SUSTAIN
ACCELERATE
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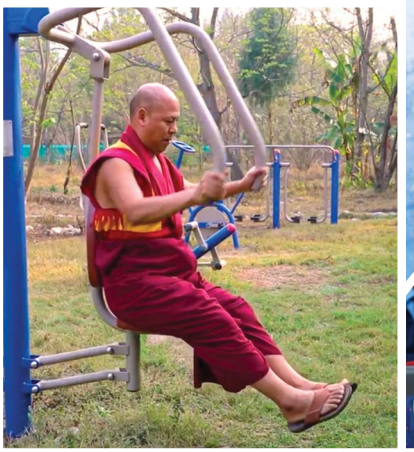
World Health Organization
South-East Asian Region

South-East Asia:
Flagship Priority Programmes
driving impact in countries for the Health of Billions



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Sustain. Accelerate. Innovate – South-East Asia: Flagship Priority Programmes driving impact in countries for the Health of Billions

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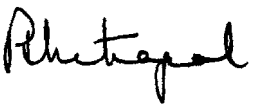
FOREWORD

Impact at country level lies at the heart of eight Flagship Priority Programmes that were identified in consultation with the Member States based on their needs, as I took over the office of Regional Director, WHO South-East Asia Region in 2014. These Flagship Priorities provide direction to Member States to invest resources effectively to achieve optimal health outcomes.

The WHO South-East Asia Region has made and continues to make rapid, inclusive and sustained progress on each of its eight Flagship Priority Programmes, which are aligned with the WHO Triple Billion targets and the health-related Sustainable Development Goals (SDGs).

This publication complies 11 success stories from countries in the Region, each pertaining to one of the eight Flagship Priorities. It includes stories on preventing and controlling noncommunicable diseases in Bhutan, Sri Lanka and Thailand; strengthening emergency risk management in Bangladesh, Nepal and Timor-Leste; accelerating efforts to end TB in Myanmar; role of traditional medicine in health care in DPR Korea; healthy city approach in Indonesia; innovative steps taken by Maldives to combat climate change; and accelerating reductions of maternal, neonatal and under-five mortality in India. It highlights an array of best practices and innovative approaches used at country level. Countries in the Region and across the world can learn from each other's experience and find these innovations useful in their efforts to accelerate progress in each of these priority areas and more.

The success stories contained herein were made possible through strong political commitment and leadership backed by adequate and sustained support from partners and donors. I thank all health workers for their tireless efforts to provide services, including amid the COVID-19 response. I look forward to the Region's onward journey together, towards our Flagship Priorities, the Triple Billion targets and SDGs, and in furtherance of our "Sustain. Accelerate. Innovate" vision.



Dr Poonam Khetrapal Singh
Regional Director
WHO South-East Asia Region

HOW BANGLADESH RAPIDLY SCALED UP IPC PROGRAMMES IN THE WORLD'S LARGEST REFUGEE CAMP AT COX'S BAZAR

Highlights

- Bangladesh with the support of WHO and partners scaled up infection prevention and control (IPC) programmes using targeted measures in Cox's Bazar to 100% of health facilities by April 2022 from a mere 4.4% in February 2020.
- This scaling up of programmes against infection laid a firm foundation for the institutionalization of IPC in health care facilities.
- By April 2022, 70% of health facilities reported using daily IPC checklists, up from 17% in February 2020.

On average, 15 out of every 100 patients in acute-care hospitals in low and middle-income countries acquire at least one health care-associated infection (HAI) during their stay in hospital. Infection prevention and control (IPC) interventions can reduce HAI by at least 30% for patients, health workers and visitors to health care facilities.

IPC is also crucial for tackling the global crisis of antimicrobial resistance (AMR) that threatens to render antibiotics ineffective and limit our metabolic ability to treat common infections.

While countries in the Region have been making progress to strengthen IPC interventions, the COVID-19 pandemic brought into sharp focus the urgent need to scale up these measures. The Rohingya refugee camps in Cox's Bazar, Bangladesh, which are among the most densely populated refugee camps in the world with 890 000 refugees, were especially vulnerable.

Congested living spaces, far-from-optimal water and sanitation facilities, and lack of awareness, among others, posed serious challenges to containing the spread of COVID-19 in the camps. According to February 2020 IPCAF (Infection Control and Assessment Framework) conducted by WHO team, only 20% of health facilities in the Rohingya camps had IPC committees.

To address vulnerabilities, plug the gaps and strengthen IPC interventions, Bangladesh launched a series of targeted measures with the support of WHO and partners that, among others, helped rapidly scale up IPC programmes from 4.4% of the health facilities in February 2020 to 100% of all health facilities by April 2022. The measures adopted also firmly institutionalized infection prevention and control protocols and actions within the health sector's humanitarian response framework during the COVID-19 pandemic in Cox's Bazar.

Scaling up training

In mid-February 2020 – just a fortnight after the COVID-19 outbreak was declared a public health emergency of international concern (PHEIC) on 30 January 2020 – WHO in collaboration with the Ministry of Health and Family Welfare (MoHFW) and partners organized a general IPC training for health care workers at all health facilities in the refugee camps. The training was integrated into the overall COVID-19 containment prevention and control strategy.

Participants were trained on a wide range of health and safety topics, including standard infection precautions; use of personal protective equipment (PPE); infection-limiting space requirements; environmental decontamination; health care waste management; shifting of COVID-19 patients to the health facilities, and decontamination of equipment.

IPC training was provided in 100% of the health facilities, a huge leap from just 22% of such facilities that had received such training earlier. As a result, by July 2020, 3600 health and humanitarian workers had been trained in IPC. In March 2021, a refresher course for Master Trainers was also conducted.

Training health care workers on proper use of personal protective equipment
Photo credit: WHO Bangladesh

Master Trainers

To speed up the training of health workers in the district and establish a pool of experts on COVID-19 IPC, WHO in collaboration with MoHFW in April 2020 trained 43 participants (11 female, 32 male) as Master Trainers in Cox's Bazar.

Master Trainers were also trained to run the severe acute respiratory infection isolation and treatment centres (SARI ITCs) in Cox's Bazar.

Each trainee was also provided with a USB drive with relevant information on IPC Master Training Module and Training PPTs, such as Introduction to IPC; Introduction to COVID-19 and COVID-19 IPC; Setting-up the Health care Facility; Rational Use of PPE; Isolation of Suspected COVID-19 Patients, etc., IPC guidelines were also shared with all health facilities through an open-source digital platform. A video in Bengali was also made to outline the correct usage and handling of PPEs.

A still from a video in Bengali produced by WHO detailing the proper usage of PPEs
Photo credit: WHO Bangladesh

The WHO IPC team also adapted COVID-19 global guidance to the local context. IPC guidance was also prepared for travel, physical meetings, schools, health facilities, non-medical workplaces, etc. This guidance was made available on the health sector open platform for use by different partners and health care workers.

IPC structures including IPC committees at the district, sub-district and health facility levels were also set up. The selection of IPC focal persons in all facilities was identified as a priority task. This was completed in three months.

Peer-to-peer support and knowledge exchange programme, wherein health care providers gain technical knowledge and skills by learning from each other while performing their roles, were especially useful in

enhancing skills and training. With guidance from WHO, the initiative served as a foundation for optimized clinical care to ensure the best possible chance of survival of patients in Cox's Bazar and the adoption of best health care practices incorporating IPC.

Setting up severe acute respiratory isolation and treatment centres

As part of the COVID-19 pandemic response, 14 severe acute respiratory infection isolation and treatment centres (SARI ITC) were established in Cox's Bazar between May 2020 to September 2020.

To strengthen worker and patient safety at the SARI isolation and treatment centres, WHO worked closely with engineers and managers to integrate IPC into their design and construction. Transparent and protective screens and easy-to-clean surfaces to enable safe consultations between health care workers and those visiting the health centres were among the several measures adopted.

All SARI ITCs in Cox's Bazar were set up according to WHO standards for isolation and treatment centres. This included design considerations to ensure staff and patient safety

Photo credit: WHO Bangladesh

Adequate provision for proper seating and waiting spaces, directions of workflow, separation of different zones, and ventilation and lighting, was emphasized. WHO further encouraged partners to assign dedicated IPC professionals, define clear IPC objectives, and include IPC in their workplans.

All these measures enabled people in the camps to visit health facilities safely, and recover and return to their community without acquiring associated infections.

A patient being examined at UNHCR/Relief International SARI ITC in Cox's Bazar
Photo credit: WHO Bangladesh

"COVID-19 is a highly infectious disease, and we are committed to creating the safest environment possible before caring for patients, while doing so, and even after. Our top priority is patient safety and that means ensuring health workers stay safe too,"
said Dr Nazia Sultana, medical in-charge at UNHCR/Relief International SARI ITC.

Daily checklist and monthly scorecards

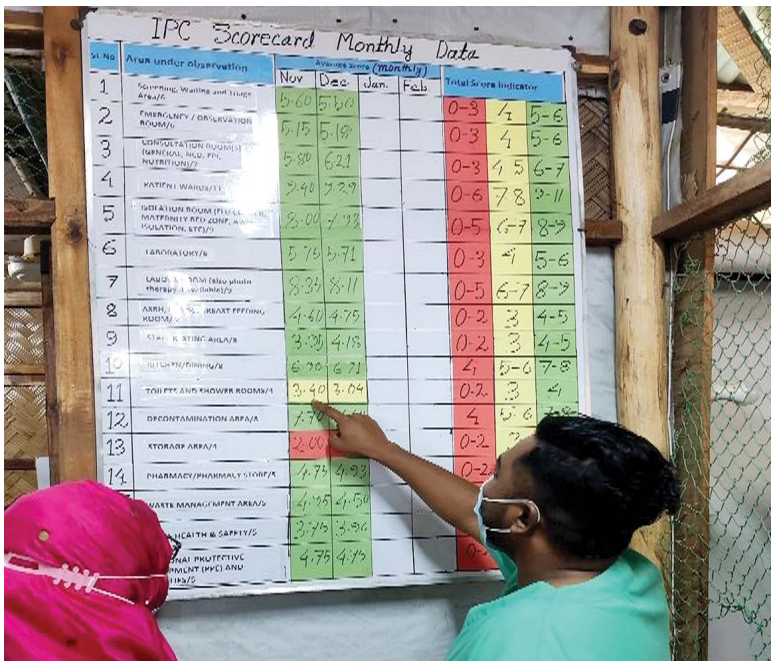
To effectively monitor the implementation of IPC measures, WHO and health sector partners introduced a user-friendly daily IPC checklist along with a monthly scorecard. IPC focal persons from all the health facilities were also trained on how to use the daily checklist and scorecard for IPC monitoring.

The checklist helped bolster IPC practices through daily monitoring and course corrections. The regular feedback on IPC measures also resulted in better performance on the scorecard. These tools were adopted by all SARI ITCs in September 2020 and then followed by general health facilities in November 2021.

In addition, WHO supported the development of a quarterly supportive supervision checklist for SARI ITCs as well as a six-monthly supportive supervision checklist for district general health facilities.

While only 17% of the health facilities had reported monitoring of any IPC activity till February 2020, 70% of the facilities reported using daily IPC checklists for monitoring all IPC activities by April 2022.

The supportive supervision checklists are also useful for WHO and the ad hoc IPC Technical Working Group, which consists of the Government, the UN and international NGOs, and a few other agencies, in carrying out quarterly and six-monthly technical support to partners.



A monthly scorecard displayed at primary health care in a Rohingya camp. These became a useful monitoring and quality assurance tool for regular supportive supervision visits made by WHO

Photo credit: WHO Bangladesh

Stakeholder involvement is key to success

In order to strengthen the implementation of IPC interventions not only in the refugee camps but also in the district overall, WHO facilitated several consultative meetings and a workshop for stakeholders including the WHO Country Office, the Office of the Civil Surgeon of Cox's Bazar district, the Office of the Refugee Relief and Repatriation Commissioner, the Ministry of Health and Family Welfare's Coordination Cell and health sector partners.

Prof. Dr Khurshid Alam, Director General of Directorate General of Health Services (DGHS) Bangladesh addressing physicians and nurses at a workshop in Dhaka in March 2021 on Infection Prevention and Control

Photo credit: WHO Bangladesh

"It is essential that all staff are aware of IPC measures. They must learn and be committed and devoted to the work they do. There is no alternative to IPC practices in all clinical settings, and all health care workers must be vigilant about this. We highly appreciate WHO's support in building the national capacity on IPC. This is an essential matter, especially during emergencies like this,"
said Prof. Dr Khurshid Alam, Director General of DGHS.

WHO also supported the formation of eight sub-district hospital IPC committees and a district hospital IPC committee, along with an overarching district IPC committee. None of these committees existed before the IPC programme started in Cox's Bazar. All committees of over 300 health workers received training to enable them to perform their responsibilities for IPC sustainability with the goal of reduction of HAIs and ensuring patient and health worker safety in the district.

At the divisional level, the WHO Country Office supported the Directorate General of Health Services (DGHS) in training 65 physicians and nurses from medical colleges and district hospitals in eight divisions on infection prevention and control in March 2021.

Challenges and the road ahead

Since 2020, the rapid scale-up of IPC measures in Cox's Bazar following the COVID-19 pandemic has provided the impetus to strengthening such measures in the district. To date, all 137 health facilities in the Rohingya camps have IPC committees and focal persons, comprising health workers. The committees include the lead of PHCC/field hospital, leads of all major clinical departments, the lead nurse, lead pharmacists, lead of laboratories, head of maintenance and cleaning departments, and IPC focal persons.

Although there are efforts at institutionalization made by IPC personnel recruited by organizations, as well as allocated budgets, workplans with clear objectives and monitoring, there is still no microbiology laboratory support.

Although there are institutionalization efforts taken through IPC personnel recruited by organizations, budgets, workplans with clear objectives and monitoring, there is still no microbiology laboratory support. Health care-associated infections and studies of antimicrobial resistance and surveillance need the laboratory to culture, identify and test the microorganisms. Additionally, sustainability of the programs can be challenging especially if funding is not continuously channeled towards this cause."

To reduce cost and time in reporting on IPC feedback, WHO is currently advocating for embedding IPC activities into existing systems.

Integrating IPC feedback as part of the routine quarterly review meetings at the district or health-facility level instead of having a separate quarterly IPC feedback meeting will help achieve this objective.

Suggested Reading

1. "Scaling up IPC capacity in Cox's Bazar in response to COVID-19 pandemic furthers streamlining of best practices in general health facilities" as published in WHO Health Emergencies Programme Weekly Operational Update on COVID-19, Issue No. 93, 1 March 2022 https://www.who.int/docs/default-source/coronaviruse/weekly-updates/20220301_wou_93.pdf?sfvrsn=1c81a78d_3&download=true (accessed on 29 July 2022)

2. Preventing the spread in the Rohingya refugee camp: from changing community behaviour to institutionalizing Infection Prevention and Control (IPC) strategy in Cox's Bazar https://www.who.int/bangladesh/news/detail/08-06-2021-preventing-the-spread-in-the-rohingya-refugee-camp-from-changing-community-behaviour-to-institutionalizing-infection-prevention--and-control-(ipc)-strategy-in-cox-s-bazar (accessed on 29 July 2022)

3. Rohingya Crisis Situation Report https://www.who.int/bangladesh/emergencies/Rohingyacrisis/situation-report---rohingya-crisis (accessed on 29 July 2022)

EVOLVING A PEOPLE-CENTRED APPROACH TO NONCOMMUNICABLE DISEASE (NCD) SERVICES IN BHUTAN

Highlights

- Bhutan launched the Service with Care and Compassion Initiative (SCCI) to plug gaps & improve NCD services. As part of SCCI, all persons visiting health facilities are screened for NCDs.
- Home care, refill of medicine, reminder & follow-up for treatment & medication, referrals and real-time monitoring are some of the key elements of the initiative.
- Following its success, SCCI was scaled up to all districts of Bhutan.

NCD screening at Dag ana, Bhutan
Photo credit: WHO Bhutan

Noncommunicable diseases (NCDs) pose a serious health problem and are responsible for 64 percent of all deaths in the WHO South-East Asia Region impacting social and economic development. In Bhutan, changing lifestyle and dietary habits have been the chief factor driving the increase in NCDs, which account for 69 percent of all deaths.

In 2014, combating NCDs was identified as a Flagship Priority by Dr Poonam Khetrapal Singh when she assumed charge as Regional Director. Since then, countries of the Region have been making sustained efforts to reduce the incidence of NCDs by addressing the prevalence of risk factors.

As part of Bhutan's Gross National Happiness (GNH), which prioritizes the well-being and happiness of people over conventional socioeconomic indicators, the country has taken several innovative measures to combat NCDs and save lives.

Bhutan was the first country in the WHO South-East Asia Region to adopt the WHO Package of Essential Noncommunicable (PEN) disease interventions for primary health care in low-resource settings in 2009 and scaled it up nationwide in 2013–2014. In 2015, Bhutan launched the Multisectoral National Action Plan for Prevention and Control of Noncommunicable Diseases.

A clinical audit of PEN implementation conducted in 2016 highlighted several gaps in care for hypertension, diabetes and other chronic diseases. These included little follow-up by health care facilities and medicine refills not being monitored carefully, often leaving patients to manage their condition alone, leading to poor results.

Service with Care and Compassion Initiative (SCCI) – a people-centred approach

To address gaps and shortcomings, the Ministry of Health with support from WHO in 2018 piloted the Service with Care and Compassion Initiative (SCCI) in four dzongkhags (districts) of Punakha, Tsirang, Wangdue and Zhemgang.

Following its successful implementation, the ministry during the Biennial Health Conference in 2019, prioritized to scale it up to all 20 districts in the country.

The approaches employed by this model are known as 7Rs: robust team building, reach out to homebound services, refill of medicines, recall and reminders, responsive referrals, reliable and people-centered laboratory diagnosis, and real time monitoring and supportive supervision and 3Cs: comprehensive, collaborative and continuum of care.

Making a difference

Rinzi Dorji breaks out in a smile as he recalls the life-altering change that health care at home has meant for him and his father. The 65-year-old farmer from Bara village, Shengana, Bhutan has chronic diabetes and for years faced hardships in getting regular medicine refills and health care for himself and his 95-year-old father, Ap Dorji, who has visual and hearing impairments.

Ap Dorji and his son Rinzi at their house in Bara village, Shengana, Bhutan

Photo credit: WHO Bhutan

Then in 2018, the Service with Care and Compassion initiative (SCCI) was launched. An important part

of this initiative involves screening for NCDs whenever a person visits a health facility. This helps identify any problems early on and timely intervention. Regular follow-up of patients, ease of getting medication and home-bound care are just a few of the innovative features of the initiative.

For Rinzi, Ap and many others, this has meant getting medicines and health care is no longer an ordeal. Earlier on, there was no coordination among health facilities to gather forms III and II medicines for patients, often leading to inconvenience.

To ensure continuity of medication, a robust system was set up as part of the SCCI, with a designated focal person collecting prescriptions at the Jigme Dorji Wangchuck National Referral Hospital (JDWNRH) from all the districts and sending these to the pharmacists. The pharmacists at district levels then call the in-charges from the primary health centres (PHCs) to collect medicines for the patients, which are line-listed and due for dispensing.

NCD screening of officials in the Ministry of Health
Photo credit: WHO Bhutan

Patients who are unable to come to the PHCs are visited as part of home care. Medical teams also follow up on their progress and screen for any problems when conducting home care visits and regularly follow up with patients about their condition and reminders about their medication.

Medicine supply including forms III and II

Photo credit: WHO Bhutan

> **"Home care has benefited me and my mother and I am very thankful for the regular visits by the health assistant,"**
>
> *says 42-year-old Ms Aum Zam, the prime caregiver for her 76-year-old mother who has been bed-ridden due to a spinal injury from a fall five years ago.*

Regular clinical mentoring, support and supervision of PHC workers

The SCCI is founded on a system-based improvement approach where in that health workers support each other to address emerging challenges and fill any gaps in NCD services and practices of patient care. A team led by a doctor based in the district hospital provides mentoring and

leadership to two PHCs. Every six months, the mentoring team visits the PHCs to carry out supportive supervision. A standard checklist is used to document successes and challenges being faced by the PHCs.

The district mentoring teams use a combination of onsite and virtual modes of interaction and employ social media platforms to coach and discuss cases and referrals with the staff of PHCs.

> **"The PHC teams are being mentored in person, as well as through virtual platforms. The team from the district hospital mentors the PHC on essential clinical care services, while the district health office provides mentoring on reporting systems. This has resulted in improved clinical care and early referral of pregnant women with expected complications and patients with uncontrolled hypertension and diabetes."**
>
> *– Dr Tshewang Gyeltshen, Tsirang Hospital, Bhutan.*

The WHO also supports regular joint monitoring and supportive supervision by focal persons from Ministry of Health and Gross National Happiness Commission to assess the gaps and improve the implementation of SCCI in the districts.

Redistribution of tasks and task-sharing

Apart from benefiting beneficiaries, the SCCI has been a motivating factor for health professionals. At the primary care level, there has been an improvement in the redistribution of tasks and task-sharing. Health assistants (HAs) at the PHCs conduct screening, initiate treatment, and counsel and educate patients.

Patient histories and any challenges are discussed at the district hospital level. This has led to an overall change in approach to patient care at the district level and the work environment has become more positive. It has also helped make the health system more resilient.

> **Personally, I am very satisfied with the PEN HEARTS model as it helps me work in a more systematic way. In addition, this concept ensures that the patient is at the centre of everything. One example is that now I call up the doctor and fix an appointment before sending the patient for further consultation or treatment to the hospital at Yebilaptsa. This way, patients are able to meet the doctor on time and it saves a lot of trouble.**
>
> *– Ms Krishna Maya Monger, HA Tshaidang PHC, Zhemgang.*

Increased interaction, including home-care visits by HAs, has further helped the health care professionals gain the trust and confidence of patients and the community and increase community-based support and cooperation.

Recording and reporting

To review and improve the effective delivery of NCD services, as a part of cohort control rates and coverage rates for hypertension, brief interventions, and home-bound care are computed for all health facilities, including PHCs, on a quarterly/annual basis.

The PEN focal person at the district level reviews these reports and submits them to the district health officer. These reports are then submitted to the NCD programme division at the Ministry of Health. The NCD programme division provides written feedback on the reports. This has gone a long way towards improving health services.

Promoting physical activity

Insufficient physical activity and sedentary behaviour is a leading risk factor for NCD-related mortality and the rising prevalence of NCDs. Globally, one in four adults do not meet the global recommended levels of physical activity and up to 5 million deaths a year could be averted if the global population was more active.

To encourage people to participate in physical activities, the Ministry of Health of Bhutan in 2015 with support from WHO established outdoor gyms at various locations in all 20 districts of the country.

Dr Rui Paulo De Jesus, WHO Representative to Bhutan, said,

"NCDs are preventable. WHO consistently works with the Royal Government of Bhutan, Ministry of Health and other stakeholders to raise awareness of Bhutanese on prevention of NCDs including promotion of physical activity, healthy diet, tobacco-free initiative as well as avoiding the harmful use of alcohol. To promote physical activity, WHO supported the establishment of open-air gym facilities across the country."

Mr Sonam Gyeltshen, teacher, Lekshed Jungney Shedra exercising in an open-air gym

Photo credit: WHO Bhutan

"In order to protect our monks from noncommunicable diseases, we must have physical activities. Unlike others, monks don't have the time to go for morning run, to play football or basketball. The open air gym is convenient because we can exercise regularly between our studies. Health workers who visit our monastic school to screen us for NCDs have observed visible improvements in our health and encourage us to continue using the open-air gym,"

said Mr Sonam Gyeltshen, Teacher, Lekshed Jungney, Shedra.

While the open-air gyms have opened up avenues for people to exercise and stay healthy, they face challenges of regular maintenance. Though physiotherapist technicians were trained in the past to take care of the machines, it was noted that they did not have adequate tools and parts for maintenance. Addressing these challenges will restore and add to the available measures to combat NCDs.

Challenges and road ahead

While the SCCI has made an impact, it has also led to an increase in the workload of health care professionals. Increased frequency of attending home-bound care, collecting medicine refills from hospitals, and increased frequency to attend to calls in the community. Though the initial phase of this intervention may demand additional attention and efforts, the programme may consider assessing the amount of workload due to this initiative within the context of the overall workload.

The integration of the SCCI into primary health care as part of a routine programme instead of implementation in project mode would help further realize benefits, document gains and enable the exchange of best practices among health care professionals. Efforts should be made to include SCCI modules as part of university curricula to ensure its long-term sustainability

To reduce the burden of vertical reporting and ease of listing and tracking medicine refills, home-bound visits, quarterly reporting, recalling and reminding patients, the programme may work on integrating these with the Health Management Information System (HIMS) datasets.

Health, happiness and well-being are closely linked. By zeroing in on the main risk factors contributing to NCDs and taking steps by innovating, sustaining and accelerating action to prevent and treat NCDs with a people-centric approach, Bhutan has set an example of how to make people healthier and happier by beating NCDs.

Addressing challenges will further strengthen measures to combat NCDs and accelerate progress towards Sustainable Development Agenda (SDG 3.4) of reducing premature deaths from NCDs by one third by 2030 and promoting well-being for all at all ages.

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2. https://www.who.int/news-room/feature-stories/detail/bhutan-making-its-people-healthier-happier-by-beating-noncommunicable-diseases (accessed 12 June 2022).

3. http://lms.kgumsb.edu.bt/index.php/course/health-service-delivery/ (accessed 12 June 2022).

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DPR KOREA: INTEGRATING TRADITIONAL MEDICINE IN HEALTH CARE

Highlights

- Almost 70% of the people use Koryo traditional medicine at the PHC level in DPR Korea.
- Koryo traditional medicine along with allopathic medicines are fully integrated into every level of the health system. It is an example of traditional medicine supplementing allopathic medicines in ensuring well-being.
- All medical practitioners in DPR Korea are trained and qualified to practice both Koryo traditional and allopathic medicine.

More than 80% of the world's population in over 170 of WHO's 194 Member States currently use some form of traditional medicine, such as herbal medicine, yoga, Ayurveda, acupuncture and acupressure, and indigenous therapies. For many, traditional medicine is the first port of call, and practitioners of traditional medicine have played an important role in treating chronic illnesses.

While the use and recognition of the role of traditional medicine in primary health care (PHC) and universal health care (UHC) have been growing, the Democratic People's Republic of Korea (DPR Korea), which has a long history of using traditional medicine, is one of the leaders in integrating traditional medicine with allopathic treatments to provide care and promote health and well-being.

Almost 70% of the population in DPR Korea use Koryo traditional medicine at the PHC level while about 30–40% use it at the central level and 40–60% at the county level.

Some of the common health conditions managed with traditional medicine in DPR Korea include bone and joint disorders, cardiovascular diseases, neurological disorders (paralysis, cerebral palsy), metabolic disorders (diabetes, gout), gastrointestinal disorders, respiratory disorders (asthma, cold), skin disorders, gynaecological disorders (menstrual abnormality), mental and psychological disorders.

Koryo system – a long history of healing and care

The Koryo system of traditional medicine is more than 5000 years old and traces its roots to 3000 BC. These traditional medicines and practices have been preserved, organized and modernized during the past several decades, and have been fully integrated into the national health care delivery systems from the central to the most peripheral administrative levels in DPR Korea.

Koryo medicine evolved through three distinct periods between the 15th and 17th centuries and has been carefully documented in three publications of immense significance, which capture its development and use.

1. *Hyangyakjipsongbang* (Compendium of prescriptions from the countryside) is a medical classic published by Ro Jung Rye, a famous

Koryo medical doctor in 1433. It describes 10 706 herbal prescriptions for 959 diseases and 694 kinds of domestic herbal materials that can be used in their treatment.

2. *The Uibangruichi* (Classified assemblage of medical prescriptions) in 266 volumes was published by Kim Rye Mong in 1477. It is a comprehensive compilation of successes achieved in the development of Koryo traditional medicine up to the beginning of 15th century, and was well known as a medical encyclopedia worldwide at that time.

3. *Tonguibogam* (Treasured mirror in eastern medicine), was published by Ho Jun, a famous Koryo medical doctor, in 1611. It comprises a total of 25 volumes and describes Koryo medical therapeutic methods for all diseases of the body. It lists 1400 kinds of domestic herbal medicines and continues to play a crucial role in the development of traditional medicine even today.

Combining ancient wisdom with modern science

While the Koryo system of traditional medicine has been in use for over 5000 years, sustained support since 1945 from the government to integrate the allopathic and traditional systems of medicine enabled the modernization and integration of traditional medicine with the national health care delivery system in the 1970s.

All medical practitioners in DPR Korea are trained and qualified to practise both Koryo traditional and allopathic medicine. People can opt to access both or either allopathic or traditional medicine. Both systems of care are offered at all levels of the health system, including the central, provincial, county and Ri or village level, the most peripheral administrative level.

Acupuncture, chiropractic and naturopathy are used by 20–39% of the population while 40–59% of the population use herbal medicines.

To generate awareness about traditional medicines, since the 1980s, a number of publications on self-health care have been developed to inform people about the benefits and uses of traditional medicine. Several TV programmes highlighting the uses of traditional medicines are also broadcast to inform people.

A doctor provides Koryo medical treatment to a patient in DPR Korea

Photo credit: Ministry of Public Health, DPR Korea

The household doctors

The backbone of the health system in DPR Korea is the household doctor system. At every primary health centre level, there is at least one doctor who caters to around 135 households in their catchment area. This allows DPR Korea to provide comprehensive health care coverage to the entire population.

Typically, the doctors stay at the primary health centre during the first half of the day to attend to patients. In the afternoon, they undertake home visits as per their duty schedule to provide medical consultation, health education and other community duties. In case patients need specialized treatment, they are referred to the district-/county-level hospital or to the central or 20 provincial Koryo traditional medicine hospitals, depending on the ailment and needs of the patient.

As some patients are unable to visit a primary health centre due to injuries, infirmity or health conditions, home visits by the household doctors play a crucial role in ensuring care. The doctors also screen patients for any underlying health conditions and suggest timely remedial action.

Training, education and research

In DPR Korea, those opting to major in allopathic medicine must compulsorily take courses in traditional medicine and vice versa. This ensures that medical practitioners are aware of and can utilize both systems of medicine.

Students can enrol in 13 medical universities located at the central and provincial levels and one Koryo traditional medicine pharmaceutical university. Each medical university has a Koryo traditional medicine faculty where Koryo traditional medicine is taught. Basic theories of Koryo medicine such as acupuncture, herbal prescriptions, internal medicine, surgery, gynaecology, paediatrics, etc. are all taught along with modern medical subjects such as anatomy, physiology, pathology, internal medicine, surgery, etc.

This enables doctors to diagnose and treat with both modern allopathic medicine for specific conditions as well as Koryo traditional medicine since referral between both systems is facilitated.

A doctor in Koryo medicine undertakes scientific research of the functional status of the body through investigation of ear acupressure points

Photo credit: Ministry of Public Health, DPR Korea

To guide and build on research and training, the Academy of Koryo Medical Science in Pyongyang serves as a scientific research and therapeutic and preventive institution at the central level. There are also 28 research institutions for Koryo medicine in DPR Korea.

Academy of Koryo Medical Science in Pyongyang
Photo credit: Ministry of Public Health, DPR Korea

As the leading research institute for traditional medicine and practice, the Academy plays the lead role in standardizing the manufacturing process of extracts from herbal materials to improve dosage formulation and improve the quality of herbal medicines.

Some of the areas of focused research include studies on the development of anticancer drugs, cardiovascular diseases such as arteriosclerosis and angina pectoris, respiratory diseases such as bronchial asthma, obesity, diabetes and other metabolic disorders, and basic studies on acupuncture therapeutic mechanisms for various bone and joint and spinal disorders, and on different kinds of composition of the human body. Based on the findings of the research, the Ministry of Public Health issues treatment guidelines on a regular basis and integrates health care services into the health care delivery system.

The Academy has also developed materials such as a chart of the meridian nerves, manuals on acupuncture, moxibustion and manual therapy, therapeutic methods of disk herniation according to Koryo traditional medicine, preparations from hawthorn leaves and their clinical effects. These have been offered as part of international collaborative efforts and examples of the research being conducted in traditional medicine in DPR Korea.

The Koryo Medical Science Academy was also designated as a WHO Collaborating centre between 1988 and 2004, and carried out two WHO projects, published annual reports on Koryo traditional medicine.

Safety and regulation

To ensure the safety, standardization, efficacy and quality of traditional medicines, DPR Korea follows the same stringent standards and regulations for production and use of traditional medicines as are followed for allopathic medicines.

To practise traditional medicine in DPR Korea, a license is a must, which is provided by the government. There are also national-level regulations on indigenous traditional medicine and acupuncture providers, chiropractic and herbal medicine providers, and providers of naturopathic medicine.

"To build the knowledge and evidence base on traditional medicines is one of WHO's traditional medicine key strategy objectives. WHO SEARO continues to support the Member States to build research capacity in traditional medicine toward promoting evidence-based traditional medicine,"
said Mr Manoj Jhalani, Director, Department of Health Systems Development at the WHO Regional Office.

The same regulations and safety standards followed for conventional pharmaceuticals are also followed for herbal medicines.

Herbal medicines are regulated as prescription and non-prescription medicines, dietary supplements, health foods and general food products. They are sold with medical, health, and nutrient content details.

Koryo medicines and herbal extracts
Photo credit: Ministry of Public Health, DPR Korea

Sustainable manufacturing process

As of 2022, there were 671 herbal medicines registered with the authorities for production. Out of these, 28 products are included in the national essential drugs list and are being widely used for public health care. These Koryo medicines are manufactured at 210 factories, which are overseen by the Production and Management Bureau of the Ministry of Public Health.

Regular inspections are carried out by the authorities at the manufacturing plants and laboratories, and samples are regularly tested. Most of the raw materials are locally produced. There are also 160 management centres for sourcing raw materials.

Challenges and the road ahead

DPR Korea has a substantial network of well-regulated health facilities but, despite this, movement of patients and people between health facilities poses a challenge as it is often hampered by a range of barriers such as mountainous terrain and communications systems. The country is also prone to extreme weather and natural catastrophes in the form of floods and droughts, which pose a threat to public health and access to health services.

External geopolitical factors and international economic sanctions have challenged economic development in the country and impacted the health system. Securing operational finance for ensuring quality medical equipment, planning and human resources are needed to strengthen the health system.

The country has an ageing and highly urbanized population and noncommunicable diseases account for an increasing burden of morbidity and mortality. This is especially the case with cerebrovascular and cardiovascular diseases as well as cancers and respiratory illnesses.

The COVID-19 pandemic has highlighted gaps in health coverage by health systems across the world. Traditional medicines and practices can play a vital role in helping to plug these gaps, help in faster recovery and provide avenues of research into new therapies to counter and deal with emerging health threats and emergencies.

With decades of research and development of traditional medicine, DPR Korea has already established a lead in harnessing the potential of traditional medicine. Combined with its long-standing pledge to universal and free health care supported by household doctors at the PHC level, it has set the benchmark for the successful integration of traditional and allopathic systems of medicine towards improving people's health and well-being.

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INDIA: AN INNOVATION IN THE CARE OF SMALL AND SICK NEWBORNS

Highlights

- A mother–newborn care unit (MNCU), an innovation in the care of small and sick newborns in India, can prevent over 150 000 newborn deaths globally every year.
- The MNCU aims to ensure zero separation between mother and child from birth to discharge by ensuring combined care for both.
- The MNCU provides several opportunities to improve newborn care.

Low birth-weight infants, i.e. infants with a birth weight of less than 2.5 kg, constitute approximately 15% of all newborns worldwide but account for 70% of all newborn deaths. Most of these babies are born in low- and middle-income countries (LMICs) in Asia and sub-Saharan Africa and die within the first few days of life. Reducing mortality among these infants is key to achieving the United Nations Sustainable Development Goals' target of reducing newborn mortality to as few as 12 deaths per 1000 live births by 2030.

Additionally, these newborns are at a higher risk of developing various illnesses requiring care in the newborn care unit. Those who survive are more likely to develop growth-related and neuro developmental problems than babies born with a normal birth weight.

Dr Poonam Khetrapal Singh, Regional Director of the World Health Organization Regional Office for South-East Asia, identified maternal and child health as a Flagship Priority in 2014.

In India, current mother and newborn care services are organized in such a way that if the baby is normal, the mother and baby stay together in the postnatal ward. But if the baby is sick or has a low birth weight, the baby is separated from the mother and kept in the special newborn care unit (SNCU) while the mother stays in the postnatal ward and visits the baby in the SNCU only on the advice of the health care providers. However, this model of service delivery is not in the best interest of either the baby or the mother.

Involvement of mothers and families in the routine care of their newborns is essential not only for improving the baby's short and long-term health and development outcomes, but also for improving the overall experience of care by families. It is here that the concept of "zero separation" of mothers with their small and sick babies after birth comes in and thus the need for a mother–newborn care unit (MNCU).

The MNCU is an area within the hospital/health facility where sick and small newborns are taken care of by their mothers on a 24×7 basis. Such an area can be created in hospitals/health facilities that provide special newborn care, i.e. care for babies who are not critically sick but require oxygen support and intravenous fluids for a few days. Most babies (80–

85%) requiring special newborn care can be managed with their mothers in the MNCU.

How the mother–newborn care unit evolved

Before looking at how the MNCU came into being, it is important to understand a life-saving intervention called kangaroo mother care (KMC). KMC refers to a process wherein the mother keeps her low birth-weight baby in continuous skin-to-skin contact against her chest for a long period of time and receives support for feeding the baby exclusively with breast milk. KMC is among the most effective interventions for low birth-weight infants, which not only reduces the risk of death by 40%, but also improves their growth and development along with the mental health of the mother.

Currently, WHO recommends KMC when the infant's clinical condition has stabilized, which is normally achieved 3 days after birth. However, approximately 45% of newborn deaths occur within 24 hours of birth and 80% during the first week of life. Thus, most of the deaths among infants with low birth weight typically occur before KMC is initiated.

Recently, new research has suggested that KMC initiated within two hours of birth followed by continuous KMC for more than 20 hours/day (immediate KMC), compared to the current guidelines (KMC after the baby is clinically stable), improves newborn survival by 25%.

This multicountry research was coordinated by the World Health Organization in five countries – Ghana, India, Malawi, Nigeria and Tanzania. In India, the study was conducted at Safdarjung Hospital, New Delhi.

Implementation of the immediate KMC (iKMC) intervention required mothers to be with their small and sick newborns on a 24x7 basis in the newborn intensive care unit (NICU) to provide continuous KMC, against the present norm of separating sick newborns from their mothers. This led to a restructuring of the existing NICU to accommodate the mother and allow her to stay with the baby, and hence the intervention of iKMC led to the innovation of "mother–newborn care unit (MNCU)". Thus, the first MNCU in India was born.

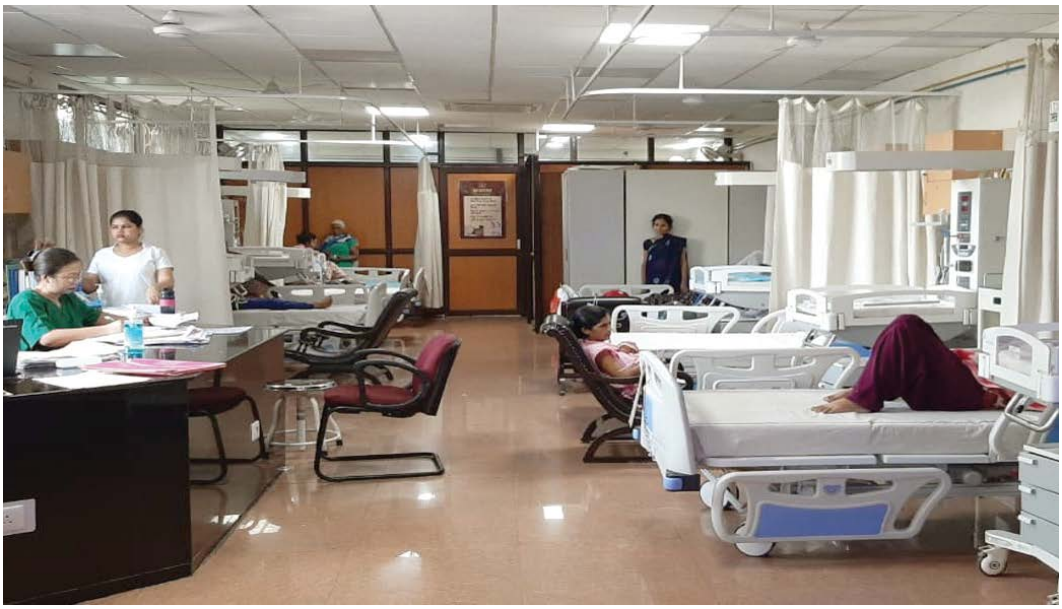
Dr Neena Raina, Regional Advisor, Child and Adolescent Health, WHO Regional Office for South-East Asia, said,

Keeping mothers and babies together is the natural order. Achieving zero separation and ensuring optimal and respectful care for both the mother and the baby together as a unit is important for implementing life-saving interventions like immediate KMC. I urge all Member States to explore how to convert newborn units to mother–newborn care units with universal KMC for all preterm or low birth-weight newborns.

Setting up of MNCUs in India

Implementation of iKMC requires the mother or surrogate (family member to provide KMC when the mother is not available) to be with their baby soon after birth and continue to be together 24×7 till discharged, i.e. zero separation. Since there was not enough space in the existing NICU to have mothers' beds inside, a new newborn care unit was designed with enough space to accommodate a mother's bed with each baby. This new NICU was named as the "mother–newborn care unit (MNCU)". The infrastructure of the MNCU included a toilet, bathing area, food and water, and a clinical examination cubicle for mothers, which is imperative to ensure respectful maternal care.

Like a conventional NICU, all equipment for level II intensive care is available, including a radiant warmer (required during the time the mother/surrogate cannot provide KMC), continuous positive airway pressure (CPAP) machine, oxygen and suction facilities, vitals monitor, phototherapy unit, etc. Mothers are provided post-childbirth care inside the MNCU by obstetricians and neonatal nurses who are trained to provide essential postnatal care to mothers. *"Mother as a resident of the MNCU becomes an active caregiver and is involved in the continuum of neonatal care,"* said Dr Sugandha Arya, clinical investigator for the iKMC study. This is the first such model of care in developing country settings. It provides an example where mother and baby are cared for together from birth till discharge, following the concept of zero separation.



Mother in the NICU (MNCU) means a level II NICU where mother and baby are cared for together 24X7

Photo credit: Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi

Mother NICU

All provisions for level II newborn care

Platform to improve overall care of mothers and their small and sick newborns

The presence of the mother with her baby 24X7 in the MNCU provides her an opportunity to play a central role in her baby's care. Mothers in the MNCU have less anxiety and stress as compared to mothers staying away from their babies in the postnatal ward.

Delhi-based Pooja, a 25-year-old mother, who provided iKMC in the MNCU, said

> **When the baby is on my bare chest, I can feel his little fingers, feel him breathing and moving – a feeling I can't express in words.**

The MNCU also provides several opportunities to improve newborn care. A very important opportunity that the MNCU provides is early exclusive breastmilk feeding and breastfeeding. Since the mother is with her baby in the MNCU, expressed breast milk (EBM) is readily available as a first feed for initiation soon after birth. Mothers can provide prolonged, continuous, effective KMC for as long as 16–17 hours per day.

Skin-to-skin contact with the baby results in better lactation and it is easier to maintain babies on exclusive breastmilk feeding. Babies can be put to the breast earlier for non-nutritive sucking (NNS), which helps babies to develop feeding reflexes faster and improves the milk output of the mother by stimulating the prolactin reflex.

Mothers in the MNCU substantially contribute to the routine care of babies, such as feeding, changing diapers, and supporting health care providers in the routine monitoring of babies, thus providing family-centred care to newborns, which promotes early childhood development. The presence of the mother in the MNCU gives ample opportunity for health care personnel to teach the mother healthy practices of neonatal care, thus preparing her to take care of her neonate after discharge. Last but not least, the MNCU results in mother–newborn couplet care

by both the paediatrician and obstetrician with better coordination of neonatal and maternal care.

Roshni, 22 years old, who provided iKMC in the MNCU, shared her experience of how it made her feel empowered. *"Usually, nurses do the needful in a NICU, however, MNCU enables us to feel more connected to our newborns."* Roshni further said that she has also taken it upon herself to counsel new mothers to help them understand how to provide KMC in the MNCU. Nursing officer Ms Veena, who works in the MNCU, feels mothers are less stressed here and babies' weight gain is better.

The MNCU thus provides a platform to deliver holistic respectful care to both the mother and the newborn while maintaining "nature's norm" of zero separation and thus promoting early childhood development.

Over 1.5 lakh newborn deaths can be prevented

Immediate KMC, delivered using the MNCU platform, has been shown to reduce newborn mortality by 25% compared to conventional KMC implemented using the routine service delivery mechanism. This implies that at least 150 000 newborn deaths can be prevented globally every year if this model of care is adopted. The study results also show that babies in the MNCU had 35% less incidence of low temperature and 18% less infections as compared to babies cared for in conventional NICUs.

There are several possible mechanisms by which iKMC might have reduced newborn infections and thus improved survival. Since mother and baby are in close contact from birth, the baby is more likely to be colonized by the mother's protective microbiome and receive early breastfeeding. With fewer people needing to handle the baby, the risk of newborn infections is also reduced.

The results were published in May 2021 in the *New England Journal of Medicine.*

Addressing challenges

Even with all the advantages of this model of care, the MNCU innovation came with its set of challenges that any unit/country might face when setting these up. However, all these challenges can be overcome by discussing them with health care providers.

To begin with, mothers need to be observed for about two hours after normal childbirth and six hours after caesarean section, and most sick and low birth-weight babies need early transfer to the MNCU for monitoring and management. This challenge is overcome by having a surrogate in the delivery area for transporting the baby to the MNCU in the kangaroo position. In the MNCU, the surrogate provides KMC till the mother reaches the MNCU. Having a family member next to the mother in the labour room and in the MNCU additionally contributes to support and respectful care for the mother.

Another major concern among paediatricians and policy-makers has been that the presence of mothers in the NICU will bring more infection. However, the iKMC study has shown that the presence of the mother next to the baby in the MNCU reduces the risk of newborn infections. The experience of the MNCU suggests that mothers can be easily trained to follow infection control practices.

Third, the majority of babies who weigh less than 1.8 kg are preterm and many of them develop early breathing difficulty requiring respiratory support in the form of continuous positive airway pressure (CPAP).

Providing CPAP in the KMC position

Photo credit: Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi

Learning to provide CPAP in the KMC position is an important challenge. The nasal interface for CPAP is secured, and standard operating procedures for fixing it appropriately have been developed and implemented (Fig. 3). A binder is used to maintain the baby's neck in a slightly extended position. A pulse oximeter is constantly used when the baby is in KMC position to monitor the heart rate and oxygen saturation so that any sudden changes in the vitals can be detected.

Next, providing care to mothers from a few hours after birth is also a major concern in the MNCU. An essential maternal–postnatal care package has been developed, and neonatal nurses are trained in implementing this package. Obstetricians take daily rounds to examine the mothers and attend immediately to their urgent needs. "Strong cooperation, coordination and collaboration between paediatricians and obstetricians is the cornerstone of the MNCU," said Dr Pratima Mittal, study investigator from the Department of Obstetrics and Gynaecology, Safdarjung Hospital.

Providing continuous KMC in the MNCU is a challenge in itself. The most common reason for separation is the mother not being available due to medical reasons or during daily routines like bathing, using the toilet, etc. This challenge is overcome with the help of a surrogate who provides KMC in the MNCU when the mother is not available. Another common reason for separation during iKMC is medical procedures and treatment of the baby, including phototherapy. Some procedures like glucose monitoring, tube feeding, giving intravenous (IV) injections can be done even while the baby is in the KMC position. However, other procedures such as inserting an IV cannula, fixing a CPAP cannula, inserting an orogastric tube, providing phototherapy, etc. require separation, but the baby is immediately placed in KMC position following the procedure.

Also, initially, there were apprehensions among health professionals and parents regarding the spread of COVID-19 infection in the MNCU. However, by following COVID-appropriate behaviour, including strict use of masks, hand hygiene and respiratory hygiene (Fig. 4), Safdarjung Hospital in Delhi has been running this facility successfully throughout the ongoing pandemic with 100% occupancy of 12 mothers with 12 to 18 babies, as many of these mothers have twin babies.

Making zero separation a reality

The World Health Organization is in the process of reviewing the current recommendations on the care of preterm or low birth-weight newborns and considering new evidence that has become available. However, it would require a change in national policies to permit the mother and surrogate in the NICU 24×7 to make the concept of zero separation a reality.

> **Keeping mother and baby together right from birth with zero separation will revolutionize the way neonatal intensive care is practised for babies born early or small,**
>
> *said Dr Rajiv Bahl, head of the newborn unit at WHO, Geneva, and the coordinator of the study.*
>
> **When started at the soonest possible time, kangaroo mother care can save more lives, improve health outcomes and ensure constant presence of the mother with her sick baby.**

Till now, most health care providers have been typically separating small and/or sick babies from their mothers and keeping them in specialized care in newborn care units, believing that it is best for them. This notion is now in question and well set to change.

New special newborn care units (SNCUs) in district hospitals and NICUs in tertiary-care hospitals should be designed with all the provisions for a mother to stay 24×7 as a caregiver to make them MNCUs. Similarly, there is a need to adopt a new design when renovating already functional NICUs and SNCUs. This will also need certain policy changes, i.e. allowing mothers/surrogates in the MNCU (same as that for family-centred care), shifting small babies from delivery areas to the MNCU in the KMC position, conducting obstetric rounds inside the MNCU, and giving essential care to mothers in the MNCU by neonatal nurses.

Dr Harish Chellani, one of the study investigators from Vardhman Mahavir Medical College and Safdarjung Hospital, India, said,

> **New evidence suggests that zero separation of small and sick babies starting immediately after birth till discharge is a step towards early child development and this practice must be actively promoted.**

He added that,

> **to make zero separation a reality, we need changes in policy, infrastructure, processes and, most importantly, the mindset of health professionals.**

The presence of the mother in the NICU 24×7 is a paradigm shift in the care of small and sick babies.

Paediatricians, obstetricians and policy-makers need to be taken into confidence and convinced of the benefits of the presence of mothers in the NICU 24x7 for the care of their small and sick babies. At the same time, the continuity of care from health facility to home must be strengthened and all babies must receive the benefits of KMC and responsive care through home visits.

HOW THE HEALTHY CITIES INITIATIVE IS PAVING THE WAY FOR HEALTH AND WELL-BEING IN INDONESIA

Highlights

- Indonesia has taken several proactive and innovative steps to address urban health conditions that impact people's lives through the 'Healthy Cities' approach.
- Key aspects of the Healthy Cities Forums include involving communities to discuss urgent problems, find solutions and mobilize community participation.
- A review conducted by the Ministry of Health in 2018 indicated a positive association between acquiring the designation of 'Healthy City/Regency' and having better access to essential health services.

Taman Pandanaran, Semarang, Indonesia
Photo credit: Semarang city government

More than half of the world's population now lives in cities. By 2030[1], 5 billion people, or 2 out of every 3 people, are likely to be living in urban centres. About 90% of the shift from rural to urban areas will happen in Africa and Asia. This global trend of urbanization is having a significant impact on health and leading to huge social, economic and environmental transformations.

The WHO South-East Asia Region is home to over a quarter of the world's population and currently, 750 million people in the Region live in urban areas. This population is growing on average by 3.5%.

While urbanization can bring health and economic benefits, rapid and unplanned urban growth is leading to many negative health, social and environmental impacts. Globally, almost 40% of urban dwellers do not have access to safely managed sanitation services and many do not have access to adequate drinking water. An estimated 91% of people in urban areas breathe polluted air.

[1][Around 2.5 billion more people will be living in cities by 2050, projects new UN report] https://www.un.org/en/desa/around-25-billion-more-people-will-be-living-cities-2050-projects-new-un-report

The COVID-19 pandemic has also shown that cities often bear the brunt of emergencies. Overcrowding, lack of sanitation, and safe water sources increase the spread of the virus. Evidence has shown that in areas of existing health inequities, including access to quality health services, COVID-19 cases and deaths in these deprived areas are double compared to those in more advantageous areas.

The World Health Organization conceived the Healthy Cities initiative in 1986. The goal was to respond to health issues that have emerged due to urbanization and place health high on the social and political agenda of cities. In addition, the initiative aimed to promote health, equity and sustainable development through innovation and multisectoral changes.

While countries in the WHO South-East Asia Region have been taking steps to promote health, equity and sustainable development, in Indonesia, the efforts to promote health through the Healthy Cities approach have been ongoing for more than two decades. The country has taken several proactive and innovative steps to address urban health conditions that impact people's lives.

Birth of the Healthy City pilot project in Indonesia

In Indonesia, there are two types of administrative areas: City (Kota) and Regency (Kabupaten), and the Healthy Cities initiative targets both cities and regencies.

A Healthy City in Indonesia is defined as a clean, comfortable, safe and healthy city (or regency), which is manifested in multiple settings through integrated activities agreed upon by the community and local government.

Inspired by the WHO-designated theme for the 1996 World Health Day, "Healthy Cities for Better Life", the Ministry of Health in Indonesia, in collaboration with the Ministry of Home Affairs, organized a series of seminars and meetings that led to the initiation of the Healthy City pilot project in 1998.

The pilot project involved six cities and regents (head of regency) from six provinces in Indonesia, namely Bandar Lampung City (Lampung

Taman Swasti Saba, Semarang, Indonesia
Photo credit: Semarang city government

Province), East Jakarta Administrative City (Jakarta Province), Pekalongan City (Central Java Province), Malang City (East Java Province), Balikpapan City (East Kalimantan Province) and Cianjur Regency (West Java Province). In 1999, eight more cities/regents participated in implementing the Healthy Cities approach.

At the National Convention of Mayors and Regents of Indonesia held from 26 to 28 July 2000, subnational government leaders reached a consensus on adopting the Healthy City approach as a strategy to achieve the national health development goal of "Healthy Indonesia 2010".

The national government backed this commitment by issuing a joint regulation with the home and health ministries. The joint Ministerial regulation establishes the concept of Indonesia's Healthy City/Regency and helps to define it.

Indonesia Healthy Cities comprise nine pillars: (1) self-sufficient and healthy people; (2) offices and industrial places; (3) transportation and road safety; (4) residential and religious places; (5) marketplaces; (6) social protection; (7) educational/schooling practices; (8) tourism places; (9) disaster prevention and management.

'Going local' – the key to success

The active involvement of mayors and other local political and community leaders in all aspects of Healthy Cities is crucial.

As the first step toward becoming a Healthy City, local governments are required to facilitate the establishment of a Healthy City Forum in their respective city/regency. The Healthy City Forum consists of representatives from different sectoral government offices, civil society/ nongovernment organizations and academia, who are interested in contributing to the advancement of health, social well-being, and the development of their city/regency.

The Healthy City/Regency Forum is responsible for formulating and coordinating Healthy City/Regency activities as well as mobilizing community resources to support these activities.

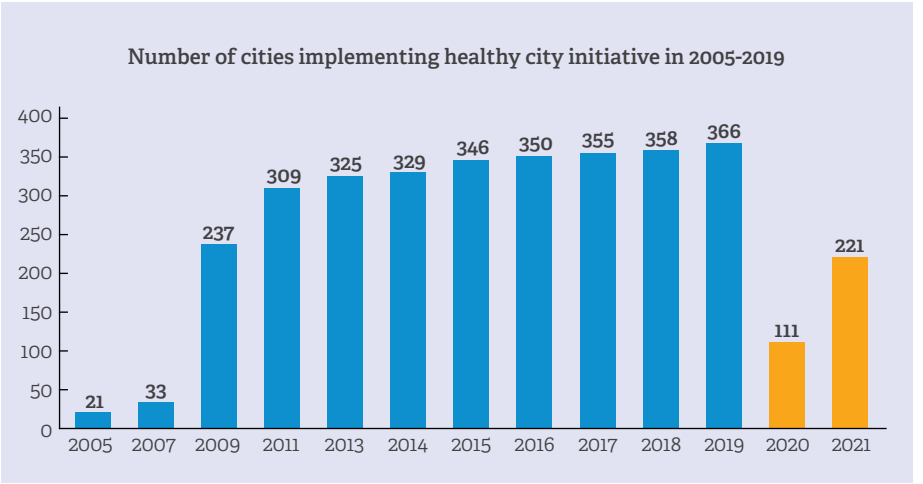
> **"The implementation of a healthy city is important in improving the quality of community health. But this will happen only if there is a commitment from the local government. The key for successful implementation of healthy cities is when four elements – the government, stakeholders, reporters and entrepreneurs – work together."**
>
> *Mrs Krisseptiana Hendrar Prihadi, Chair of Indonesia Healthy Cities Forum.*

Every two years, the Ministry of Health and Ministry of Home Affairs appraise the performance of the cities/regencies to evaluate improvements in the nine domains. Awards are given to the cities based on the outcome of these appraisals.

During 2005 and 2019, the number of cities and regencies voluntarily enrolling in the bi-annual appraisal of Healthy Cities/Regencies increased from 20 to 366.

However, despite the commitment, the number of cities/regencies that participated in the Healthy City/Regency appraisal in 2021 declined as local governments' focus was on controlling the spread of COVID-19 and mitigating its impact.

Number of cities and regencies participating in Healthy City/Regency appraisal 2005–2021



Source: Ministry of Health, Republic of Indonesia

In March 2022, once the COVID-19 pandemic had relatively de-escalated, mayors/regents and leaders of Healthy City/Regency forums convened at the National Healthy City Summit hosted by the Government of Semarang City.

The Summit sought to revive and strengthen the approaches toward the Healthy Cities initiative, taking the lessons learned from the COVID-19 pandemic. The leaders of the Healthy City/District also agreed to form a national forum for Healthy Cities. Mrs Krisseptiana Prihardi, the Chair of Semarang Healthy City Forum, was elected as the first chair of the National Forum for Healthy Cities.

WHO's regional and country offices provided technical support to this event, sharing WHO's guidance on emergency preparedness and recovery for cities/communities, the updated global principles for Healthy Cities, designation criteria, action domains, and indicators of a Healthy City.

WHO also shared the aspiration to establish a South-East Asia Regional Healthy Cities Network as a means to enhance the capacities of urban leaders in urban governance for health and well-being.

A new initiative of the Regional Office, Regional Networks of Healthy Cities, has existed since some time in other regions. Taking the lead from the regional offices of Europe, the Eastern Mediterranean, Western Pacific and the Pan American Health Organization, the Regional Office for South-East Asia established the Healthy Cities Network, which is a platform to support cities to take actions on health and carry out agendas that enhance well-being. It is part of WHO's health promotion actions and provides standard guidance for implementation, accreditation of cities, and acts as a learning hub for intercity sharing of experiences, innovation, and practices. The Urban Governance for Health and Well-being and urban leadership training are key contributions of the Regional Office to the regional Healthy Cities Network.

The transformation of Semarang city as a Healthy City: a case study in point

Semarang is the capital and largest city of Central Java province in Indonesia. In 2010, Semarang City's public health system was burdened with a large number of maternal and child deaths and a high incidence of dengue haemorrhagic fever (DHF). The city's incidence of DHF surpassed 5000 in 2010, which made the city one of the epicentres of DHF in Indonesia.[2]

Mrs Krisseptiana Prihadi, who was then the lead of the Family Welfare Programme in Semarang City, discussed comprehensive actions that needed to be taken to improve the situation with the Semarang City health officials. They learned that these actions were already accommodated in WHO's Healthy Cities initiative.

Health officials held discussions with various sectoral government offices, academia, and civil society organizations to generate interest and commitment to establish the Healthy City concept in Semarang City. As a result, the Semarang Healthy City Forum was formed in 2014.

The Healthy City Forum consists of representatives of nongovernment stakeholders, including academia, health professional organizations,

[2][Climate change threatens efforts to control DHF on Semarang City]. 11 February 2022 (https://www.ekuatorial.com/2022/02/perubahan-iklim-ancam-upaya-pengendalian-dbd-di-kota-semarang/, accessed 7 July 2022).

journalists, and informal community leaders. Their role is to empower the community to recognize the need to protect and promote their health; to advocate for community health needs in the city's development planning and budgeting, and to mobilize community support for the implementation of government programmes to address the determinants of health.

While the Healthy City Forum sits at the city level, its role extends down to the *kelurahan* (urban village) level through the *Kelurahan* Health Forum. Essentially, the Healthy City Forum consists of city-/regency-level stakeholders, while the *Kelurahan* Health Forum consists of subcity or subregency stakeholders.

One of the important functions of the Healthy City Forum and *Kelurahan* Health Forum is to organize community meetings to discuss various situations that impact the health of the local population with the purpose of looking for solutions and mobilizing participation. These are then taken up during the annual city development planning process as proposals from the local village community.

It is through such ongoing consultations that the Healthy City Forum mobilized community participation for the eradication of mosquito larvae for the prevention and control of DHF.

More recently, during the peak of the COVID-19 pandemic, the Healthy City Forum and *Kelurahan* Health Forum spearheaded the risk communication and community engagement (RCCE) activities.

Youth groups were engaged by the forums to promote awareness among local communities about COVID-19 risk prevention measures, including wearing face masks, keeping a safe social distance, and ensuring hand hygiene. Once the COVID-19 vaccination drive was launched, youth groups were roped in to encourage community members to get vaccinated.

The forums also initiated a community collective support model for the self-isolation of people with mild or asymptomatic COVID-19. This includes arranging a dedicated place and provision of food for such patients.

> **The implementation of healthy city activities has been very beneficial for our community. All levels of the community have been empowered, from the grass-roots level up to the policy-makers. For example, school students are involved in the dengue prevention activity; young people are enabled to initiate and lead the promotion of COVID-19 prevention protocols. We can feel that our community's health and well-being are improving as the result of healthy city activities.**
>
> *Ms Ibu Gondowati, social worker and resident of Semarang City.*

Ms Ibu Gondowati, social worker and resident of Semarang City

Photo credit: Semarang Healthy City Forum, Semarang city authorities

Addressing challenges such as equitable access to health care, vulnerability, the determinants of health and sustainability is an important part of the initiative's uniqueness and success. By holding regular public consultations and seeking solutions from the local communities, the Healthy City Forum and *Kelurahan* Health Forum in Semarang, ensured that the most pressing health concerns of the local communities were taken up on priority.

Involving community members also helped instil a sense of ownership and pride in the developmental works and initiatives backed by community action. Between 2016 and 2021, public infrastructure and facilities in 250 neighbourhoods were upgraded through the Thematic *Kampung* programme. The Thematic *Kampung* (neighbourhoods) programme provides funds for groups that commit to improving their environmental conditions and developing small–medium businesses supporting tourism such as making handicrafts and selling traditional food.

Kampung residents collectively decide which environmental and/or social determinants affecting their health they want to prioritize and design the intervention in a way that also improves the local economy. Then, the community shares a budget proposal for funding the

interventions with the city government. The funding can cover all or a fraction of the budget needed.

Some examples of improvement in the living environment resulting from neighbourhood upgrading as part of the Thematic Kampung programme

Source: Semarang Healthy City Forum, Semarang city authorities

The move toward becoming a Healthy City has benefited Semarang City and its people in many ways.

People's participation both in planning and implementation has resulted in a cleaner environment, lower incidence of DHF, and the ability to quickly gain control of the COVID-19 situation. Multisectoral efforts in manifesting Healthy City features in Semarang City have also contributed to improved tourism and small–medium enterprises. Human settlements along the banks of the river have improved. The upgraded neighbourhood resulting from the Thematic *Kampung* Programme not only provides residents with cleaner and healthier living conditions but also helps improve economic opportunities from tourism and small–medium enterprises.

For its efforts, Semarang City has earned a number of national and regional recognitions, including being awarded the Healthy City award four times from the Government of Indonesia (in 2015, 2017, 2019 and 2021)[3] as well as the title of Cleanest Tourist Destination in South-East Asia 2020–2022 from the ASEAN Clean Tourist City Standard (ACTCS).[4]

[3][The city of Semarang successfully maintains the predicate of the highest health city Swasti Saba Wistara]. 18 November 2021 (http://semarangkota.go.id/p/3116/kota_semarang_berhasil_pertahankan_predikat_kota_sehat_tertinggi_swastisaba#:~:text=Pemerintah%20Kota%20Semarang,-Beranda&text=Diselenggarakan%20secara%20virtual%2C%20Kota%20Semarang,yang%20sama%20pada%20tahun%202019, accessed 6 June 2022.

[4]Semarang named cleanest tourist destination in Southeast Asia. 21 January 2020 (https://www.meetings-conventions-asia.com/News/Destinations/Semarang-named-cleanest-tourist-destination-in-Southeast-Asia#:~:text=JAKARTA%20%2D%20Semarang%2C%20a%20Central%20Java,tourist%20destination%20in%20Southeast%20Asia, accessed 6 June 2022).

The ultimate recognition of Semarang City's efforts toward becoming a Healthy City was the selection of Semarang City as the venue for the Indonesia Healthy City Summit 2021 and the election of the chair of the National Forum for Healthy Cities established during the Summit.

Healthy cities – paving the way towards better health and well-being

A review conducted by the Ministry of Health in 2018 indicated a positive association between the designation as a Healthy City/Regency and better access to services essential for health.

The study found that cities/regencies that earned Healthy City/Regency awards have 14–23% higher access to improved sanitation and 20–28% higher access to clean water.

These results suggest that the Healthy Cities designation is an effective advocacy tool to expedite implementation of the public health agenda in urban development.

A number of disease prevention measures and protection of the population's health were achieved through the implementation of Healthy Cities such as reduction of dengue in cities due to mayors' leadership, multisectoral actions, engagement with local youth to clean up the neighbourhood, and improved drainage and sewage systems in local communities.

The cities that participated in this initiative were also able to improve urban planning along with nature conservation, and were able to create more active spaces for people to walk and do physical activity. The improved surroundings and spaces with the cultural uniqueness of each area also made the local neighbourhoods more attractive to tourists.

While there has been a qualitative improvement, a nationwide systematic analysis of the Healthy Cities initiative effect on these conditions is yet to be made available.

Urban planning and water conservation efforts between 2017 and 2021
Source: Semarang Healthy City Forum, Semarang city authorities

The COVID-19 pandemic also showed that cities/regencies designated as Healthy Cities/Regencies did not cope better in emergencies (including public health emergencies) than the rest of the cities/regencies. The implementation of mentoring and assessment activities for the Healthy Cities programme is heavily dependent on the budget and human resources of the health sector.

In addition, health equity, in terms of access to essential health services and achievement of the desired health outcomes, has not been fully addressed in the current concept of Indonesia's Healthy City programme.

In response to some of these challenges, the Ministry of Health and Ministry of Home Affairs have initiated the process of developing a Presidential Regulation on the implementation of Healthy City/Regency in 2022, which will expand the scope of the Healthy City/Regency initiative to include health equity as a core principle. The regulation will also provide a stronger policy basis for the formulation of multisectoral interventions and budgeting.

The interlinked nature of urban health challenges has shown that action in one sector can have benefits for many other sectors. The achievements of the Healthy Cities programme in Indonesia have highlighted the importance of investment in sustainable development with people's health at the centre of multisectoral actions and good urban governance for health and well-being in cities.

MALDIVES: LEADING THE WAY TO SUSTAINABLE ENVIRONMENTAL HEALTH

Highlights

- Making the health care system climate-resilient and ecologically sustainable are among the several innovative initiatives being taken to combat climate change and mitigate its impact.
- Addressing environmental health and the factors affecting it are at the core of Maldives' development policy.
- Community awareness and involvement is one of the key aspects of the country's strategic approach to a low carbon growth.

An inhabited atoll as seen from the air in the Maldives
Photo credit: WHO

Climate change is the single biggest health threat facing humanity. It threatens to overwhelm the world's health systems and the health of people. The health impacts of climate change will be felt by everyone, everywhere; however, the WHO South-East Asia Region, home to more than 2 billion people, is highly vulnerable and has the highest estimated number of deaths due to climate change.

While all countries of the Region have seen first-hand the devastating effects of climate change, in Maldives, where even a 1-metre rise in sea level can lead to submergence of over 80% of the country's total land area, global warming poses an existential threat.

Climate change is already posing increasing challenges in Maldives, with more frequent soil erosion, loss of beaches and saltwater intrusion into land and freshwater sources. Rising ocean temperatures are leading to reduced tuna catches. With a high population density and more than 50% of the housing structures on 121 islands within 100 meters of the coastline, more frequent extreme weather events, including storm surges, floods and cyclones, are directly and indirectly impacting the health and well-being of the people.

Acutely aware that time is running out and inaction to combat climate change and prepare for the effects of global warming is not an option, the country has been leading by example. It has a low carbon growth, environmentally sustainable and resilient smart health care services, and addressing factors affecting environmental health is at the core of its development policy.

> **"Maldives is constantly battling the ravages of nature for our very survival as a nation. Global warming and rising sea levels are causing warming of the seas and more severe frequent tidal waves and flooding in Maldives. Tidal waves and flooding often contaminate groundwater and sewerage systems leading to disease outbreaks in the country."**
>
> *Ahmed Naseem, Minister of Health, Maldives at the World Health Assembly, May 2022.*

Mr Ahmed Naseem, Minister of Health, Maldives at the World Health Assembly, May 2022

Photo credit: WHO

Combating these adversities and challenges have provided Maldives with a unique perspective, knowledge and insight into the strategies and best practices to address these multiple and complex challenges.

Making health systems climate-resilient and ecologically sustainable

While Member States of the WHO South-East (SE) Asia Region have been making concerted efforts to strengthen and make health systems more climate-resilient and ecologically sustainable, in 2017, they reaffirmed

their high-level political commitment to make health systems more resilient to climate change through the Malé Declaration adopted at the Seventieth Regional Committee meeting of the Region in Maldives.

Health National Adaptation Plans and Green Climate Smart Hospital Policy and Strategy

One of the key action points of the Malé Declaration is the development of individual national adaptation plans for health. In 2020, with technical and financial support from WHO, Maldives developed its Health National Adaptation Plan (HNAP). The Plan aims to build the climate resilience of health facilities, mainstream management of risk to health and health facilities from climate change, protect human health from the effects of climate change through a multisectoral response, build health workforce capacity and raise public awareness of the impact on health from climate change and ensure sustainable financing.

The country has also conducted climate vulnerability assessments in health facilities and has developed the "Green Climate Smart Hospital Policy and Strategy".[1] In 2018, Greater Malé became the first city in the WHO SE Asia Region to join the BreathLife campaign.

Waste management

Solid waste management is a growing problem in Maldives. With the islands remote and dispersed over a wide geographical area, the collection, management and transportation of waste for disposal at facilities comes with its own complexities and difficulties. Extreme weather events, including intense rainfall and tidal waves, further adversely impact the system of collection, management and disposal of garbage.

For almost 30 years, garbage generated by Malé and neighbouring atolls used to be sent to the Thilafushi island, nicknamed the garbage island. While some waste was burnt, most of it ended up in a landfill in a

[1]Green Climate-Smart Hospitals: policies and strategies report. World Health Organization; 2019 (https://apps.who.int/iris/bitstream/handle/10665/312046/9789290226987-eng.pdf, accessed 8 August 2022).

lagoon on the island. This was not only causing water and air pollution but burning of waste is also responsible for 15% of Maldives' carbon emissions.

As part of a larger sustainable waste management strategy, Maldives in 2021 launched the Greater Malé Waste to Energy Project, the largest integrated waste management initiative in the country located at the waste management facility on Thilafushi Island.

As part of the Waste to Energy Project, a regional solid waste treatment system is being set up from the Greater Malé region to the Ari and Vaavu Atolls for the proper collection, storage, management and transportation of waste to the regional waste management facility on Thilafushi Island. A 500-tonne per day waste-to-energy plant is also being set up.

Maldives aims to stop incineration and open burning in all health facilities of the country and has been working to strengthen safe and environment-friendly health care waste management with WHO support. As part of this:

- WHO provided technical assistance to the Ministry of Health (MoH) to develop the National Health care Waste Management Policy (2016) and Strategy (2016–2021).

- A pilot Health care Waste Management Project has been implemented in Laamu Atoll on all inhabited islands (through the Low Emission Climate Resilient Development Programme [LECReD]). Autoclaves were installed and autoclave consumables were provided for three months. Health care workers of all the islands were trained on health care waste management.

- Eighteen additional autoclaves and consumables were handed over to the MoH. Five of these autoclaves were bought through emergency funds. Some of the autoclaves are being used for waste management in COVID-19 treatment and isolation facilities.

- The purchase of 10 additional autoclaves using emergency funds is under process.

- WHO is also supporting the MoH to instal autoclaves in 40 islands under the Canada Grant.

Community sensitization to minimize single-use plastic

Single-use plastic is a real challenge on the islands. Most of it is disposed of by burning at garbage dumps. This releases toxic fumes into the air and contaminates the ground and water.

In 2018, a nationwide ban on single-use plastics was implemented in schools. This was followed up with a ban in 2021 on the import of eight types of single-use plastics – single-use plastic-based drinking straws, single-use plastic-based plates, cutlery and stirrers, plastic shopping bags below 30×30 cm; single-use plastic drinking cups below 250 mL; cotton buds with plastic stems and shampoo, soap, conditioner and lotion bottles in plastic packaging that were 50 mL and below. From June 2022, the country also banned the production and sales of these and more single-use plastic products.

To build community participation and encourage the use of reusable bottles and bags, the islands roped in children as the main drivers of campaigns to promote reusable bottles in workplaces and at social gatherings. Community members are also encouraged to make use of reusable carry bags for all shopping and other needs.

In 2022, as part of WHO's "Our Planet, Our Health" theme for World Health Day and the year-long campaign, the MoH and Ministry of Education in Maldives held a national recycled art and short story competition. Open to students from grades 1 to 9 from all schools nationwide, students

Artworks using recycled material by schoolchildren in Maldives, 2022

Source: WHO Maldives

were required to create original artwork using only recycled materials, including plastic, rope, paper, glass, electronic waste, foam, etc. The contest generated enthusiastic responses and helped engage children and local communities to focus on the environmental impacts on health and solutions for a healthier and sustainable future.

'Green Smart Island' – leading by innovation

Maldives consists of about 1192 islands with the population mainly distributed on 187 inhabited islands. While each island varies in size, they all have similar problems and challenges when it comes to the health risks of climate change and environmental health.

To calibrate a successful strategy, address challenges and protect human health, Maldives has drafted a "Green Smart Island initiative" as part of the HNAP. A pilot project across four islands aims to create green cities and islands that are environmentally friendly. They will provide clean air, water, land and green spaces to educate and create awareness among and empower communities to practise environment-friendly habits.

The Initiative aims to do this by integrating the management of infrastructure and natural resources, including energy, transport and mobility, wastewater and sanitation, and promoting the use of innovative and socially inclusive governance and financing schemes.

Green technology, transport and infrastructure

Transport is one of the biggest consumers of energy in Maldives and is estimated to be responsible for 25% of the country's greenhouse emissions. Usage of vehicles is being controlled on some islands to encourage walking and cycling.

To accelerate the transition towards sustainable transport, the Smart Island initiative aims to encourage the use of bicycles and switch to walking to schools, places of work, and other destinations on the islands. The aim is to achieve a 90% reduction in motorized transport by 2023 on the four islands to start with. The Integrated National Public Ferry Network through high-speed ferry services was launched by the government in 2021 to strategically address the sea transport demands of the nation.

Green agriculture and living

To reduce the use of chemical-based fertilizer and pesticides and prevent soil and groundwater contamination, Maldives is working to minimize the use of pesticides and fertilizers and promote the use of organic fertilizers.

The Green Smart Islands pilot project aims, by 2024, to reduce pesticide use by 35% and enhance public knowledge and awareness about the use of organic fertilizers.

To improve mental, physical and social well-being and quality of life, green spaces, including parks and outdoor recreational areas, have been planned in all of the four islands by 2024.

Men playing a game of football on a beach playground, Maldives
Photo credit: WHO

Green power and infrastructure

Most of the power in Maldives comes from diesel generators. According to a 2020 Asian Development Bank (ADB) report, about 290-megawatt (MW) diesel generators are installed in 186 inhabited islands. Islands with resorts have an additional 144 MW in diesel generators and islands with industries about 20 MW.

The use of diesel fuel is polluting, expensive and produces greenhouse gasses. Instillation of solar panels in the greater Malé region has increased in the past few years and, by 2020, had reached a peak of 3000 kilowatt (KW).

An aerial view of a solar-powered hospital in Maldives
Photo credit: WHO Maldives

With an aim to turn diesel-based energy systems into hybrid solar–diesel systems in at least 160 islands, Maldives established the Preparing Outer Islands for Sustainable Energy Development (POISED) project in 2014. This Project aims to instal a minimum of 21 megawatt-peak (MWp) in photovoltaic (PV) installations with the support of ADB. The concept design of hybrid systems (combining efficient diesel generator sets + solar energy + energy storage) has resulted in an average fuel saving of 25%.

Buildings and houses account for a large share of energy use in Maldives. To ensure that houses, offices and other public buildings have adequate natural lighting and ventilation, the Green Smart Island project aims to engage with planners and architects, and encourage them to adopt designs that reduce the need for lighting and cooling of homes, schools and workplaces.

The plan is to instal solar panels in all government buildings by 2024. To make homes healthier and safer, only lead-free paint is being used on the four islands.

Health emergency preparedness

As first responders, medical systems are particularly vulnerable to the impacts of climate change. As with other coastal communities, extreme weather along with sea-level rise can generate storm surges, which could flood and quickly overwhelm the island's infrastructure and significantly impact health care service delivery during and after emergencies.

To ensure that hospitals and health systems can withstand climate-related natural hazards and mitigate the impacts of climate change by reducing their own ecological footprint, an on-the-ground assessment of several existing health care facilities was commissioned by WHO and carried out by Health care Without Harm (HCWH) in 2018. The Maldives Health Protection Agency (HPA) requested this technical assistance to facilitate HPA's initiative to pilot a green, climate-smart health facilities programme in Maldives.

The assessment focused on a review of the existing policies in Maldives and related national and international documents and studies, on-site visits of seven typical Maldivian health care facilities, meetings with WHO, MoH, HPA, Ministry of Environment and Energy and key stakeholders.

To assess the vulnerability of the health facilities, the WHO model for climate-resilient health systems, the World Bank Climate-Smart Health care, Low-Carbon and Resilience Strategies for the Health Sector and HCWH's Global Green and Health Hospitals (GGHH) Agenda were used to examine 10 sustainability goal areas. These include the following:

- Leadership for prioritizing environmental health;
- Substituting harmful chemicals with safer alternatives;
- Reducing and safely disposing of health care waste;
- Implementing energy efficiency and clean renewable energy generation;
- Reducing water consumption and increasing provision of potable water;
- Improving transportation for patients and staff;
- Purchasing and serving sustainably grown healthy food;
- Safely managing and disposing of pharmaceuticals;
- Supporting green and healthy hospital design and construction; and
- Buying safer and more sustainable products, materials and services.

Stakeholders also identified ongoing activities and priorities for the future, which include improving natural lighting and ventilation, planting more trees to reduce the heat island effect, installing solar panels, minimizing and better managing waste, exploring zero waste hospitals, reducing water consumption and wastage in health care

facilities, substituting outdated mercury-containing medical devices in a phased manner starting with the main regional/atoll hospitals followed by island health centers and making sure all X-ray systems are digital and chemical free, among others.

Daylight from windows reduces the need for electrical lighting at ADK hospital, Maldives

Source: Maldives: Green Climate Smart Hospitals, Hospitality Vulnerability Analysis and Report

Following the assessment, a health emergency operations plan was endorsed to ensure an efficient and effective response and to strengthen health sector emergency preparedness. To build capacity among the health workforce and relevant organizations, hospital emergency drills were also conducted among 13 islands in Maldives.

Challenges and the road ahead

There is growing evidence globally that climate change is adversely affecting human health. With climate-induced weather events becoming more intense, along with health care facilities, there is a need to make other key infrastructure more climate-resilient, including water supply, waste disposal and sanitation, telecommunication, energy supply and transport. There is also an urgent need to scale up the medical workforce to take care of the expected increase in demand.

More research is needed to better understand the impact and effects of climate change to tailor strategies and adapt measures to ensure that these are the most cost-effective and efficient. Despite the challenges, Maldives, by "walking the talk" on climate action, has built a track record of leadership in combating climate change through mitigation, adaptation and building health care resilience.

Suggested Reading

1. WHO Maldives and Health care Without Harm. Maldives Green Climate-Smart Hospitals: hospital vulnerability analysis and report. WHO; 2019 (https://apps.who.int/iris/bitstream/handle/10665/312045/9789290226994-eng.pdf?sequence=1&isAllowed=y, accessed 5 August 2022).

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HOW MYANMAR ACHIEVED THE 2020 MILESTONE OF REDUCING TB DISEASE BURDEN

Highlights

- Myanmar is the only country in the Region to achieve the 2020 deadline for the SDG target of 20% reduction of TB incidence from the 2015 baseline.
- Collaboration of the public and private sectors has played an important role in the efforts to control TB.
- An increase in government spending on TB, newer diagnostic tools, use of mobile clinics, and making treatment affordable are some of the key elements of Myanmar's approach to combat TB.

Every year more than 10 million people fall ill from tuberculosis (TB), a bacterial infection that mainly affects the lungs. Despite being preventable and curable, TB disease claims 1.5 million lives globally every year.

Most of those who fall ill with TB live in low and middle-income countries. The World Health Organization's South-East Asia Region, home to 26% of the world's population, has 43% of the global TB burden.

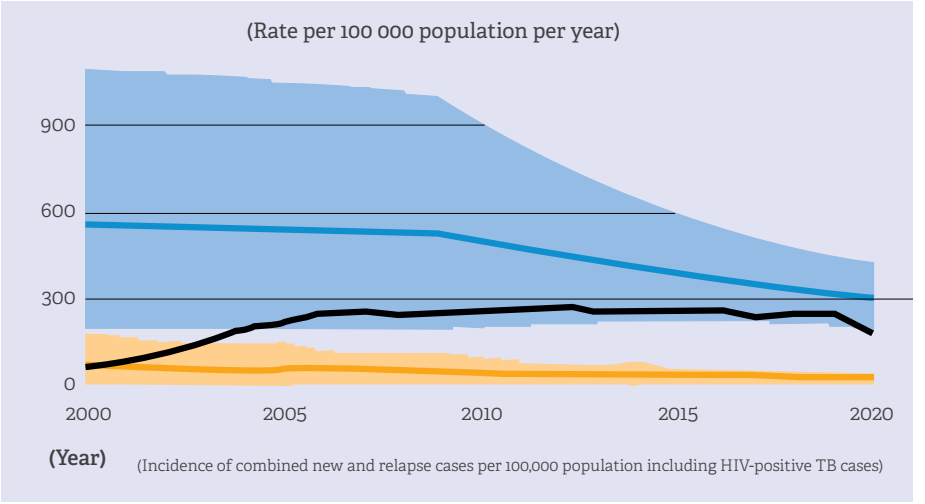
Eliminating tuberculosis was declared a Regional Flagship Priority Programme in 2017 by Dr Poonam Khetrapal Singh, Regional Director of WHO South-East Asia Region. WHO SEARO continues to provide policy, strategic and operational technical support to the national TB programmes and to partners in its Member States.

Myanmar is one of the countries with a high burden of TB, TB-HIV and drug-resistant TB. As per the *Global Tuberculosis Report 2021* of WHO, an estimated 167000 people fell ill with TB in the country. An estimated 22000 deaths occurred in the country due to the disease, including 2900 deaths of people living with HIV, in 2020.

There were also an estimated 10000 new cases of rifampicin-resistant (RR) and multidrug-resistant (MDR) TB emerging in the year. The biggest social determinants and drivers of TB in Myanmar are undernourishment (40000), smoking (19000), HIV (14000), alcohol use (7700) and diabetes (6500).

While all countries in the Region have continued to accelerate efforts to end TB, Myanmar is among a few high-TB burden countries and the only one in the WHO SE Asia Region to achieve the 2020 milestone targets of a 20% reduction of TB incidence from the 2015 baseline, in alignment with the WHO End TB Strategy which is in turn aligned with the United Nations' Sustainable Development Goals related to ending TB by 2030.

Incidence, new and relapse TB cases notified, HIV-positive TB incidence



Source: Global TB Report 2021

> **WHO's support to the national TB programmes has been based on evidence and considering regional and global commitments. The decline in TB incidence is a testament to the fact that the approach and strategic plans addressed the determinants of tuberculosis and actions were delivered through partnerships of multiple sectors,**
>
> *said Dr Thushara Fernando, WHO Representative to Myanmar.*
>
> **We still have a serious task ahead to sustain our gains and accelerate progress as the country is recovering from the pandemic and a political crisis.**

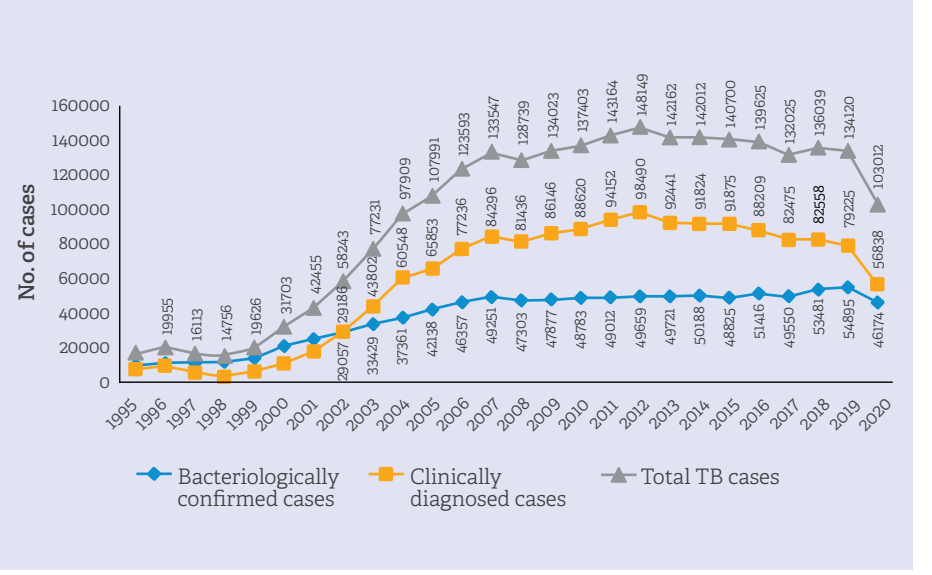
Myanmar has been battling TB since 1966. However, it was during 2009–2010 that the real extent of the TB burden in Myanmar began to emerge. The National TB Prevalence Survey was concluded by the National Tuberculosis Programme in April 2010 and revealed that the prevalence

of TB was three times higher than previously thought while incidence was more than double.

The data generated through the prevalence surveys and national TB surveillance system was carefully analysed and the information shared with national and international experts. In addition, joint monitoring missions (JMM) were held to understand progress, strengths, weaknesses and the way forward. Based on this, a National Strategic Plan was developed through a consultative process that included TB experts, public health experts, service providers, the private sector, people affected with the disease, and the like.

Subsequently, in 2011 the Myanmar Health Sector Coordination Committee (M-HSCC) was formed. It provides technical support across various pillars of the TB programme, including support in developing the Global Fund proposal and programme planning, implementation and monitoring. This partnership acted as a catalyst for the NTP on timely and quality action.

Trends in national TB case notification in Myanmar 1995–2020



Source: National Tuberculosis Programme -Myanmar

Myanmar's key interventions in the campaign against TB

Since 2000, WHO has been encouraging public-private partnership projects to control TB globally. In 2003, the Ministry of Health and Sports, Myanmar developed guidelines to involve private general practitioners (GPs) in the National Tuberculosis Programme (NTP).

Tuberculosis preventive treatment (TPT) being provided by the Sun Quality Health GP of Population Services International

Photo credit: Population Services International

The expansion of TB care in a public–private mix (PPM) or as a collaboration of the public and private sector has played an important role in Myanmar's campaign to control TB by increasing case finding and quality of care. The PPM contributed to 25% of the total case notification in 2020.

By the end of 2018, a total of 2965 GPs were involved in PPM TB activities. The treatment success rate for all forms of TB treated by GPs was 88% in the 2017 cohort. Timely planning enabled the expansion and strengthening of TB service coverage (particularly in the states) and improved links with the private sector.

'The community referral process has become more efficient through the collaboration of the National TB Programme, WHO and Myanmar Health Assistant Association in Yangon Region. Previously we relied only on the hospital to take chest x-rays and reports where the patient had to wait for hours and the reports also would not be available on the same day. Now this problem is solved. Presumptive TB cases are referred by volunteers to a nearby private health centre where WHO bears the cost for chest X-ray examination and we immediately know the results,

Mr Mar Mar Oo, from the "Lin Yaung Chi" TB Self-Help Group in Hlaingtharyar township in the Yangon Region.

Drug shops or pharmacies located in communities are often the first points of contact for people seeking health care. As part of the TB control programme drug shops or pharmacies were roped in to screen presumptive TB cases and make referrals to public health clinics. In 2011, with the support of the TB-Reach Wave 2 Fund, Population Services International accelerated TB case-finding activity (ACF or Active Case Finding)through Myanmar's drug seller-initiated programme. In 2012, the Japan International Cooperation Agency (JICA) piloted the model of accelerated TB case-finding by pharmacies in three townships and PSI adopted the model and scaled it up to 70 townships in 2017.

A total of 51259 cases were referred by drug sellers(during 2015–2018) and 12404 (24%) cases were diagnosed as TB from among those referrals.

Community-based TB care (CBTBC) services are another important activity that supported the accelerated diagnosis of cases through increased community awareness about TB. This includes screening people for TB, referring presumptive TB cases for confirmation of diagnosis, supporting sputum collection and transport, and providing home-based DOT to patients. From 1% in 2011, CBTBC notifications of all forms of TB reached 12.9% in 2019.

Mobile clinic operations was another important component of the NTP programme in Myanmar. Through WHO technical support, NTP developed standard operating procedures for mobile teams and provided training to all team members consisting of team leaders, medical officers, radiographers, X-ray assistants, laboratory technicians and data assistants.

Additional human resources were contributed by local and international NGOs. From 2011 to 2017, a total of 21115 TB cases were identified and could be treated using mobile clinics. In 2018, 439 mobile team visits were conducted; including at urban sites, areas considered hard to reach, prisons and their worksites, industrial sites and camps of internally displaced persons (IDP).

Similarly, the NTP also collaborated with the Ministry of Health and Ministry of Home Affairs for the screening of TB cases in a few prisons in Myanmar. Since 2016, entry screening for TB and HIV has also been conducted in Inse in and Mandalay central prison.

Daw Hla Hla Win, a volunteer supervisor in South Okkalapa Township (Yangon Region), shared how outreach mobile visits for TB patients have played a positive role in saving time and money for them.

"In the last decade, sputum examination was the first step of TB screening, and three sputum samples were requested from presumptive TB patients. In addition, access to chest X-ray services was difficult because of the distance and long waiting hours at the health facilities. During these years, outreach mobile visits from consortium projects started and TB service was made available nearer to home. Chest X-ray is available in the mobile van and the report is generated faster,"

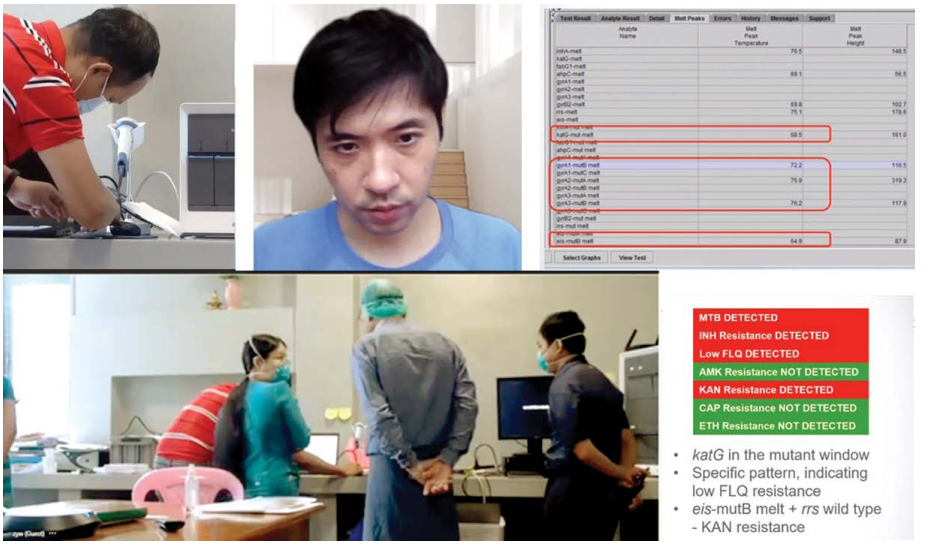
said Daw Hla Hla Win.

"More importantly, we could support longer counselling sessions to each patient and they get to know that TB is curable, improving treatment compliance and helping reduce TB stigma. The request from our community volunteers is to additionally provide nutritional support for TB patients."

Newer tools and ease of diagnosis: In order to bring quality screening and diagnostic services closer to the community, a network of laboratories was set up and expanded from 417 in 2011 to 516 in 2019. The expansion of these services also made it possible to treat patients who may not remain in the community with their disease for too long and move to another area.

Following the inception of fluorescence microscopy (FM) in 2012, 25 units were introduced in microscopy centres located in high-workload areas, and 149 added in 2014. The phase-in process continued till 2019. All the

township TB centres have been using FM microscopy which has higher sensitivity than traditional bright-field microscopes with ZN (Ziehl-Neelsen) stain, thereby increasing TB case detection. ZN stain is a rapid and practical method for detecting acid-fast bacilli (AFB), especially in low-income countries, due to its rapidity, low cost, and high positive predictive value for tuberculosis.



A session held to install software and machinery for detecting multidrug resistant tuberculosis
Photo credit: WHO Myanmar

Making treatment affordable

According to the Global Health Expenditure Database (WHO), in the last five years, the health expenditure per capita increased 2.7 times from US$ 23.28 in 2012 to US$62.11 in 2016. Out-of-pocket expenditure as per the catastrophic cost survey has also increased from 69.26% in 2012 to 73.98% in 2016.

MoHP policy has enabled all other essential drugs to be available free of charge to patients through public facilities. This has helped reduce out-of-pocket payments. People are using public health services more than they did before.

Prevention and reduction of TB transmission is faster when both diagnosis and treatment are free of charge. This policy was the same in both the public sector as well as the private sector. As more people

are using public health services than before, this stands to benefit TB care. Frontline health workers continue to be alert about identifying presumptive cases among patients where all required diagnostics are not available.

TB funding and government spending on TB control has also increased annually from 2014. The government's financial support is mainly with first- and second-line anti-TB drugs, infrastructure and human resources. Since 2017, the MoH has been procuring 100% of first-line TB drugs used in the country and 40% of second-line TB drugs, and has also instituted an effective procurement and distribution system for TB drugs. Notably, no stock-outs of drugs were observed nor were reported by the joint monitoring mission (JMM).

Major funding support has also been provided by the Global Fund, the 3 Diseases Fund, the MDG Fund, Access to Health Fund, USAID and WHO to bridge the key gaps in TB programme financing. For the implementation of National TB Strategic Plan 2015–2020, domestic funding of US$ 1.8 million was mobilized, and complemented by international donor funding of US$ 37 million. Such investments have allowed improved access to quality TB care throughout the country. Capacity-building and accelerated case finding (ACF) could be supported to detect cases early and bring them under treatment.

Challenges and the road ahead

One of the main challenges in Myanmar is the presence of a very large number of people who survived TB without treatment. Moreover, high transmission of TB in congested urban areas in the country has also been suggested in surveys.

TB prevalence continues to exceed 600/100 000 population, the HIV-TB co-infection rates hover at 13%. Smoking damages the lungs and smokers are more susceptible to TB infection; 25% of men and 7% of women in the country smoke.

The COVID-19 pandemic has also severely impacted progress in eliminating TB in Myanmar. The case notification of all forms of TB in 2020 decreased by 20% compared with 2019. DR-TB notification and childhood TB notification decreased by 80% during the same time

frame. Following the political situation after1 February 2021, public health facilities were largely non-functional for about six months. As a result, the total number of cases notified in 2021 dropped further, data for which is yet to be released.

Due to the TB service disruptions, TB diagnosis by chest X-ray examination has been stopped temporarily in a few areas that show high levels of COVID-19 community transmission. Limited TB diagnosis is undertaken due to the civil disobedience movement,and there has been a decline in referrals of presumptive TB cases by community volunteers and temporary interruption of mobile team activities. Multisectoral response and coordination across ministries is inadequate and will be needed to sustain the gains made so far and accelerate progress to combat TB.

Another area of concern for TB diagnosis services is the under staffing in the public health sector. This is particularly true about the availability of specialized personnel such as microbiologists, laboratory technicians, biomedical engineers, radiographers and X-ray technicians, and staff for administrative work including infection control. The increasing workload in the wake of human resource limitation has been an important challenge. TB care cannot be halted and efforts to resume care are being rewarded as several facilities that were earlier shut have resumed offering services.

Overcoming challenges

These challenges can be overcome by finding the cases that missed detection during the beginning of the pandemic and due to the ongoing political situation. For this to happen, resumption of operations of the public sector needs to be a priority. Partner agencies need to also step up their support until access to public health facilities becomes optimal.

Active case detection, focusing existing resources on high TB-burden sites, and strengthening public health systems in areas where the political situation is stable can be the starting point. Integrated testing for TB and COVID-19 has been initiated and is helping to find some of the missing TB cases.

2nd Meeting Review Meeting with CHVs
(24th November 2021)

A review meeting with community health volunteers to discuss measures to spread awareness about tuberculosis in November 2021 in Myanmar

Photo credit: WHO Myanmar

All oral MDR-TB (multidrug-resistant TB) regimens will be scaled up throughout the country and a shorter treatment drug regimen for drug-sensitive TB, which is already approved and recommended by WHO, will be promoted. Introduction of new tools including molecular diagnostics of TB that are capable of testing susceptibility to anti-TB drugs has begun and will be scaled up. Additional new innovations to improve the accuracy of screening and TB diagnosis, compliance to treatment, and increased chances of treatment success are being promoted.

TB preventive treatment guidelines have been updated, public health workers have been trained to deliver TPT and the programme has plans to scale up the intervention throughout the country.

Mobile teams have begun operating from 1 July 2022 to reach TB hotspots in urban, peri-urban and hard-to-reach sites and work with the local community to increase awareness of TB, identify presumptive cases, screen for TB and provide appropriate care. The approach outlined ensures no expense will be incurred by the community, which is key. A similar approach has been planned in other high-burden regions such as Ayeyarwaddy and Bago in 2022 and in other hot spots in 2023 and beyond.

Yangon: a case study

The Yangon Region is the most populous region of Myanmar and constitutes 12% of the country's population. However,drug-sensitive TB cases notified in that Region constituted 24–25% of the country's caseload. A major concern is the drug-resistant TB caseload, which was 44%, and the TB/HIV burden, which was 30–35% of the national country caseload. Success in the Yangon Region will define success in TB control across the country.

Considering the crisis situation with TB in Yangon, a tailored approach was necessary. WHO supported the Yangon Health Department and NTP to develop a regional plan to tackle its specific challenges in urban and peri-urban areas. With this support 'Yangon Consortium TB Project composed of CSOs and NGOs was formed to cope with urban and peri-urban issues. The targets of the consortium project were particularly vulnerable populations, including internal migrants and displaced populations, who had limited access to public services.

> **"We will continue to support the introduction of innovations, build capacity of the TB network to the desired level of proficiency, and deliver TB care of the highest quality to achieve the dream of ending TB in Myanmar,"**
>
> *said Dr Thushara Fernando, WHO Representative to Myanmar.*

There is further scope to improve collaboration with the National AIDS Programme to address TB in Myanmar. In 2019, only 78% of HIV-positive people with new or relapsed TB incidence were started on antiretroviral therapy and 90% on chemo-prophylactic treatment. There is scope to further improve access to these drugs for all people diagnosed with TB. For further progress,the role of WHO is undeniably crucial.

Suggested Reading

1. Global Tuberculosis Report 2021 https://www.who.int/publications-detail-redirect/9789240037021 (accessed 10 August 2022)

2. TB in SE Asia Regionhttps://www.who.int/southeastasia/health-topics/tuberculosis (accessed 10 August 2022)

ENGAGING PARLIAMENTARIANS TO STRENGTHEN RISK COMMUNICATION AND COMMUNITY ENGAGEMENT AMID THE COVID-19 PANDEMIC IN NEPAL

Highlights

- To strengthen risk/crisis communication and community engagement (RCCE) amid the COVID-19 pandemic and beyond, Nepal's Ministry of Health and Population (MoHP) with WHO support launched an innovative high-level Parliamentary engagement programme.
- A series of engagements were held across the country with Parliamentarians and lawmakers as part of the initiative.
- The high-level engagements with Parliamentarians, ministers and lawmakers also helped to strengthen political commitment and coordination towards strengthening measures to combat COVID-19 and build capacity for RCCE.

During outbreaks or emergencies, information from multiple sources floods the landscape. Addressing people's concerns by providing timely, accurate and up-to-date information that they can trust along with community engagement, especially for those facing a threat/hazard, and enabling them to make informed decisions to mitigate the effects of the threat and take preventive and protective action, becomes even more important.

Risk communication and community engagement (RCCE) focuses on doing that, and is an essential component of a health emergency preparedness and response action plan through the preparedness, response and recovery phases of serious public health events.

As people's representatives, Parliamentarians can play a key role in engaging and helping communities understand, accept and address health risk situations.

With the COVID-19 pandemic highlighting the need for strengthening RCCE, Nepal's Ministry of Health and Population (MoHP) with support from the WHO Country Office for Nepal, launched an innovative high-level Parliamentary engagement programme between February and March 2022.

These engagements were primarily aimed at informing and orienting Parliamentarians on the importance of communication on the COVID-19 vaccine to increase vaccine acceptance and dispel hesitancy, enhance overall capacity to combat COVID-19, improve compliance with public health and safety measures (PHSM), and generate commitment to strengthen RCCE both during the pandemic and beyond.

Making RCCE a priority

Even before the high-level programme to engage Parliamentarians, Nepal's MoHP, in July 2021 endorsed its RCCE directive realizing the need for a robust RCCE mechanism and structure amid the COVID-19 pandemic response.

This envisions creating a structure for RCCE across all tiers of governance, including federal, provincial, district, *palika* and ward

beyond the COVID-19 response. Before the Directive, there was no formal RCCE structure. The National Health Education, Information and Communication Centre (NHEICC), the information and communications wing of the MoHP, did produce risk communication content in collaboration with other divisions, but there was no formal assignment of roles as such.

With endorsement of the Directive, Nepal achieved a critical landmark of compliance with the International Health Regulations (IHR, 2005) in core capacities for risk communication.

Since then, the NHEICC and Epidemiology and Diseases Control Division (EDCD) with technical support from WHO Nepal have been working on its implementation by arranging workshops and orientation and training sessions.

Shifting into high gear

As the COVID-19 pandemic continues to infect and kill millions of people around the world and disrupt economies, in Nepal, a dire need was felt for informing and mobilizing top leadership in the context of COVID-19.

To promote people's right to access good, affordable and acceptable health care, strong political leadership is required. Through their legislative, budgetary, oversight and advocacy functions, Parliamentarians are well-positioned to promote health and the right to good health.

Engaging high-level lawmakers was also one of the key interventions of the Communication Strategy developed by the MoHP with WHO Nepal support and adopted on 22 August 2020. The situational context of the programme was the upcoming local-level elections, fear of new variants causing a rise in COVID-19 cases in the country, decrease in the rate of COVID-19 testing, and the need to enhance acceptance and roll-out of COVID-19 vaccines.

As part of the high-level engagement, seven one-day sessions were conducted by the MoPH, with WHO providing technical and logistical support as part of the Parliamentary engagement programme. Venues were carefully selected to ensure that adequate space could

be maintained between participants. Masks were mandatory for all participants and COVID-19 safety norms were followed.

Sessions were held at the subnational level, including in Pokhara in Gandaki Province, two in Kathmandu's Bagmati Province, one in Surkhet in Karnali Province, followed by Dhangadhi in Sudurpaschim Province, Janakpur in Madhesh Province and Biratpur in Province No. 1.

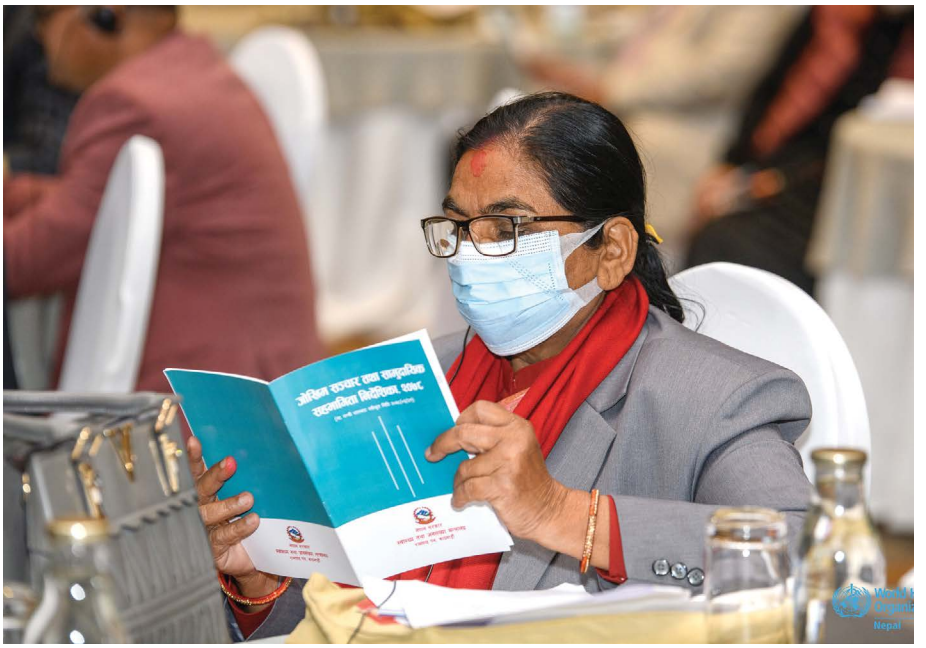
WHO Representative to Nepal, Dr Rajesh Sambhajirao Pandav, at the Parliamentarian Interaction Programme held in Karnali Province, Nepal

Photo credit: WHO Nepal

Each session was jointly inaugurated by the Chairman of the National Assembly and the Chief Minister/Speaker of the respective province. The WHO Representative to Nepal gave his remarks, followed by the keynote address by the Chairman and the remarks by the Chief Minister/Speaker of the provinces.

Parliamentarians were urged to use their positions as people's representatives to disseminate fact and evidence-based information about COVID-19 and vaccination, safety measures and overall adoption of healthier and sustainable lifestyles. The aim was also to ensure clear messaging about risk factors around COVID-19, educating the people, giving assurances so that they did not panic and motivating the general public to change their behaviour.

The technical session included briefings on the following topics by MoHP and WHO staff: (1) Technical information on COVID-19 vaccines, vaccination and related issues; (2) The science behind COVID-19-related PHSM and post-COVID-19 symptoms and their management: (3) RCCE in the context of the COVID-19 pandemic; and finally, (4) Impact of COVID-19 on noncommunicable diseases and mental health and climate change and its effects on health.



A member of the National Assembly perusing the national guideline on risk communication and community engagement during the Parliamentarians' interaction with members of the National Assembly in Kathmandu

Photo credit: WHO Nepal

At the end of each of the technical sessions, time was allocated for a question-and-answer segment where participants were able to ask questions and share their feedback and comments with technical experts, and the MoHP and WHO teams.

Along with combating COVID-19, the high-level sessions also provided an opportunity to advocate for other pertinent health issues such as noncommunicable diseases, including mental health, climate change and environmental health.

Dr Sangeeta Mishra, Chief of Health Coordination Division and Spokesperson of the MoHP, who led the initiative said: "The leadership shown by the honourable Members of the Parliament in responding to the pandemic has been appreciated and they play an important role in addressing the challenges that have arisen due to the prolonged pandemic." This included Parliamentarians following PHSM such as wearing masks, not questioning science, adopting a virtual mode of work and simple measures such as being the first ones to get the COVID-19

vaccination. This showed their constituents that vaccination is safe and encouraged them to follow suit. They also visited COVID-19 hospitals in their communities to assess the situation and advocate for medical supplies and vaccines.

> **At first I was nervous about getting the COVID-19 vaccine as it was a new type of vaccine. Seeing the senior leaders of Parliament get vaccinated helped me to get rid of my fears and increased my confidence in the vaccine,**
>
> *said Mr Ashok Poudel, a staff member working in the Office of the Chairperson of the National Assembly.*

> **The Parliamentary response to the COVID-19 pandemic has exemplified the importance of committed leaders at the helm of Parliament. We must embrace decisions based on scientific evidence that impact the well-being of our population and we must be prepared to be accountable for the words we use in public. Our experience shows that combining the efforts of Parliament with WHO can go a long way in furthering people's health-related needs,**
>
> *said Ganesh Prasad Timilsina, chairperson of the National Assembly.*

Mr Ganesh Prasad Timilsina, Chairperson of the National Assembly of Nepal

Photo credit: WHO Nepal

"There is a need for leadership in various quarters and all sections of society to respond to COVID-19. Parliamentarians play an important role not only in COVID-19 but also in other important issues of public health and policy-making related to health, ensuring citizens' health and well-being, and making health services more effective,"

said Dr Rajesh Sambhajirao Pandav, WHO Representative to Nepal.

Outcome of the high-level engagement

As the COVID-19 pandemic response is not solely a health issue and requires coordination and collaboration across sectors and at all levels, the high-level engagements with Parliamentarians, ministers and lawmakers helped strengthen political commitment and coordination towards strengthening measures to combat COVID-19 and build RCCE capacity.

During the interaction programme in Pokhara, the speakers and deputy speakers of all the seven provinces signed a commitment to build policies, and establish effective coordination and cooperation in combating the COVID-19 pandemic and future health emergencies.

After each interaction, there was a press release by the MoHP and WHO Nepal, highlighting the events and the key points from all the speakers.

Social media content was also created around each of the sessions and shared by the MoHP and WHO through social media platforms and made available on the respective websites.

WHO facilitated the recording of more than 50 public service announcements from Parliamentarians on video with the lawmakers advocating the importance of getting vaccinated against COVID-19, and following appropriate safety measures to reduce the spread of the virus. Lawmakers also stressed the importance of mental health, suicide prevention and the need to adopt healthy lifestyles. These videos were shared with government counterparts for dissemination and wider use.

> **Feedback from Parliamentarians was outstanding on the importance of the briefings held as part of the programme. This is the only initiative in Nepal on COVID-19 that has brought together elected officials across the political spectrum,**
>
> *said Mr Ganesh Prasad Timilsina, Chairperson of the National Assembly, Nepal.*

Challenges faced

There was not enough prior information about the meetings and availability of Parliamentarians, leading to absenteeism or some participants leaving the Programme mid-way. Parallel events by the MoHP along with the high-level sessions were some of the hurdles encountered. However, these were addressed by regular follow up with Parliamentarians and adjusting programme schedules.

Highlights

SRI LANKA: CUTTING BACK ON SALT FOR BETTER HEALTH

- Excessive consumption of salt is a major cause of hypertension in Sri Lanka. The country took several innovative measures and adopted a whole-of-society and whole-of-government approach to implementing a multisectoral action plan on combating NCDs.
- Involving stakeholders such as key food-chain restaurants and the bakery industry at strategic stages have played a crucial part in the country's national salt reduction campaign.
- WHO supported country efforts and innovations including evolving low salt recipes in food and making of bread.

In Sri Lanka, noncommunicable diseases (NCDs) such as heart disease, stroke, cancer, diabetes and chronic lung disease have, over the past few decades, overtaken infectious diseases to become the leading killer diseases causing over 80% of deaths. One of the intermediate-risk factors for cardiovascular disease (CVD), stroke and heart failure is hypertension or high blood pressure – a serious medical condition that significantly increases the risk of diseases of the heart, brain, kidney and other organs.

More than a quarter of Sri Lanka's population suffers from hypertension, the major cause of which is the excessive consumption of salt. Tackling salt consumption has been identified as one of the key interventions to combat NCDs in Sri Lanka. Unhealthy diets high in salt, sugar and transfats, along with lack of physical activity and unhealthy lifestyle choices, are among the chief drivers of NCDs.

"There is strong evidence that too much salt is not good for a person's health and is causing serious health outcomes. The increase in the ageing population, urbanization and modern urban lifestyle changes have all further added to the threat from NCDs, which have overtaken communicable diseases as the dominant health problem,"

said Dr Ruvaiz Haniffa, Consultant Family Physician, Senior Lecturer, Faculty of Medicine, University of Colombo, Sri Lanka.

Surveys in Sri Lanka have pointed out the presence of high salt content in various foods, especially in certain foods such as bread and bakery products, fried snacks and preserved foods such as pickles, dried fish, jadi – a traditional dried fish pickle, all of which are hugely popular and widely consumed in the country.

To add to this, a growing steady stream of easily available packaged foods and snacks high in salt, transfats and sugar have contributed to the increased risk of NCDs.

It is estimated that reducing salt intake to less than 5 g per day will save around 2.5 million lives every year and reduce disability and suffering from heart diseases and stroke globally. Salt reduction at the population level has been identified by the World Health Organization (WHO) as a cost-effective "best buy" intervention to combat NCDs and reduce the associated disease burden.

Prevention and control of NCDs was identified as a Flagship Priority Area in the WHO South-East Asia Region by Dr Poonam Khetrapal Singh at the start of her first term as Regional Director in 2014. While the Region has made sustained efforts to combat NCDs, Sri Lanka took several innovative measures and adopted a whole-of-society and whole-of-government approach to implementing a multisectoral action plan on combating NCDs.

This approach focuses on four strategic areas aimed at strengthening advocacy, partnership and leadership; health promotion and risk reduction; strengthening the health system for early detection and management of NCDs and their risk factors; and surveillance, monitoring, evaluation and research.

Screening for NCDs in Sri Lanka is carried out at healthy lifestyle centres (HLCs) established in over 1000 government sector primary care hospitals. Those with a high risk of CVDs are referred to specialized clinics at the secondary care level while others are managed with lifestyle modification and regular follow-up screening for NCDs.

Identifying and tackling the problem

Recognizing this growing threat, the Ministry of Health, along with the WHO Country Office Sri Lanka and other key stakeholders, developed the National Salt Reduction Strategy 2018–2022 and set a target to achieve a 30% relative reduction in the mean population intake of salt by 2025. The strategy is in line with WHO's global salt reduction goal by 2025 and is drawn from the best-buy strategies for combating NCDs. Three key objectives were identified:

1. Knowledge: educate and communicate communities to empower them to eat less salt.
2. Environment: support settings that promote healthy eating.

3. Harness industry: promote the formulation of foods/meals so that they contain less salt.

Changing mindsets

As part of the national strategy, a survey was done between July and August 2019 on knowledge, attitudes and practices related to dietary salt among adolescents, adults, restaurant owners and cooks at premises serving food to gauge awareness and inform of the national behaviour change communication campaign to reduce salt in the diet. This helped to tailor messaging for various stakeholders.

While several earlier surveys noted that, among people, knowledge was limited of salt, sugar and transfats being risk factors for NCDs, there was a willingness to cut down on these risk factors, especially salt, provided there were messages that effectively conveyed the case for taking corrective steps.

Sri Lanka had introduced a colour code regulation for sugar-sweetened beverages in 2017, making it mandatory for all soft drink products to display the colours red, amber and green according to the sugar level used by various soft drinks. As a result of the colour coding, there was a reduction in sugar levels in beverages almost immediately and a drop in the sale of carbonated beverages by 15%.

In 2020, the country introduced traffic light colour coding for front-of-pack labelling of sugar, salt and transfats in prepackaged foods.

The traffic light colour system is an easy-to-use visual-based system that informs consumers about the presence and levels of three main ingredients – salt, sugar and fats in packaged food.

Traffic light colour coding system indicating level of sugar, salt and fat content in prepackaged food

Photo credit: WHO Sri Lanka

> **While a simple interpretation for traffic light colour coding was introduced, highly effective communication packages for social and mass media were created to educate and change the behaviour of the public to reduce dietary salt intake by making consciously healthy food choices,**
>
> *said Dr Vindya Kumarapeli, Director NCD, Ministry of Health, Sri Lanka.*

Message to raise awareness of reducing salt, sugar and fat from food
Photo credit: WHO Sri Lanka

A baseline assessment of pre-packaged foods was done with regard to front-of-the-pack labelling to support surveillance after legislation. The assessment also included a nutrient content assessment of the nutrition panel and market share analysis, which would provide supportive evidence for the effectiveness of the regulation, and also support reformulation efforts at a later time. A post-regulation survey is yet to be done.

Involving stakeholders to prioritize salt/sodium reduction initiatives

One of the key strategies of the national salt reduction campaign has been to involve essential stakeholders at strategic stages to discuss implementation of the strategy and innovative techniques to achieve the objectives.

One of the first such meetings was organized with representatives of key food-chain restaurants in the country in July 2020. The meeting included 51 major restaurant chains having more than three outlets in one or more districts, 46 local food chains and 5 international chains.

Strategies were discussed to gradually reduce salt in diets to allow people to adjust to the change.

Contestants take part in the national low salt cooking challenge
Photo credit: Sri Lanka Medical Nutrition Association

The discussion with restaurant owners confirmed that all the key restaurants were willing to support the proposed strategy to reduce salt consumption in Sri Lanka. A plan to measure and analyse sodium and potassium levels found in almost 250 food items sold in these restaurants was shared by Dr Lakshman Gamlath, Director-General of Environmental Health, Occupational Health, and Food Safety Directorate. Once the food items with a high salt content were identified, technical assistance and a timeline to reformulate these items to a low salt content was provided.

Another highly innovative and effective strategy was the "national low salt cooking challenge", a nationwide contest to raise awareness about the importance of reducing salt in food and to get those involved in food technology and culinary science to innovate and come up with winning recipes using less salt.

The contest was jointly organized by the Ministry of Health, Sri Lanka Medical Nutrition Association and the WHO Country Office with the support of LINK Grant of the Resolve to Save Lives, an initiative of Vital Strategies.

Chefs, dieticians, nutritionists, home cooks and others, involving a total of 30 teams with at least one from each district, were selected to face off against each other to create winning meals along with preserved traditional food like pickles, all using less salt while maintaining adequate nutrient compositions and following healthy cooking techniques.

The challenge was conducted in three rounds with the medical officers of nutrition, who were specially qualified in clinical nutrition and posted in each district, acting as the district coordinators. Each of the teams was encouraged to innovate methods to reduce salt in the diet and prepare a full meal. An introductory and practical session was held virtually for all participants and clear instructions and guidelines were communicated.

Delegates at the national low salt cooking challenge
Photo credit: Sri Lanka Medical Nutrition Association

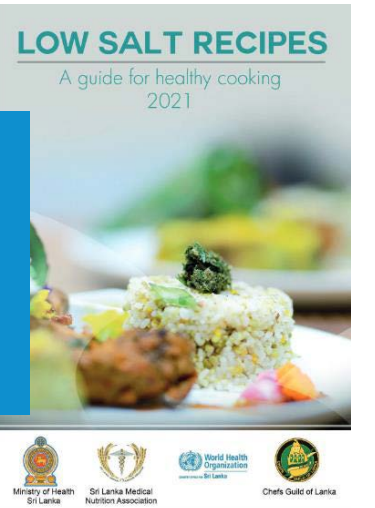
One of the dishes created at the national low salt cooking challenge
Photo credit: Sri Lanka Medical Nutrition Association

The final round involved a live cooking demonstration in October 2021 held in Colombo, with media coverage. Teams from Matale, Kuliyapitiya, Kurunegala, Nuwara Eliya and Chilaw districts contested in the final round, with each team successfully showcasing their talents for the grand finale.

The event was streamed online and other stakeholders and interested parties joined online to witness the cooking competition. The winners were awarded medals, trophies, cash prizes and certificates.

The objectives of the national competition were multifold: to increase the awareness of the public about the importance of reducing salt in food, popularizing the use of alternate flavouring to salt in the food industry and use of less salt in preserved traditional food.

> **The contest has given the Chef's Guild of Sri Lanka a chance to innovate with new flavours and come up with healthier alternatives,**
>
> *said Chef Madhawa Weerabaddana, Director, Chef's Guild of Lanka.*



Low Salt Recipes- A guide to healthy cooking 2021

Photo credit: WHO Sri Lanka

Another outcome of the competition was a colourful recipe book comprising recipes selected by judges during the contest to be shared as a low salt food guide in Sri Lanka.

> **We believe that the national low salt cooking challenge will pave the way towards combating noncommunicable diseases caused by excess salt consumption and bring about a change in the future,**
>
> *said Dr Renuka Jayatissa, President, Sri Lanka Medical Nutrition Association.*

A less salty bread!

Bread is a highly consumed food type in Sri Lanka and is among the food groups that were found to have a high salt content. A survey revealed that a loaf of bread in Sri Lanka contains approximately 6.4 g of salt. If a person consumes half of a loaf, the person takes in more than 50% of the maximum allowable salt level of 5 g/day.

The WHO Country Office has been working with the government, bakery industry and other stakeholders to reduce the level of salt in bread and bakery products. As part of this, representatives from bakeries were also invited for consultations and technical guidance was offered.

In bread production, salt has a profound effect during processing and on the final product characteristics. To maintain quality, texture and taste while reducing salt, culinary and food technology specialists were hired. In alignment with this, the experts proposed targeting a maximum salt level in bread of 0.36/100 g, which is equivalent to 1.6 g in a loaf of bread. It was decided to do this in a step-wise manner over a period of one year to limit the highest per capita daily intake of table salt through bread at 1.6 g/day.

The team also developed policy briefs/advocacy brochures with scientific justification to advocate for targeted salt reduction in bread and bakery products to policy-makers of the health and food industry, and to restaurant owners and chefs. While the ongoing economic situation has caused a temporary delay in the roll-out of this targeted action, it remains an important intervention in the overall strategy for reduction of salt in the diet in Sri Lanka.

Promoting healthy food in hospitals

While all government hospitals in Sri Lanka serve food for patients, it was discovered that several hospitals were unaware that in 2015 the Ministry of Health had issued new recommendations updating the recommended levels of sugar, salt and fat for inpatients and hospital employees. While the new circular had revised the 2009 recommendations about the use of salt, sugar and fat levels in food, administrators, chefs and doctors were unaware of the updates.

The WHO Country Office took the lead in reviving the 2015 circular and simplifying the format. Practical instructions and tools were added, including how to properly measure the level of salt, not add salt when boiling vegetables (a practice to remove their peels) or add salt to rice during cooking. This was re-circulated through the Ministry of Health to hospitals. As a result, most of the government hospitals contacted are using sugar, salt and fat within the WHO-recommended level.

Most private hospitals are, however, using sugar, salt and fat above the recommended levels. While some private hospitals have tried to limit these to WHO levels, retail food outlets that have been outsourced inside the hospitals sell packaged food and carbonated sweetened beverages. The Ministry of Health's circular has also been shared with the retail food outlets to create awareness and encourage retailers to stock healthier alternatives.

Tracking progress

Monitoring and surveillance of current efforts

The 24-hour urinary sodium measurement is considered the most accurate method for analysis of the population salt intake. It was decided to measure sodium levels for people 18 years and above to calculate the mean population salt intake. To ensure the sustainability of surveillance systems, urinary sodium measurement and analysis was integrated into the STEPs survey conducted in 2020 in Sri Lanka.

The Medical Research Institute (MRI) of Sri Lanka was tasked with conducting the National Salt Consumption Pattern survey to gather information on current population salt consumption patterns, such as daily salt intake, sources of dietary salt, stages at which salt is added to foods, along with knowledge, attitude, practice and belief (KAPB) surveys.

A survey was conducted in 2019 to evaluate the compliance of the food industry with the regulations on labels of packaged food. The Noncommunicable Diseases Unit of the Ministry of Health plans to repeat it in 2022. It was also decided to strengthen the capacity of national institutions for testing and monitoring the salt content in food.

Challenges and the road ahead

- About one third of the schools in Sri Lanka have canteens where children can buy food. While the country has a school canteen policy that prescribes what the canteen should serve to school going children, implementation has not been encouraging.

  A case study from the Western Province of Sri Lanka on implementing the guidelines of 2015 highlights the reasons for poor

implementation as the lack of support from the parents of students, absence of alternative healthy food items, lack of resources in schools, inappropriateness of the present system of selecting canteen operators and prevailing trade and fiscal policies in the country, which negatively affect the implementation of canteen guidelines.

- Promoting healthy diets in the out-of-home sector, which is becoming more popular in Sri Lanka, is a challenge – these include roadside stalls and vendors, and restaurants, many of which sell their products just outside the schools.

- An island wide cross-sectional household survey conducted in 2019 in 10 of the 25 districts of Sri Lanka indicated that the majority of Sri Lankan adults (59.9%) and adolescents (60.4%) were not adequately aware of the recommended daily salt consumption. Approximately half of the adults (48.3%) and adolescents (45.9%) believed they were eating "just the right amount of salt".

The study highlighted a crucial knowledge gap affecting Sri Lanka's efforts to implement the National Salt Reduction Strategy (NSRS), which aims to reduce population-level dietary salt consumption. What was encouraging was that a vast majority of adults and adolescents reported knowing that high salt consumption was not good for health and its association with hypertension. A majority (>55%) of adults and adolescents acknowledged that it was very important to reduce their salt consumption.

The gaps in knowledge, attitude and practices related to salt consumption need to be addressed by tailoring the communication materials to address the gaps.

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Highlights

KICKING THE CIGARETTE BUTT: THAILAND SHOWS THE WAY

- Thailand has been at the forefront of tobacco control. It has taken the lead in implementing a series of bold and innovative measures to combat the tobacco epidemic.
- Cooperation between the Ministry of Public Health, a coalition of nongovernmental organizations and highly committed civil society leaders has been instrumental in driving Thailand's tobacco control strategy.
- Concerted action against tobacco use in Thailand has led to smoking prevalence among adults dropping from 32% in 1991 to 17.4% in 2021.

Tobacco use is a leading cause of preventable death. Every year, it kills nearly 8 million people globally every year, including 1.6 million in the WHO South-East Asia Region. The Region is among the largest producers and consumers of tobacco products.

In Thailand, which has almost 10 million smokers and where one out of every six adults smoke, tobacco is a serious health issue. Thailand has been at the forefront of tobacco control and has, often with WHO support, taken the lead in implementing a series of bold and innovative measures to combat the tobacco epidemic and save lives.

Stripping the glamorous and glossy packaging off tobacco products and replacing them with plain packaging and/or large graphic health warnings is one of the key interventions that WHO sees as a "best buy" to control tobacco use. As is widely known, tobacco is a common risk factor for the main noncommunicable diseases such as cardiovascular disease, cancer and chronic respiratory disease, and other diseases such as tuberculosis and neurological disorders.

On 14 December 2018, Thailand made history by becoming the first country in Asia to adopt plain packaging for cigarette products; later, this was extended to hand-rolled cigarettes as well.

Thailand's model for tobacco control is based on close cooperation between the Ministry of Public Health, and a very active coalition of nongovernmental organizations (NGOs) and highly committed civil society leaders. A series of measures ranging from taxes on tobacco products, ban on advertisements, plain packaging, graphic warnings on cigarette packs, etc. are the result of decades of sustained efforts by civil society leaders and crusaders, including Professor Prakit Vathesatogkit, whose efforts led to not only stricter tobacco control measures but also improved treatment and care protocols for patients.

In recognition of his pioneering work across sectors for tobacco control, care of patients and outstanding contribution to public health, Professor Prakit was awarded the Dr Lee Jong-wook Memorial Prize for Public Health during the Seventy-fifth World Health Assembly. The Severe Hypothermia Treatment Centre, Poland was the other recipient of the prize.

Tracing Thailand's long history of tobacco control measures

In 1986, two thirds of Thai males smoked cigarettes and concern had been growing over the health impact of tobacco use. Professor Prakit, an expert in pulmonary disease, recalls how the dean of a medical school in Bangkok where he was teaching gave him an assignment in that year that would set him on his life's mission. "The dean asked me to initiate and join a tobacco control campaign. During those days, there was no funding for such activities and no civil society movement," says Professor Prakit. The proposal grabbed his interest and he started the Thai Antismoking Campaign project (ThaiASH) as its secretary.

Around that time, for several months, billboards with promotions for foreign cigarettes had started appearing along highways in the country, along with full-page colour advertisements in Thai newspapers and magazines. This was surprising, since the import of cigarettes into Thailand was not permitted then. Cigarette companies had, however, started advertising in anticipation of a change in policy to allow the import of foreign cigarettes into Thailand's lucrative cigarette market.

Concerned about the onslaught of imported cigarettes on tobacco control measures, ThaiASH along with a group of health-related NGOs decided to take up this issue as a priority.

A multipronged campaign was launched to rally support for continuing the import ban on cigarettes and strengthen policy measures against tobacco use. As part of this, an anti-smoking marathon run was organized by the Rural Doctor Foundation in 1987. Six million signatures were gathered and were presented to Parliament in support of tougher tobacco control. Campaigners also recommended extending the existing ban on smoking in buses and cinemas in Bangkok to all public areas while also increasing health education.

Anti-smoking marathon run in 1987

Photo credit: Professor Prakit

In 1988, the Thai government, which owned the Thailand Tobacco Monopoly (TTM), had approved a proposal and budget for TTM to increase its production capacity. ThaiASH, along with a coalition of NGOs, engaged with media to counter this by rallying support and working with the government to enhance measures to control tobacco use.

Professor Prakit Vathesatogk
Photo credit: ASH Thailand

> **Civil society partners protested and called for a balanced tobacco policy, the Cabinet responded by reversing the plan to increase cigarette production by TTM and ordering the Ministry of Public Health (MoPH) to draft a national tobacco control plan that ultimately led to the notification banning cigarette advertising in 1989. It was one of our initial successes.**
>
> *Professor Prakit Vathesatogkit.*

The Thai government in 1989 also appointed a National Committee for Tobacco Consumption Control (NCTCC) with Professors Prakit, Prawet and Attasit as its independent expert members.

With cigarette manufacturers from the United States raising the demand for the opening up of Thailand's domestic market for imported cigarettes, a move opposed by Thailand, the issue became a trade dispute between the US and Thailand. As part of the efforts to resolve the trade dispute and make the case for continuing the ban on imported cigarettes, Professor Prakit and Dr Hathai Chitanon travelled to Washington, DC during 1989–1990 as representatives of the Ministry of Public Health and part of the official Thai delegation. Professor Prakit also testified before several senate and congressional committees.

Professor Prakit Vathesatogkit testifying before the United States Trade Office's (USTR) public hearing
Photo credit: ASH Thailand

Representatives from 11 US government agencies at the public hearing
Photo credit: Prof Prakit

As Thailand and the US were unable to reach an agreement over cigarette imports, the matter was referred to the World Trade Organization (WTO) under the General Agreement on Tariffs and Trade (GATT) for arbitration.

In October 1990, GATT determined that while Thailand could not ban the import of cigarettes, it could formulate a "non-discriminatory" tobacco control policy. This meant that Thailand could retain the advertising ban on tobacco products and levy an import duty on cigarettes.

To strengthen existing tobacco control measures in the country, the Thai Cabinet in October 1990 endorsed the draft tobacco control bill and the establishment of the Office of Tobacco Consumption Control in the Ministry of Public Health.

Thailand passes comprehensive tobacco control laws

In 1992, Thailand became one of the first developing countries to pass comprehensive tobacco control legislation, in line with WHO's recommendations for tobacco control.

This included Thailand's Tobacco Products Control Act B.E. 2535 and the Non-smokers Health Protection Act B.E. 2535. These laws put a total ban on the advertisement and promotion of tobacco, restricted access to tobacco to only those above 18 years of age, banned the sale of cigarettes through vending machines and made it mandatory to print health warnings while prohibiting the use of misleading descriptions such as the words "light", "mild", etc. The law also banned smoking in all public transport, outdoor exercise areas, cinemas, public parks, banks and air-conditioned restaurants.

Graphic warning

Tobacco kills up to half of its users every year and the tobacco industry is always innovating ways to try and attract new and younger users to replace those who have died from tobacco use.

To dissuade people, particularly teenagers, from taking up the habit, Thailand in 2004–2005 implemented graphic health warnings (GHWs) on cigarette packs, becoming the fourth country in the world to implement such measures. On 8 March 2013, the country decided to take another big step to combat tobacco use by making it mandatory for cigarette companies to increase the size of the GHWs to cover 85% of the pack on both sides.

One of the graphic warnings used on cigarette packaging in Thailand

Photo credit: Professor Prakit

This decision by the Thai Ministry of Public Health was strongly opposed by three major international tobacco companies, which challenged the decision in court, stalling the implementation of the new measures. Determined to press on, the Ministry of Public Health defended its decision. In 2014, the court ruled in favour of the Ministry of Public health, asking it to implement the measures without delay and gave cigarette companies 90 days to dispose of their existing cigarette stocks and replace them with the new mandatory bigger graphic warnings.

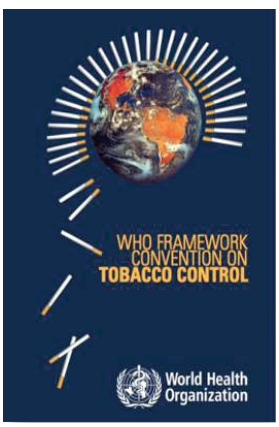
A sin tax to promote good health

Since 1994, Thailand has been following a policy of hiking taxes on cigarettes. To ensure sustainable funding for health promotion activities, the Anti-Smoking Campaign Project of the Moh-Chao-Ban Foundation, and Health Systems Research Institute (HSRI) in 1995 proposed levying a surcharge tax on alcohol and tobacco. The idea was supported by the Ministry of Finance and was formally approved by the Thai Parliament in 2001. With this, the Thai Health Promotion Foundation (ThaiHealth), an autonomous government agency, was established with its revenues coming from a 2% surcharge over and above the excise taxes on tobacco and alcohol.

ThaiHealth uses these funds for various health promotion activities, including tobacco control, combating alcohol and substance abuse, road safety and disaster management planning, health risk control, health promotion for vulnerable populations, healthy community strengthening, child and youth and family health promotion.

Global leadership in tobacco control measures

In 2005, Thailand was among the first signatories to the WHO Framework Convention on Tobacco Control (FCTC). The FCTC is the first international public health treaty negotiated under WHO auspices, which aims to protect present and future generations against the deadly health and socioeconomic impacts of tobacco use.



Drawing on its experience of taxing tobacco to promote health, Thailand, along with the European Union and Russia, also took the lead in drafting Article 6 of the Convention, which deals with “Price and tax measures to

reduce the demand for tobacco". This provision gives Member States full freedom to determine and establish their taxation policies while considering tobacco control measures.

Despite implementing some of the most advanced tobacco initiatives in the Region, smoking prevalence among adult men stagnated at around 40% between 2004 and 2015 in Thailand. To sustain and accelerate the campaign against tobacco use, Professor Prakit and an active coalition of NGOs used several innovative ways.

"People don't follow dense information and messages advising them to quit smoking, but they identify with personal accounts," said Professor Prakit, who initially used some of his patients with pulmonary disease and affected families as case studies to narrate their stories of quitting tobacco to create a connect with the target audience.

As the movement caught on, movie stars, famous monks and other public figures got involved and narrated their own personal stories of quitting tobacco. This made a deep impact, encouraging people to quit or not take up tobacco and also advocate for stronger anti-tobacco use legislation.

A mass campaign in 2015 collected more than 10 million signatures of people supporting a petition for more stringent measures against tobacco use.

Anti-tobacco campaigners collected over 10 million signatures for stringent tobacco control measures

Photo credit: ASH Thailand

Responding to the call for strengthening anti-tobacco measures, the Thai Parliament in 2017 passed the Tobacco Products Control Act of 2017 (TPCA), replacing the Tobacco Products Control Act of 1992 and the Non-Smokers Health Protection Act of 1992.

With this, the legal age limit to purchase tobacco was raised from 18 to 20 years along with a further increase of taxes on tobacco. Broad restrictions were introduced on advertisements displaying brand names or logos of tobacco products on mass media. More smoke-free jurisdictions were added or existing ones strengthened, and penalties for smoking in prohibited areas were also increased.

In July 2017, Thailand became the first country in Asia to ban tobacco industry-related corporate social responsibility (CSR) activities.

Challenges remain

Concerted action against tobacco use in Thailand has led to a change; smoking prevalence among adults has dropped from 32% in 1991 to 17.4% in 2021.

Yet despite these significant gains, there are still close to 10 million tobacco users in Thailand and almost one out of every five young Thai males 13–17 years of age is a smoker. A higher proportion of young women also smoke in comparison to their predecessors. According to the Global School-based Student Health Survey (GSHS) in 2021, 5.6% of female students were smokers as compared to 4.4% in 2015.

While Thailand has among the world's strongest legislation against tobacco use, the hard-won gains by its strong coalition are under threat from the tobacco industry, which continues to target the next generation with new products such as electronic cigarettes and existing users through "roll your own cigarettes". The illicit trade in tobacco products also poses a challenge to control measures.

The fight against tobacco use is far from over. Thailand has set a benchmark for other countries, with its long-term history of commitment to tobacco control with the active participation of NGOs and individuals working in collaboration with government and partner agencies to find innovative ways to fight the tobacco epidemic.

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TIMOR-LESTE: HOW ASIA'S YOUNGEST NATION RAPIDLY SCALED UP CAPACITY AND EMERGENCY PREPAREDNESS AMID COVID-19

Highlights

- Timor-Leste had only six intensive care unit (ICU) beds with ventilators, no dedicated infectious disease facility, and limited critical care facilities at the start of the COVID-19 pandemic.
- With support from WHO and partner agencies, the country rapidly scaled up its health care system.
- Laboratory testing, surveillance, upgrading of critical care infrastructure, community engagement, infection prevention and control (IPC), case management and capacity-building initiatives were strengthened and scaled up.

When Dr Jonio da Silva dos Santos returned from the field after long hours of contact tracing and COVID-19 surveillance, he would hastily remove his personal protective equipment (PPE) suit and fling it into the dustbin. He would also throw away his notebook and pen fearing that the virus could be lurking on its surface. The 29-year-old general practitioner with the Directorate General of Health Services (DGHS) had joined duty just a few days before the first confirmed case of COVID-19 was reported on 21 March 2020, in Dili, the capital of Timor-Leste. He soon became a part of the rapid response team (RRT) tasked with tracking international travellers and conducting community surveillance.

> **At the time we had no idea what the virus was capable of and how it could impact us,"** *said Santos.* **"It was a scary situation.**
> *said Dr Santos.*

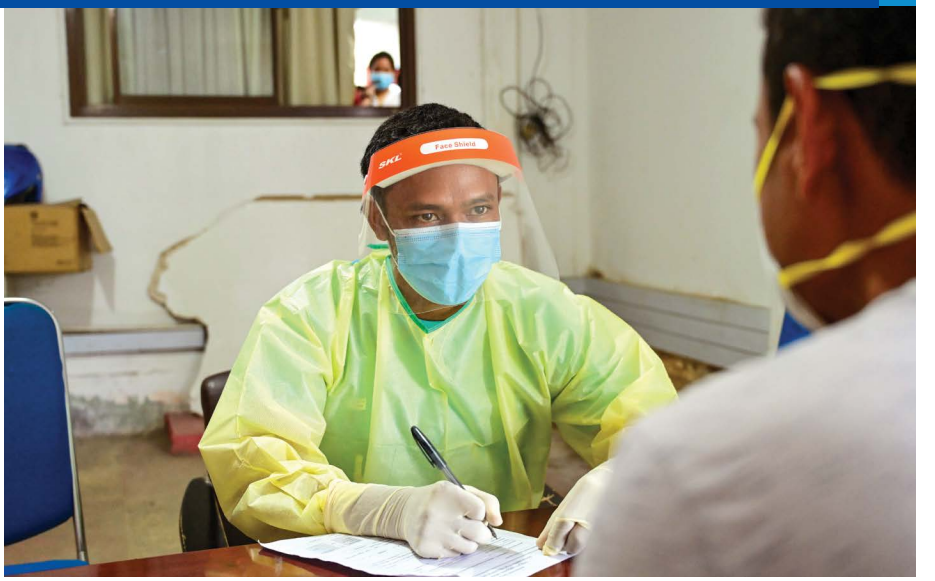
Scaling up capacity development in emergency risk management as part of health emergencies was identified as a Flagship Priority in the Region by Dr Poonam Khetrapal Singh when she was appointed Regional Director, WHO South-East Asia Region.

Soon after the COVID-19 outbreak was labelled as a public health emergency of international concern on 30 January 2020, WHO highlighted the urgent need for investing in infection prevention and control (IPC). In Timor-Leste, the WHO Country Office went into high gear to roll out multiple customized IPC training modules for health care workers, from basic hand hygiene techniques to donning and doffing the PPE gear.

With technical support from WHO and funding from several donors such as the United States Agency for International Development (USAID), Department of Foreign Affairs and Trade (DFAT), Australia, and the European Union among others, the Ministry of Health (MoH) in Timor-Leste trained more than 600 staff, including doctors, nurses, midwives, paramedics, police personnel, health inspectors and others in IPC since the beginning of the pandemic.

Santos was one of the frontline staff who benefited from these training sessions. "As I learnt about safeguarding myself from the infection, I felt more motivated and comfortable to step out on the field every day," said Santos, adding that the training sessions equipped him with vital knowledge about handwashing and the use of alcohol rubs, the importance of physical barriers such as goggles and masks, and gear that can be reused.

> **"Earlier, we would discard our goggles and face shields, but we later learnt in our training sessions that these can be sanitized carefully and reused,"**
>
> *said Dr Santos.*



General practitioner Dr Jonio da Silva dos Santos examines a patient
Photo credit: WHO Timor-Leste

Containing the virus

Timor-Leste is Asia's youngest nation with a population of around 1.3 million. The country's health services were fragile with few super specialties available in its largest hospital – the 300-bedded Hospital Nacional Guido Valadares (HNGV).

> **In the first year, we managed to successfully avert community transmission,**
>
> *said Dr Helio Guterres, a 36-year-old internal medicine specialist at HNGV.*
>
> ***All cases we had were among people who had travelled from outside. We began to see community transmission only around February 2021.***

At the start of the pandemic, the country had only six intensive care unit (ICU) beds with ventilators, all at HNGV. Its five referral hospitals outside the capital Dili were not equipped with critical care facilities and the country did not have any dedicated infectious disease facility. To battle COVID-19, the country began to scale up its health care system from the ground up.

With an aim to prevent COVID-19 from entering Timor-Leste, the government closed the country's international borders. This was followed by rigorous surveillance on the ground for quick case detection. All foreign travellers were sent to a 200-bed quarantine facility built in Tasi Tolu, which was later converted into an isolation facility with its bed capacity increased to nearly 400.

A community health centre at Vera Cruz was converted into an isolation facility for positive patients. The 40-bed Vera Cruz facility was also equipped with four ICU beds with ventilators. Around 40 hotels were converted into quarantine and isolation facilities.

By August 2021, another 20-bed ICU facility was opened in Dili. Known as Lahane Medical Facility, the intensive care hospital was equipped with six ventilators and was dedicated for patients with severe COVID-19.

Health Minister Dr. Odete Maria Freitas Belo and WHO Representative to Timor-Leste Dr Arvind Mathur review the Lahane Medical Facility

Photo credit: WHO Timor-Leste

Timely action helped keep mortality low

"The COVID-19 pandemic, in many ways, helped to boost the medical infrastructure of Timor-Leste," said Guterres. The country made significant progress in rapidly expanding its critical care services. From minimal critical care infrastructure in 2020, the country was also able to set up 26 high dependency unit (HDU) beds by September 2021 and train more than 100 health care professionals to handle patients. WHO, along with other partners supporting the MoH, stepped in to train general practitioners and nurses in intensive and respiratory care. Due to a severe dearth of intensive care specialists, WHO brought two critical care experts to train the anaesthetists and posted them in the ICU wards.

Guterres was trained by WHO experts and was one of the master trainers in the training of trainers (ToT) model wherein many doctors and nurses were coached by him on intensive and respiratory care of COVID-19 patients. "Without the training, patient care would have been a serious problem," he said.

Health workers receive case management training to handle COVID-19 patients
Photo credit: WHO Timor-Leste

As of 26 June 2022, Timor-Leste had recorded 22 951 cases of COVID-19. The nation's death toll stood at 133. The mortality rate from COVID-19 in Timor-Leste stands at 0.5%, much lower as compared to the global average of 1.17%. The nation's mortality rate is also lower compared with some of the nations such as the United States of America (1.17%) and the United Kingdom of Great Britain and Northern Ireland (0.7%).

We followed the WHO treatment guidelines to the core and avoided experimenting with drugs like hydroxychloroquine and ivermectin. We were able to keep our mortality rate much below the global average at all times,

said Dr Guterres, adding that the training offered to the doctors helped in developing the much-needed confidence to tackle COVID-19 patients and reduce mortality.

The intensive and respiratory care training included ventilator operation, oxygen management, use of continuous positive airway pressure (CPAP) therapy and bilevel positive airway pressure (BiPAP) machine. In addition, the health care staff was also prepped on a range of skills, including case detection, patient triaging and referrals.

Essential supplies provided with the support from WHO arrive in Dili airport in April 2021
Photo credit: WHO Timor-Leste

The country's overall COVID-19 response was planned under the nine pillars of the Strategic Preparedness and Response Plan (SPRP) of WHO, which include providing country-level coordination, planning

> **WHO played a vital role in helping to expand the critical care facilities in Timor-Leste, without which the mortality rate could have been higher,**
>
> *said Dr Arvind Mathur, the WHO Representative to Timor-Leste.*
>
> **We not only focused on creating more ICU beds, but also on making critical care physicians available in the country.**

and monitoring, risk communication and community engagement, surveillance, points of entry, laboratory testing, IPC, case management, and operational support and logistics.

> **Broadly, WHO played a key role in providing the most up-to-date technical guidance on every aspect of the pandemic – from supporting genome sequencing outside the country to coordinating with development partners and non-State humanitarian actors,**
>
> *said Dr Mathur, adding that the WHO Country Office also went beyond its mandate and supported infrastructure upgrades in various health facilities.*

Timor-Leste's health minister Dr Odete Maria Freitas Belo acknowledged the WHO Country Office's role, especially in capacity-building. "The training offered by WHO experts contributed to the improved understanding of case severity, clinical case management and referrals, use of oxygen therapy and methods of non-invasive and invasive ventilation," said Dr Belo. "These were all essential to salvage lives and manage COVID-19 cases effectively," she said, adding that the MoH and citizens appreciated the support and solidarity shown by WHO throughout the pandemic.

Upgraded testing capacity

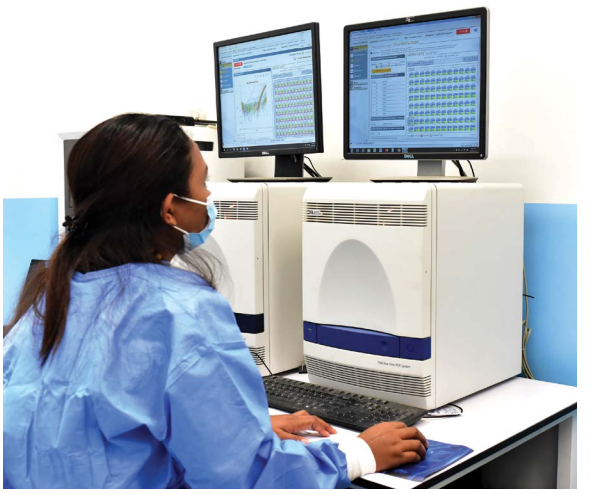
At the start of the pandemic, Timor-Leste's largest laboratory, the National Health Laboratory in Dili, had only one functional reverse transcription polymerase chain reaction (RT-PCR) machine, which the staff used for testing HIV, TB and chlamydia, among other infections. The second RT-PCR machine was non-functional and was repaired when sample collection for COVID-19 began in the country. About 30 laboratory technicians were trained in sample collection as well as COVID-19 testing. However, the samples were sent to Australia for validation during the first few weeks.

During the first year, the laboratory could test only around 100 samples every day. One more RT-PCR machine was put to use along with additional human resources. With this, the laboratory's daily capacity went up to 1000–1500 samples a day when the second wave began, with community transmission from August 2021 to October 2021.

"On certain days, we tested even more than 1000 samples," said Elvina Sarmento Belo, a 30-year-old medical technologist at the NHL. "Our staff strength was almost doubled by the onset of the second wave," she said.

The MoH was supported by WHO and other partners to increase human resources and build capacity. Support was also provided to procure testing kits, reagents and consumables.

Belo recalled how several laboratory staff members feared coming to work in the initial months of the pandemic. "Only a few of us volunteered to work and our shifts often went beyond 12 hours," said Belo. "I took it as a challenge. It was an extraordinary time and I wanted to be a part of the group that worked throughout the pandemic," she said.



A technician at work at the National Health Laboratory
Photo credit: WHO Timor-Leste

Overcoming community resistance

A crucial challenge faced by health care workers was resistance from the community towards testing and isolation during the early stages. This was primarily due to a lack of knowledge and fear of the virus. "Despite the new case detections, we faced a lot of opposition from the community during surveillance activities," said Dr Yu Dongbao, a medical officer (epidemiology) at the WHO Country Office in Timor-Leste. "Many community members were also strongly against building new isolation centres. We had dialogues with local community leaders and religious heads to gradually turn around the situation," he said.

Ms Maria Angela Varela Niha, an officer from the WHO's surveillance team said,

> **"Targeted communication to debunk myths and spread awareness about COVID-19 played a vital role in changing the mindset of the community members. We invested a lot of time and effort in designing posters, banners and planning social media updates so that the community had accurate information about the virus and its true impact on the country. This helped in containing the panic."**

A Briefing for health care workers at the Vera-Cruz isolation facility in Dili

Photo credit: WHO Timor-Leste

Door-to-door campaigning, however, remained the most challenging part of pandemic management. "Community members found it difficult to believe in the pandemic, and they were upset with the stay-at-home orders," said Marito Soares, a 30-year-old nurse with the DGHS. "Since we were often their first contacts, they spilt all their anger on us," added Soares, who was once attacked by a community member with a stone during COVID-19 contact tracing.

Often, during the initial months of the pandemic, field medical staff like Soares had to take the help of the Police and Army to accompany them when doing door-to-door campaigning and testing. "We were trained in risk communication, which helped us manoeuvre around the community resistance. We told them about the risks of developing severe respiratory symptoms, especially in senior citizens and those with underlying ailments. We also told them about how their children were also at risk. Gradually, as the cases rose and the media coverage about the pandemic increased from across the world, the community became more receptive," said Soares.

While the daily case detections in Timor-Leste have come down to single-digit figures over the past several weeks, with zero cases on many days, activities to strengthen the health care system continue in full swing. The country is training more doctors in intensive care to take charge of the newly set up HDUs in the referral hospitals. A batch of laboratory staff is also being trained in genome sequencing, with an aim to start a state-of-the-art sequencing facility soon.

World Health Organization
South-East Asian Region

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