

## **Strengthening Myanmar's biosecurity capabilities** by Kyaw San Wai

*Kyaw San Wai ([isswkyaw@ntu.edu.sg](mailto:isswkyaw@ntu.edu.sg)) is a Senior Analyst at the S. Rajaratnam School of International Studies in Singapore.*

As Myanmar continues its political and economic liberalization, it has stepped up efforts to join and ratify a number of international agreements. In December 2014, it ratified the Biological and Toxin Weapons Convention (BTWC) and, in July 2015, the Chemical Weapons Convention. This highlights Myanmar's seriousness in becoming a responsible and constructive member of the international community.

By ratifying the BTWC, Myanmar promises not to develop, produce, stockpile, acquire or retain biological agents and weapons. This removes the risk of using such weapons along with that of accidental release or theft of dangerous biological agents. While this is an important step in improving the country's biosecurity, more should be done. Biosecurity – minimizing the effects of bioterrorism and the outbreak of infectious diseases of pandemic potential – will be a global issue in the 21<sup>st</sup> century. Myanmar's public health challenges, geography, and increasing interconnectivity all contribute to the need for robust biosecurity capacities.

One of the poorest countries in Asia, infectious diseases are a real problem in Myanmar. According to the World Health Organization, it has one of the highest prevalence rates in Asia and thrice the global average: an estimated 180,000 adults and children developed tuberculosis in 2011. Myanmar also has a high disease burden and mortality rate from malaria, with the WHO estimating 680,000-1.9 million cases in 2013. Worryingly, multidrug-resistant (MDR) and drug-resistant (XDR) forms of malaria and tuberculosis have been reported. Around 210,000 people are infected with HIV, including 20,000 co-infected with tuberculosis. Dengue fever is also experiencing a major epidemiological shift across Southeast Asia and now poses a greater challenge. Myanmar saw a doubling of infection rates between 2014 and 2015 to more than 10,000 cases in the first six months of this year, despite a nationwide preventive campaign.

The impact of communicable diseases is amplified by a chronically underfunded public health system, conflict, poverty, internal displacement, porous borders, and irregular migration. Myanmar's location along migratory bird routes and near emergent disease hotspots also makes it vulnerable to zoonotic epidemics and pandemics. The Myanmar government did not report cases of Severe Acute Respiratory Syndrome (SARS), but at least one human case and three outbreaks of H5N1 in livestock have been reported in rural areas since 2006. The country also experienced over 60 cases during the 2009 H1N1 pandemic.

Bioterrorism is a low probability, high consequence threat. Yet incidents such as the 2001 anthrax letters, the Iraqi biological weapons program under Saddam Hussein, and Al Qaeda's alleged biological weapons program have kept it on the agenda of governments. Agencies are exploring ways to regulate dual-use research, ensuring adherence to biosafety protocols, vetting researchers, expanding bio-surveillance and improving medical countermeasures, such as vaccine stockpiles. Myanmar's aspirations to be a trade node means it will need to bolster monitoring, including bio-surveillance, at ports and land checkpoints so that transnational criminal and smuggling networks cannot exploit connectivity projects for nefarious means such as the transit of dangerous biological agents and toxins.

Myanmar's main obstacle to strengthening biosecurity capacity is the lack of human, technical, and material resources. Agencies such as the Ministry of Health's Department of Medical Research and the Ministry of Science and Technology lack trained staff and adequate access to modern equipment due to past sanctions. The health and education sectors suffer from chronic neglect under previous governments, hampering efforts to build a talent pool to operate and expand Myanmar's biosecurity and bio-surveillance infrastructure. The high disease burden also means that few resources can be spared for projects beyond the scope of traditional infectious diseases.

Myanmar has two Biosafety Level 3 (BLS-3) laboratories, one in Yangon, one in Mandalay, and another one planned in Taunggyi. The labs serve as tuberculosis reference libraries but their roles have expanded to rapid diagnosis of emerging disease threats. There is a need to ramp up their expertise, capacity, and capabilities: some suspected tuberculosis samples are sent to Thailand for testing due to limited capacity, and when a suspected case of Ebola was detected at Yangon International Airport in August 2014, the samples had to be flown to Germany for testing. In discussions, staff from the Ministry of Health stress that Myanmar lacks the capacity and expertise to tackle pandemics and that more resources are needed to address familiar infectious diseases.

There are a number of platforms that Myanmar can use to bolster its biosecurity capacities. The recently-launched Global Health Security Agenda, which focuses on preventing, detecting, and responding to infectious disease threats and includes many of Myanmar's neighbors, is one. There is also growing multilateral interest in biosecurity at the regional level that Myanmar should use. For instance, the US Department of Defense's Asia-Pacific Center for Security Studies, the Philippines' Department of Health, and the National Defense College of the Philippines co-hosted a workshop on "Biosecurity in Southeast Asia" in November 2014, involving eight Southeast Asian nations. The "Multilateral Strategic Dialogue on Biosecurity" involves

government agencies and research institutions from the United States and certain Southeast Asian states. Recognizing that biosecurity is becoming a major international issue and exploring avenues for cooperation will enable Myanmar to benefit from the pooled resources and expertise to identify issues, weak spots, and opportunities.

BTWC ratification also paves the way for foreign academic and research institutions to collaborate with Myanmar universities on biotechnology research. Building the capacity of Myanmar's BSL-3 laboratories will enable faster disease testing and provide training opportunities. Myanmar is aiming to achieve universal health coverage by 2030, and the expansion of public health infrastructure to meet this objective can incorporate guidelines and resources that can be easily mobilized for biosecurity emergencies. Improved surveillance networks can better monitor and report familiar and novel emergent diseases faster, and a robust community health worker network can be utilized for vaccinations and other responses.

As a developing country that has recently opened up to the world, Myanmar has a laundry list of issues to tackle. In the health arena, the emphasis will be on familiar communicable diseases due to the staggering number of Myanmar people affected annually. Strengthening biosecurity capabilities to tackle emerging infectious diseases or possible bioterror threats occupies a low rung on Naypyidaw's agenda. As the country works on achieving universal health care, however, it would be beneficial to do so because these foundations and resources can serve more than one purpose. In short, improving the country's biosecurity capacities will go a long way and have multiple benefits, contributing to public health, scientific innovation, and national security.

*PacNet commentaries and responses represent the views of the respective authors. Alternative viewpoints are always welcomed and encouraged.*