ACTION AGAINST DENGUE

ASEAN Dengue Day: One Year On

15 June 2012

World Health Organization
South-East Asia Region | Western Pacific Region

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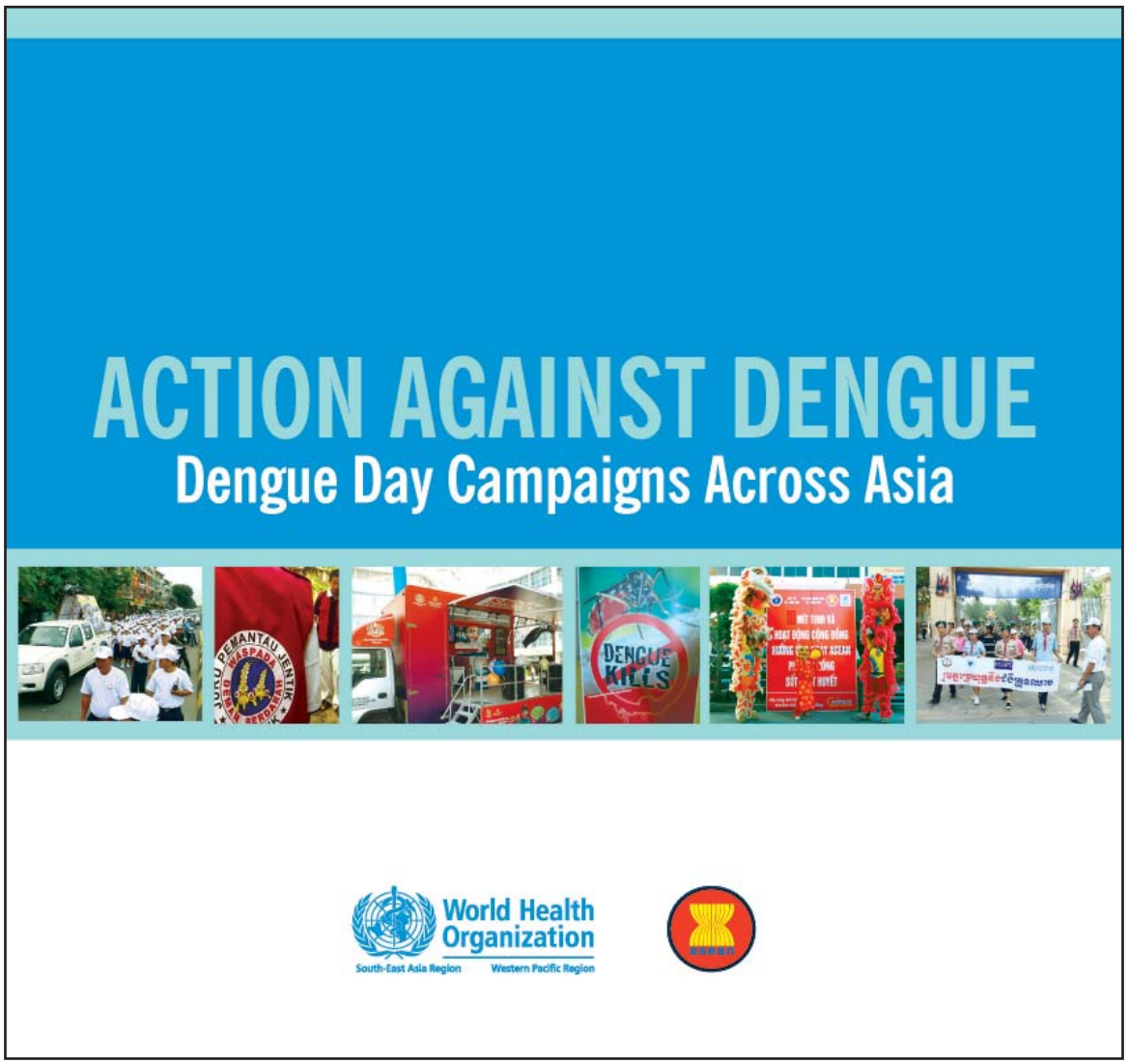
In 2010, the Ministries of Health of the Association of Southeast Asian Nations (ASEAN) designated 15 June as ASEAN Dengue Day. The annual event is intended to raise awareness of dengue, to mobilize resources for its prevention and control, and to demonstrate the region's commitment to tackling this disease.

The first ASEAN Dengue Day was commemorated throughout Asia on 15 June 2011, with an official launch in Jakarta, Indonesia. Regional and national celebrations were documented in the publication, *Action Against Dengue: Dengue Day Campaigns Across Asia*, which was published jointly by ASEAN and the World Health Organization (WHO).



KEY MESSAGES:

- ☑ Calling for action from all
- ☑ Shifting from reactive to proactive approaches
- ☑ Strengthening capacity in an efficient and sustainable way
- ☑ United fight against dengue

Considerable time and effort were put into preparing for the inaugural ASEAN Dengue Day. Together, WHO and ASEAN developed four key messages aimed at policy-makers, high-level officials and other stakeholders concerned with dengue prevention and control.

This year, Myanmar will host the regional celebration of ASEAN Dengue Day 2012, overseeing an official opening ceremony and convening the 2nd ASEAN Dengue Day Conference. At the national level, it will organize essay and poster competitions, an exhibition and health talk on combating dengue, and grassroots-level activities to strengthen local authorities' commitment.

The theme of ASEAN Dengue Day 2012, **"ASEAN Unity for a Dengue-free Community,"** advocates for all ASEAN Member States to work together as one community to fight dengue. It also suggests that dengue cannot be defeated by the health sector without the involvement of other public and private sector stakeholders.

Dengue remains a serious public health problem in Asia. The interplay of vector, climate, international travel, human ecology and behaviour gives the disease its complex epidemiology. The periodic occurrence of large outbreaks in some countries in the region results in significant economic and health impacts. Enhancing regional preparedness and capacity through integrated approaches to surveillance, prevention and timely outbreak response are necessary for sustainable and effective dengue prevention and control.

Calling for action from all

Dengue prevention and control is a shared responsibility. Unless everybody plays their role, dengue will not be controlled.

Key actions include social mobilization (community participation), vector control, case management, surveillance, outbreak response and research.

Individuals, communities, private sector and government agencies (including non-health) need to work together to fight dengue.

Collaboration and partnerships have been key pillars in the call for action for dengue prevention initiatives across the region. From community-based social mobilization activities, to developing innovative tools and strategies for vector management, to disease surveillance and outbreak response, Member States have mobilized their key stakeholders and facilitated on-the-ground action.

In Singapore, the reduction of *Aedes* mosquito breeding, or source reduction, is the cornerstone of the dengue control programme. Through a coordinated Inter-Agency Dengue Task Force (IADTF), every government agency as well as local communities and the pest control industry are actively engaged in the national vector control effort. Integrated vector management (IVM) is aligned with the Government's campaign to establish public–private–people (3P) partnerships for the development of innovative dengue prevention initiatives that are sustainable, safe for the environment and involve the local community. Calls for action are done regularly through community education and law enforcement. A household survey conducted in 2011 revealed that more than 97% of respondents were aware of dengue prevention actions, and more than 81% take such actions regularly.

The vector control programme in Singapore also addresses other vectorborne diseases such as chikungunya and malaria. Intersectoral collaboration is central to the Government's IVM efforts. The IADTF coordinates nationwide mosquito control efforts in 3P sectors, such as urban development and management of water resources, to ensure that activities in these sectors do not compromise source reduction and vector control efforts. The task force also provides a platform for 3P sectors to devise collective solutions to eliminating potential sources of stagnant water in public areas, such as repairs to infrastructure, sealing up of cracks, backfilling of land, and removal of rain gutters. Advocacy within the 3P sectors ensures that vector control is embedded in the operational agenda, and, in the process, empowers the sectors to undertake the activities necessary to sustain mosquito control.

In Indonesia, a significant reduction in dengue morbidity in 2011 and early 2012 may have resulted from strong political will, allocation of funds for dengue prevention and control activities, implementation of intensive health promotion measures using printed and electronic media, and improved availability and effective use of the *Dengue Control Manual* and technical guidelines for larvae control. Effective case management and availability of local funds for outbreak management may have been other contributing factors. Also, an official letter from the Ministry of Health to the governors, which advocated for the cleaning of larvae breeding sites, resulted in the governors instituting a legal decree on provincial dengue control. Early diagnosis, vector control operations, clinical management, and surveillance for outbreak detection were all improved over the year.

In the Lao People's Democratic Republic, under the leadership of the Ministry of Health, dengue prevention and control activities have been implemented collaboratively by official key partners, including the Ministry of Education, the Ministry of Information and Culture, provincial and district-level governors, local village authorities, and private sector groups.

Malaysia has expanded its anti-dengue campaign to new social media such as Facebook, Twitter and blogs.

In Malaysia, the Ministry of Health has adopted several health promotion and community mobilization activities to increase awareness and participation in the community, including:

- launching dengue prevention campaigns through national mass media (television, radio and newspapers), new social media (Facebook, Twitter, blogs), advertisements on public buses and in bus stations, billboards at dengue hotspots, and posters in schools;
- engaging Mobile Dengue Interactive Exhibit and Adversiting Services to campaign for dengue prevention and control in dengue problem areas;

Malaysia's Mobile Dengue Interactive Exhibit and Advertising Services visits dengue problem areas.

National convention on dengue communication materials held in Malaysia in October 2011.

Malaysia's celebrities appointed as health ambassadors

- organizing a national Communication for Behavioural Impact (COMBI) convention chaired by the Ministry of Health in October 2011 in Subang, Selangor to give COMBI groups an opportunity to share their experiences; and
- appointing celebrities as health ambassadors as part of the "Duta Sihat 1 Malaysia" campaign to promote anti-dengue campaigns and encourage community participation. Recent ambassadors have been Mr Aznil bin Haji Nawawi (TV and radio presenter), Ms Phoebe Yap Siok Wah (Mandarin radio presenter and TV host) and Mr Uthayakumar Gopal (radio presenter and talk show host).

Larvae control activities in Myanmar

In Myanmar, dengue prevention and control activities, including conventional antilarval measures, mass larviciding and dengue case surveillance, have been led by Region and State Health Departments and Vector-Borne Disease Control (VBDC) teams, with the participation of national nongovernmental organizations (NGOs), community leaders and responsible administrative officials. Together, health staff and local NGOs conduct weekly larval surveys and control activities. Although vector control has been a regular activity for several years, communities became more involved in dengue prevention in 2011 after ASEAN Dengue Day. For example, in 2011, 2 123 055 houses were tested for the presence of larvae

and participated in larvae control activities, including larvae removal and larvicide treatment of water-storage containers. Mass larviciding activities were carried out in cooperation with local NGOs under the supervision of medical officers in 50 endemic townships using Abate (1% Temephos), according to WHO guidelines.

Thailand's advocacy materials

In Thailand, during the first ASEAN Dengue Day in 2011, the Government adopted the regional theme and developed a local theme to promote mass clean-up of mosquito breeding places. The Ministry of Public Health, through its Department of Disease Control, launched its celebration in Nonthaburi with an opening address by the Permanent Secretary of Public Health, Dr Paijit Warachit. The daylong event, which attracted 874 registered participants from the government, media and public, consisted of performances, an exhibition, health talks, a presentation of awards for a logo competition, and a signing ceremony among five key partners in the fight against dengue: Ministry of Natural Resources and Environment, Ministry of Interior, Ministry of Education, Bangkok Metropolitan, and Ministry of Public Health. The Department of Disease Control disseminated guidelines for dengue prevention and control to 12 regional offices and all provincial health offices. The Department organized a partners' meeting to consider joint activities and conducted a series of campaigns in various settings in Ayutthaya province.

At the regional level, WHO is pursuing intersectoral collaboration through an integrated multi-disease approach that is in line with the principles of IVM and disease surveillance and response. Various disciplines and experts within the Organization are working together to mitigate the impact of climate change on vectorborne diseases in Cambodia, Mongolia and Papua New Guinea. Dengue surveillance and vector management are key areas of focus in this work.

Shifting from reactive to proactive approaches

Dengue is here to stay. Don't react! Act year round!

A proactive approach to fighting dengue means, "Moving from response-driven activities to long-term prevention and preparedness-driven activities."

A proactive approach makes better use of resources to minimize negative health, social and economic impacts from dengue.

To address dengue as a public health problem, Member States have been pursuing sustainable, integrated approaches to dengue prevention and control. Governments have allocated substantial resources to vector control, health education, and surveillance strengthening, and have shifted significantly from response-driven activities to long-term prevention and preparedness-driven strategies.

In Viet Nam, dengue is associated with high morbidity. Approximately 70 million people, out of a total population of 89 million, live in dengue-endemic areas. Dengue control is still considered a public health priority, particular in the southern provinces where dengue incidence is high and the risk of outbreaks is greatest. In 2011, Viet Nam allocated US$ 4 761 000 for national dengue prevention and control activities (up from approximately US$ 900 000 in 2001), and local authorities contributed additional funding at the provincial level, particularly in provinces with hyper-endemic dengue, such as Ho Chi Minh City. Prevention and control activities have been implemented in collaboration with national and regional institutes, as well as centres for preventive medicine at subnational levels. WHO has provided support for policy and guideline development and training.

Since ASEAN Dengue Day 2011, dengue prevention and control activities in Viet Nam have included:

- proactive identification of dengue outbreaks, followed up with dengue vector control measures such as insecticide spraying and removal of mosquito breeding sites;
- strengthened dengue epidemiological surveillance, including case, serological and vector surveillance at all levels, by medical staff trained to use the new national guidelines on early detection and control of outbreaks;
- adoption of new national guidelines on diagnosis and treatment—based on WHO guidelines and used in a training course for doctors working at national, provincial and district hospitals;

- maintenance of a dengue network of collaborators who carry out behaviour change communications activities and help remove mosquito breeding sites in targeted villages and communes;
- broadcast of dengue prevention and control messages on national, regional and provincial television and radio; and
- dengue awareness-raising activities incorporated in school health education programmes and through direct communication to communities by medical staff and dengue collaborators.

In Myanmar, one of the four key messages of ASEAN Dengue Day, "Dengue is here to stay, don't react, act year round," was publicized to generate sustained attention and support in addressing dengue as a public health problem.

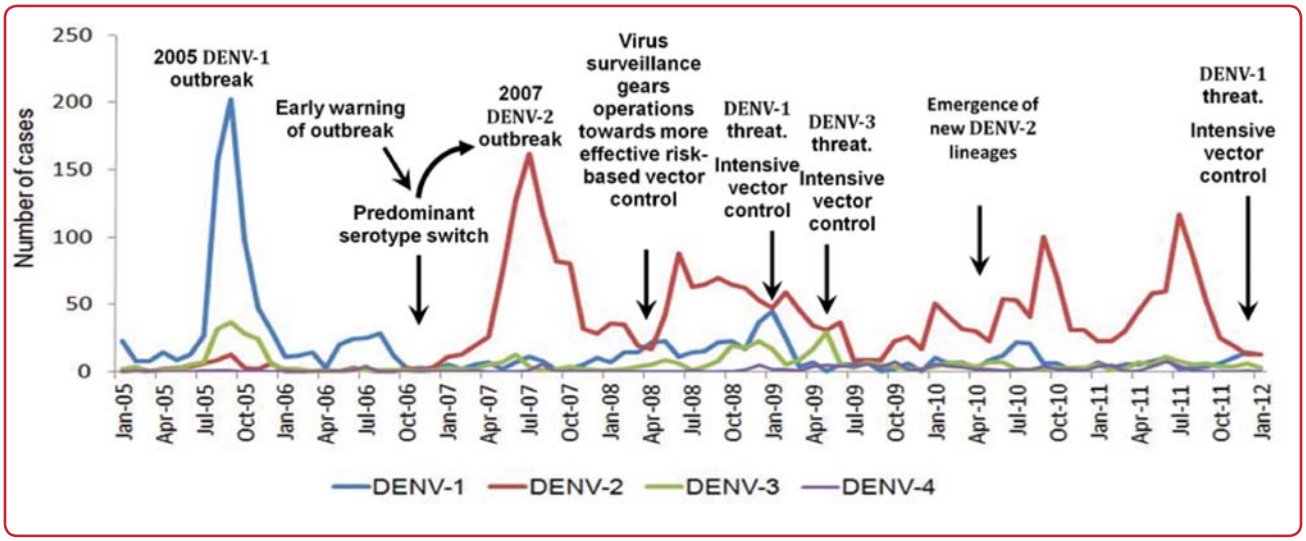
In Singapore, the Government has taken a pre-emptive approach to dengue. Source reduction and educational efforts are performed year-round and are intensified before the onset of the typical dengue season—in the warmer months of June through September. Additionally, a computer-based integrated decision support system, built on the four pillars of case, virus and entomological surveillance and ecological information, continues to provide temporal and spatial risk stratification to facilitate optimal deployment of resources.

Virus serotype and genotype surveillance is performed weekly in Singapore to detect any switch in the predominant serotype of the circulating virus, as well as the emergence and establishment of uncommon virus genotypes that may herald an impending outbreak. In early 2012, six months prior to the dengue season, surveillance detected a switch from dengue virus 2 to dengue virus 1, allowing for a pre-emptive response (See **Figure 1**).

For spatial risk stratification, several risk factors—level of herd immunity, circulating serotypes, distribution of *Aedes aegypti* and *Aedes albopictus*, age of the

Dengue prevention and control activities in Viet Nam

Figure 1. **Changes in predominance of dengue virus serotypes over time in Singapore**



estates, and demographics—are analysed in Singapore using a geographic information system. Areas considered to have relatively higher epidemic potential risk of dengue transmission are marked as focus areas. More resources and intensive vector control are then carried out in these focus areas.

In Cambodia, increased dengue activity has been recorded, especially in the last 12 months. To address this issue, the National Centre for Malaria and Vector Borne Diseases (CNM) has undertaken enhanced surveillance and response activities. Some activities have been routine, but others have been quite innovative. The country has enhanced not only sentinel surveillance with selected samples sent for serological analysis to determine circulating subtypes, but also active inpatient syndromic surveillance to review the burden of disease. In terms of response, more larvicides have been distributed earlier this year compared to the previous year to combat the increasing cases. Additionally, school-based campaigns have started earlier in the year, and training courses and workshops have been conducted for clinicians to improve case management.

In Indonesia, dengue outbreaks are being recognized earlier, and more sensitive and specific diagnostic tests are being used to confirm the disease. There was a 66% reduction in dengue morbidity in 2011 as compared to 2010.

At the regional level, dengue surveillance, prevention and control are guided by two strategic documents: the *Asia Pacific Strategy for Emerging Diseases (*APSED) 2010 and the *Dengue Strategic Plan for the Asia Pacific Region (2008–2015)*. These documents emphasize sustainable integrated disease surveillance

Outbreak control measures in Cambodia

and evidence-based approaches for dengue prevention and control.

Consistent with the regional dengue strategic plan, a community-based dengue vector control project was piloted in Cambodia and the Lao People's Democratic Republic. This work aimed to complement traditional larviciding methods in a sustainable, efficient way by introducing locally available larvivorous guppy fish in water-storage containers. In communities that piloted the strategy, a 95% reduction in vector pupae was observed after 11 months. The methodology has been sufficiently tested in the two Mekong Subregion countries and is ready to be introduced beyond the pilot areas and in other countries with similar entomological conditions.

For outbreak response, proactive and integrated steps have been taken to respond to outbreaks in the Asia Pacific region. Existing national response teams in several countries have been utilized for outbreak

Vector control programme to eliminate adult mosquito breeding in Brunei Darussalam

Community participation during a dengue awareness campaign in Brunei Darussalam

response. WHO has collaborated closely with partners to mobilize resources and to procure emergency vector control equipment and rapid diagnostic test kits. WHO has also provided support through the development of outbreak control guidelines and dispatch of an operational entomologist for technical support on vector control operations.

Strengthening capacity in an efficient and sustainable way

Dengue: Pathfinder for strengthening national and regional alert and response capacities.

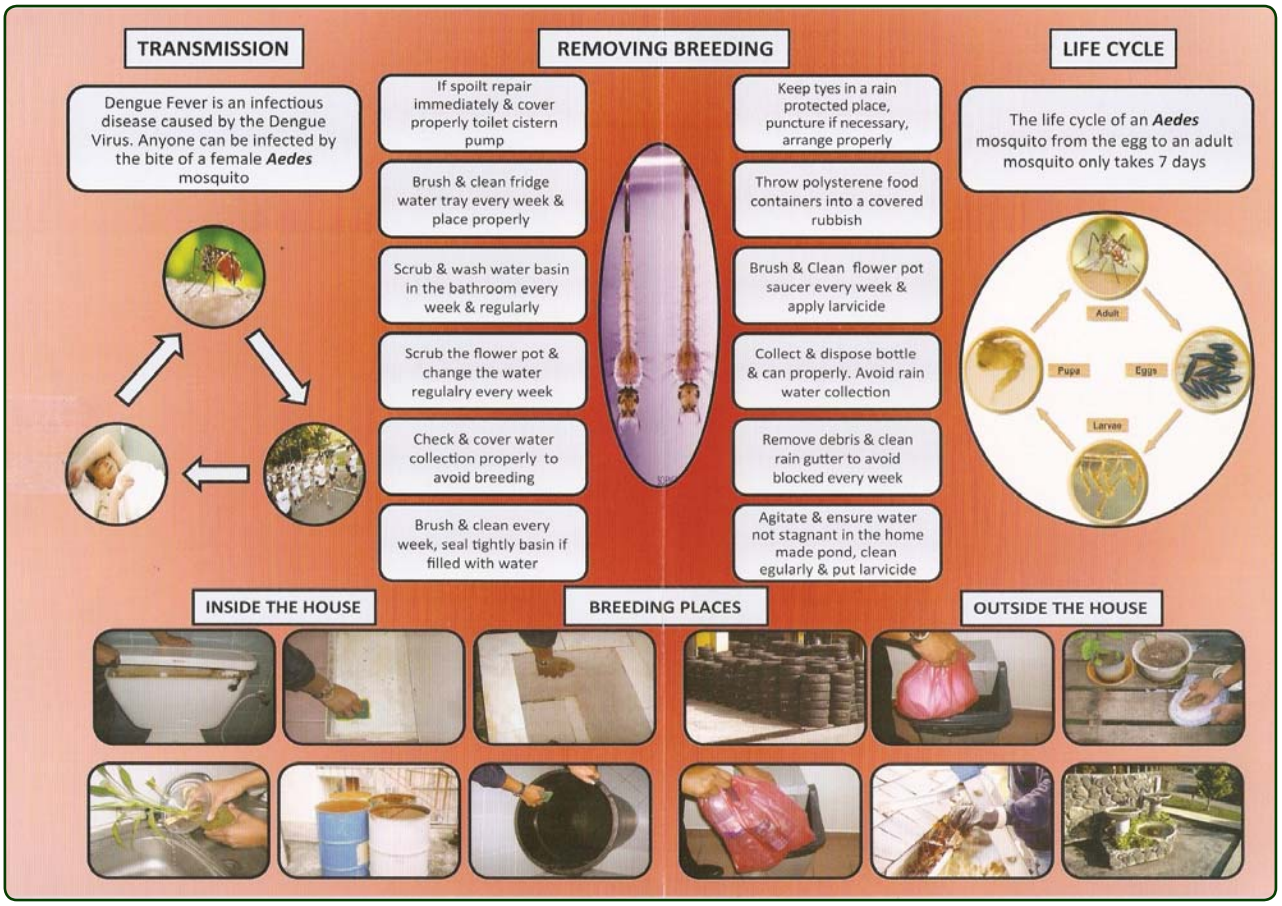
Integrating dengue prevention and control measures into existing initiatives improves efficiency and sustainability.

Existing initiatives include Integrated Vector Management (IVM) and core capacity development in accordance with the Asia Pacific Strategy for Emerging Diseases (APSED) and the International Health Regulations (2005).

Existing capacity-building strategies are being used throughout the region as a springboard for dengue prevention and control activities. By maximizing strategies such as *APSED (2010)* and the *Dengue Strategic Plan for the Asia Pacific Region (2008–2015),* WHO and Member States are able to use resources more efficiently, eventually hastening sustainability.

In Brunei Darussalam, dengue prevention and control is being achieved through the strengthening and enhancement of public health strategies and measures that have been in place since the 1960s. Such strategies and measures include early detection of dengue cases, serological screening of contacts, entomological surveys, vector-reduction activities including environmental sanitation, and health education through IVM. The country is experiencing a seasonal pattern in the reporting of dengue cases. An early warning system set up by the disease surveillance network gives a further boost to the current efforts. Additionally, to strengthen clinical competencies in the diagnosis and management of dengue cases, continuous medical training on dengue case management is in place. Research looking into serotyping, health risk impact assessment, and entomological surveys are also currently undergoing.

School-based dengue awareness campaign in Brunei Darussalam



Dengue awareness pamphlet distributed in schools and communities in Brunei Darussalam

Children learn about the two dengue vector species, *Aedes aegypti* and *Aedes albopictus,* in Brunei Darussalam

In the Philippines, the Department of Health updated their *Guidelines on Dengue Clinical Diagnosis and Treatment* based on WHO's guidelines for diagnosis, prevention and control of dengue. After a series of consultations with selected national government hospitals and medical societies, such as those for paediatrics, internal medicine and infectious diseases, the guidelines came into effect through a Department of Health Administrative Order, and will be disseminated to the local level. Training was also conducted in the Davao Region of Mindanao for senior medical officers and heads of local hospitals, both public and private. The next step for senior management will be to harmonize the surveillance case definition as well as the criteria for health insurance reimbursements.

The Research Institute for Tropical Medicine of the Philippines has been strengthening its capacity for laboratory diagnosis of dengue. Initiatives have included training for virology laboratory staff on laboratory techniques, assay development, kit evaluation, real-time polymerase chain reaction and genotyping of isolates, data management, and use of geographic information systems and other modelling software.

Dr Lyndon Lee Suy, National Dengue Programme Manager, lectures physicians in Davao on the new dengue clinical guidelines in the Philippines.

In Myanmar, in 2011, 193 township medical officers and 16 VBDC staff from 144 townships were trained on dengue surveillance, IVM, laboratory diagnosis of dengue, and prevention and control of dengue cases, with support from WHO and the United Nations Children's Fund (UNICEF). That same year, the

National Dengue Control Programme negotiated with the Japan International Cooperation Agency to assist in the development of database software for dengue morbidity and mortality. State and regional focal persons were trained on developing a dengue database in 2012.

Indonesia has been actively monitoring the dengue disease burden. All four dengue serotypes are present in urban and rural areas and across all age groups in Indonesia. Severe disease is predominantly attributed to dengue virus 3. Morbidity and mortality associated with dengue have decreased in recent years, but dengue epidemics occur in all provinces in Indonesia. Dengue outbreaks have also been recognized earlier, with more sensitive and specific diagnostic tests helping to confirm the disease.

Capacity-building activities in Myanmar

United fight against dengue

Dengue respects no boundaries.

Dengue is a priority disease for the Asia Pacific region. Regional information sharing is vital.

Addressing common threats in a united and coordinated way will maximize our region's resources and secure our region's health.

Dengue does not respect national borders. As such, regional cooperation is needed to wage a united fight against it. ASEAN Dengue Day is a tangible expression of how Member States are working together to prevent and control dengue. Regional collaboration has helped to enhance dengue prevention and control activities at the national level and has facilitated partnerships for capacity-building among countries.

Singapore and Malaysia are working together on cross-border surveillance. The Environmental Health Institute of Singapore and the Ministry of Health of Malaysia are jointly developing a web portal, UNITEDengue (United In Tackling Epidemic Dengue), which will enable participating public health institutions in the Asia Pacific region to share case and virus surveillance information, thus contributing to a better understanding of the molecular epidemiology of dengue in the region.

Dengue awareness billboard in Malaysia

Larvae inspectors conduct breeding reduction activities every Friday in Indonesia

Capacity-building activities in Myanmar

Thailand, with funding from its Armed Forces Research Institute of Medical Sciences, has provided training on data management, geographic information systems and modelling to staff of the Philippines' National Epidemiology Center.

Indonesia, in 2012, conducted a second round of the dengue vaccine trial among schoolchildren in three cities—Jakarta, Bandung and Denpasar. No significant adverse effects have been reported so far. This trial is running simultaneously in Malaysia, the Philippines, Thailand and Viet Nam.

Myanmar, under the guidance of the Ministry of Health, has encouraged local governments, NGOs and communities to wage a united fight against dengue at all levels to support the common goal of recognizing dengue as a priority disease in the Asia Pacific region.

Brunei Darussalam is enhancing dengue awareness among community leaders and schoolchildren and promoting community participation in combating vector breeding to limit dengue transmission.

In support of the national dengue prevention and control activities, regional initiatives such as information sharing are critical. Member States recognize the benefits of sharing information among neighbouring countries, and in collating data to monitor epidemiological trends. WHO facilitates information sharing at the regional level and systematically updates the regional dengue situation every two weeks on its public website (http://www.wpro.who.int/entity/emerging_diseases/DengueSituationUpdates/en/index.html). In addition, a comprehensive annual report on the regional dengue situation is published by the online journal, *Western Pacific Surveillance and Response*, which serves as a tool to share information and to document field experiences.

WHO has prepared a regional strategic framework for IVM as a roadmap for the region. Malaysia and the Philippines are being supported in conducting national IVM training workshops. One of the IVM strategies is rational use and sound management of pesticides.

The Asia-Pacific Network for Monitoring Insecticide Resistance was established to strengthen the regional information base on disease vector susceptibility to insecticides. This initiative will be the basis for recommending a rational resistance management policy and effective vector control.

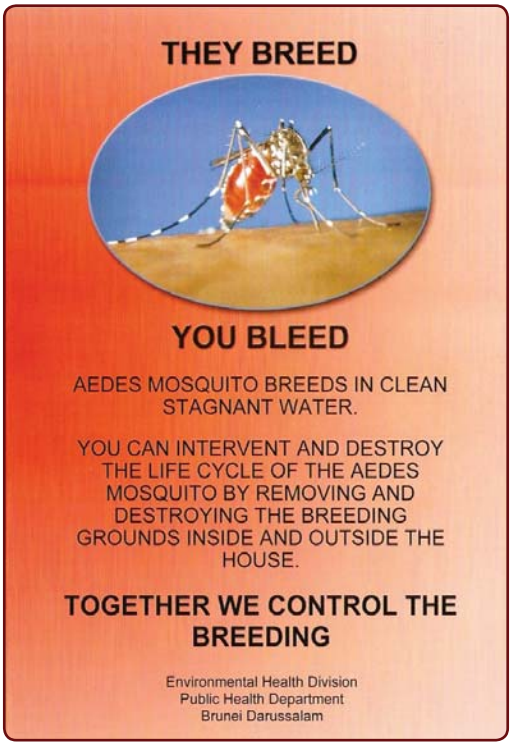
Efficient and accurate diagnosis of dengue is of primary importance for surveillance activities, outbreak control, clinical care, academic research, vaccine development and clinical trials. Regularly conducting external quality assurance (EQA) programmes is important to assure the quality of dengue diagnostic tests. EQA involves comparing test results between laboratories. WHO is working closely with dengue experts and WHO Collaborating Centres for Arbovirus Reference and Research to establish an EQA programme for the diagnosis of dengue in the region.

Promoting dengue awareness among schoolchildren in Brunei Darussalam

WHO collaborating centres are key partners in dengue prevention and control, and closer collaboration has been achieved with existing centres such as the Environmental Health Institute, Singapore and the Institute for Medical Research, Kuala Lumpur, Malaysia.

Dengue is a common public health problem in Asia and the Pacific, with the threat becoming increasingly more complicated. The success of dengue prevention and control activities depends heavily on the coordinated efforts of the Member States, not just the efforts of individual country programmes. Combating a common disease effectively entails fighting as one community.

Dengue awareness bulletin boards prepared by the Ministry of Health of Brunei Darussalam



Dengue awareness pamphlet distributed by the Ministry of Health of Brunei Darussalam

For more information, please visit:

www.asean.org
www.searo.who.int
www.wpro.who.int/health_topics/dengue

Calling for action from all

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