positive for *L. donovani* – this was the first-ever confirmation of the existence of visceral leishmaniasis and identification of leishmaniasis species by PCR in Chad.

- **Monitoring and case management:** The Ministry of Public Health and National Solidarity arranged weekly coordination meetings, which brought together field actors and partners, in particular the WHO Country Office and the WHO Regional Office for Africa, to monitor the epidemiological situation and management of cases to control the epidemic.

- **Deployment of medicines and diagnostic tools:** A second joint WHO and Ministry of Public Health and National Solidarity mission made it possible to deploy medicines and RDTs to Borkou and Tibesti and to strengthen the capacities of local service providers for the diagnosis and management of cases. Because meglumine antimoniate, the medicine used for the management of visceral leishmaniasis, is expensive (more than US$ 150 for a complete treatment) and often unavailable in Chad, WHO headquarters sent the medicine when it was needed.

- **Extension of investigations:** A list of cases was created in the two epicentre provinces (Borkou and Tibesti). Investigations were extended to other provinces, and cases were isolated in Ouaddai and N’Djamena. A monthly report on the situation was prepared and shared with all partners.
• **Adoption of a therapy protocol**: Chad, with technical support from WHO and in accordance with WHO guidelines, provisionally adopted the dual therapy protocol (sodium stibogluconate + paromomycin) for 17 days of treatment. Adopting the protocol enabled WHO to provide these two key drugs for management, as well as rK39 RDTs for rapid diagnosis at the peripheral level.

• **Training of health-care workers**: Data on visceral leishmaniasis are scarce in Chad and not well known to health-care practitioners. The Ministry of Public Health and National Solidarity and the WHO Country Office in Chad addressed this major challenge by training 30 service providers in case management in Borkou and Tibesti.

Although the diagnosis of visceral leishmaniasis and identification of leishmaniasis species have been made, the extent of the disease in Chad remains unknown and a significant amount of work remains to be done. An epidemiological survey on all at-risk areas is being prepared, with support from the WHO Country Office, which will further strengthen surveillance and control of the disease in Chad.

Debunking myths about COVID-19 vaccines in Costa Rica

Increased vaccine uptake

An abundance of information – some accurate, some not – spread alongside the coronavirus disease (COVID-19). An infodemic\(^1\) created a breeding ground for uncertainty. As Costa Rica began to acquire vaccines through the COVID-19 Vaccine Global Access (COVAX) Facility\(^2\) and bilateral agreements, uncertainty fuelled scepticism and distrust, causing some people in the country to reject quality, safe and effective COVID-19 vaccines.

To empower people to make evidence-informed choices about COVID-19 vaccination, the Pan American Health Organization (PAHO)/WHO launched a communication initiative in Costa Rica to debunk myths about COVID-19 vaccines. Its inclusive messaging, aimed at leaving no one behind, was transmitted via radio, television, in-person events and virtual platforms, such as online training courses.

Verbal and survey feedback indicated that the initiative was well received by community members, and PAHO/WHO received a high number of requests from actors at the local, regional and national levels to replicate the
workshops. Vaccine coverage increased, particularly in the segments of the population targeted by the initiative, indicating that the full range of efforts to improve vaccine uptake in Costa Rica was effective.

**How did Costa Rica, with the support of the WHO Secretariat, achieve this?**

**Involving diverse stakeholders:** The PAHO/WHO Country Office in Costa Rica supported and advised national health authorities on COVID-19 through vaccination forums, official press conferences and local emergency committees, as well as reaching out to other diverse stakeholders to understand problems in the community and attain commitment, resources and action. PAHO/WHO’s existing networks had wide reach, but new alliances were established at the national and subnational levels to expand the reach. This included traditional partners, such as the Ministry of Health and the Costa Rican Social Security Fund. New partnerships were formed, for example with the Ministry of Justice, the Ministry of Communications, the National Emergency Committee and the National Patriotic Alliance for COVID-19 Vaccination led by the Catholic Church.

**Developing a workshop:** PAHO/WHO facilitated access to timely, accurate and credible information by continually monitoring scientific evidence on COVID-19 vaccination. Using the evidence base, the PAHO/WHO Country Office developed a workshop that aimed to debunk myths and misinformation about COVID-19 vaccines in the general population. The 29 virtual workshops held in 2021 attracted 673 attendees, as well as 7794 views on the Facebook Live videos.

**Reaching indigenous communities:** Local governments and indigenous leadership organizations requested workshops as they felt that they had few opportunities to discuss with institutions or ask questions about COVID-19 vaccines. Staff from the PAHO/WHO Country Office enquired indigenous communities about their fears surrounding COVID-19 vaccines and collaborated with indigenous associations to adapt the original workshop content, language and vocabulary so that they would resonate. Two radio programmes and 37 in-person workshops were delivered to 11 indigenous communities.

**Overcoming access barriers for people with disabilities:** To address the needs of people with hearing and visual disabilities, the PAHO/WHO Country Office (with input from the National Council for People with Disabilities) added a video, Costa Rican Sign Language and an audio track to communication materials. In two participatory workshops held with 39 people with intellectual disabilities and their carers, activities such as painting images related to vaccination were used to transmit the message more effectively. As one participant shared, “I have learned that COVID vaccines are like a shield; they protect us”.

* PAHO was established in 1902 as the specialized health agency of the Organization of American States within the inter-American system. In 1949, through an agreement with WHO, PAHO agreed to serve as the WHO Regional Office for the Americas.
• Training health workers: Barriers to accessing COVID-19 vaccination included a lack of adequate knowledge among health workers. Nurses expressed concern about low vaccination rates in pregnant women and needed more information to be able to communicate well with their patients. In response, PAHO/WHO developed a version of the workshop focusing on pregnancy and lactation and integrated this into an online continuing education course at Hospital México. The course was promoted nationwide through institutional and social networks, and 150 obstetric nurses attended.

PAHO/WHO’s approach was effective because it recognized that myths and misinformation about COVID-19 cut across all segments of the population; a collaborative and participatory approach was taken to address the issue. PAHO/WHO continues to work with national authorities and communities to counter myths and misinformation as they emerge and evolve in Costa Rica. By continually adapting material to meet diverse needs, PAHO/WHO is progressively reaching more people with information that can make a difference of life and death.

Engaging meaningfully with community stakeholders to respond to COVID-19 in Ecuador

Empowering indigenous women as agents of change

Ecuador is a multi-ethnic country with wide cultural diversity, including 18 indigenous nationalities and 14 traditional and diverse indigenous villages, which are distributed in different geographical areas of the country. In many cases, entry into the communities must be by river or air, especially in the Amazon region. This, along with other socioeconomic realities, presents challenges to accessing health services. Populations in those areas are highly vulnerable to public health threats such as the coronavirus disease (COVID-19). The WHO Regional Office for the Americas/Pan American Health Organization (PAHO) selected and engaged with two local civil society organizations – Fundación Pachamama and the Confederation of Indigenous Nationalities of the Ecuadorean Amazon (CONFENIAE) – to mitigate the impact of the pandemic on indigenous communities. The PAHO/WHO Country Office in Ecuador provided support to the two civil society organizations through jointly planned interventions to scale up their community assistance programmes. Assistance was provided as part of a global initiative financially supported by the COVID-19 Solidarity Response Fund, which aimed to train and equip communities and health workers to prevent, detect and treat COVID-19, as well as strengthening the readiness and resilience of communities to face future public health emergencies.

It is expected that improving access to information, providing continued support for essential health services and promoting inclusive community participation will strengthen the Amazonian indigenous communities’ immediate response to COVID-19 and beyond, as well as increasing vaccine uptake and reducing morbidity and mortality in those isolated communities. Actions implemented in Ecuador under this initiative, together
with other country-led efforts, have already contributed to slowing down the transmission of the disease and reducing COVID-19 incidence in the targeted provinces (Morona Santiago, Pastaza and Tungurahua). Between epidemiological weeks 17 and 43, the number of newly reported COVID-19 cases in those provinces decreased from 1748 confirmed cases in May 2021 to 262 new cases in October 2021. In the long term, it is expected that community-led interventions will lead to more resilient communities and health systems in their preparation for and response to all health emergencies, not just COVID-19.

**How did Ecuador, with the support of the WHO Secretariat*, achieve this?**

*Having a strong framework for action: All COVID-19 Solidarity Response Fund countries were guided by the three E’s of commitment: enable, empower and engage. Ecuador enabled local civil society organizations to empower indigenous Amazonian women to become “agents of change”, thus engaging their communities to defeat COVID-19 and future emergencies.*

*I feel proud to walk around as a health promoter and I want to invite all the sisters and women to be part of this empowerment and fight for our rights. I want us to be strong women and fighters.*

Indigenous health promoter on maternal health Fundación Pachamama

*Working with organizations that are already well established in the community: For more than 20 years, Fundación Pachamama has worked in the south-central Amazon of Ecuador to support indigenous organizations. CONFENIAE is made up of 11 indigenous nationalities spread out in six provinces in the Amazon region, belonging to 23 grass-roots organizations and federations. CONFENIAE has a coverage of more than 100 000 people in over 200 indigenous communities.*

*Improving access to information: The only radio station that reaches indigenous communities in their native languages is La Voz de la CONFENIAE. To increase listenership and steer programming of relevance to COVID-19, PAHO/WHO supported CONFENIAE in expanding the FM radio frequency of the station and developing radio production plans. CONFENIAE took on the role of amplifying the national response to the COVID-19 pandemic in those hard-to-reach communities, conveying messages relevant and culturally appropriate to the indigenous communities to tackle vaccine misinformation and hesitancy, building trust in the country’s immunization programmes. A total of 30 radio scripts were co-written in the native languages and transmitted through seven local and CONFENIAE-affiliated radio networks. At the same time, as part of risk communication and outreach efforts, the PAHO/WHO Country Office in Ecuador collaborated with CONFENIAE to distribute*

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* PAHO was established in 1902 as the specialized health agency of the Organization of American States within the inter-American system. In 1949, through an agreement with WHO, PAHO agreed to serve as the WHO Regional Office for the Americas.
600 copies of the translated book *Naatka muruitme* (“My hero is you”) in the Shuar language to school children and their families in order to provide mental health support during the pandemic.

**Supporting better hygiene and the continuum of essential health services:** Without supportive action that enabled local communities to comply with COVID-19 public health measures, even the best access to information would not have been as effective at reducing COVID-19 infection and disease. Fundación Pachamama organized a series of workshops to build capacity in local communities, training 223 indigenous community health workers in the Shuar and Achuar communities in Ecuador’s Amazon region. Training sessions on safe deliveries to prevent maternal and neonatal deaths were complemented by the distribution of 400 childbirth kits. Training workshops on COVID-19 awareness and health promotion were supported by artisanal soap production training, enabling 20 local women from the Shuar and Achuar provinces of Morona Santiago and Pastaza to become agents of change in hygiene while generating a source of sustainable income.

**Fostering gender inclusivity:** As Fundación Pachamama’s workshops evolved, Shuar men were included in the programme, for the first time, when addressing gender-based violence. A total of 31 men from the Shuar indigenous community participated, including community and faith leaders. The news of local men becoming allies for women and family health was welcomed by the community.

Building national and local health systems, as well as communities, that are resilient to emergencies is in line with WHO’s triple billion targets. By coordinating culturally appropriate risk communication activities, Ecuador demonstrated that community-based and inclusive interventions can effectively address the disproportionate vulnerabilities faced by remote communities. This intervention also empowered local communities by providing diverse training to indigenous community health workers to ensure the continuum of essential health services through a pandemic. Overall, the civil society organization engagement initiative demonstrated the need to step up systematic engagement at the community level in order to facilitate quality service delivery to communities, within the framework of the global commitments of the Sustainable Development Goals and universal health coverage.

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Launching a rapid and integrated post-earthquake response to support health recovery in Haiti

Rapid and integrated earthquake response

On 14 August 2021, a 7.2-magnitude earthquake struck the southern peninsula of Haiti, killing more than 2000 people and injuring more than 12 000. In total, 600 000 people required immediate humanitarian assistance, 150 000 homes were destroyed and more than 80 hospitals and health centres were damaged.

The Pan American Health Organization (PAHO)/WHO provided effective support to Haiti in the emergency and immediate recovery phases of the response. Multidisciplinary field response teams, set up on-site in each of the affected administrative divisions (departments), continued their work to maintain and re-establish essential health services three months after the earthquake in order to facilitate the transition from immediate response to recovery efforts.

How did Haiti, with the support of the WHO Secretariat*, achieve this?

- **Delivery of emergency supplies**: To respond to pressing supply and equipment needs on the ground during the emergency phase of the response, PAHO/WHO leveraged its global supply chain to receive and dispatch more than 400 cubic metres of emergency medical products and equipment (worth US$ 1.2 million) to the affected areas. More than 70 health facilities benefited from the support.

  - **Damage assessment**: In the days following the earthquake, PAHO/WHO experts assisted officials from the Ministry of Public Health and Population in rapidly assessing structural, water and sanitation damage to health infrastructure in the affected departments. More detailed damage assessments of three major hospitals in the earthquake-affected area were conducted by an expert structural engineer from the PAHO/WHO Safe/Smart Hospital Initiative. The critical information supported the development of the health sector component in the post-disaster needs assessment and national reconstruction plan.

  - **Coordination**: As the lead agency for health, PAHO/WHO supported the Ministry of Public Health and Population and the Directorate General of Civil Protection by organizing and facilitating coordination activities. Weekly health response coordination meetings were held involving dozens of health actors in Haiti. PAHO/WHO helped to coordinate the deployment of 18 Emergency Medical Teams from other countries, which attended to over 30 000 people in

* PAHO was established in 1902 as the specialized health agency of the Organization of American States within the inter-American system. In 1949, through an agreement with WHO, PAHO agreed to serve as the WHO Regional Office for the Americas.
the three earthquake-affected departments. Multidisciplinary field response teams were set up in health directorates in the three departments to re-establish essential health services, including maternal and child health, mental health and vaccination.

**Establishment of an early warning system for outbreak detection:** Earthquake-hit populations relocated to assembly points where the risk of disease outbreak was high. To enable rapid detection and response to any new outbreaks, PAHO/WHO supported the Ministry of Public Health and Population in establishing the first early warning and response system in Haiti. Local personnel were trained; mobile data-collection devices and Internet access were provided at 37 assembly points, enabling local data analysis and regular reporting at the departmental and central levels. Nurses were deployed to assist in screening, collecting specimens and testing for selected infectious diseases, including the coronavirus disease (COVID-19). This was particularly important in the context of a resurgence of COVID-19 due to the Delta variant. Through this initiative, more than 2800 people were sampled (for COVID-19 and diarrhoeal diseases) and over 100 alerts were investigated.

**Capacity-building to deliver mental health support:** Psychosocial support and mental health care were identified as urgent needs. PAHO/WHO provided technical support to departmental health directorates to establish mental health coordination units that organized integrated mobile clinics providing immediate psychological support in the affected population. Psychological first aid training for trainers was rapidly organized; 41 trainers in four departments of the Great South trained 610 community health workers in psychological first aid.

PAHO/WHO provided critical support in the emergency and immediate recovery phases by facilitating the national authorities in the rapid needs assessment, the coordination of health sector partners and the rapid mobilization of human, financial and material resources. This has already improved mental and physical health outcomes for thousands of Haitians affected by the earthquake. The long-term impact is yet to be determined, but the many lessons learned from the earthquake response are expected to strengthen multihazard preparedness and response capacity in Haiti, a vulnerable population that has been experiencing increased seismic activity since the earthquake in August 2021.

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Ensuring an effective response to COVID-19 in the Islamic Republic of Iran

Increased vaccination coverage and genome sequencing capacity

The Islamic Republic of Iran has witnessed a high incidence and prevalence of the coronavirus disease (COVID-19), and related deaths, since the country confirmed its first case on 19 February 2020. As of 28 February 2022, the country has reported more than 6.6 million cases and approximately 140 000 deaths.1 Amid the rapid spread of new variants as the pandemic evolved, the country’s limited capacity to effectively conduct genome sequencing significantly hampered surveillance and tracking of variants of the COVID-19 virus (SARS-CoV-2) to inform the national pandemic response. From the onset of the pandemic to December 2021, genome sequencing analysis of viral samples was performed on only 86 COVID-19 diagnostic positive cases. Low vaccination coverage – 20% of the total population of 85 million nationals and 4 million refugees had two doses – partly due to an inability to procure vaccines until the end of August 2021, affected the national response to the pandemic. Sanctions have posed further challenges to an already strained market for the procurement of COVID-19 supplies.

At a public COVID-19 vaccination site in Tehran, August 2021. Photo credit: WHO Country Office in the Islamic Republic of Iran
WHO and its partners provided crucial support to the Islamic Republic of Iran to overcome these challenges and scale up the pandemic response, which resulted in mobilizing more than 130 million vaccine doses and increasing capacity to conduct genome sequencing analysis of 7700 viral samples. Genome sequencing has been important for the COVID-19 response. As with all viruses, SARS-CoV-2 continues to evolve as it spreads. Genomic data have guided countries to make quick and informed public health decisions since the start of the pandemic. Data help countries to prepare for potential surges and take important steps, such as increasing oxygen supply, adding more hospital beds or ramping up testing for more transmissible variants. They have also been crucial to helping countries to select the safest and most effective vaccines.2

How did the Islamic Republic of Iran, with the support of the WHO Secretariat, achieve this?

WHO engaged extensively with member states of the European Union, the Government of Japan and other donor countries, as well as the COVID-19 Vaccine Global Access (COVAX) Facility,3 together with the United Nations Children’s Fund (UNICEF), to mobilize bilateral donations. WHO and its partners undertook intense diplomatic efforts to mobilize donations through COVAX; provided extensive training and supplies to vaccination centres; delivered clear risk communication and community engagement campaigns to mobilize the community; mobilized vaccines for refugees from the COVAX Humanitarian Buffer; procured genome sequencing machines and provided training; and robustly monitored adverse events of special interest.

The Islamic Republic of Iran has had five waves of COVID-19 but the vaccination rate has been growing in recent weeks with imported and locally produced vaccines, covering all age groups, and more importantly, the most vulnerable, such as pregnant women, adolescents and children with safe vaccines, and even refugees and displaced populations mainly from Afghanistan. This universal COVID-19 vaccination gives us hope for smart reopening of businesses and other entities in a gradual and vigilantly monitored pace.

Dr Bahram Eynollahi
Minister of Health and Medical Education

The advocacy efforts resulted in the procurement of more than 130 million vaccine doses, including directly from manufacturers. WHO led the regulatory and legal aspects, as well as strengthening vaccination capacity, which resulted in a record 1.7 million doses administered each day. As a result, the country achieved 60% total adult population coverage (with two doses). To strengthen genome sequencing capacity, WHO mobilized funds to procure advanced genome sequencing machines equipped with next generation sequencing technology, including kits, software and training from the manufacturers. The sudden surge in sequencing capacity resulted in the
genome sequencing analysis of 7700 viral samples. The success of genome sequencing efforts mobilized further resources to procure four additional advanced genome sequencing machines. Robust risk communication and community engagement campaigns rolled out through mass media and local chancellors enabled community-centred approaches and generated demand for testing, treatment and vaccines.

The country has faced several obstacles in its response to COVID-19, including sanctions that affected the health sector even before the pandemic. The sanctions have threatened equitable access to vaccines owing to, for example, restrictions on transferring Iranian investments into the COVAX Facility as a self-financing member. The country continues to fight the battle against the viral infection amid the challenges, and WHO stands by the national health system, the people and all partners to increase access to life-saving COVID-19 products and services.

1 Iranian Ministry of Health and Medical Education.
Building laboratory capacity for diagnostic testing and sequencing of COVID-19 in Nepal

Rapid expansion of capacity

To effectively control the coronavirus disease (COVID-19), it is necessary to have (a) widespread molecular diagnostic assays to identify COVID-19 virus (SARS-CoV-2) infection; and (b) rapid virus genome sequencing to support monitoring of the spread, activity and evolution of SARS-CoV-2.

In January 2020, the first suspected case of COVID-19 was clinically diagnosed in Nepal. The National Influenza Centre at the National Public Health Laboratory (NPHL) was the only public respiratory diagnostic laboratory in Nepal with capacity to conduct molecular diagnostic assays through real-time reverse transcription polymerase chain reaction (rRT-PCR). However, the laboratory did not yet have the capacity to conduct rRT-PCR for SARS-CoV-2, or to sequence the virus. Recognizing the urgent need for widespread

The WHO Representative to Nepal delivering MinION Mk1C sequencers and reagents to the Director of NPHL. Photo credit: WHO Country Office in Nepal
molecular diagnostic assays and genome sequencing in the face of the pandemic, Nepal launched a collaborative capacity-building effort. By March 2022, two years after WHO declared the COVID-19 outbreak a pandemic, over 5.5 million molecular diagnostic assays for SARS-CoV-2 had been conducted by 105 laboratories in Nepal (56% public sector, 44% private sector), and nearly 2000 SARS-CoV-2 genome sequences had been shared with the Global Initiative on Sharing All Influenza Data (GISAID).

How did Nepal, with the support of the WHO Secretariat, achieve this?

- **Building molecular diagnostic capacity for SARS-CoV-2 in the national reference laboratory:** The National Influenza Centre’s molecular diagnostic assay protocol for influenza was quickly adapted to test for SARS-CoV-2. On 15 March 2020, NPHL commenced testing for the virus. WHO deployed an international expert from the Global Outbreak Alert and Response Network to provide technical assistance, including for the development of surge testing plans aimed at increasing the number of samples tested each day. This included optimizing the operation of equipment and the procurement of reagents, as well as allocating staff and work shifts.

- **Expanding quality molecular diagnostic assay capacity nationwide:** NPHL led a collaborative capacity-building effort involving the Government of Nepal, WHO, academia and the private sector. WHO technical experts worked with NPHL to identify and approve existing laboratories that could be repurposed for rRT-PCR testing. They also developed diagnostic laboratory standard operating procedures, work instructions, assessment and audit reports (including the Interim guidelines for SARS-CoV-2 PCR laboratories in National Public Health Laboratory network, Nepal) and trained laboratory personnel on the use of the guidelines. Once laboratories began performing molecular diagnostic assays, WHO experts developed the laboratory quality assurance programme and provided expertise to develop a laboratory data-management system for integrating laboratory and epidemiological data. Quality assurance activities included the validation of newly established laboratories (by parallel testing), monthly re-testing of random samples, in-house proficiency panels and online and on-site laboratory audits. The WHO Country Office in Nepal provided direct financial support for the recruitment of surge staff, transportation of samples and procurement of panels for quality control.

- **Developing international partnerships to sequence SARS-CoV-2:** Before Nepal had internal sequencing capacity, the Ministry of Health and Population requested WHO to arrange for sequencing to be conducted outside of the country. The WHO Country Office in Nepal, the WHO Regional Office for South-East Asia and WHO headquarters engaged with three international entities to form partnerships between NPHL and laboratories in China, India and the United Kingdom of Great Britain and Northern Ireland. WHO provided logistic support for the shipment of clinical samples from patients with suspected COVID-19 to WHO reference laboratories. Nepal’s first case was confirmed through a reference
laboratory at the University of Hong Kong School of Public Health, a member of the WHO Global Influenza Surveillance and Response System. Thirteen subsequent samples were sent to that laboratory for genome sequencing. Later, to enable Nepal to sequence about 50 genomes per month with a shorter turnaround time, the WHO Regional Office for South-East Asia signed an agreement for the performance of work for SARS-CoV-2 sequencing with the Institute of Genomics and Integrative Biology, in New Delhi. Through this agreement, 227 samples had been sequenced by March 2022. Finally, a material transfer agreement was created between NPHL and the New Variant Assessment Platform at Public Health England (now replaced by the UK Health Security Agency and the Office for Health Improvement and Disparities). This enabled the sequencing of 818 samples by March 2022. A tripartite agreement between WHO, NPHL and the UK Health Security Agency is currently under way to extend the partnership beyond SARS-CoV-2 sequencing to other pathogens in the future.

- **Increasing in-country capacity to conduct sequencing**: The National Pathogen Genetic Sequencing Consortium became operational in October 2021 after the WHO Country Office procured a sequencing machine (MinION Mk1C) and reagents for NPHL. WHO technical experts within NPHL conducted genome sequencing, interpreted the data, uploaded the data in the GISAID platform and trained other NPHL staff in genome sequencing to build capacity. By March 2022, 432 genomes had been sequenced, including the SARS-CoV-2 Omicron variant of concern, which was detected by NPHL with a turnaround time of six days. Subsequently, a private laboratory also established a sequencing facility and contributed an additional 431 sequences.

*Having the capacity to conduct gene sequencing tests within the country has enabled us to detect the SARS-CoV-2 Omicron variant in a timely manner and to make quick and informed public health decisions.*

Dr Runa Jha  
Director of NPHL

Within two years, strong national and international collaborative efforts, including technical and financial support from WHO, have transformed Nepal’s capacity to detect known and unknown emerging pathogens and strengthened Nepal’s compliance with the International Health Regulations.³

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Delivering coordinated emergency response in Nepal through Health Emergency Operation Centres

WHO supports response to emergencies in Nepal

In 1991, United Nations General Assembly resolution 46/182 created the foundations of the current international humanitarian coordination system. In 2005, the system was reformed through the Humanitarian Reform Agenda, which introduced elements to enhance predictability, accountability and partnership. The Cluster Approach was one of the elements. Clusters are groups of humanitarian organizations activated by the Inter-Agency Standing Committee in each of the main sectors of humanitarian action. WHO is the lead agency for the health cluster, one of the 11 clusters established at the global level.

In Nepal, lessons learned from natural disasters and disease outbreaks indicated that strengthened coordination and information management were necessary. Therefore, in 2014, WHO provided technical support to Nepal to establish Health Emergency Operation Centres (HEOCs). Conceptualized as the health sector’s coordination and information management hubs and strategically dispersed across the country, HEOCs have improved emergency preparedness, operational readiness, coordination, risk analysis, response and recovery, enabling Nepal to build back earlier and better after disasters. The impact of HEOCs has been demonstrated in multiple natural disasters and disease outbreaks, including the coronavirus disease (COVID-19) pandemic and the earthquake in 2015, when coordination and communication between the Ministry of Health and Population and its partners were sustained in several aftershocks.

HEOCs will help mitigate the adverse impacts of natural disasters, disease outbreaks and other acute public health risks through robust preparedness, readiness and response.

Dr Rajesh Sambhajirao Pandav
WHO Representative to Nepal

How did Nepal, with the support of the WHO Secretariat, achieve this?

- Developing a nationwide network of HEOCs: Nepal’s HEOCs were conceptualized jointly by the Ministry of Health and Population and the WHO Country Office in Nepal. The HEOC network was launched at the national level in 2014, at the premises of the Ministry of Health and Population. As the national HEOC functions also as the secretariat of the Ministry’s Incident Command System, this enables rapid action due to direct access to high-level, committed leadership. After the 2015
earthquake, Nepal’s HEOC network was expanded, including through provincial-level HEOCs. These were strategically distributed to enable a coordinated operational response across the country. WHO Country Office staff support the operational activities of the local health authorities by conducting rapid assessments, monitoring activities, providing supervision and training to staff, sharing information and conducting evaluations. By providing technical support and computer equipment, WHO has continued to contribute to the upgrading of HEOCs. This has included adding a conference room in the national HEOC, training sessions, simulation exercises, workshops, conferences and stakeholder consultations to develop consensus-based action.

- **Supporting provincial health authorities in coordinating with partners:** The Ministry of Health and Population and WHO co-lead the health cluster coordination meetings with partners. In 2021, this was particularly crucial in flood-prone provinces. When early warnings were received, local health and nutrition coordination meetings were convened through HEOCs, connecting the federal and provincial levels to mobilize preparedness measures, as well as planning for health response activities amid the ongoing COVID-19 pandemic.

- **Strengthening communication for an effective, coordinated public health response:** WHO health emergencies field staff, including field medical officers, information management associates and COVID-19 surveillance associates are stationed in both provincial HEOCs and the national HEOC. They are equipped with communication and information management tools (including land, cellular and satellite telephones, Internet, radio frequency-based wireless sets, televisions and computers) and support government counterparts and partners in implementing health interventions developed with the federal and provincial health authorities. The coordinated approach has strengthened capacities as stipulated in the International Health Regulations, to achieve targets of the Sendai Framework for Disaster Risk Reduction 2015–2030.
• **Information management**: Each HEOC has three staff members (a chief, a medical officer and a section officer), who are responsible for the timely analysis and communication of data and information to relevant stakeholders. WHO staff provide technical support to government focal points and HEOC staff in data management and coordination to systematically identify where health services are most needed, coordinate with stakeholders to reduce duplication of effort and generate timely situation reports, press releases and infographics to inform decision-makers and communicate risk to the community.

The WHO Country Office in Nepal has provided invaluable support to the Government of Nepal to conceptualize, establish and upgrade HEOCs. This has been recognized by the Ministry of Health and Population, as well as the health ministries and authorities at the national, provincial and local levels.

*I would like to thank the WHO Representative to Nepal and WHO staff for their tireless effort for the establishment and strengthening of national and provincial HEOCs.*

Dr Samir Kumar Adhikari
Chief of the national HEOC

WHO remains committed to supporting the sustained efforts of the Ministry of Health and Population in strengthening capacity to detect, assess and respond to public health events through the HEOC network.

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Supporting Romania’s COVID-19 response through targeted action

Targeted action saved lives

Like many countries, Romania was heavily affected by the coronavirus disease (COVID-19) in 2020 and 2021. By the end of February 2022, approximately 2.8 million cases and 64,000 deaths\(^1\) had been reported, among a population of 19.3 million.

To reinforce Romania’s COVID-19 response efforts, WHO provided ongoing strategic, technical and material support to the Government of Romania. During the three months of heightened crisis from November 2021, this support was guided by WHO’s in-country COVID-19 Incident Manager. By providing overall coordination of technical, management and operational aspects, the COVID-19 Incident Manager identified needs and actions to mitigate the health impact of COVID-19 on society. Targeted action, including the provision of life-saving medical equipment and supplies, saved countless lives and helped to turn the tide of the COVID-19 pandemic in Romania.

The COVID-19 Incident Manager supervising a WHO delivery of oxygen concentrators, vital equipment for the COVID-19 response.
Photo credit: Mihai von Eremia
How did Romania, with the support of the WHO Secretariat, achieve this?

- **Strengthening the community health system**: For many years, community-based health care has been key to the delivery of essential health services and public health functions in Romania. With over 2000 community health nurses and mediators, the health-care delivery and social engagement capacities of community health workers played a critical role in maintaining the continuity of essential health services during the COVID-19 response. To meet increased demand for community-based health services, especially in rural and hard-to-reach areas where travel times to health facilities are long, WHO provided 1833 bicycles and helmets to community health workers to reduce travel times and expand the workers’ reach to more patients in need of care. Community health workers were equipped with pulse oximeters, including 1990 oximeters donated by WHO. The community health workforce played a fundamental role in the COVID-19 response by transporting patients to medical consultations; delivering basic commodities (e.g. food, medicines, medical/surgical masks and disinfectants); managing self-isolated and quarantined patients; conducting triage in schools; and serving as members of epidemiological investigation teams. Their role as public health ambassadors was vital for mobilizing the community to get vaccinated, especially in rural communities where vaccine uptake was low among at-risk groups.

  *I serve a community of 7000 residents across nine villages. Having a bicycle allows me to travel faster, visit more patients and be wherever and whenever I am needed. It is fair to say that this means of transport has really helped me in my work, not just during the global emergency but forever.*

  A community health worker

- **Building capacity for COVID-19 testing and clinical care at the tertiary level**: In November 2021, Romania faced its most severe infection wave since the onset of the pandemic. A record number of cases and intensive care unit hospitalizations overcrowded hospitals, depleted supplies of oxygen and led to many deaths. In order to interrupt the chain of transmission and reduce COVID-19-associated mortality, robust testing, isolation, case management and contact tracing were essential. To support the response, WHO provided 34 000 rapid diagnostic tests, 1350 COVID-19 laboratory kits and consumables and 200 eight-litre oxygen concentrators.

- **Supporting civil society organizations to continue their work**: WHO delivered 462 500 medical/surgical masks to Asociatia Carusel, a civil society organization that works with vulnerable groups in Romania (including marginalized populations such as those experiencing homelessness, people living with tuberculosis and HIV, sex workers and those with substance abuse problems). The medical/surgical masks enabled the organization to safely continue health visits and to reduce the transmission of the virus.
During the pandemic, the need for health-care workers to visit patients and monitor them at home has become increasingly important. Community health nurses and health mediators are often a person’s first point of contact with the health and social care system. As members of the communities themselves, they have a unique understanding of the neighbourhoods and people that they serve.

Dr Cassandra Butu  
Acting WHO Representative to Romania

WHO’s long-term investment for over two decades to strengthen Romania’s community health system has reinforced the resilience of communities to respond to health crises, such as COVID-19. To buttress Romania’s response to the pandemic, targeted action by WHO, including the provision of life-saving medical equipment and supplies, has saved countless lives and helped to turn the tide of the COVID-19 pandemic in Romania. Guided by the principles of health equity and health system strengthening to ensure the realization of universal health coverage, WHO works closely with the Government of Romania to further strengthen community health-care systems. The WHO Country Office in Romania provides training for community health system managers and the local authorities, among other activities, and serves as a member of the Ministry of Health’s working group on community health-care strengthening.


Ensuring a rapid and comprehensive volcano eruption response amid the pandemic

Improved clinical outcomes for thousands

On 8 April 2021, volcanic activity from La Soufrière, a volcano on the main island of Saint Vincent and the Grenadines, rapidly increased. A same-day evacuation order was issued by the Prime Minister, and on the following day the volcano erupted. Ash and gas affected basic services (water, transport and communications), and many health facilities were evacuated. There was a surge in demand for health services in the remaining operational facilities, which had already been struggling owing to a high caseload of the coronavirus disease (COVID-19). One fifth of the island population was affected and displaced by the event.

The Pan American Health Organization (PAHO)/WHO provided comprehensive, rapid and effective support to the country to increase access to and ensure continuity of health services in the emergency and recovery phases of the response. The support helped to improve mental and physical outcomes for thousands of people affected by the natural disaster. PAHO/WHO continues working in the country to improve access to integrated health services through long-term health system strengthening efforts.
How did Saint Vincent and the Grenadines, with the support of the WHO Secretariat*, achieve this?

- **Mobilizing medical teams and public health professionals:** PAHO/WHO channelled Emergency Medical Teams into the country, as well as United Nations regional response team specialists in areas such as water, sanitation and hygiene; health emergency coordination and logistics; and damage and needs assessment. The external teams and specialists provided clinical care, assessed disaster impact and identified urgent health needs. To support in-country health professionals, PAHO/WHO collaborated with the Ministry of Health to identify displaced health workers with unmet food and accommodation needs. Through a collaboration between PAHO and the International Organization for Migration, temporary accommodation was provided for 160 nurses. Food vouchers and cash transfers were provided in collaboration with the European Union, the European Collaboration for Healthcare Optimization project, and executed by the World Food Programme.

- **Delivering emergency supplies and strengthening the supply chain:** PAHO/WHO provided administrative support for the country to access and receive an initial 24,000 doses of COVID-19 vaccines through the COVID-19 Vaccine Global Access (COVAX) Facility, with the delivery of additional doses arranged for later in the year under the COVAX Humanitarian Buffer assistance mechanism. The PAHO Strategic Fund purchased and delivered essential medical supplies and equipment to scale up care capacity and replace damaged items in health facilities; treat and store water and monitor its quality; and ensure biosafety and personal protection. Because the country’s existing central store had limited space, the PAHO/WHO Country Office in Saint Vincent and the Grenadines rented an additional warehouse.

- **Opening and ensuring the safety of vital health infrastructure:** PAHO/WHO provided experts in water, sanitation and hygiene and financial support for the assessment and improvement of 20 health facilities. The health facilities were deep cleaned of volcanic ash, hand hygiene stations were installed, water storage tanks and water pumps were provided, plumbing improvements were made, and water supply tests were procured and delivered. Assembly points had been opened to receive displaced people, which presented a disease outbreak risk. To mitigate the risk, PAHO/WHO provided technical support to the Ministry of Health for the syndromic surveillance of COVID-19 and other diseases, as well as providing and training 35 health surveillance teams from the Ministry to use WHO’s Early Warning, Alert and Response System (EWARS) kit to strengthen real-time reporting and analysis of early warning data. The standard EWARS kit covered 40 clinics with a combined population of 500,000 people. PAHO/WHO was established in 1902 as the specialized health agency of the Organization of American States within the inter-American system. In 1949, through an agreement with WHO, PAHO agreed to serve as the WHO Regional Office for the Americas.
WHO also procured insecticides, insecticide application equipment and rodenticides for controlling and preventing outbreaks of vector-borne diseases, such as dengue and leptospirosis, both for families in shelters and for communities.

- **Providing care for noncommunicable diseases (NCDs):** PAHO/WHO transported nutritionists to serve people with NCDs in shelters, as well as providing NCD kits (medicines and diagnostic supplies) for the management of diabetes, hypertension and cardiovascular disease in a population of 10,000 people for three months. More than 40 health professionals were trained in the use of the NCD kits. PAHO/WHO evaluated mental health and psychosocial support (MHPSS) capacity – forming an MHPSS technical working group to address identified gaps – and trained three senior clinical health managers in MHPSS coordination in humanitarian emergencies. This led to the delivery of MHPSS in 86 shelters. PAHO/WHO also conducted an MHPSS and psychological first aid online course for front-line workers; a resounding 568 people registered from 22 countries.

- **Communicating with the public:** To deliver messages to the public, PAHO/WHO designed, developed, printed and distributed communication materials, as well as commissioning a videographer and starting a social media campaign with the United Nations Children’s Fund (UNICEF). Messages were also delivered through public service announcements with the Ministry of Health. With the help of videos, 90 social media cards, 36 posters and three vehicle wraps, the messages aimed to increase vaccine uptake, as well as knowledge about hygiene and sanitation, volcanic ash exposure, mental health and healthy eating.

Strong coordination was vital to the response’s success. PAHO/WHO worked in close cooperation with national and local authorities, subregional emergency response entities such as the Ministry of Health and the National Emergency Management Organisation, and other health partners, specialized agencies of the United Nations system and international organizations. More information on the PAHO/WHO response to La Soufrière’s eruption can be found in a video.5

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Building bridges between migrants and health workers during the COVID-19 pandemic: Serbia case study on COVID-19 lessons

Improved migrant health

In 2020–2021, with the support of the coronavirus disease (COVID-19) Solidarity Response Fund, WHO provided direct financial and technical support to 54 grass-roots civil society organizations in 40 countries, serving over 80 million people in situations of vulnerability. This included migrants, refugees, internally displaced persons, persons with disabilities, older persons, youth groups, women and children in distress, hard-to-reach indigenous communities, social and ethnic minorities, and front-line care providers. By connecting communities to services and fostering participatory governance through the systematic engagement of community stakeholders, 2000 refugees and migrants were reached with COVID-19 information, thus mitigating the impact of the pandemic. Furthermore, longer-term systemic change was catalysed, which is anticipated to improve health outcomes more broadly.

A workshop with migrants in Belgrade, Serbia, in 2021. Photo credit: IDEAS
The WHO Regional Office for Europe supports eight community engagement projects across the region. These include a civil society organization in Serbia called IDEAS Centre for Research and Social Development. Every year, more than 50,000 refugees and migrants pass through Serbia. On arrival, many are physically exhausted and traumatized, as well as needing medical services and assistance. However, migrants on the move often prioritize continuing their journey over caring for their health or getting treatment for serious medical conditions. Although health workers have been encouraging migrants to take protective measures to prevent transmission of COVID-19, report symptoms and get vaccinated, many have low levels of trust in health services and little understanding of how to access them.

I have been here for 4 years now and I am confused.
A 23-year-old Afghan woman

If a doctor asks me now to take off my clothes and I am not comfortable, I will say so and ask if there is a health mediator available.
A 16-year-old boy from Pakistan

To better meet the health needs of migrant populations, IDEAS worked to develop new collaborative structures, guidelines and professional roles that improve the accessibility, quality and cultural sensitivity of health services.

How did Serbia, with the support of the WHO Secretariat, achieve this?

- **Taking a participatory approach**: IDEAS ensured that the real-life experiences of migrants were considered in policy-making and engaged with migrant communities and health workers in migrant reception, transit and asylum facilities.

- **Collaborating to develop and adopt guidelines**: To improve migrants’ access to facilities that provide essential services, guidelines on culturally sensitive services for migrants were developed and adopted, in collaboration with the Ministry of Health and the Ministry of Labour, Employment, Veteran Affairs.

- **Building trust through health mediation**: Thirty-four medical staff in reception, transit and asylum centres were trained to become health mediators, and a toolkit was developed to help to reduce negative consequences of language barriers, sociocultural differences and tensions between ethnic groups. Health mediators carry out assessments of COVID-19 symptoms, as well as addressing mental health issues and other medical problems. Trained on communication and cultural competency, health mediators also counsel and support migrants in accessing legal and social services. This creates a relationship of trust with migrants and facilitates better understanding of their needs and behaviour for further improvement of quality and accessibility of health-care services.
• **Building the cultural competence of health workers:** Twenty-six health workers employed in primary health-care settings were trained in cultural competence approaches and practices. A focus was placed on COVID-19 prevention and interventions. The health workers also learned how to support victims of trauma and violence. This included survivors of gender-based violence, women and girls, unaccompanied and separated children, and persons with addictions.

*I understood cultural competence training as a way of appreciating the context from which migrants are coming and how to better provide services for them.*

A health worker who followed the training

• **Supporting dialogue to promote inclusive governance:** The WHO Country Office in Serbia supported a policy dialogue between IDEAS and the Ministry of Health through regular participation in a technical working group. The working group is developing a protocol for cooperation between the Ministry of Health and the Ministry of Labour, Employment, Veteran and Social Affairs. The group identifies opportunities for collaboration between different ministries. As a result, the Ministry of Health will consider the IDEAS proposal to include health mediators and culturally competent practices in the planning of an upcoming grant from the European Union.

WHO headquarters and the WHO Regional Office for Europe organized monthly check-ins with implementing partners, IDEAS and the WHO Country Office in Serbia to monitor progress and ensure project objectives were on track to be delivered. Solutions to any challenges were proposed for implementation. To ensure implementing partners met WHO quality standards, WHO developed questions and answers for onboarding implementing partners and a background note on the civil society organization initiative, as well as organizing project launch and closing meetings.

Partnerships between the community and the health authorities ensure the provision of essential health services to persons in vulnerable settings. Participatory approaches to governance which ensure that populations with diverse needs are included enable longer-term systemic change leading to longer-term impact. By improving health equity, health outcomes in Serbia will improve, which will ultimately contribute towards the achievement of the WHO triple billion targets.¹

Ensuring a rapid and successful response to the polio outbreak in Tajikistan amid the COVID-19 pandemic

Halted transmission of poliovirus

The first-ever outbreak of circulating vaccine-derived poliovirus type 2 (cVDPV2) in the WHO European Region was confirmed in Tajikistan on 20 January 2021, after its importation from a neighbouring country. As a result of global supply constraints following cessation of type 2 oral polio vaccine in 2016, an estimated 520 000 Tajik children born between 2016 and 2018 were vulnerable to infection. By August 2021, 34 children had been paralysed, and the virus had been isolated from 26 healthy contacts and from 20 samples periodically collected from the sewer system in the capital city. From February to September 2021, a response unprecedented in terms of speed and quality to the poliovirus outbreak was mounted, despite competing priorities amid the coronavirus disease (COVID-19) pandemic and the worsened security situation in the subregion. Readiness verification for the use of a novel vaccine in Tajikistan was conducted rapidly, and several rounds of quality immunization campaigns were implemented, covering more than 1.3 million children. Interim evidence from the 16–20 August 2021 outbreak response assessment indicated that cVDPV2 transmission in Tajikistan had already been interrupted. After WHO conducted a final outbreak response assessment, it declared the outbreak closed on 27 April 2022.

How did Tajikistan, with the support of the WHO Secretariat, achieve this?

- **Strengthening surveillance**: Following confirmation of the outbreak, the Ministry of Health and Social Protection of the Population immediately acted upon the WHO Regional Office for Europe’s key recommendations on responding to poliovirus type 2 for enhancing poliovirus surveillance. These are in line with the standard operating procedures of the Global Polio Eradication Initiative (GPEI). Intensive contact tracing and sampling were conducted, and immunization coverage was reviewed.

- **Selecting the most appropriate vaccine**: The Government of Tajikistan opted for the use of a genetically stabilized novel oral polio vaccine type 2 (nOPV2), which received WHO emergency use listing status in November 2020. The Ministry of Health made this decision on the basis of a recommendation from, and extensive technical discussions with, the WHO Regional Office for Europe. A rigorous risk assessment was conducted to determine the outbreak response scale, and nOPV2 was chosen as the best vaccine both for the response and for protecting the polio-free status of the entire WHO European Region.

- **Conducting readiness verification for the novel vaccine**: With technical support from the WHO Country Office in Tajikistan and GPEI partners, Tajikistan documented the 25 emergency use listing readiness criteria necessary for the
initial use phase, enabling the release of nOPV2 within eight weeks. Tajikistan became the first country outside of the WHO African Region authorized to use nOPV2. To fulfil outbreak monitoring and nOPV2 preparedness requirements, Tajikistan established functional environmental surveillance within record time, and the first sample was collected by the week of 7 February 2021.

*Increasing vaccine coverage to close the immunity gap nationwide:* In February 2021, a high-quality nationwide campaign on inactivated polio vaccine was launched in order to close the immunity gap against poliovirus type 2 among the 520 000 children born between 2016 and 2018. WHO covered the financial costs, deployed an international expert to provide the required technical expertise and trained local staff. Between June and September 2021, three nOPV2 immunization rounds were implemented, and an external evaluation confirmed that coverage was high (more than 95%).

*Implementing specific strategies for hard-to-reach groups:* To cover missed children during all three rounds of vaccination, a flexible outreach approach was used that could be adjusted rapidly as gaps in coverage were identified. During the second round of vaccinations to address low coverage, there was a surge in COVID-19 cases that affected human health-care resources and vaccine uptake. Exemplary resilience was demonstrated in implementing immediate corrective measures. Extensive social mobilization and communication strategies were deployed to reach groups that were at risk of being missed,
including internal migrants in urban areas, communities close to the land border with Afghanistan, Luli populations and unregistered children.

In addition to successfully halting transmission and removing the risk of infection for millions of people, Tajikistan, with the support of WHO, contributed to global research on nOPV2 through an nOPV2 immunogenicity study. The study was initiated by the Ministry of Health and WHO headquarters and the WHO Regional Office for Europe reviewed the design, financially supported the study and arranged for samples to be tested in WHO’s global laboratory in Atlanta, Georgia, United States of America. The findings were presented at a Polio Research Committee meeting on 7 April 2022. The country also participated in a global study on vaccine wastage.

Tajikistan’s success was particularly notable because the country’s health system was already overstretched by the COVID-19 pandemic and competing priorities posed a challenge. Preparation and implementation activities for the nOPV2 campaign took place while the country was mounting a massive vaccination drive against COVID-19. Major efforts were also made to ensure that the provision of routine childhood vaccination services was not disrupted. Conducting training activities and organizing vaccination points at health facilities in the context of COVID-19 restrictions were challenging, but primary health-care staff demonstrated high motivation and determination to work during the pandemic. Moreover, the high commitment of the national government was key to the success. Strong national leadership, complemented by continuous and effective technical guidance and assistance from WHO and GPEI, was instrumental to a robust outbreak response.

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Increasing COVID-19 vaccination coverage in Togo with traditional leaders and community dialogue

Increased COVID-19 vaccination coverage

Togo, like many other West African countries, did not meet the target set by WHO for all countries to have immunized 10% of the population against the coronavirus disease (COVID-19) by the end of September 2021; this made it a major challenge to reach the 40% target by the end of December 2021. Vaccination against COVID-19 was officially launched in Togo on 10 March 2021. The Prime Minister, government ministers, members of the National Assembly and heads of specialized agencies of the United Nations system in Togo set an example by getting vaccinated. Health workers were vaccinated to protect themselves and better serve the population in response to the emergency. Measures to encourage vaccination were put in place, such as requiring the presentation of a COVID-19 vaccination certificate for entry to public institutions. Despite the different strategies, as at 17 September 2021, the proportion of the population in Togo aged 18 and over who had received two doses of a COVID-19 vaccine was only 5.6%.

The WHO Representative to Togo, with the consultant for risk communication and community engagement and community leaders. Photo credit: WHO Country Office in Togo/S. Fiaty
To reach the vaccination targets, the WHO Country Office in Togo provided technical and financial support to the country, through the Ministry of Health, Public Hygiene and Universal Access to Health Care (MSHPAUS), to conduct community dialogues and raise awareness in the Grand Lomé region, the epicentre of the country’s COVID-19 outbreak. The objectives were to:

- reduce misinformation;
- break down potential barriers to vaccine acceptance; and
- encourage community support for COVID-19 vaccination.

The community-led initiatives helped to increase national immunization coverage to 25.4% as at 30 December 2021.

**How did Togo, with the support of the WHO Secretariat, achieve this?**

- **Community dialogues**: The WHO Country Office in Togo provided technical support to MSHPAUS for social mobilization, namely community dialogues with the strong involvement of traditional leaders. For the first round of the dialogues, the Grand Lomé region was selected because more than 80% of confirmed COVID-19 cases were located in that region. Thirty-two community dialogues took place, mobilizing approximately 1600 leaders. The dialogues started on 7 October 2021 in the royal palaces under the leadership of the 11 canton chiefs of the region. Local chiefs, priests of voodoo temples, women leaders of market vendor associations, representatives of local development committees, leaders of car and motorcycle driver unions, representatives of youth groups and representatives of arts and crafts organizations were the main actors involved. Honest and open discussions addressed the circulation of misinformation and poor communication about the COVID-19 vaccines; concerns about the speed at which the COVID-19 vaccines were produced and made available; and the location of vaccination sites in remote communities.

- **Awareness-raising messaging**: To facilitate the broad dissemination of awareness-raising messages, the WHO Country Office in Togo provided funding for 13 vehicles equipped with sound equipment to publicize tailored messages. The vehicles announced the messages in markets, in bus stations, at crossroads and in front of bars and restaurants in all neighbourhoods of the Grand Lomé region, under the direct supervision of mayors.

- **Initiatives spearheaded by traditional leaders**: Following community dialogues, traditional leaders encouraged the population to adhere to COVID-19 vaccination recommendations through a number of initiatives:
• Vaccination centres were set up in the palaces of traditional chiefs, markets and bus stations, and the chiefs were vaccinated in the presence of their communities to set an example;
• The chiefs were personally involved in the vaccination teams in order to dispel rumours;
• Practitioners of voodoo, whose beliefs meant they were wary of needles/syringes, got vaccinated;
• Audiovisual messages were produced to refute false information that created confusion in communities. The messages were diffused via WhatsApp groups and community radio stations.

The community dialogues conducted in the Grand Lomé region, with technical and financial support from the WHO Country Office, resulted in interventions that facilitated community acceptance of vaccination against COVID-19. The social mobilization made it possible to increase the national vaccination coverage against COVID-19 by about 20 percentage points, to 25.4% as at 30 December 2021, by providing accurate information to the public and, above all, creating a channel of exchange between traditional leaders and health workers in their respective areas. It is hoped that extending this experience throughout the country will contribute to increasing the vaccination coverage to target by end-2022.
Accelerating mental health and psychosocial support during a health emergency: a multi-country approach

Global acceleration of mental health and psychosocial support during COVID-19

The coronavirus disease (COVID-19) pandemic simultaneously exacerbated mental health conditions and strained mental health services worldwide, highlighting the importance of protecting and improving people’s mental health and psychosocial well-being during emergencies.

WHO’s COVID-19 Strategic Preparedness and Response Plan\(^1\) incorporates mental health and psychosocial support (MHPSS). During the COVID-19 pandemic, WHO deployed MHPSS coordinators and resources. This strengthened national mental health systems and MHPSS responses, particularly in fragile and conflict areas and for vulnerable groups. WHO efforts in MHPSS have been welcomed by Member States and have gained traction globally. Awareness and recognition of the need for MHPSS have increased worldwide. In March 2020, there were 23 functional MHPSS multisectoral coordination groups globally. As a result of WHO efforts, this more than doubled, to 47 groups, covering over 64% of the Global Humanitarian Overview countries by October 2021.

How did the countries, with the support of the WHO Secretariat, achieve this?

- *Increasing the number of functional MHPSS multisectoral coordination groups*: More than 30 MHPSS experts were deployed to Global Humanitarian Overview countries by WHO and its partners during the pandemic to integrate mental health components within the framework of comprehensive health services. In their respective regions of deployment, experts coordinated action among humanitarian assistance providers and assisted in relief efforts. Activities included establishing, leading and supporting MHPSS technical working groups; setting up monitoring, evaluation and learning structures; and conducting situational and stakeholder analyses using approaches designed for crises and emergencies such as 4W mapping (who is where, when, doing what).\(^2\) Deployed for the first time in January 2020, the MHPSS experts improved multisectoral coordination and interagency capacity.\(^3\)

- *Developing mental health and psychosocial well-being guidance for support actors*: WHO, together with the International Federation of Red Cross and Red Crescent Societies, co-chairs the Inter-Agency Standing Committee Reference Group on Mental Health and Psychosocial Support in Emergency Settings,\(^4\) a unique collaboration of the United Nations, international nongovernmental organizations and international agencies providing MHPSS in emergency settings. Through the Reference Group, WHO provided technical expertise to develop several COVID-19-specific...
guidance documents. This included the *Interim briefing note addressing mental health and psychosocial aspects of COVID-19 outbreak*; and the guidance *Operational considerations for multisectoral mental health and psychosocial support programmes during the COVID-19 pandemic*. These COVID-19-specific materials built upon interagency guidance on planning, establishing and coordinating a set of minimum multisectoral responses to protect, support and improve people’s mental health and psychosocial well-being during an emergency. WHO, together with the International Federation of Red Cross and Red Crescent Societies, provided technical support and resources to build a roster of experts for rapid deployment by the Dutch Surge Support initiative during the COVID-19 pandemic, and to link experts to existing humanitarian coordination structures. This rapid deployment mechanism helped to enable MHPSS services to be continued or improved. In 2021, rapid deployment focused on fragile and conflict regions, serving vulnerable communities in a number of countries, such as Afghanistan, Armenia, the Congo, Ethiopia, Haiti, Mozambique, Pakistan, the Sudan, Uganda and Yemen, among others.

- **Adapting MHPSS resources to meet local needs**: Technical experts from WHO and partners developed COVID-19 MHPSS resources. WHO then worked across its regional and country offices to translate and adapt the MHPSS resources to meet local needs, enhancing their cultural relevance and enabling greater uptake. Resources focused on vulnerable groups including children, older adults and front-line workers engaged in COVID-19 response activities, particularly those living in fragile and conflict regions.

- **Creating materials to engage children and adolescents**: To help children and their families to cope with COVID-19, WHO and partners created two fictional books: *My hero is you: how kids can fight COVID-19* and its sequel *My hero is you 2021: how kids can hope with COVID-19*. The stories offer a way for children and parents to think together about questions surrounding the pandemic and share how they are coping with the impacts of COVID-19. The second book drew from survey responses of more than 5000 children, parents, caregivers and teachers from around the world, who described the challenges they continued to face in the second year of the pandemic. Both books were released by a collaboration of 60 organizations working in the humanitarian sector. The first book is currently available in over 145 languages, sign language and braille, and in more than 50 adaptations, in animated video, read-aloud, theatre, activity books and audio formats. It can be used by parents and teachers in conjunction with a guide entitled *Actions for heroes*, which advises parents, caregivers and teachers on how to create the right conditions for children to openly share their feelings and worries about the pandemic, as well as including activities based on the books in the series.
• **Creating tools to support older adults**: WHO worked with partners to develop and disseminate *Living with the times*, a toolkit to support the mental well-being of older adults. The toolkit promotes key messages for older adults on maintaining their well-being amid the COVID-19 pandemic, while also supporting those around them. Employing a unique design, posters within the toolkit are illustration-based, are culturally diverse and aim to engage older adults in conversations and activities, rather than simply sharing information. Prioritizing those most vulnerable, WHO focused on disseminating this resource to older adults living in fragile and conflict regions. In the Syrian Arab Republic, more than 100 000 older adults have received the toolkit.

• **Developing a guide for front-line workers**: COVID-19 has put a tremendous strain on health-care and front-line workers, both physically and psychologically. The Inter-Agency Standing Committee’s *Basic psychosocial skills: a guide for COVID-19 responders* was designed to enable first responders to integrate psychosocial support skills into their daily work. National organizations, such as the Armenian Psychiatric Association, collaborated with WHO to translate and disseminate these guidelines, enhancing uptake. To increase reach, the WHO Division of Pacific Technical Support and the University of Technology Sydney developed a self-directed training course for the Pacific Islands based on the *Basic psychosocial skills* guide, reaching more than 1000 participants to date. The course enables anyone involved in the COVID-19 response – community members, health workers and law enforcement officers – to learn how to look after their own well-being and that of others.

The success of those initiatives demonstrates how health and humanitarian emergencies can become opportunities to strengthen mental health systems. Strong collaboration and coordination, in addition to WHO technical expertise, have been vital to producing materials and reaching millions of people around the world. WHO continues to lead the interagency coordination across different organizations to ensure a coordinated and effective mental health response in emergencies worldwide. For example, in addition to working to ensure rapid deployment to countries affected by emergencies, WHO and partners are developing a handbook on MHPSS coordination (which is expected to be released in late 2022), a minimum services package for MHPSS in emergencies, and a guidance note on addressing suicide in humanitarian settings.
Outcome 2.3 Health emergencies rapidly detected and responded to


3.1 Determinants of health addressed
Improving air quality in Accra, Ghana, by integrating health into policy-making

Preventing 1848 deaths from household air pollution annually

Ambient and household air pollution is a major cause of death and disease worldwide. Almost all of the global population (99%) are exposed to polluted air worldwide. In addition to causing ill health, short-lived climate pollutants, such as methane, black carbon and tropospheric ozone, are also significant contributors to climate change. In Ghana, the levels of air pollution are affected by seasonal variation. During the dry season (November to March) there are high peaks due to desert dust. Nevertheless, throughout the year, anthropogenic sources of air pollution are responsible for keeping average values high and for serious health impacts. Levels of air pollution are significantly high in Accra and high in Greater Accra. It has been estimated that if 2015 levels of air pollution, in excess of the WHO Air Quality Guidelines, remain in Greater Accra, air pollution will be responsible for 70 000 years of life lost in the adult population. Since the adoption of World Health Assembly resolution WHA68.8 (Health and the environment: addressing the health impact of air pollution) in 2015, WHO has worked closely with the Government...
of Ghana and other partners to implement the Urban Health Initiative, which aims to reduce deaths and diseases associated with air and climate pollutants and enhance health co-benefits from policies to tackle urban air pollution and short-lived climate pollutants, thus saving lives by linking health, environment and sustainable development. Assessments of the health impacts of air pollution are now being given full consideration in policies relating to transport, waste, land use and energy.

**How did Ghana, with the support of the WHO Secretariat, achieve this?**

A pilot project was launched in Accra in 2016 to support the health sector and demonstrate the full range of health benefits that can be achieved from implementing air pollution and short-lived climate pollutant reduction strategies. Interventions of the project rested on four pillars:

1. applying multidisciplinary approaches, methodologies and tools to address the health impacts of urban policies;
2. assessing policy measures to reduce air pollution and win multiple public health gains in the household energy, waste, land-use and transport sectors;
3. fostering health sector competencies, engaging key stakeholders and working with the Ghana Health Service to raise awareness about air pollution and health among health workers and their patients; and
4. conducting health communication campaigns (e.g. BreatheLife Accra) to raise public awareness about the connections between climate change, air pollution and health, and catalyse action for the reduction of emissions.

The WHO Air Quality Guidelines recommend limits for concentrations of key health-harming air pollutants based on global scientific evidence. Assessments of policy scenarios to address air quality in Accra showed that meeting the Guidelines’ values could prevent 1790 deaths annually in Greater Accra, which corresponds to an estimated economic burden of approximately US$ 247 million. According to the Urban Health Initiative’s household energy analysis, the most ambitious policy scenario of reducing household use of charcoal as a primary cooking fuel in Accra, for example, would prevent an estimated 1848 deaths annually by 2030. A long-term policy scenario with a significant shift from the use of passenger cars to efficient public transport, walking or cycling would avert up to 5500 premature deaths through improved air quality, and save an additional 33 000 lives due to increased physical activity, with overall estimated economic savings of US$ 15 billion over a 35-year period.

The Urban Health Initiative helped to build capacity in the health sector to engage across sectors to address air pollution and its health impacts. This allowed for examination of the impacts and challenges in sectors responsible for air pollution, such as household energy, transport, waste and land use (including green spaces). Discussions on the implementation of the WHO Air Quality Guidelines were held with stakeholders in Ghana. Key results included incorporating the Urban Health Initiative’s health recommendations into the Greater Accra Metropolitan Areas Air Quality Management Plan of 2018, the

Accra has become a leading city for the implementation of air quality and health strategies by providing technical information, lessons learned and guidance for other countries in the WHO African Region. Capacity-building remains one of the pillars of the project, with WHO piloting a course for the health workforce in Ghana, including training modules on air pollution and health for clinicians and public health practitioners. In June 2022, through a train-the-trainer approach, 42 health workers from all regions of Ghana were enabled to act as air pollution and health trainers and scale up the dissemination of knowledge and skills at country level. In the next phase, with further activities planned for 2023 in Ghana, a strategic challenge will be to implement a policy tracking framework that is applicable across the region.

Rolling out COVID-19 vaccines for vulnerable populations on the Greek island of Lesvos

COVID-19 immunization on Lesvos, Greece

The refugee and migrant camp on the Greek island of Lesvos used to be one of the largest of its kind in Europe and is still home to 1649 individuals (1215 adults and 434 minors) in March 2022. After the Moria Refugee Camp burned down in 2020, its 12500 refugees and migrants were relocated to a temporary camp and, the WHO Country Office in Greece, the WHO Regional Office for Europe and WHO headquarters initiated an emergency response to address the health needs of the vulnerable group. Emergency Medical Teams (EMT) were deployed, and a mobile health clinic was established on the site under the leadership of the National Public Health Organization (EODY) in keeping with WHO guidelines. Amid the coronavirus disease (COVID-19) pandemic, WHO further deployed a rapid response mobile laboratory (RRML), along with EMTs, to support the authorities in their surveillance and contact tracing efforts.

How did Greece, with the support of the WHO Secretariat, achieve this?

After more than five months of intense collaboration between the WHO Country Office in Greece, the WHO Regional Office for Europe and WHO headquarters to support the acute emergency operations, the mobile health clinic and RRML were donated to EODY to ensure sustainability, and they have remained in operation until today. The WHO Secretariat also organized capacity-building sessions for EODY staff. Health-care services were maintained within the camp, enabling refugees and migrants to access COVID-19 polymerase chain reaction (PCR) testing throughout the pandemic via RRML. Additionally, a COVID-19 testing and contact tracing strategy was developed and quarantine and isolation areas were established. The adaptable strategic plan for the management of the pandemic within the newly established Lesvos camp ensured that actions could be adjusted according to the evolving context.

The immunization plan for refugees and migrants was developed by the Ministry of Health in collaboration with a health working group which focused on common health issues in the refugee camps in Greece. In addition to the Ministry of Health it included the participation of other governmental bodies, specialized agencies of the United Nations system, civil society organizations and other national organizations such as the Greek Formal Refugees (representation of the beneficiaries). A task force for the roll-out of COVID-19 vaccination was later established at the federal level in Athens, convening each week to ensure that all concerned agencies contributed to the development and efficiency of the immunization roll-out in the camps in Greece, including in Lesvos. The WHO Country Office’s provision of
technical guidance and collaboration with the Greek government supported
the creation of an immunization policy document which strengthened the
implementation. Through the task force, the evolving policy document could
be further adapted to the populations needs and the tasks at hand, with the
ownership of the government and the coordination of all stakeholders.

In addition to the health working group at the federal level, feedback from
the community regarding the immunization strategy and messages were
addressed at Communication with Community sessions. Religious leaders,
individuals representing ethnic groups, interpreters and EODY field agents
as well as WHO Country Office representatives, gathered to discuss issues
of concern and provide feedback. As a result, a risk communication and
community engagement campaign for COVID-19 was developed. Messages on
topics such as the safety of COVID-19 vaccines, as approved by national and
international regulators and organizations, and vaccine effectiveness against
severe COVID-19 outcomes were formulated. The campaign also focused
on issues of scheduling and prioritization, as well as information-sharing
regarding potential side-effects through a door-to-door approach by EODY.

The successful communication between the stakeholders and beneficiaries
and ongoing coordination efforts, have resulted in weekly mass vaccinations
within the Lesvos camp which have continued to the present day. According
to EODY, as of 18 March 2022, 85.5% of refugees and migrants who were
eligible for vaccination (aged 5 years and above) in the Lesvos camp had
been vaccinated. Interpreters and direct communication channels involving
the community itself helped to overcome barriers and made a central
contribution to the vaccination uptake within the camp In this way, individuals
could have the ability to lead their everyday lives more safely, be protected
against severe COVID-19 disease, and look forward to what the future holds..

1 International Organization for Migration; Office of the United Nations High
Commissioner for Refugees (UNHCR); United Nations Children’s Fund (UNICEF);
and WHO.
2 Médecins Sans Frontières; Hellenic Red Cross; and Médecins Du Monde.
Protecting, promoting and supporting breastfeeding in Kenya

New regulations aimed to increase rate of breastfeeding

Breastfeeding is one of the most effective ways to ensure child health, survival and development. Kenya set a target to increase the rate of exclusive breastfeeding from 61%¹ to 75% by 2022. The 2022 Kenya Demographic and Health Survey is currently ongoing to ascertain if this target has been achieved. Contrary to national guidelines on infant feeding, which recommend exclusive breastfeeding in the first six months of life, about 23% of infants aged under 6 months in Kenya are fed with breast milk plus water and other milks.²

Inappropriate marketing of breast-milk substitutes continues to undermine efforts to improve breastfeeding rates and duration worldwide. To increase breastfeeding in Kenya, WHO supported regulations that formed part of the legal framework for establishing and operationalizing a breast-milk substitute complaints and violations monitoring system. The regulations came into force on 30 May 2022.

A breastfeeding mother in Kenya. Photo credit: Kavle Consulting/George Ndagu
WHO continues to work to protect, promote and support exclusive breastfeeding in Kenya, by providing technical support to the Government of Kenya to operationalize the regulations and document results. The Ministry of Health has already reached out to WHO for additional support in responding to questions from breast-milk substitute manufacturers.

How did Kenya, with the support of the WHO Secretariat, achieve this?

- **Adopting international regulations**: Kenya adopted the International Code of Marketing of Breast-Milk Substitutes by enacting the Breast Milk Substitute (BMS) (Regulation and Control) Act in 2012. The objective of the Act is to regulate the manufacture, sale and marketing of breast-milk substitutes and to protect, promote and support breastfeeding to ensure safe and adequate nutrition for infants. However, violations of the Act continued to undermine efforts to improve breastfeeding rates, necessitating the development of regulations to operationalize existing legislation. The Act gives the Cabinet Secretary for Health powers to issue regulation prescribing implementation of certain sections of the Act. WHO supported the Ministry of Health in developing the regulations in view of provisions in existing national legislation, policies and standards. WHO conducted advocacy and convened key stakeholders, including civil society organizations, other specialized agencies of the United Nations system, nongovernmental partners, the Office of the Attorney General, the Kenya Law Reform Commission and the Kenya Bureau of Standards. WHO further supported the development of technical briefs for relevant National Assembly committees, as well as supporting the Ministry of Health in addressing concerns, developing response documents and providing technical feedback. Additionally, WHO supported a regulatory impact assessment of the likely benefits, costs and effects of the proposed regulations,² in fulfilment of the Statutory Instruments Act (No. 23 of 2013), sections 6 and 7.

- **Aligning regulations with Kenya’s Constitution and World Trade Organization (WTO) agreements**: Kenya’s Constitution of 2010 guarantees every person the right to the highest attainable standard of health (article 43(1) (a)) and to be free from hunger and have adequate food of acceptable quality (article 43(1)(c)). Every child has the right to basic nutrition, shelter and health care (article 53(1)(c)) and to parental care and protection (article 53(1)(e)). Furthermore, consumers have the right to the information necessary for them to gain full benefit from goods and services (article 46(1)(b)) and to the protection of their health, safety and economic interests (article 46(1)(c)). Article 2.2 of WTO’s Agreement on Technical Barriers to Trade was examined closely when establishing the regulations to deter ongoing deceptive practices that interfere with efforts to effectively protect the nutrition of Kenyan infants and young children.
Engaging in high-level policy dialogue: The Ministry of Health published the proposed regulations on 27 August 2021 in the Kenya Gazette. The Kenya Association of Manufacturers petitioned the National Assembly to reject the regulations and the matter was referred to the Parliamentary Committee on Delegated Legislation. The Ministry of Health and the Kenya Association of Manufacturers were invited to parliament on 8 November 2021 to explain their position. WHO participated in briefing the Ministry of Health and was in attendance as part of its team. The delegation from the Kenya Association of Manufacturers included its legal team and regional and country representatives from breast-milk substitute manufacturers. The Parliamentary Committee presented its report to the full house of the Assembly, which adopted the Breastmilk Substitutes (General) Regulations on 10 November 2021. The regulations came into force on 30 May 2022, as directed by the National Assembly.

Strong opposition was encountered from the Kenya Association of Manufacturers and from various parties through WTO. For the regulations to be adopted, strong leadership from government ministries, legal advisory teams and the legislature was vital. Presentation of local data and evidence on the need to enact such laws and regulations was key to gaining support. WHO played a crucial role in providing dependable, evidence-based guidance to policy-makers and in advocating, convening and supporting various stakeholders for high-level policy dialogue.


Ratifying Mexico’s groundbreaking National Law of Mobility and Road Safety

Action to reduce road traffic fatalities

The number of road traffic fatalities in Mexico, a country of nearly 130 million people, has remained consistently high in recent years, despite extensive efforts at the national and subnational levels. More than 16 000 deaths were recorded in 2019 alone. There was a lack of accountability among different sectors and institutions within the Mexican federal government, which challenged intersectoral coordination and progress in road safety to prevent fatal and non-fatal traffic injuries. Laws related to speeding, alcohol limits and licensing were created subnationally, with levels of government responsible for planning, designing and operating transport systems, mostly working independently. A crucial constitutional amendment was introduced in 2020 that recognized “mobility under the conditions of safety, accessibility, efficiency, sustainability, quality, inclusion and equality” as a universal right. The stage was set for a new national law to harmonize all actions and to enshrine an integrated Safe System approach that recognized road safety as key to saving lives and achieving the Sustainable Development Goals. Mexico’s National Law of Mobility and Road Safety, passed by both the Senate and the Chamber of Deputies in April 2022, marks a major step forward in the

Members of the Safe Mobility Coalition in the Senate after the new Law was passed in April 2022.
Photo credit: Safe Mobility Coalition/Agustín Martínez Monterrubio
country’s efforts to reduce the persistently high number of road traffic deaths and boost equitable and sustainable access to transport services for all.

How did Mexico, with the support of the WHO Secretariat*, achieve this?

Since 2008, the technical cooperation of PAHO/WHO has been central to Mexico’s progress in mobility and road safety. PAHO/WHO has worked with a multitude of partners to build up the systems, capacities and awareness needed to drive progress at all levels, including through funds from the Bloomberg Initiative for Global Road Safety.

Through funding, training and multiple awareness-raising campaigns, PAHO/WHO supported and strengthened Mexico’s Safe Mobility Coalition (Coalición Movilidad Segura), which played a key role in amending the Constitution and approving the new Law. The Coalition brought together 70 civil society organizations from 25 of Mexico’s 32 states.

PAHO/WHO also engaged in high-level advocacy and coordination to shape and build momentum for the new Law, working closely with influential Mexican senators and officials and coordinating across the United Nations system at the global, regional and national levels.

Over several years, PAHO/WHO has worked with the local authorities to produce crucial technical documents to advance police enforcement around road safety, including:

- a guide on implementing traffic surveillance and control interventions;²
- a national programme to implement alcohol testing checkpoints;³ and
- a protocol for the implementation of alcohol testing checkpoints.⁴

More recently, as part of the coronavirus disease (COVID-19) response, PAHO/WHO, along with the Ministry of Agrarian, Territorial and Urban Development, the Ministry of Health, and the Safe Mobility Coalition, produced three documents to support safe mobility.⁵

To reinforce the effectiveness of these actions, PAHO/WHO supported a number of major social marketing campaigns. Moreover, targeted training programmes were provided for several journalists to amplify key messages and improve reporting on road safety. In collaboration with the Government of Mexico and civil society, PAHO/WHO provided technical and legal support in 2020 for the development of Mexico’s mobility plan for the new normal. The plan included key elements for safe, sustainable and healthy mobility.

The National Law of Mobility and Road Safety calls for the establishment of the proven and life-saving Safe System approach, which is fully aligned with

* The Pan American Health Organization (PAHO) was established in 1902 as the specialized health agency of the Organization of American States within the inter-American system. In 1949, through an agreement with WHO, PAHO agreed to serve as the WHO Regional Office for the Americas.
the Global Plan for the Decade of Action for Road Safety 2021–2030. The law prioritizes the safety of the most vulnerable road users (i.e. pedestrians, cyclists and people with disabilities) and promotes sustainable and equitable mobility for all. It clarifies the roles and responsibilities within the Mexican government and calls for the creation of a unified database for licences, number plates and fines. Moreover, it incorporates the majority of WHO’s recommendations to promote the safe use of equipment (e.g. helmets, seatbelts and child restraints) and to reduce road users’ exposure to key risk factors (e.g. speeding, mobile phone use while driving and driving under the influence of alcohol). Having been approved by the Senate and the Chamber of Deputies, the Law was published on 17 May 2022. This momentous safe mobility law should be viewed as an integrated component of many important policy areas, including child health, climate action, gender, poverty and equity. Having the country’s mobility systems firmly rooted in safety will bring a range of benefits to human health and the environment, reducing the social and economic toll of road safety tragedies, as well as addressing gender equity on access to safe mobility. The Law is expected to lead to a significant reduction in road traffic deaths in Mexico.

Assessing water, sanitation and hygiene services in Montenegrin health-care facilities

New data to improve WASH in health care facilities and quality of care

In 2019, World Health Assembly resolution WHA72.7 on water, sanitation and hygiene (WASH) in health-care facilities was adopted. The resolution draws attention to the fundamental importance of adequate WASH services for providing safe, people-centred health care and achieving universal health coverage. Addressing and integrating efforts for WASH can catalyse improvements in service delivery, staff moral and performance, health-care costs, disaster/outbreak resilience, infection prevention and control, and reductions in antimicrobial resistance. The resolution calls upon Member States to improve WASH in health-care facilities by, among other things, conducting comprehensive assessments of WASH conditions according to the national context, on the basis of which follow-up interventions – at the policy and practical levels – should be identified and prioritized.

How did Montenegro, with the support of the WHO Secretariat, achieve this?

WHO supported Montenegro in executing an assessment of WASH in health-care facilities, including the process of prioritization and planning of activities, and providing international experts and instruments for capacity-building and conducting the assessment. WHO supported the adaptation of international definitions and recommendations to the Montenegrin context and provided state-of-the-art tools relevant for the national context. In addition, WHO served as an experienced guide for the country in the evaluation of the assessment results and identification of priorities and improvement action relevant for the local context, while ensuring that these were built on existing systems and structures and based on national health priorities.

Specific activities that the Institute of Public Health of Montenegro undertook in partnership with WHO included an analysis of existing policies and the broader enabling environment and a survey of the actual situation in facilities, using internationally recognized indicators for basic and advanced WASH indicators established by the WHO/United Nations Children’s Fund (UNICEF) Joint Monitoring Programme for Water Supply, Sanitation and Hygiene. The overall objective of the survey was...
to establish a baseline of prevailing conditions of WASH in health-care facilities to inform policy-making and national target-setting and to identify progressive improvement interventions. The WHO European Centre for Environment and Health, in Bonn, Germany, and the WHO Country Office in Montenegro provided technical and financial support in undertaking the assessment. In 2021, the WHO Regional Office for Europe produced a video “Who cares about toilets?” which follows Dr Enisa Kujundzic of the Institute of Public Health as she assesses sanitation services in health-care facilities in Montenegro.

Data were collected from all operating health-care facilities in the country at all levels of care (151 in total). The results are thus of relevance and of impact for the entire population in the country. The findings indicated that there was good basic provision of different WASH components in many health-care facilities – especially with respect to water, hand hygiene and waste management, showing the results of past efforts (for example, on capacity-building in waste management) – but that basic provision of environmental cleaning and sanitation remained a challenge in many health-care facilities across the country. Challenges in WASH provisions were observed more often in facilities providing primary care services and those located in rural areas (in particular health stations) and in private facilities for waste management.

The outcomes informed on strengths and gaps and will help to develop targeted recommendations for improvement interventions – at the governance level and in practice at the facility level – for example, strengthening the national surveillance system and developing the capacity of medical and nonmedical staff. The outcomes of the project also supported national reporting at the global level for monitoring progress towards achieving Sustainable Development Goals 3 (Ensure healthy lives and promote well-being for all at all ages) and 6 (Ensure availability and sustainable management of water and sanitation for all), as well as on the implementation of World Health Assembly resolutions WHA72.7 and WHA73.1 (COVID-19 response).

The assessment was key to raising awareness on important provisions related to WASH for ensuring quality of care, showing possible entry points and ways to take action and improve coverage of WASH provisions. Immediate action following the outcome of the assessment will be the inclusion, from 2022, of water quality control within the regular surveillance programme. Also planned is the integration of provisions related to WASH operation and maintenance in legislation and the development of a programme dedicated to private health-care facilities to enhance capacity-building.

The assessment also supported the drafting of a list of indicators that could be used for the development of a national definition of advanced level for WASH
in health-care facilities in Montenegro, which will guide national target-setting (for example, under the Protocol on Water and Health4) and improvement of national monitoring systems. WHO's facilitation of the evaluation of the results and support in translating it into concrete policy action by the Ministry of Health resulted in planned improvements of the surveillance system and development of targets, including creating a road map for action and ensuring sustainability of the initiative.

Preventing lead exposure through the effective implementation of a paint standard in Nepal

Preventing lead exposure by implementing a paint standard

The widespread use of lead has resulted in extensive environmental contamination, human exposure and significant public health problems in many parts of the world. It is a cumulative toxicant that affects multiple body systems, including the neurological, haematological, gastrointestinal, cardiovascular and renal systems. Young children are particularly vulnerable to the toxic effects of lead and can suffer profound and permanent adverse health impacts, particularly on the development of the brain and nervous system. Exposure of pregnant women to high levels of lead can cause miscarriage, stillbirth, premature birth or low birth weight.

WHO identified lead as one of 10 chemicals of public health concern requiring action by Member States to protect people’s health. Studies have highlighted the high level of lead exposure in children in the country, especially in Kathmandu, Birgunj and the Dharan-Dhankuta industrial corridor. Moreover, a global study conducted by the United Nations Children’s Fund (UNICEF) and Pure Earth in 2020 estimated that over 65% of Nepal’s total child population have elevated blood lead level. One of the main sources of contamination identified in the studies was paints containing lead.

Since 2013, the WHO Country Office in Nepal has supported the Center for Public Health and Environmental Development (CEPHED) in spearheading efforts against lead paint and its adverse effects on children. As a result, Nepal has standards in place and stakeholders have committed to a series of actions to strengthen and enhance compliance. The WHO Country Office continues to provide technical support to the Government of Nepal to ensure that policy implementation is timely, as that is critical to lessening the harmful effects of lead on the country.

Paint is one of the main sources of human exposure to lead in Nepal. Photo credit: WHO/Christopher Black
How did Nepal, with the support of the WHO Secretariat, achieve this?

- **Implementing effective elimination policies and regulations**: The Global Alliance to Eliminate Lead Paint, jointly led by WHO and the United Nations Environment Programme, was launched in 2011. In 2012, in order to catalyse efforts of diverse stakeholders to minimize and prevent exposure to lead in paints, the Alliance released its operational framework. In 2014, the Government of Nepal enacted a lead paint standard specifying that lead in paints should not exceed 90 parts per million (ppm). There is no such thing as a “safe limit” of blood lead level, and it affects children far more adversely. The impact on their mental development, very often, is irreversible. More needs to be done in protecting our health from lead poisoning which is 100% preventable.

Dr Rajesh Sambhajirao Pandav
WHO Representative to Nepal

- **Building regulatory capacities including monitoring mechanisms**: A study on compliance monitoring of the lead paint standard was carried out by the Ministry of Forest and Environment in 2016. It showed that only 30% of paints complied with the 90 ppm lead paint standard. In 2021, a follow-up study was conducted by CEPHED, with technical and financial support from the WHO Country Office in Nepal. The biggest study on the topic to date, it demonstrated that while compliance with the lead paint standard had increased from 30% in 2016 to 52% in 2021, paints with high concentrations were still being sold in retail stores across Nepal. This provided strong justification for the strict monitoring of compliance, and strict enforcement of a regulation or standard banning the manufacture, import, export, distribution and sale of paints with total lead concentrations greater than 90 ppm.

- **Conducting comprehensive advocacy to strengthen commitment**: The Alliance held its ninth International Lead Poisoning Prevention Week in October 2021. With the support of the WHO Country Office in Nepal, CEPHED planned a series of advocacy events to promote full compliance with the mandatory lead paint standard, a national blood lead level policy for all children in Nepal and a blood lead level testing infrastructure. Webinars were held to engage with, and build awareness and capacity of, concerned government agencies and health and environment journalists. Social media messaging and radio public service announcements conducted over Nepal’s most popular radio station aimed to build awareness in the general population. Letters were written to follow up with key stakeholders. Moreover, workshops were held at the national level and in three provinces, and campaign materials (posters, fliers, infographics and banners) were distributed to each. At a stakeholder workshop, stakeholders deliberated ways forward and strengthened their commitment to updating the status of compliance to enable effective
implementation of the paint standard; enhancing compliance through the use of standard-compliance labelling on paint packaging; promoting lead-free paints; and increasing awareness and building capacity of all levels of government and the paint industry.

• WHO’s role in creating an enabling environment and providing technical expertise has been crucial to Nepal’s efforts to eliminate lead in paints. Work in this endeavour is part of WHO’s broader work with the Government of Nepal to address the environmental determinants of health. WHO-supported compliance monitoring has already demonstrated that lead is avoidable and that national compliance with the lead standard is necessary to enable progress. Continuous advocacy to diverse stakeholders along the supply chain, including manufacturers and users, will be needed to accelerate progress and sustain achievements in minimizing the environmental health risks associated with the use of lead in paints.

3 A 2014/2015 blood lead level study carried out in Kathmandu Valley by the Nepal Health Research Council, with support from WHO.
4 A 2017 study by Dr Keyoor Gautam and team, Birgunj, Nepal.
Addressing climate risks to supply safe water in Nepal

Delivering climate-resilient safe water in Nepal

Target 6.1 of the Sustainable Development Goals (SDGs) calls for universal and equitable access to safe and affordable drinking water for all. The target is tracked by indicator 6.1.1 (proportion of population using safely managed drinking water services), which is defined by WHO as drinking water from an improved water source that is located on the premises, available when needed, and free from faecal and priority chemical contamination. Poor water quality is one of the major environmental health issues facing Nepal, and the problem has been exacerbated by climate change and climatic hazards. In 2020, only 18% of Nepal’s population had access to a safely managed water supply system.

To enable Nepal to transform its water supply and fulfil SDG 6 (clean water and sanitation for all by 2030), WHO joined forces with the Government of Nepal’s Department of Water Supply and Sewerage Management (DWSSM). Together, WHO and DWSSM implemented a project to deliver climate-resilient water and sanitation in Africa and Asia, including in Nepal, funded by the Foreign, Commonwealth and Development Office (FCDO) of the United Kingdom of Great Britain and Northern Ireland. The multiregional project aims to enhance climate-resilient water safety and sanitation management to effectively respond to climate change impacts, as well as developing integrated surveillance for climate-sensitive diseases and, where feasible, early warning systems.

Monitoring water quality in Nepal. Photo credit: WHO Country Office in Nepal
Since the project’s launch in 2018, WHO has provided technical expertise to revise Nepal’s water safety plan (WSP) guidelines to incorporate climate resilience, build water monitoring capacity and implement the new safety plan in 10 projects that supply water to 480,000 people. This is expected to reduce the incidence of water and sanitation-related diseases and better ensure a continued supply of safely managed water in the face of climate challenges for the approximately half a million people already covered by the projects. The project also serves as a functional model for water supply improvement. To expand the coverage and therefore impact of the climate-resilient water safety plan (CR-WSP), the Government of Nepal is working with development partners to implement the plan in water projects across the country.

*Adopting a climate-resilient water safety plan (CR-WSP) not only ensures continuous supply of safe water but also takes into consideration the climatic hazards from catchment to the consumers. Hence, I urge all stakeholders to expand the plan in other water supply systems which is an advanced step in complying with national drinking water quality standard.*

Dr Rajesh Sambhajirao Pandav
WHO Representative to Nepal

**How did Nepal, with the support of the WHO Secretariat, achieve this?**

- **Upgrading the WSP:** With technical expertise from WHO, DWSSM upgraded the 2013 *Water safety plan handbook,* to incorporate climate resilience. Nepal’s *Climate resilient water safety plans guideline,* launched in 2017, included site-specific activities for both rural and urban water supply systems, a budget and a time frame.

- **Providing water quality monitoring equipment to water supply projects:** From 2019 to 2021, the WHO Country Office in Nepal provided technical, material and financial support to DWSSM to upgrade 10 water supply projects in alignment with the country’s 2017 guideline. The 10 projects were dispersed throughout the country and aimed to complement and further strengthen ongoing projects. The projects were chosen on the basis of criteria to obtain a representative sample of water projects across the country and had a total population coverage of 480,000 people. In 2020, WHO experts, in consultation with DWSSM, carried out a baseline assessment of water supply projects and procured and provided FCDO-funded test kits (Wagtech kits, photometers, autoclaves, digital turbidity meters, pen-type EC meters, with reagents and consumables) to 10 water supply projects to strengthen the water quality mechanism in each project.

- **Building human resource capacity:** There are more than 42,000 water supply projects operating in Nepal, managed by Water Users and Sanitation Committees (WUSCs), spread across 753 palikas. Members of WUSCs include local and community leaders and other stakeholders. To
enable WUSCs to properly use the water quality monitoring equipment, WHO provided technical expertise to develop and implement a training on water quality monitoring and standard operating procedures. The training was delivered to lab technicians and WUSC representatives on all 10 water supply project sites. As the technical capacity of WUSCs is limited, dedicated additional teams with in-depth technical expertise, WSP teams, were formed at each of the 10 water project sites. WSP teams are responsible for developing and implementing the CR-WSP in each project. WSP members are diverse and include representatives from local health agencies, weather stations, nongovernmental organizations, teachers and civil society. After they are oriented to the CR-WSP, their activities include conducting review meetings to identify and integrate climatic hazards into the plan, and modifying and implementing the improvement plan.

The inclusive approach of WSP teams has been crucial to increasing awareness of the CR-WSP, at both the project level and the community level. The CR-WSP helped to enhance national capacity to supply safe water in view of emerging challenges such as climate risks. There are many water supply projects in Nepal, each small in size with limited technical capacity. Poor documentation, inadequate chlorination and weak institutional capacity were some of the challenges that the CR-WSP has had to overcome during its implementation in the 10 projects. This pilot was found to be beneficial for improving water quality in the country to meet national drinking water standards and SDG targets.

Strengthening nutrition surveillance to guide the management of wasting in the Sudan

About 1.8 million children and women to benefit annually

Malnutrition in children aged under 5 years and among women has been a public health problem in the Sudan for the past three decades, leading to wasting,\(^1\) stunting,\(^2\) increased vulnerability to infectious and noncommunicable diseases, reduced quality of life and increased risk of early death. Malnutrition is associated with not only poor physical development, but also poor mental development. A child with wasting has lower immunity and thus is more vulnerable to infectious diseases and has an increased risk of death. However, both wasting and stunting are entirely preventable. While the overall trend for wasting and stunting in the Sudan shows a decline, the results of the 2018 Simple Spatial Survey Method (S3M II) for the Sudan revealed that one in seven children aged under 5 were wasted (13.6%) and one in three children were stunted (36.4%).\(^3\) With nutritional surveillance, children at risk of wasting are identified earlier, preventing other severe forms of malnutrition and death. WHO’s strategic investments in building and sustaining a fully functional nutrition surveillance system in the Sudan will benefit an estimated 1.8 million children and women annually, accelerating progress towards the Sustainable Development Goals.

How did the Sudan, with the support of the WHO Secretariat, achieve this?

A robust national nutrition information system is essential for collecting timely, regular and quality data to assess children’s nutrition status. Disaggregated data facilitate the identification of at-risk groups for developing policies able to address nutrition concerns in those populations. It guides decision-making to ensure efficient and effective allocation of resources, monitors implementation of actions and evaluates outcomes to determine progress towards the achievement of goals and targets and reach those most in need.

- **Building on the existing health information system:** Through a consultative process, the Ministry of Health of the Sudan, together with WHO and partners, agreed to build on the existing health information system to integrate nutrition indicators that allow measurement for wasting (weight-for-length/height) and stunting (length/height-for-age). This also helped to strengthen the quality of data by having a continuous data quality monitoring feedback mechanism, which allowed Ministry of Health officials in all states to promptly detect and report data issues.

- **Refining data sources and processes:** The Ministry of Health, with support from WHO, refined nutrition indicators, identified sources of data and developed methods for analysis and reporting.
Aggregating data from multiple databases: Data from three databases – severe acute malnutrition (SAM), targeted supplementary feeding programme (TSFP) and growth monitoring database – were used for the integrated analysis of nutrition-specific and nutrition-sensitive indicators to support a comprehensive analysis of nutrition status and the management of severe wasting.

Investing in capacity-building for nutrition surveillance and reporting: WHO trained 139 health workers through seven 5-day workshops/sessions on nutrition surveillance and database management. The trained health workers went on to develop and publish surveillance “Bulletins”, reports that included national and subnational-level data from all states disseminated to nutrition partners on a quarterly and annual basis.

Developing guidance documentation: A data registration, reporting and planning manual for nutrition staff was developed and pre-tested in Khartoum State. In addition, a checklist was developed to improve community management of acute malnutrition. It was tested in two states, in stabilization centres, outpatient treatment programmes and targeted supplementary feeding programmes prior to its approval by the Ministry of Health. The checklist is now used in all states.
• **Forecasting and planning for nutrition commodities:** The report of the Community Management of Acute Malnutrition, which included calculations of nutrition commodities, was revised to include more accurate calculations of nutrition supply needs to prevent shortages.

• **Developing a global action plan road map:** In 2021, the Ministry of Health, together with WHO and other specialized agencies of the United Nations system, developed a global action plan road map for the Sudan to improve the prevention and treatment of wasting in the country.

• **Strengthening infrastructure and capacity for the management of wasting:** WHO provided 18 training sessions to 492 health workers on the inpatient management of wasting. The WHO Country Office in the Sudan provided 1496 kits for the management of severe acute malnutrition in 144 nutrition centres. Anthropometric measuring equipment (e.g. mid-upper arm circumference measuring tapes, infant hanging scales and length/height measurement boards) was provided to 48 nutrition centres. Computer equipment (seven laptops and four desktop computers) was provided to the Ministry of Health.

• **Developing functional stabilization centres:** In 2021, WHO provided support to the Ministry of Health that led to the development of 144 functional stabilization centres, which have provided treatment to approximately 31,000 children with wasting and medical complications. The WHO Country Office provided medical and laboratory supplies to 48 stabilization centres and renovated nine stabilization centres in various states. WHO also supported social mobilization activities to promote early detection, referral and treatment of children with severe wasting in need of hospitalization.

Ending hunger, achieving food security and addressing malnutrition in all its forms are essential to ensuring healthy lives and well-being for all. Nutrition surveillance provides a foundation for dialogue and the development of multisectoral discourse. To ensure a coordinated, coherent and fit-for-purpose response, WHO collaborates closely with other specialized agencies of the United Nations system, non-State actors, communities and the Government of the Sudan to support community management of acute malnutrition along a multidimensional continuum of care.

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1 Child wasting refers to a child who is too thin for his or her height and is the result of recent rapid weight loss or the failure to gain weight. A child who is moderately or severely wasted has an increased risk of death, but treatment is possible.

2 Child stunting refers to a child who is too short for his or her age and is the result of chronic or recurrent malnutrition. Stunting is a contributing risk factor to child mortality and is also a marker of inequalities in human development.

Advancing tobacco control efforts in Tunisia

Graphic health warning labels on tobacco products

In Tunisia, tobacco weighs heavily on the health of its people and of its economy. The prevalence of tobacco consumption is 25% and is particularly high among the male population (50%), according to the latest Tunisian Health Examination Survey in 2016.¹

A recent Tunisian investment case study stated that every year, tobacco use killed more than 13 200 people, representing 20% of overall deaths in Tunisia, of whom 49% were under 70 years old. It is estimated that 18% of lives lost from tobacco use were due to exposure to second-hand smoke.² In 2019, the economic losses linked to tobacco use in Tunisia were considerable, estimated at 2 billion Tunisian dinars (1.9 billion dinars in lost productivity and 146 million dinars in health spending), which was equivalent to 1.8% of Tunisia’s gross domestic product. WHO provides support to assist countries in their tobacco control efforts to achieve national targets. WHO’s cooperation with the Government of Tunisia led to a new order from the Minister of Health mandating that graphic warning labels cover 70% of the outer packaging of tobacco products, and that they contain written health messages and warnings describing the harmful effects of smoking.

How did Tunisia, with the support of the WHO Secretariat, achieve this?

As part of the WHO Framework Convention on Tobacco Control (WHO FCTC) 2030 project,³ WHO and WHO FCTC provided guidance and support to Tunisia’s tobacco prevention and control efforts. Several actions have been taken, in particular the creation of a committed multisectoral network to review the global law; a decree banning smoking in public spaces; the ministerial order to adopt graphic health warning labels; the elaboration of a protocol for the design and evaluation of graphic health warning labels specific to tobacco products; and the dissemination of the investment model for tobacco control⁴ as part of a large advocacy campaign.

With over 15 years of WHO FCTC investment in Tunisia, positive returns on the investment have been seen. For every 1 dinar invested in providing tobacco cessation support, a return of 3 dinars is generated. For every 1 dinar invested in increasing taxes on tobacco, a return of 500 dinars is generated. An investment case study on tobacco control in Tunisia,⁵ to which WHO and WHO FCTC contributed, demonstrated that graphic health warning labels, which warn people of the hazards of tobacco use, generate among the three highest returns on investment: 163 dinars for every 1 dinar invested.

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A 1998 Tunisian law mandated that cigarette packaging should contain a clear, legible warning covering 30% of the principal display area. The law required the composition of tobacco products, including nicotine and tar content, to be displayed on the packaging in Arabic and another language. However, the law did not mandate graphic warning labels (only requiring a textual health warning), or include a requirement to rotate health warnings to minimize wear-out effects. An order from the Minister of Health, published on 15 February 2022, mandating that graphic warning labels cover 70% of the outer packaging of tobacco products, and that they contain written health messages and warnings (in Arabic and another language) describing the harmful effects of smoking, was a key achievement resulting from the cooperation between WHO and Tunisia. The secretariats of WHO and WHO FCTC jointly supported the Ministry of Health in issuing the order and developing the graphic health warnings for display on tobacco products. Further actions, supported by WHO and WHO FCTC, are being taken to prevent smoking in Tunisia, including advocacy for multisectoral commitment to tobacco control.

Today, it is possible to act even more effectively and sustainably. The investment case study illustrates that it is possible to reduce the burden of tobacco in Tunisia. Through the implementation of WHO FCTC’s tobacco control measures, Tunisia will avoid an estimated 25% in economic losses that smoking would have caused in the next 15 years. Preventing tobacco-related deaths would reduce the equivalent of about 22% in premature mortality, which would help Tunisia to achieve target 3.4 of the Sustainable Development Goals (By 2030, reduce by one third premature mortality from noncommunicable diseases through prevention and treatment and promote mental health and well-being), and above all to save the lives of an estimated 55,000 people.

Safeguarding the health, safety and well-being of health workers in the United Republic of Tanzania

About 46% more health workers protected

The health sector is one of the most hazardous work settings for health and safety, presenting specific risk factors. While contributing to the enjoyment of the right to health for all, health workers should also enjoy the right to healthy and safe working conditions to maintain their own health.¹ Providing healthy and safe workplaces in the health sector prevents avoidable harm to patients and health workers, as well as improving quality of care, patient safety, health worker retention and environmental sustainability.²

Therefore, the Ministry of Health, Community Development, Gender, Elderly and Children (Ministry of Health) of the United Republic of Tanzania (mainland) requested WHO support to improve working conditions in the health sector by developing and implementing a national programme for occupational health and safety for health workers. The process started in 2016 with a training-of-trainers workshop using HealthWISE, a training package on work improvement in health services designed by WHO and the International Labour Organization (ILO). This was followed by a series of consultations with stakeholders from the central and regional health authorities and associations of health workers. In March 2019, the Ministry of Health issued the National guidelines for workers health and safety in health care facilities and emergency responders.³

The guidelines provide specific recommendations about prevention and control of occupational hazards and protecting the health and safety of health workers in different types of health-care facilities. They were printed with WHO support and disseminated to all health-care facilities. Additional assistance was provided for the implementation of the programme at the subnational and health-care-facility levels. By the end of 2021, the programme had been implemented in 9 of the 26 administrative regions covering

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³ The guidelines provide specific recommendations about prevention and control of occupational hazards and protecting the health and safety of health workers in different types of health-care facilities. They were printed with WHO support and disseminated to all health-care facilities. Additional assistance was provided for the implementation of the programme at the subnational and health-care-facility levels. By the end of 2021, the programme had been implemented in 9 of the 26 administrative regions covering.
26 045 health workers and 3674 health facilities, representing 46% of health workers and 36% of health facilities.

How did the United Republic of Tanzania, with the support of the WHO Secretariat, achieve this?

- **Technical and financial support:** In 2020 and 2021, WHO provided technical and financial support for the development and implementation of occupational health and safety programmes for health workers at the subnational and facility levels in four regions (Dodoma, Mtwara, Mwanza and Ruvuma), covering 10 757 health workers in 1463 health facilities. This resulted in:
  - a 22% increase in the number of health workers who received hepatitis B vaccination;
  - a 36% reduction in the number of health workers needing postexposure prophylaxis for HIV following exposure to blood and body fluids; and
  - better reporting of violence and harassment in health facilities in the regions where the programmes had been implemented.
- This suggests that the practical implementation of occupational health and safety programmes has stimulated interventions to mitigate occupational health and safety risks for health workers.

- **Coordination and mobilization of partners:** WHO mobilized partners such as ILO to support the development and implementation of occupational health and safety programmes for health workers. This included capacity-building HealthWISE workshops, assisting with the development of facility policies and action plans for workplace improvement, and appointing facility focal points and labour-management committees for occupational health and safety in the four regions. In the last biennium, there was a 65% increase in the number of health workers who received a five-day training on workplace improvement in health facilities, and who were enabled to take up functions for developing and implementing measures to improve working conditions as focal points for occupational health and safety and as members of facility health and safety committees. Furthermore, the proportion of health facilities with appointed focal points and health workers covered by occupational health and safety programmes has more than doubled.

- **Communication and awareness-raising:** An online training course on occupational health and safety for health workers in the context of COVID-19, available from the OpenWHO learning platform, was translated into Swahili and disseminated by the Ministry of Health. In July 2021, WHO co-organized a webinar with the Ministry of Health and ILO on progress in (and lessons learned from) the implementation of the occupational health and safety programme for health workers in the United Republic.
of Tanzania in the context of COVID-19 response and recovery. The event attracted national, regional and international participants and encouraged other African countries and the African Union Development Agency to take action on protecting the health and safety of health workers.

WHO’s technical assistance, financial support and partner mobilization have enabled the implementation of occupational health and safety programmes for health workers at the national, subnational and facility levels. The programme in the United Republic of Tanzania has been used as an example of good practice in several WHO normative and standard-setting products relating to safeguarding the health and safety of health workers.


Providing life-saving emergency nutrition care to children under 5 in war-torn Yemen

Children saved from undernutrition

The lives of children in Yemen are marked by poverty, hunger and disease. Drivers of acute malnutrition – conflict, economic decline and a poor health environment – challenge efforts to end child hunger and malnutrition in Yemen. In 2022, an estimated 2.2 million children aged under 5 years would suffer from acute malnutrition, including 538 000 from severe acute malnutrition and could die without urgent treatment. Fortunately, from 2016 to March 2022, 70 009 (21 904 in 2021 alone) were nourished from the brink of death back to health at 110 WHO-supported therapeutic feeding centres (TFCs) across Yemen. The death rate has decreased from around 10% to less than 5% in TFCs. New centres are being established to enhance access to treatment and health services where acute malnutrition is a public health concern.

How did Yemen, with the support of the WHO Secretariat, achieve this?

WHO provided technical and financial support to sustain essential nutrition services and enhance access to life-saving interventions, including for the most vulnerable populations. WHO support included training and paying 1300 health workers; procuring 1000 paediatric/severe acute malnutrition kits and 30 000 admission/water, sanitation and hygiene (WASH) kits; providing 526 000 balanced diet meals to caregivers; and conducting over 2000 quality assurance field visits. WHO equipped the 110 TFCs with solar panels to address power-supply issues and ensure reliable energy access. The 110 TFCs comprise 85% of total TFCs in Yemen, covering 90% of the cluster targeted caseload. Financial support from WHO is around US$ 15 million per year.

Many Yemeni families struggle to keep their children safe from war, starvation and disease as a result of the ongoing crisis. Admission to WHO-supported TFCs has saved the lives of tens of thousands of under-5 children in Yemen. Hamza, an under-5 child, has brain damage and is unable to speak or walk. His life has been further threatened by severe
acute malnutrition. After seeking hospital care for him, his mother, Amani, brought him to the Al Buraikah TFC in Aden, which is supported by WHO in partnership with donors and other partners. Care was delivered to Hamza’s weak and fragile body just in time – he was treated and nourished from near-death back to health at no cost to his family.

Naynoor, 3 months old, her little body frail and suffering from acute malnutrition, was brought by her mother to a WHO-supported TFC in Dhamar district. She received treatment in the centre for 12 days.

*She is feeling much better now. She is taking milk and medication regularly. I am thankful her health has improved, and I am glad that my child is being cared for and treated at this centre for free.*

Naynoor’s mother (25 years old)

Vulnerable populations in hard-to-access areas (geographically or inaccessible owing to active conflict) are suffering in silence with little to no access to basic and essential health-care services. Malnutrition perpetuates vulnerability and illness within families that already lack the necessary resources. Amid prolonged conflict and devastated infrastructure, some families feel helpless as they watch their malnourished children deteriorate and die without treatment.

In one of the least-permissive operational environments possible for humanitarian interventions, with the coronavirus disease (COVID-19) exacerbating the difficulties, WHO and partners continue to fight for the lives of children in Yemen. Gender and child-friendly admission and discharge kits, WASH items and meals to caregivers are essential supplies provided to families. With a focus on increasing availability, access and quality of critical health and nutrition services for mothers and children at TFCs, WHO and other health and nutrition cluster partners provide life-saving services and supplies to a fragile country.

3.2 Risk factors reduced through multisectoral action
Investing in tobacco control for better lives for all in Eswatini

Lives saved through tobacco control

Tobacco use causes undue burden to Eswatini’s economy and health system. As one of the leading risk factors for noncommunicable diseases (NCDs), tobacco use is responsible for needless loss of lives and high health expenditures. Prevalence of current tobacco use among adults aged 15+ years in Swazi people is 9% and use is more common among men (17% prevalence) than women (2% prevalence). A 2021 study, *Investment case for tobacco control in Eswatini,* concluded that tobacco use kills more than 600 Swazi annually, with 66% of the deaths among individuals under 70 years of age. Nearly one quarter (24%) of lives lost from tobacco use are due to exposure to second-hand smoke.

Additionally, in 2017 tobacco use cost the economy 684 million emalangeni (about US$ 46 million), equivalent to 1.1% of the country’s gross domestic product. This included 64 million emalangeni in health-care expenditures and 620 million emalangeni in lost productive capacities due to premature mortality and disability, as well as workplace smoking breaks. Left unchecked, Eswatini will face continued economic, health and societal hardship attributable to tobacco use. Investment in tobacco control was needed.

How did Eswatini, with the support of the WHO Secretariat, achieve this?

WHO collaborated with the Ministry of Health to ensure that funding was available to address issues related to tobacco control. The WHO Country Office in Eswatini assisted the country to apply for funding through the WHO Framework Convention on Tobacco Control (FCTC) 2030 project. Eswatini became one of the few countries globally to benefit from the FCTC 2030 project, which is funded by generous support from the Governments of Australia, Norway and the United Kingdom of Great Britain and Northern Ireland. Funding commenced in 2020 and contributes towards promoting the implementation of WHO FCTC as part of the Sustainable Development Goals.

WHO, through its convening power, brought together relevant government sectors, international development partners, nongovernmental organizations, faith-based organizations, civil society organizations, communities and individual stakeholders to join the renewed effort to make Eswatini smoke free.

WHO also played a leadership role in conducting a tobacco control needs assessment, in collaboration with the Research Triangle Institute, the United National Development Programme, the WHO FCTC Secretariat and local stakeholders. The findings were used to develop and publish the first-ever investment case for tobacco control in Eswatini.
WHO, together with the Government of Eswatini, widely disseminated the investment case report\(^4\) as an evidence-based advocacy tool for garnering support from stakeholders to reduce the demand for and supply of tobacco-related products. With updated country-level data and 15-year projections on the gains that can be realized if Eswatini invests in tobacco control measures, the tool advocates not only for the protection of one's life, but also for the protection of the lives around. Reducing demand for tobacco products will improve life expectancy and result in fewer premature deaths for both smokers and non-smokers.

Eswatini, with technical support from WHO, has since established a multisectoral National Coordinating Mechanism for tobacco control. The National Coordinating Mechanism facilitated the development of the National Tobacco Control Policy, the National Tobacco Control Regulations and a national tobacco control action plan, all of which address various elements of the demand for and supply of tobacco products. Several awareness-raising campaigns on the dangers of tobacco use have been conducted, targeting school children and out-of-school youths. Moreover, municipalities have been engaged to create smoke-free towns and cities.
Most importantly, these efforts are contributing towards a 30% relative reduction in prevalence of current tobacco use in persons aged 15+ years and a 25% reduction in premature mortality from NCDs by 2030, in line with the NCD global monitoring framework.² Investing in tobacco control will mitigate the health, social and economic impacts of tobacco use, protecting vulnerable second-hand smokers, including children and pregnant women. Investing in tobacco control saves lives.

Eliminating trans fats by 2023 in India

Eliminating trans fats to reduce noncommunicable diseases

Cardiovascular diseases have been the leading cause of death globally for the past three decades. The biggest killer is coronary heart disease, which is responsible for 16% of total deaths. In 2019, an estimated 4.63% of coronary heart disease deaths in India occurred owing to trans-fatty acid (TFA) intake. TFA is an artificial compound that can be found in cakes, cookies, biscuits, packaged foods, cooking oils and spreads. Eliminating industrially produced TFA is a relatively simple policy measure that is within the reach of countries.

In 2018, WHO identified TFA elimination as one of the priority targets in its Thirteenth General Programme of Work. It called for the global elimination of industrially produced TFA by 2023. India responded to the call and in January 2022 became the first lower-middle-income country aligned with global best practice policy on TFA, one year ahead of the global target. India’s policy covers 1.4 billion people. In addition to saving millions of lives in the country, this is expected to incentivize trading partners to align their policy, as well as serving as a model for implementation, building momentum for TFA elimination more broadly in the region.

How did India, with the support of the WHO Secretariat, achieve this?

- **Implementing effective TFA elimination policies and regulations**: WHO headquarters conducted global advocacy through platforms including the World Health Assembly, the United Nations Decade of Action on Nutrition (2016–2025), the United Nations Food Systems Summit (2021) and the Nutrition for Growth Summit (2021). Simultaneously, the WHO Country Office in India collaborated with the Food Safety and Standards Authority of India (FSSAI) to advocate for alignment with the global target on TFA. As a result of WHO advocacy, in December 2020, FSSAI changed its TFA limit in oils and fats from 5% to 2% in a phased manner: to 3% in edible oils and fats by January 2021 and to 2% by January 2022. By February 2021, FSSAI had extended the 2% limit to apply to all foods, aligning with global best practices. This best practice policy came into effect on 1 January 2022. FSSAI also made it mandatory for food manufacturers to declare trans fats on food labels, through the 2020 Food Safety and Standards (Labelling and Display) Regulations.

- **Building regulatory capacities including monitoring mechanisms**: WHO developed guidance on monitoring and surveillance of TFA. Representatives from the WHO Country Office shared TFA assessment protocols and provided technical expertise to the governments of states such as Kerala and Punjab to support their training of laboratory personnel. This enabled FSSAI to strengthen and upgrade laboratories across the country so that they could monitor food samples for TFA at a sufficiently high frequency. Now that the 2020 Food Safety and Standards
(Food Products Standards and Food Additives) Tenth Amendment Regulations have come into effect, FSSAI food safety officers are responsible for sampling relevant products to check for compliance with regulations.

- **Assessing, monitoring and validating progress**: In 2020, WHO announced the launch of a validation programme that aims to accelerate progress towards the 2023 goal for TFA elimination, by providing recognition to countries that have a normative framework in place to eliminate industrially produced TFA from their national food supplies. To qualify for validation, countries must demonstrate that a best practice TFA policy has been implemented, and that effective monitoring and enforcement systems are in place. India plans to apply for the process as soon as the validation programme is open for country application. In 2019, WHO established a TFA indicator that records whether countries have adopted WHO best practice policies for eliminating industrially produced TFA. To provide a baseline and help to strategize the next steps for implementation of regulations, India’s monitoring and surveillance plan will be developed and implemented in this biennium. WHO will conduct market surveys to generate evidence on the status of monitoring of regulations.

By creating an enabling environment and providing technical expertise, WHO has played a crucial role in eliminating TFA in India. FSSAI has taken a 360-degree approach: science-based policies to limit industrial production, and modifications to labelling and advertising requirements to reduce demand.

India’s progress, and that of other countries, towards the 2023 target can be monitored on WHO’s live policy tracking map, the TFA Country Score Card.²

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Engaging primary and secondary school children as agents of change to prevent malnutrition and related diseases in Rwanda

Decreased stunting

In Rwanda, 44% of children under 5 years had chronic malnutrition (stunting) in 2010.¹ The high rate has many causes, including household food insecurity, poor dietary diversity and inappropriate dietary and care practices. Tackling them requires well coordinated, evidence-based interventions.

Since 2008, specialized agencies, programmes and funds of the United Nations system in Rwanda have been delivering as one (the “One United Nations” initiative). With support from the Swiss Agency for Development and Cooperation (SDC), the One United Nations joint nutrition project – comprising the Food and Agriculture Organization of the United Nations (FAO), the United Nations Children’s Fund (UNICEF), the World Food Programme and WHO – has worked with the Government of Rwanda to deploy a multisectoral

A page from the comic book on nutrition distributed in Rwanda. Photo credit: Ministry of Education/SDC/United Nations Office in Rwanda/WHO
approach to address immediate causes of chronic malnutrition. The comprehensive range of interventions implemented included a comic book on nutrition to encourage appropriate feeding practices and food and water safety at the household level by engaging children as “agents of change”.

Efforts to reduce malnutrition in Rwanda are already bearing fruit. Stunting decreased from 44% in 2010 to 33% in 2020. WHO continues to implement diverse multisectoral interventions through the One United Nations joint nutrition project to support the Government of Rwanda in reaching its ambitious goal of reducing stunting to 19% by 2024.

How did Rwanda, with the support of the WHO Secretariat, achieve this?

- **Empowering children to mobilize their communities**: In 2016, the WHO nutrition technical team worked with the Ministry of Education and colleagues from the One United Nations joint project to develop visual and text content for a comic book on nutrition. The aim was to ignite the interest of children and strengthen their knowledge so that they could positively influence eating behaviour and dietary intake to help to prevent malnutrition in their families and communities. Schools were considered an efficient distribution point for the books, as most children in Rwanda spend their formative years, from early childhood to young adulthood, in a classroom environment. WHO provided technical guidance and covered the costs of the development, printing and distribution of 38,844 comic books to schools in eight districts with a high prevalence of stunting.

- **Monitoring and adapting the strategy**: The Ministry of Education conducted continuous monitoring visits in collaboration with the WHO Country Office in Rwanda to four of the eight districts. During the visits, structured games were played in “consumer workshops” to assess the effect of the comic book on children’s understanding and behaviour. Feedback was mostly positive: one child said, “I decided to plant an avocado tree to help my family diversify their meals”. However, it became apparent that many children needed more support to put the lessons learned into practice. WHO and the Ministry of Education met with the Rwanda Basic Education Board, and it was decided that existing book clubs would benefit by involving teachers who could encourage children to discuss the message and make micro-plans to communicate to their families and communities. To strengthen the capacity of teachers to lead this activity, 414 schools from four districts with a high prevalence of stunting were selected to receive the books and the teacher training on school health and nutrition. Monitoring, which took place from 2017 to 2021, suggested that the use of the comic books improved in the 8,280 children who received continuous mobilization support from their teachers.
• **Incorporating the comic book into routine teaching activities:** In 2020, a decision was made to distribute the comic book nationwide. WHO’s technical team worked alongside the Ministry of Education and One United Nations colleagues to integrate the comic book into a national training manual on health and nutrition for teachers. In 2021, WHO financed a primary and secondary school teacher training, which was delivered to 684 teachers through e-learning; the initiative has enabled the comic book to be used as didactic material in primary and secondary schools from 2022.

> Before reading the nutrition comic book I liked to eat cake and soda and did not like vegetables. After reading the nutrition comic book I changed. I now eat vegetables and do not eat too much junk food.

A school child

Multisectoral action was crucial to the comic book’s success. Education specialists’ technical knowledge strengthened the book design; the education system enabled messages to be sustainably shared across the country by teaching professionals; and the One United Nations structure enabled the initiative to benefit from the technical expertise of WHO and other specialized agencies, as well as WHO financial support. The effective, coordinated effort across agencies and sectors was made possible by the Government of Rwanda’s strong leadership and cross-sectoral communication at the central, district and subdistrict levels.

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Establishing the United Nations Thematic Working Group on Noncommunicable Disease Prevention and Control

Tackling noncommunicable diseases head on in Thailand

In Thailand, noncommunicable diseases (NCDs) are responsible for 77% of all deaths each year.1 Multisectoral action is central to controlling NCDs; the health sector alone cannot address NCDs and their underlying social determinants and risk factors. To strengthen multisectoral action to reduce NCD risk factors, in 2018, at the invitation of the Government of Thailand, the WHO Country Office in Thailand organized a joint programming mission of the United Nations Interagency Task Force on the Prevention and Control of NCDs. The results of the joint mission included a set of 17 recommendations2 designed to scale up Thailand’s response to the NCD epidemic. The outcomes of some of these recommendations are already evident, such as introducing plain packaging for tobacco products, and a law on restricting marketing of unhealthy food and beverages targeting children is in progress. The United Nations Thematic Working Group on Noncommunicable Disease Prevention and Control was established in Thailand to follow up on the recommendations of the joint mission. The WHO Country Office facilitated and coordinated partners, prepared terms of reference, organized meetings and acted as the secretariat to drive the Working Group. The Working Group

and the WHO Country Office facilitated multisectoral action to implement the recommendations. During its two-year term (2020–2021), the Working Group, the WHO Country Office and the Government of Thailand tackled NCDs using time-bound goals.

How did Thailand, with the support of the WHO Secretariat, achieve this?

- **Multisectoral engagement**: With human resources provided by the WHO Country Office to facilitate, coordinate and manage the Working Group, non-health sector stakeholders from government, civil society organizations and academia collaborated. Supported by the three levels of WHO, the Working Group provided an effective platform for the WHO Country Office’s joint activities with the United Nations Development Programme (UNDP) and the United Nations Children’s Fund (UNICEF), and stakeholder commitment to meeting Sustainable Development Goal targets related to NCDs. The WHO Country Office and UNDP contributed to Thailand’s NCD investment case, developed policy briefs for multisectoral actions on NCDs to be taken by seven ministries and produced the Thailand NCDs progress tracker.

- **Increased advocacy and high level leadership**: The Working Group is co-chaired by the UN Resident Coordinator and the Director General of Disease Control. Through their leadership, there is increased advocacy for effective and sustained multisectoral action against NCDs. With technical support and convening power provided by the three levels of WHO, the Working Group was able to advocate for policy development and accelerate multisectoral actions by non-health ministries and other specialized agencies of the United Nations system in Thailand. Funding and human resources provided by the WHO Country Office facilitated the production of reports and advocacy materials, including a joint WHO/UNDP op-ed for World No-Tobacco Day in 2021 and 2022. WHO and UNICEF collated international best practices and assisted the Department of Health in developing a regulation to ban inappropriate marketing of unhealthy food and beverages targeting children.

The Working Group had no formal authority in the country and therefore could not enforce activities. Participation by specialized agencies of the United Nations system and government ministries was variable and resources for frequently intensive engagement and activities were insufficient. Maintaining high-level commitment was challenging, and performance could have been more closely monitored and reported upon to sustain momentum on NCD actions.

The recommendations of the Working Group included:

- High-level commitment by all stakeholders to ensure motivation, momentum and change. The United Nations can play a catalytic role as a mobilizer and integrator.
• The NCD coordination mechanism should be given equal decision-making power to ministerial departments and government agencies.
• Membership of the Working Group could extend to the private sector, recognizing its role in mobilizing wide support and shaping policy on NCDs and their risk factors.
• NCD coordination mechanisms could be integrated into broader country-specific development frameworks or multisectoral networks to use synergies and avoid duplication.
• The Working Group should agree on targets and goals at the outset.
• Communication, advocacy and outreach should ensure that NCD prevention and control strategies are accepted by non-health ministries and communities.
• Human and financial resources for NCD coordination mechanisms are essential for coordination, progress and success.

The Working Group became known as an example of best practice for multisectoral collaboration on NCDs, both nationally and globally, as was highlighted in the report of the WHO Director-General on the Interagency Task Force on the Prevention and Control of NCDs, transmitted to the Economic and Social Council in 2021.4


3.3 Healthy settings and Health in All Policies promoted
Increasing the resilience of Mozambique’s health system to adverse climate change impacts

Climate-resilient health service delivery

Mozambique is one of the most vulnerable countries in the world to the impacts of climate change. It lies in the Intertropical Convergence Zone, a narrow belt of humidity and precipitation expected to unevenly shift and affect water availability, food production and disease distribution. Mozambique’s high disease burden is dominated by climate-sensitive diseases, such as malaria, cholera and measles, which disproportionately affect rural populations, women and children. Essential public services, including health, water and sanitation, are especially stretched in rural areas and along Mozambique’s extensive coastline, locations characterized by widespread poverty and vulnerability to extreme climate-related weather events such as cyclones, droughts and floods. In 2022, Mozambique was classified as being at “very high” risk (ranked 9 out of 191 countries globally) in the Index for Risk Management, a global open-source risk assessment for humanitarian crises and disasters which is used to support decisions on prevention, preparedness and response.

To increase the resilience of Mozambique’s health system to climate change impacts, a project was launched in 2018 that aimed to strengthen on-the-ground interventions and policy-level actions. Four years later, the Ministry of Health’s capacity to monitor climate change risks and impacts and to coordinate and lead health adaptation efforts has been strengthened.

European Union/United Nations beach clean-up campaign on 18 September 2021. WHO collaborated to strengthen efforts to address the environmental determinants of health, including climate change. Photo credit: WHO Country Office in Mozambique/Joelma Pereira
During the 26th session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP26), Mozambique submitted its *Update of the first nationally determined contribution to the United Nations Framework Convention on Climate Change* (2020–2025), committing to strengthening the national health system against the impacts of climate change through taking measures to protect public health.

**How did Mozambique, with the support of the WHO Secretariat, achieve this?**

- **Securing additional funding:** WHO headquarters and the WHO Country Office in Mozambique developed a funding proposal that secured €2 million from the Government of Belgium to support climate change and health efforts in Mozambique.

- **Assessing which populations and geographical areas were most vulnerable:** The Ministry of Health used WHO’s vulnerability and adaptation assessments to evaluate which populations and specific geographical areas were most vulnerable, as well as the capacity of health systems to manage the health impacts of climate change. WHO recruited five multidisciplinary experts to undertake the assessments, covered all financial costs and provided technical guidance for implementation. Of 161 districts, 11 were assessed as having high to very high adaptive capacity to climate change. As the first assessment of its kind to be performed in the country, it improved understanding of the linkages between climate change and health, served as a baseline analysis for future monitoring and strengthened the case for investment in health protection.

- **Taking a strategic approach to bringing together climate change and health agendas:** WHO technical experts developed strategic plans to mainstream climate in the health sector, covering the costs of multi-stakeholder workshops. This enabled the Ministry of Health to collaborate with other sectors and communities. The 2020–2021 WHO–Mozambique Binary Work Plan, countersigned by the Government of Mozambique, and the Ministry of Health’s 2022–2025 National Health Adaptation Plan to Climate Change, which integrated technical inputs from WHO and multi-stakeholder groups, depart from a disease-specific approach in favour of an integrated approach to improving health outcomes.

- **Building awareness and advocating for change:** To pave the way for the implementation of integrated programming for climate change and health in 2020–2021, government decision-makers, representatives of diverse sectors (e.g. environment, meteorology and agriculture), donors, specialized agencies of the United Nations system and nongovernmental organizations were urged to address climate risks across health policies, strategies, plans and programmes.
• **Building monitoring capacity**: Early Warning, Alert and Response System (EWARS) activities were conducted at Mozambique’s health observatory (National Institute of Health) and seven pilot sentinel sites. WHO established a national Climate Change and Health Technical Working Group with the Ministry of Health, research institutes and universities, and coordinated monthly with two universities in Europe to develop risk maps and models on climate-sensitive diseases. To integrate climate data into health surveillance systems and incorporate climate service decision aids into health programme decision-making, WHO provided training to the Ministry of Health, the National Institute of Health and more than 85 staff at the provincial and district levels. WHO developed dashboards and risk mapping tools and provided one desktop, nine laptops and 32 tablets to enable the triangulation of entomological and epidemiological data with climate information such as temperature and humidity.

WHO built capacity within the Ministry of Health, which will continue to provide benefits in health decision-making and programming beyond the lifespan of the project, as well as contributing to the delivery of key country development priorities and the achievement of multiple Sustainable Development Goals. Learnings from the work conducted have been shared globally through conferences and workshops, including the National Adaptation Plan Global Support Programme’s South-South Knowledge Exchange Forum.


4.1 Strengthened country capacity in data and innovation
Taking evidence-informed action to eliminate malaria in Indonesia

Malaria elimination in Indonesia

Indonesia is one of nine malaria-endemic countries in the WHO South-East Asia Region, and accounted for 16% of the region’s estimated cases and 16% of estimated malaria deaths.\(^1\) WHO provides ongoing technical support to the Indonesian Ministry of Health by generating evidence, formulating national strategic plans and policies, strengthening case management and improving surveillance and information systems. Malaria cases in Indonesia decreased from 1.1 million in 2015 to 784,854 in 2020, and an estimated 75% of Indonesia’s population now live in malaria-free communities.\(^1\) Since
November 2018, WHO has provided focused subnational support in nine low-performing districts with moderate to low endemicity. Of those nine districts, two have been declared malaria-free by the Ministry of Health, and one has reported no indigenous cases since January 2019.2

Indonesia aims to eliminate malaria by 2030. Owing to WHO’s success in designated provinces, the Ministry of Health requested to expand WHO support to other provinces that had experienced stagnation in malaria elimination in the past five years.

How did Indonesia, with the support of the WHO Secretariat, achieve this?

- **Well defined elimination strategy adapted to local needs**: WHO’s Global technical strategy for malaria 2016–2030,3 updated in 2021, provides a technical framework to guide and support regional and country programmes as they work towards malaria control and elimination. In Indonesia, WHO Country Office technical experts support the Ministry of Health in (a) converting WHO global recommendations into locally relevant, evidence-based policy through research conducted in collaboration with local research institutes, universities and professional organizations; (b) conducting triennial malaria programme reviews that identify critical issues, areas for improvement and best practices; and (c) developing strategic plans, such as the National Action Plan for Acceleration of Malaria Elimination 2020–2024, the 2030 road map for malaria elimination, and the prevention of re-introduction plan.

- **Decentralized and coordinated action**: Indonesia aims to achieve malaria elimination in phases, and the country’s subnational elimination strategy has been acknowledged by the WHO Global Malaria Programme and incorporated into A framework for malaria elimination.4 To ensure coordinated efforts, different health partners are allocated different districts by the government. Since November 2018, WHO has provided subnational technical assistance to nine districts in four provinces of Java island. In these districts, WHO technical experts have adapted workplans, assessed preparedness and achievements towards malaria elimination indicators, conducted training sessions for staff on programme management and malaria information systems and met with the local authorities and private companies to advocate for local commitment and resource mobilization.

- **Malaria surveillance as the core intervention of malaria elimination**: To strengthen the different dimensions of malaria surveillance, WHO Country Office technical experts (a) developed a vector surveillance information system, SILANTOR, that has enabled monthly surveillance of the mosquito vectors of malaria; (b) held workshops to develop a technical manual on monitoring insecticide resistance and trained 21 national entomologists to ensure that protocols are put into practice; (c) provided technical input for the design and development of a national electronic malaria surveillance
information system (SISMAL); and (d) trained 786 health professionals from nine provinces, 128 districts and 422 health facilities on its use. SISMAL has been particularly effective in improving case finding and reporting, as well as strengthening the supply chain through improved stock monitoring.

The coronavirus disease (COVID-19) pandemic did present a challenge to the continuation of Indonesia’s malaria programme, but WHO was committed to supporting the Ministry of Health’s response to COVID-19, while maintaining essential health services including the malaria programme. In one of WHO’s subnational areas of focus, Purworejo, malaria migration surveillance and the COVID-19 response were successfully integrated. Village malaria workers and village leaders collected the travel history of all new visitors to their village and performed screening for malaria and COVID-19 to identify potential infections of either disease.

WHO continues to support Indonesia’s malaria programme. From 2021, WHO subnational support has been expanded to all provinces in the Java-Bali region and seven districts in Kalimantan. In 2022, it will be expanded to 19 districts in Sumatera and Sulawesi.

References

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Tracking COVID-19 vaccination and issuing vaccine certification in Sri Lanka

COVID-19 vaccination tracking

The coronavirus disease (COVID-19) immunization tracker of Sri Lanka, based on the District Health Information System (DHIS2) platform, was developed and implemented with the initiation of the COVID-19 vaccination programme in the country. The system enabled the health authorities at the local and national levels to monitor the vaccination rate across the country, including in remote areas, and to identify areas where more effort was needed to protect the population through vaccination. The generation of smart vaccination certificates (SVCs) as proof of COVID-19 vaccination, which was essential for travel abroad, was made possible by the COVID-19 immunization tracker.

The system was developed by the WHO Country Office in Sri Lanka in partnership with the Ministry of Health of Sri Lanka, the Health Information Systems Programme of Sri Lanka, the core DHIS2 developers’ community from the University of Oslo (Norway), the Information and Communication Technology Agency of Sri Lanka, and Digital Infrastructure for Verifiable Open Credentialing (DIVOC), India.

Sri Lanka was the first country in the world to deploy a DHIS2-based COVID-19 vaccination information management system. This system was shared with other countries in the region as a public good and was adapted by the Government of Timor-Leste to develop its own vaccine tracker.

At a COVID-19 vaccination centre and example of an SVC. Photo credit: WHO Country Office in Sri Lanka
How did Sri Lanka, with the support of the WHO Secretariat, achieve this?

- **Free and open-source data**: The COVID-19 immunization tracker was developed on the free and open-source DHIS2 platform, and the generic tracker application was adapted to suit Sri Lanka’s needs. Its design was based on the 2020 *Guidance on developing a national deployment and vaccination plan for COVID-19 vaccines*, developed by WHO and the United Nations Children’s Fund (UNICEF).

- **Multifaceted immunization tracker**:
  - The immunization tracker recorded the date on which each vaccine dose was administered.
  - As the primary data source for COVID-19 vaccination information, the system was capable of measuring vaccine coverage by geographical area, age, gender, priority group and vaccine product.
  - The system could analyse and make data visible on dashboards at different user levels, from local-level vaccination centres to district, provincial and national levels, while serving as a platform to generate and disseminate SVCs.

- **Concrete results**: The tracker produced the following key results:
  - obtaining real-time disaggregated data for accurate monitoring and evaluation of the COVID-19 vaccination process;
  - measuring the uptake and coverage of vaccination over time in different geographical areas and target groups;
  - facilitating the provision of SVCs according to national policies to meet travel or other requirements; and
  - ensuring the availability of data for use in coverage surveys, safety and disease surveillance and vaccine-effectiveness studies.

- **Easy registration**: A total of 16 million records were pre-registered in the system using Sri Lanka’s national election database. User interfaces and data flows were simplified. A comprehensive end-user package was developed to roll out vaccination registration nationwide in a short period of time. This included one-page user guides for each key function, standard operating procedures, vaccination system performance monitoring solutions and short data-entry training videos.

- **Tools and training for data analysis**: Standard and built-in analytic tools were used in DHIS2 for both basic and advanced data analysis. Basic data analysis was automated, and the outputs were displayed as pivot tables, graphs, charts and geographic information system maps on the dashboards for each organizational unit level. Relevant stakeholders were trained on advanced data analytics. Detailed dashboards were generated for the different institutional levels, from vaccine centres to district, provincial and national levels, so that system users could develop their own needs-based dashboards.
• SVCs: An integral part of the immunization tracker, the SVC was upgraded with the support of leadership from the WHO Country Office’s technical team. Developed in accordance with WHO guidelines, SVCs included a cryptographically verifiable QR code generated through the DIVOC server, and were distributed by SMS or email.

The main benefits of the immunization tracker were twofold: (a) monitoring COVID-19 vaccination coverage at the national and subnational levels; and (b) generating and issuing SVCs, which supported government efforts to revive the economy by opening up international travel and trade and providing critical support to Sri Lankans seeking employment overseas.

The SVC public request portal developed as part of the system reduced the risk of contracting COVID-19 by removing the need to visit medical officers of health offices to obtain the certificates. The SVC portal simplified, streamlined and improved accountability in the issuance process and minimized the workload of the Ministry of Health.

4.2 Strengthened leadership, governance and advocacy for health
Opening a new WHO office in Bahrain to advance health and well-being in the country

A healthier, safer and fairer future for the people of Bahrain

Inaugurated on 26 July 2021, the WHO Country Office in Bahrain, located in Manama, became the 20th country office in the WHO Eastern Mediterranean Region. Hitting the ground running, the WHO Country Office addressed Bahrain’s health priorities and capitalized on opportunities to achieve WHO global and regional strategies. Several concrete outputs were achieved through providing advisory services, convening stakeholders, strengthening multisectoral partnerships and promoting technical collaboration, all aligned with WHO’s Vision 2023 for the Eastern Mediterranean Region.¹ As a new country office, the desired impact and outcome of WHO’s commitment in Bahrain are to achieve a healthier, safer and fairer future for all Bahraini people in the years to come.

*The WHO Country Office will provide strategic, technical, policy and service delivery support to the government in its work to advance health and well-being at the national, regional and international levels.*

Dr Tedros Adhanom Ghebreyesus
WHO Director-General

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The WHO delegation from headquarters and the Regional Office for the Eastern Mediterranean visiting a COVID-19 vaccination centre in Bahrain. Photo credit: WHO Country Office in Bahrain/Nadia Al Aali
The first WHO Representative to Bahrain, Dr Tasnim Atatrah, was appointed on 1 June 2021. Strategies were quickly developed to drive progress on health-related Sustainable Development Goals (SDGs). Key areas of focus in Bahrain include noncommunicable diseases (NCDs), the coronavirus disease (COVID-19) response, universal health coverage, assistive technology and health innovation. National health authorities were motivated by WHO in-country collaboration, and a WHO Country Office workshop for national focal points convened key counterparts, streamlined communication, strengthened national capacities and unified Health for All agendas.

**Partnership for health is at the heart of WHO’s vision of Health for All by All in the Eastern Mediterranean Region. Bahrain has been a key partner in the global and regional health arenas, and I am delighted that our partnership is now set to go even further.**

Dr Ahmed Al-Mandhari
WHO Regional Director for the Eastern Mediterranean

**How did Bahrain, with the support of the WHO Secretariat, achieve this?**

- **Tobacco control:** A virtual mission with the Ministry of Health and the WHO Regional Office for the Eastern Mediterranean was organized by the WHO Country Office to discuss strengthening tobacco control efforts in the Region to achieve WHO’s triple billion targets and the SDGs. With WHO input, the Government of Bahrain and experts from the country’s national tobacco control programme developed a SMART (specific, measurable, achievable, relevant and time-bound) action plan to reduce tobacco use prevalence.

- **Mental health in schools:** Guided by the WHO Regional Office for the Eastern Mediterranean’s School Mental Health Programme, the WHO Country Office facilitated the participation of 32 in-country trainers from the Ministry of Health and the Ministry of Education to attend the school mental health package workshop. The workshop promoted a three-step model to scale up the programme, empower in-country trainers and develop skills in health and social workforces.

- **COVID-19:** Guided by WHO’s strategic priority to ensure 1 billion more people are better protected from health emergencies, the WHO Country Office hosted a joint mission, including representatives from the three levels of WHO, to document COVID-19 success stories. Close collaboration with the Ministry of Health, the Supreme Council for Health and the Office of the Prime Minister enabled access to key operational areas in hospitals, polymerase chain reaction (PCR) testing facilities, vaccination centres and the “war room” (the COVID-19 administrative hub). The war room produced real-time data dashboards, which the government used for strategic decision-making. Results included bringing the WHO Country Office into the WHO health emergencies network and building the foundation for a platform for best practice exchange in health emergencies.
• **NCD prevention**: A joint mission of representatives of the United Nations Interagency Task Force on NCDs and the three levels of WHO took place to review NCD prevention and management strategies and document best practices in line with Bahrain’s National Action Plan for control and prevention of NCDs (2019–2030). In Bahrain, with a population of 1.7 million (in 2021), NCDs – including cardiovascular diseases, cancer, diabetes and chronic respiratory diseases – are the leading cause of death, accounting for over 80% of total deaths. Members of the joint mission were connected to Ministry of Health officials and nongovernmental organizations, including the Bahrain Cancer Society, the Bahrain Diabetes Society and the Bahrain Anti-Smoking Society. Resulting recommendations included scaling up NCD prevention and management services, strengthening coordination across all relevant sectors, establishing monitoring and evaluation mechanisms, investing in food systems and developing research platforms for NCD progress.

• **Dietary guidelines**: The development of the Bahraini dietary guidelines was supported by the WHO Country Office using a cross-sectoral participatory process and resulted in the development of a comprehensive guide for policy-makers, health professionals and individuals.

• **Universal health coverage**: Using the WHO Assistive Technology Capacity Assessment tool, Bahrain, with activity support from the WHO Country Office, became the first country in the Region to develop a national action plan to improve access to assistive health technology.

• **Progress towards the health-related SDGs**: Forging ahead in this area, the WHO Country Office mapped key SDG stakeholders to strengthen intrasectoral collaboration and coordination to realize the WHO Regional Office for the Eastern Mediterranean’s Vision 2023 Health for All by All principle. The WHO Country Office also produced a factsheet on Bahrain’s trends and progress in advancing the health-related SDGs.

**Creation of the new WHO Country Office in Bahrain has cemented results-oriented work on the ground through strengthened partnerships and regional collaboration even in the midst of the COVID-19 pandemic.**

Dr Tasnim Atatrach  
WHO Representative to Bahrain

With a new country office, the desired impact and outcome of WHO’s commitment in Bahrain are to achieve a healthier, safer and fairer future for all Bahraini people in the years to come.

Strengthening Jordan’s mental health system with an updated national action plan, as a WHO Special Initiative for Mental Health country

Improving mental health care in Jordan

- Mental health can be defined as a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to contribute to his or her community. Mental health services in Jordan are limited, relying mainly on expensive tertiary care in psychiatric hospitals instead of cost-effective primary health and community-based care. Mental, neurological and substance-use disorders are associated with immense suffering, stigma and discrimination, violations of human rights, poor health outcomes, poor adherence to treatments for health conditions, and significant disruptions in daily functioning, affecting multiple areas of life including social, personal, vocational and educational areas. WHO first partnered with the Ministry of Health of Jordan and the Jordanian Nursing Council in 2008 to reform the mental health system. Since then, WHO has provided ongoing support as a technical adviser and co-implementer to strengthen the country’s mental health system using an evidence-informed approach. The Ministry of Health Directorate of Disabilities and Mental Health and WHO are currently engaging with senior ministry leaders and other national stakeholders to support the implementation of Jordan’s 2022–2026 National Mental Health and Substance Use Action Plan.

A delegation from Jordan visiting the WHO Collaborating Centre for Research and Training in Mental Health, Trieste (Italy). Photo credit: WHO Country Office in Jordan
WHO's support has led to strengthened governance for mental health care and the scale-up of community-based mental health services. The Ministry of Health is more supportive of the deinstitutionalization of mental health care, enabling free or low-cost care to be provided to both Jordanians and residents through community mental health centres, primary health centres and general hospitals. Civil society activism around mental health and mental disorders has been increasing, and the international community has shown interest in supporting Jordan in mental health reform.

How did Jordan, with the support of the WHO Secretariat, achieve this?

- **Taking an evidence-based approach to strengthening mental health governance:** In 2016, the Ministry of Health and WHO jointly assessed the status of mental health reform under the 2011–2021 National Mental Health Policy. Information gained from the assessment was used to steer the National Mental Health and Substance Use Action Plan. For example, it was evident that the Directorate of Disabilities and Mental Health had no allocated budget and limited policy-making authority. In 2017, the Mental Health Unit within the Ministry of Health was upgraded to the Directorate of Disabilities and Mental Health to provide it with more authority at the national level. The Ministry of Health and WHO also conducted a multi-stakeholder evaluation of the 2018–2021 National Mental Health and Substance Use Action Plan and used participatory consultation and feedback to develop the 2022–2026 National Mental Health and Substance Use Action Plan.

- **Supporting the implementation of the National Mental Health and Substance Use Action Plan:** Based on the country’s progress in the mental health sector and the need for further reform, Jordan was selected for the implementation of the WHO Director-General’s Special Initiative for Mental Health, covering the five-year period 2019–2023. The initiative aims to advance policies, advocacy and human rights, and to scale up quality interventions and services.

- **Scaling up community-based mental health services using established approaches:** In 2010, Jordan was selected as the first country to implement the WHO mental health gap action programme, which aims to expand services for mental, neurological and substance use disorders. The programme has been delivered to 154 health workers operating in 94 primary health facilities across Jordan. Moreover, the WHO Regional Office for the Eastern Mediterranean developed a mental health in schools programme for countries of the WHO Eastern Mediterranean Region. It was implemented in Jordan in 2021 in collaboration with the Royal Health Awareness Society and the Ministry of Education; 18 heads of counselling departments at Ministry of Education directorates were trained as trainers, and educators at 50 public schools nationwide were trained so that they could better support the mental health needs of their students.
• **Increasing the capacity of human resources for mental health:** WHO partnered with the Jordanian Nursing Council to develop standard operating procedures for health facilities and deliver training sessions to build capacity in mental health inpatient units at general hospitals and community mental health centres. A 10-month training course (61 theory hours and 81 clinical hours) was delivered to 60 trainees from specialized health services, and 68 mental health and psychosocial support trainees participated in a three-month training course (15 theory hours and 27 clinical hours). Training topics included the rational prescription of psychotropic medicines; evidence-based substance use interventions; psychosocial interventions for children and adolescents; and surveillance using the Integrated Electronic Reporting System.

• **Cross-contextual learning:** In May 2022, the WHO Country Office in Jordan supported a delegation from Jordan to visit the WHO Collaborating Centre for Research and Training in Mental Health, in Trieste (Italy). The delegation comprised decision-makers, service providers and service users, who learned about the deinstitutionalization process and the delivery of comprehensive community-based care, through training and guided visits to community-based services.

• **High-level political commitment has been crucial to Jordan’s success so far,** together with the involvement of the Ministry of Health leadership, support from the three levels of WHO and collaborative partnerships with multisectoral stakeholders including service users. The selection of Jordan for implementation of the Special Initiative for Mental Health has been imperative for creating the momentum needed for further implementation.

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Generating evidence for decision-making in Jordan to decrease morbidity and mortality from COVID-19

Generating evidence to decrease COVID-19 morbidity and mortality

Jordan reported its first case of the coronavirus disease (COVID-19) on 2 March 2020. In Jordan, WHO and the Office of the United Nations High Commissioner for Refugees (UNHCR) chair the Health Sector Working Group, which serves as a platform to coordinate and optimize activities for refugees in camps and urban settings. To tailor public health measures and support decision-making within and beyond Jordan’s health sector, including in refugee camps, the WHO Country Office in Jordan leveraged its access to a vast global network of technical expertise and provided evidence-based guidance, recommendations and updates to the Ministry of Health of Jordan to deploy an immediate evidence-informed response to COVID-19.

A strict nationwide lockdown was enacted in airports, schools and public and private institutions, which remained until early June 2020. After an intensive COVID-19 vaccination campaign, Jordan began its COVID-19 recovery with a reopening of the economy and in-person learning from September 2021. COVID-19 vaccines have been provided free of charge to all people in Jordan. By February 2022, more than 50% of eligible individuals had received at least two doses of a COVID-19 vaccine,1 with uptake similar across the general and

refugee populations. Population seroprevalence increased dramatically within a one-year period, from 0.25% in August 2020 to 74% in August 2021.

WHO input enabled the successful vaccination of Jordanians and refugees in the country and was praised by the Ministry of Health and partners. WHO emerged as a prominent partner to the Government of Jordan and continues to support the country and its partners in their coordinated and multisectoral response to COVID-19.

How did Jordan, with the support of the WHO Secretariat, achieve this?

- **Developing inclusive strategic plans driven by equity:** Jordan’s population of about 11 million include about 1.3 million Syrian refugees and more than 2 million Palestinian refugees. As 30% of the population are non-Jordanians, launching an inclusive response was critical to halting transmission. The WHO Country Office in Jordan provided technical expertise to support the planning of the government’s equitable response, including through the development of the National Preparedness and Response Plan for COVID-19 (March 2020), which is continually updated to reflect the latest situation, and the COVID-19 National Deployment and Vaccination Plan (December 2020).

- **Following advice from technical experts monitoring the situation on the ground:** As a member of the multi-agency National Epidemiology Committee, the WHO Country Office in Jordan provided ongoing technical advice to the Ministry of Health on the management of COVID-19. WHO conducted four national household seroprevalence surveys to generate data crucial to guiding the COVID-19 vaccination campaign and feeding the prediction models that helped to inform policy recommendations throughout the pandemic. The COVID-19 International Modelling Consortium modelling research groups’ prediction approach was applied through collaboration between the WHO Regional Office for the Eastern Mediterranean, the WHO Country Office in Jordan and the Ministry of Health.

- **Identifying gaps and building national capacities:** To strengthen Jordan’s capacity to prevent, detect and respond to a COVID-19 outbreak in accordance with the International Health Regulations, the Ministry of Health used the WHO national capacities review tool (January 2020). The capacities and gaps identified fed into the National Preparedness and Response Plan for COVID-19. In March 2021, an intra-action review was conducted in Jordan by the WHO Country Office and the WHO Regional Office, with the engagement of the Ministry of Health, which resulted in immediate and long-term policy recommendations. Jordan also assessed risk factors for health-care workers in health facility settings (as part of the WHO Unity Studies) and several behavioural insight surveys, which reaffirmed the significant risk from exposure to COVID-19 patients and the role of hand hygiene. Infection and prevention control capacity-building activities were tailored accordingly.
• Establishing strong communication: WHO information, education and communication materials were approved by the Ministry of Health, disseminated during awareness sessions and made available in public places, including health and education facilities, local businesses, points of entry to Jordan, and Syrian and Palestinian refugee camps.

• Taking a holistic approach: WHO continuously advocated to the Minister for Health to issue a decision banning all forms of smoking and vaping to ensure that indoor public places are 100% smoke free during COVID-19 and beyond. Moreover, training sessions on the WHO mental health gap action programme were conducted in 25 primary health facilities, bringing the total number of trained health workers to 154, working in 94 primary health facilities across the country.

The value of scientific evidence in decision-making is recognized by Jordan. WHO continues to work closely with the Government of Jordan to ensure that global best practices are translated into action on the ground.

Developing a first-of-its-kind public health leadership programme for the Gulf Cooperation Council region

Strengthened public health leadership


Building on the momentum, four months into its opening the WHO Country Office coordinated a high-level public health programme for senior officials of the ministries of health of Kuwait and neighbouring countries. The programme, Public Health Leadership for Positive Change, was guided by the Kuwaiti Ministry of Health and engaged collaborating partners from academia, including the Kuwait Institute for Medical Specializations and Kuwait University. With the commitment of the Gulf Health Council, senior officials from the ministries of health of Bahrain and Oman were active participants in the first cohort of the programme. The curriculum, which aims to build a critical mass of health leaders in the region with strong public health
competencies and interpersonal qualities, was developed and delivered in collaboration with experts from the Johns Hopkins Bloomberg School of Public Health, the United Nations System Staff College and the three levels of WHO (headquarters, regional offices and country offices).

Throughout the four-day in-person component of the programme, more than 20 middle to senior level public health officials participated in lectures, interactive exercises and dialogue relating to priority subjects on public health leadership, including diplomacy, effective communication, collaboration and systems-thinking in the context of sustained improvements in human and planetary health. Participant evaluation of the programme revealed unanimous enthusiasm for its content and method of delivery. Participants would recommend the programme to their superiors and colleagues. The programme, first of its kind in the Gulf region, was a critical steppingstone towards strengthening Kuwait’s national health workforce to respond to the burgeoning burden of noncommunicable diseases, prepare for future pandemics and meet WHO’s triple billion targets.1

How did Kuwait, with the support of the WHO Secretariat, achieve this?

- **Identifying the need for training:** The Ministry of Health led a well coordinated, multisectoral response to the coronavirus disease (COVID-19) pandemic. It strengthened national capacity across sectors at all levels of government, reviving a sense of urgency for impactful, strategically-led public health programming. In order to sustain these gains beyond the pandemic, high-level public health leadership programming must be embedded in higher education curricula and within institutional memory. Leadership competencies are often not part of public health training programmes or included in other specialized health curricula, highlighting a need to fill this gap. Leadership competencies, such as communication, collective learning and collaboration, are required to respond to adaptive challenges in situations of emergency and beyond. The same leadership competencies are required to decisively address the increasing crisis in noncommunicable diseases, which account for more than 1.7 million deaths annually in the WHO Eastern Mediterranean Region2 and cost billions to economies.

- **Developing a training programme through multi-stakeholder collaboration:** WHO, as a coordinating authority on public health matters, with its three-level operating model, is uniquely poised to coordinate multi-stakeholder collaboration to develop the public health leadership programme. To design a high-quality, immersive programme that addresses implementation gaps relevant to public health leadership practice, the WHO Country Office partnered with global health education experts at the Johns Hopkins Bloomberg School of Public Health and the United Nations System Staff College. Designed to be executive and flexible in nature, the programme combined a four-day in-person training at the headquarters of the Kuwait Institute for Medical Specializations with two weeks of online module learning hosted on the United Nations System Staff College platform. Health professionals were immersed in topics crucial for effective
and collaborative leadership, including systems-thinking, essential public health functions and health diplomacy. Interactive sessions were delivered on a broad range of issues of public health priority. Participants engaged in the programme through various modalities, including learning through keynote lectures and opportunities to share their own experiences, navigate their perspectives on subjects and interact with their peers. As one participant from the Ministry of Health commented, “I consider this course among one of the best conferences or trainings I have ever attended globally”.

- **Implementing and scaling up the programme:** The WHO Country Office in Kuwait partnered with the Ministry of Health to implement the programme, rolling it out with national and regional partners. COVID-19 restrictions prevented the in-person attendance of some speakers, but this was overcome by using videoconferencing. The programme succeeded in communicating the urgency of strengthening leadership in public health to national counterparts and provided a model to deliver the programme in a sustainable format to future cohorts of participants from the Gulf Cooperation Council countries.

WHO supports Kuwait by working with the government to enhance capacity for effective health system governance. As the WHO Country Office in Kuwait celebrates its one-year anniversary, such programmes highlight the impact of WHO’s country presence. The Country Office broadens the scope for public health cooperation and critically contributes to increasing the contribution of the country’s future leaders to national, regional and, ultimately, global health. The continuity plan for the public health leadership training programme will continue the model of broad stakeholder engagement for public health. With ownership ultimately resting with the Ministry of Health, the programme will continue to include representatives from academic medical institutions, hospitals, medical associations and medical societies, among others. This will allow the programme to fulfil its goal of establishing a framework to sustain competencies and attributes in health leadership which are contextualized specifically for the Gulf Cooperation Council region. The next session of the programme, which will engage a cohort of 35 participants, is scheduled for 2022.

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Malawi

Integrating periodic data reviews in health facility interventions towards achieving primary health-care outcomes in Malawi

Improved data availability

Malawi is one of the pathfinder countries under the Network for Improving Quality of Care for Maternal, Newborn and Child Health supported by WHO, the United Nations Children’s Fund (UNICEF) and the United Nations Population Fund (UNFPA). The Network’s goals included halving maternal and newborn deaths and stillbirths and improving the experience of care in participating health facilities and countries by 2022. To realize the goals, the Malawian Ministry of Health integrated the nine maternal and newborn health quality of care standards in health facilities, as provided for by the national quality of health-care policy and strategy. The nine standards were implemented in nine learning districts by Quality Improvement Support Teams and Work Improvement Teams. Through its collaborative leadership, WHO has led efforts to better align support in maternal and newborn health quality of care under a United Nations joint project with partners (UNICEF and UNFPA) conducting similar work supported by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). With generous financial support from the Foreign, Commonwealth and Development Office of the United Kingdom of Great Britain and Northern Ireland, through the joint project, Malawi has improved data availability and use.

How did Malawi, with the support of the WHO Secretariat, achieve this?

Throughout the 2020–2021 biennium, WHO provided technical and financial support for maternal and newborn health quality of care interventions, including training, coaching and mentorship, as well as evidence-based reporting on progress in the implemented quality improvement projects. This formed part of the coordinated support Malawi received from WHO and the Global Action Plan for Healthy Lives and Well-being for All, as well as the Health Data Collaborative partner agencies under accelerator theme 1 (primary health care) and accelerator theme 7 (data and digital health). Specific interventions included developing and adapting “quality of care” tools, maternal and newborn health standards and assessment tools; providing quality improvement training to 416 health workers from 14 districts; conducting collaborative learning sessions for more than 225 health workers from the nine learning districts; building capacity of governance structures; strengthening Quality Improvement Support Teams and Work Improvement Teams; and improving data reviews. Further interventions included the maternal and newborn health quality of care mentorship programme for 53 mentees from four districts (Blantyre, Kasungu, Mzimba South and Thyolo), which involved collaborative learning sessions based on the “Leadership, action, learning and accountability” framework for quality improvement.
Since the work on improving maternal and newborn health quality of care started in 2017, there have been limited systematic data reviews on maternal and newborn health quality of care indicators. Monthly data on maternal and newborn health indicators, collected by health facilities in primary data collection tools, were reviewed and verified, along with monthly data reported through the District Health Information System (DHIS2) platform. The data were key for guiding the monthly capacity-building, coaching and mentorship programme implemented by WHO and the Quality Management Directorate (Ministry of Health) in the nine districts. Participation enhanced ownership and use of maternal and newborn health data for planning and decision-making by health workers in the targeted health facilities.

With the goal of using data to make evidence-based decisions, health facilities collected data through the quality improvement programme to address causes of neonatal admissions; assess newborn, infant and child morbidity and mortality; monitor complications; and address causes of maternal mortality and morbidity during pregnancy, labour and delivery, as well as the postpartum period. To assess the progress and impact of the maternal and newborn health quality of care interventions, data on 25 quality of care indicators were collected from July 2020 to June 2021, quality assured and reviewed using participatory approaches in 140 health facilities (10 from each of the 14 districts). The process facilitated documentation of progress and achievements, identified gaps, enabled strategy revisions and facilitated planning for the next year of interventions in the targeted districts.

The data quality assessment for selected health facilities revealed limited use of the WHO data quality review toolkit owing to lack of awareness of it. A lesson learned was that institutionalizing data reviews on a monthly and quarterly basis is critical to improving health service delivery and achieving targets of set indicators. Another insight gained was that continuing professional development on the use of data-collection tools is essential for new staff who continue to learn on the job.
With support from the WHO Regional Office for Africa and WHO headquarters, plans are under way to complete the second phase of mentorships; continue with capacity-building in quality improvement mentorship support (in person and virtually); measure progress in experience of care; and revise the quality of care policy and strategic plan to align with the Health Sector Strategic Plan III 2022–2030, in development.

The maternal and newborn health quality improvement interventions supported by WHO and other partners have empowered health workers to use data to analyse and respond to the root causes of maternal and newborn mortality and morbidity. With support from the WHO Regional Office for Africa and WHO headquarters, the WHO Country Office in Malawi will continue to improve the delivery of maternal and newborn health services using insights gained through enhanced data collection.

Uniting partners to accelerate Pakistan’s progress towards health-related Sustainable Development Goals

Partners united in Pakistan

In 2018, Pakistan signed the UHC2030 Global Compact, committing to advancing universal health coverage (UHC) as part of the country’s efforts to achieve health-related Sustainable Development Goals (SDGs).

The Government of Pakistan recognizes the fundamental role of primary health care (PHC) in achieving UHC. In view of the dire need for PHC reforms and the country’s recent commitments, international partners came together to agree on the Global Action Plan for Healthy Lives and Well-being for All (SDG3 GAP) agenda. Pakistan has been prioritized by SDG3 GAP for intensified support under two accelerator themes: PHC and sustainable financing for health.

How did Pakistan, with the support of the WHO Secretariat, achieve this?

In view of Pakistan’s commitment to the SDGs and UHC, the WHO Country Office in Pakistan took the lead in establishing an SDG3 GAP coordination committee to enhance and harmonize coordination among partners engaged in the health sector. Further, two technical working groups for PHC and sustainable health financing were established to provide technical support to the committee.

Members of the SDG3 GAP coordination committee in Pakistan comprise WHO (as chair and secretariat); the Gavi Alliance; the Global Financing Facility; the Global Fund to Fight AIDS, Tuberculosis and Malaria; the Joint United Nations Programme on HIV/AIDS (UNAIDS); the United Nations Children’s Fund (UNICEF); the United Nations Population Fund; and the World Bank Group.

The coordination committee and related technical working groups convene regular meetings to align and accelerate their support, monitor progress and exchange information on recent initiatives. At the most recent meeting, partners acknowledged that the committee was a useful forum for exchanging information for alignment and committed to remaining engaged for the provision of coordinated support to the country.

The WHO Country Office in Pakistan is leading SDG3 GAP coordination at the country level. WHO organized a high-level “primary health care for universal health coverage” (PHC4UHC) mission on 1–5 March 2021, which united eight SDG3 GAP partners in Pakistan to review the status of PHC and sustainable health financing and advise on a model of care to ensure effective implementation of the UHC Benefit Package. The Director of Universal Health Coverage and Health Systems at the WHO Regional Office for the Eastern Mediterranean led the mission, which concluded with a high-level national PHC4UHC forum where representatives from federal and provincial levels, as well as the eight SDG3 GAP partners, signed a joint statement in support of enhancing PHC towards UHC in Pakistan.
After endorsement of the UHC Benefit Package/essential package of health services\(^1\) in October 2020, SDG GAP partners supported Pakistan in the development of documents on a provincial/area-specific essential package of health services. Three provinces have already endorsed the package, and the remaining provinces are expected to endorse it soon.

WHO is providing technical and financial support to the Government of Pakistan through a grant provided by the Government of Canada for the pilot implementation of the UHC Benefit Package through a PHC-oriented model of care in two districts (Islamabad Capital Territory andCharsadda). The project support was envisaged to be provided over a four-year period in a phased manner. The first phase was implementation in those two districts from 1 April 2021 to 31 May 2022, which was later extended till September 2022. This phase primarily focused on integrating a holistic health approach and intersectoral collaboration to optimize all health interventions, while addressing the social determinants of health. All SDG3 GAP partners and government stakeholders were engaged in brainstorming the key elements of the proposed model of care. WHO regularly exchanged progress with partners at periodically convened technical working group meetings.

The successful implementation of the model of care will present an example that can be replicated in other districts for implementing the UHC Benefit Package to expand UHC in the country. Given the size of the population (about 230 million), success of the model in general and of UHC expansion in particular is crucial to achieving the target of 1 billion more people benefiting from UHC globally.

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Joining forces to move towards universal health coverage in Tajikistan

Aligning partners to achieve universal health coverage

Tajikistan’s health system is structured around input-based financing and significant out-of-pocket payments. As a result, access to quality essential health services and products is inequitable. Universal health coverage (UHC) means that all people have access to the health services they need, when and where they need them, without financial hardship. To achieve UHC in Tajikistan, strengthened leadership, governance and advocacy for health are essential.

Tajikistan was one of the global pilot countries for the implementation of the Global Action Plan for Healthy Lives and Well-being for All (SDG3 GAP). Introduced in the country in 2019, it has been instrumental in bringing together and better aligning multilateral health, development and humanitarian partners, enabling them to better support the Government of Tajikistan in moving towards UHC. Between 2019 and 2021, Tajikistan’s UHC service coverage index – a measure of indicator 3.8.1 of the Sustainable Development Goals (SDGs) – moved in a positive trajectory, increasing from 66 to 68. WHO continues to work on improving partner coordination under the umbrella of SDG3 GAP in Tajikistan, helping to better position local and international health partners to achieve not only UHC, but also all health-related SDGs by 2030.

A Tajik family visiting a primary health-care clinic. Photo credit: WHO Country Office in Tajikistan/Mukhsin Abidzhanov
How did Tajikistan, with the support of the WHO Secretariat, achieve this?

- **Strengthening the Development Coordination Council on Health:** Tajikistan’s Development Coordination Council on Health was established to foster collaboration and dialogue, both within the development community and with the Government of Tajikistan. Co-chaired by the European Union and the WHO Country Office in Tajikistan, the Development Coordination Council on Health has held regular meetings and developed tools to facilitate information exchange and discussion on health-related activities. A retreat organized by the WHO Country Office for development partners – in collaboration with the European Union; the Global Financing Facility for Women, Children and Adolescents; and the World Bank – enabled the partners to solidify working structures and coordination mechanisms, facilitating better and more aligned support for Tajikistan’s Ministry of Health and Social Protection of the Population. Recently, five subgroups of the Development Coordination Council on Health were established and aligned with the strategic priorities of the recently launched National Health Strategy 2021–2030, in which UHC is a key objective.

- **Producing joint position statements that presented a common vision:** Joint position statements on health financing and primary health care (PHC) were developed by the partners, and position statements on health management information systems and human resources for health are in progress. Presenting the joint vision of health development partners, the position statements provide high-level guidance to Tajikistan, while aligning and coordinating partners’ technical assistance and financial
support with government agenda and country needs. On health financing, the joint statement urges the country to modernize budgeting and payment systems, increase domestic funding for health and distribute resources equitably. The joint statement on strengthening PHC was signed by both development partners and the Ministry of Health and Social Protection of the Population, which share a common vision and ambition to build an effective PHC model in Tajikistan. These living documents will be updated as new issues emerge and as the country’s health system is strengthened over time.

- **Engaging in policy dialogue to learn from past implementation and plan for the future:** The WHO Country Office organized policy dialogues to discuss topics addressed in the joint statements, review the first year of implementation of the new National Health Strategy and develop concrete implementation plans. This helped to further align health partners’ support provided to the Government of Tajikistan.

- **Partnering up to pivot towards health financing reforms:** The UHC Partnership[^4] is one of WHO’s largest platforms for international cooperation on UHC and PHC. Tajikistan joined the UHC Partnership in 2016. Furthermore, the WHO Country Office is currently implementing a European Union-funded UHC programme with Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) and the United Nations Children’s Fund (UNICEF). Thanks to these partnerships and the joint statement on health financing, the Ministry of Health and Social Protection of the Population and the Ministry of Finance are discussing significant changes to the health financing system, which will be instrumental to achieving UHC.

Aligning partners has been critical to moving towards UHC in Tajikistan. The WHO Country Office in Tajikistan has played a crucial role, using its convening power to strengthen overall leadership, governance and advocacy for health. In addition to its convening role, the WHO Country Office has collaborated with health partners on various pilot projects and provided technical support to ministries and national and regional bodies in furthering the implementation of health financing reforms for achieving UHC.
