



# MONTHLY DENGUE UPDATE

A publication of the National Dengue Control Unit  
Ministry of Health, Sri Lanka



Volume 02 Issue 05

May 2022

## Contents

1. <i>Feature article</i>	1
2. <i>Distribution of Dengue patients</i>	4
3. <i>Virus surveillance data</i>	4
4. <i>Summary of entomological and epidemiological surveillance data – April 2022</i>	4
5. <i>Entomological forecast</i>	7
6. <i>News update</i>	8

## *Thinking beyond the boxes: The dilemma of preserving health in built environment*

Structures of different shapes and sizes have intrigued mankind since time immemorial. Pyramids of ancient Egypt, the Great Wall of China and our own Stupas have continued to draw the attention of not only archeologists, engineers, and architects but also awestruck public across the globe. Such fascination and interest are testimonials for the relationship between the man and the built environment, they occupy.

Many schools of thought and think tanks across the globe identify buildings as 'living entities. Therefore, a healthy, living building, no doubt would ensure the health and wellbeing of its inhabitants. This has been further consolidated by the declaration of 'Sustainable Cities and Communities' as one of the Sustainable Development Goals (SDG). Given the context of 'Health and Wellbeing' being highlighted as another SDG, the relationship between these two SDGs (SDG 3 and 11) would be an interesting area of research in future.

Hence, National Dengue Control Unit, Department of Civil Engineering, University of Moratuwa and Disaster Preparedness and Response Division (DPRD), Ministry of Health (MoH) together University of Huddersfield and University of Colombo conducted a

special plenary session on “**Built environment resilience and innovation in addressing biological hazards and multi hazard scenarios**” during the recently concluded Dengue amidst the pandemic: International Research and Innovations Symposium, 2022. The panelists include,

- Dr. Sunil De Alwis, Additional Secretary (Medical services), Ministry of Health
- Dr. Hemantha Herath, National Coordinator, Disaster Preparedness and Response Unit (DPRD), Ministry of Health
- Dr. Novil Wijesekara, Acting Consultant Community Physician, DPRD, Ministry of Health
- Dr. Chandana Siriwardena, Senior Lecturer, Department of Civil Engineering, University of Moratuwa



Session was moderated by Dr. Lahiru Kodituwakku, Medical Officer, National Dengue Control Unit. Discussion evolved around several thematic areas, namely,

- Basic concepts of built environment
- Health hazards and built environment
- Critical infrastructure with special emphasis on 'Safe Hospitals'
- Health resilience and innovations in built environment



#### **a) Basic concepts of built environment**

Basic components of the built environment were highlighted as a starting point for the discussion. Panelists emphasized that the built environment not only include the physical aspects such as buildings, bridges, and road networks but also nonphysical aspects like inhabitants of the built structures and human-building interaction. Therefore, they reiterated that it is justifiable to categorize a built structure as a 'living entity'.

Discussion also highlighted the fact that whenever the balance between the human, environment and building components are lost, the health of the inhabitants would be compromised. Hence, any intervention aimed at prevention of transmission of diseases within built environment should identify built environment as a living system of individual components with a fragile balance between them. For example, one cannot eliminate mosquito

breeding sites in a construction site ignoring the involvement of its labour force during the process.

#### **b) Health hazards and built environment**

Building further upon the basic concepts, panelists then focused on the common health hazards encountered within the built environment. According to them, Injuries and accidents in the construction industry were prioritized as health hazards for many decades, yet we need to see beyond common trauma and injuries. They stressed that transmission of communicable diseases, especially vector borne diseases like dengue and malaria, COVID-19 and other respiratory diseases, skin diseases, water borne diseases due to unhygienic living conditions within the construction sites would be the greatest threat in coming years. Additionally, extreme weather events like heat waves could further deteriorate the living conditions within construction industry, giving rise to heat exhaustion and heat stroke.

They further emphasized the importance of appreciating the existence of dual health threats like COVID-19 and dengue among construction workers that would challenge any health system.

#### **c) Critical Infrastructure and Safe Hospital Initiative**

Following a rich exchange of ideas on health hazards in built environment, panelists initiated the discussion on the importance of identifying critical infrastructure within the built ecosystem. They reiterated the fact that functionality and service continuity of hospitals and other health care institutions are essential during any crisis or disasters. Hence, consistent monitoring and evaluation of the structural, nonstructural, and functional integrity of hospitals should be implemented collaboratively with engineers, architects, and health care professionals. 'Safe Hospital Initiative' is one such collaboration where all allied professionals work in unison to make hospitals disaster resilient. Dr. Chandana Siriwardana and Dr. Novil Wijesekara, two of the pioneers in adapting Safe Hospital Initiative to Sri Lanka explained the process of this collaboration and the way forward.

With the advancement of cost-effective building material and sophisticated architectural designs we have shifted from being open to environment to being confined to boxes, panelists reiterated. This needs to be changed and there should be a paradigm shift in our building development processes to incorporate more environment friendly, aerated, spacious and health-conscious building designs. According to the expert panel, rethinking building designs are critical to control vector borne diseases such as dengue. Simple modifications like removing unused gutters to complex building designs with globally accepted standards could be a change maker in vector borne disease prevention in built environment. Citing an example from developed nations, they emphasized that while we are concentrating more time on the construction phase itself, developed nations prioritize on the planning phase.



#### **d) Health resilience and innovations in built environment**

‘Fivefold health (pancha vidaya saukhya)’ inscribed in ancient Buddhist teachings is a valid tool to evaluate health and hygiene even in today’s context, highlighted the panelist in their final remarks during the first round of discussion. Well ventilated houses, sanitary toilets, safe drinking water, compost site and

home garden are the essential elements of this time-tested system. If one can apply the same on construction and city planning sectors, health of the communities would be automatically ensured.

Additionally, they also reiterated how innovations in building designs, reconfiguration of streets, changes in transportation, provision of green spaces and more avenues for teleworking could transform the built environment landscape in future. These transformations would augment the built environment resilience against biological hazards and multi hazards scenarios.

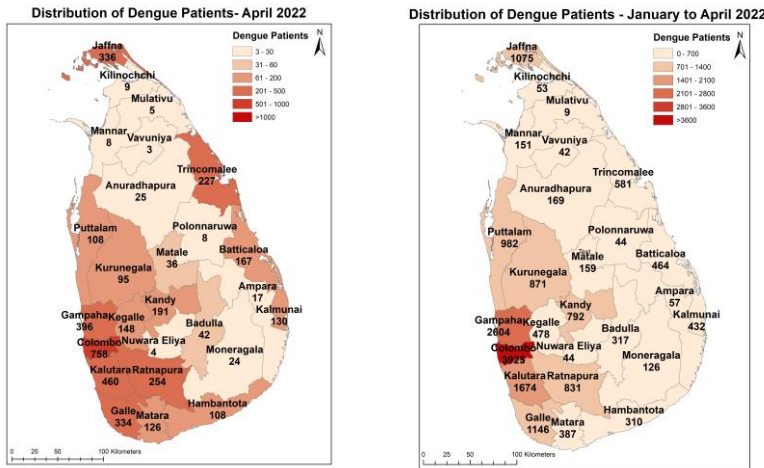
In the second round of discussion all resource personnel highlighted the importance of shifting towards ‘Systems thinking’ rather than working in silos in response to multiple hazards. A paradigm shift from disease surveillance to one health concept, emergency outbreak response to health system resilience, international health regulations to planetary health concept would be the pathway to future. Such thinking would pave the way for innovative interventions in controlling diseases of major public health concern like dengue within our living spaces.

No doubt the ideas generated through this rich discussion would have a cascading effect on disseminating new knowledge and best practices in built environment resilience among many professionals of varied interest. It is certain that thinking beyond our silos and boxes would enable us to mount a cohesive and collaborative effort towards achieving a disaster resilient built ecosystem in future.

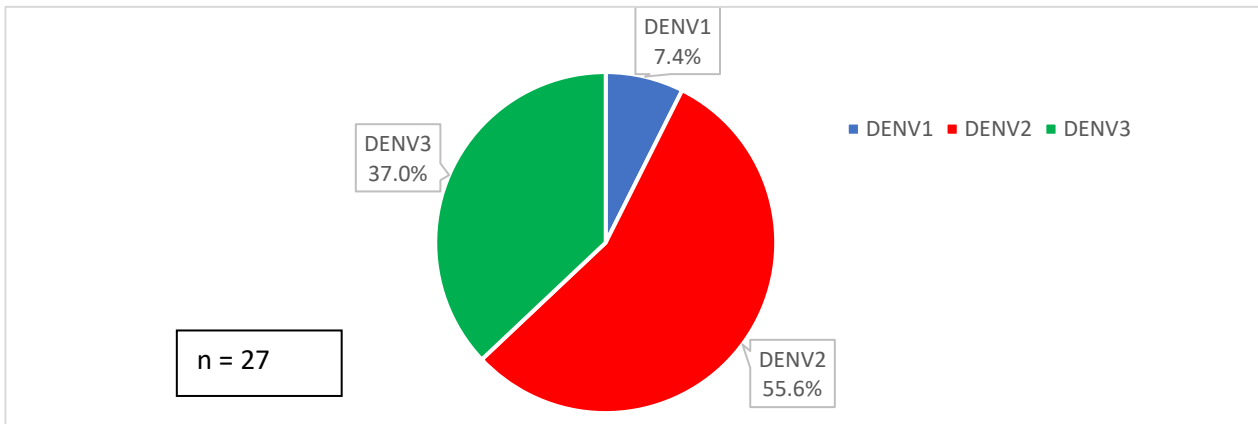


**Author: Dr. Lahiru Kodituwakku, Medical Officer, National Dengue Control Unit**

## 2. DISTRIBUTION OF DENGUE PATIENTS – April 2022



## 3. VIRUS SURVEILLANCE DATA – April 2022



Source: Department of Virology, MRI and Centre for Dengue Research, University of Sri Jayewardenepura

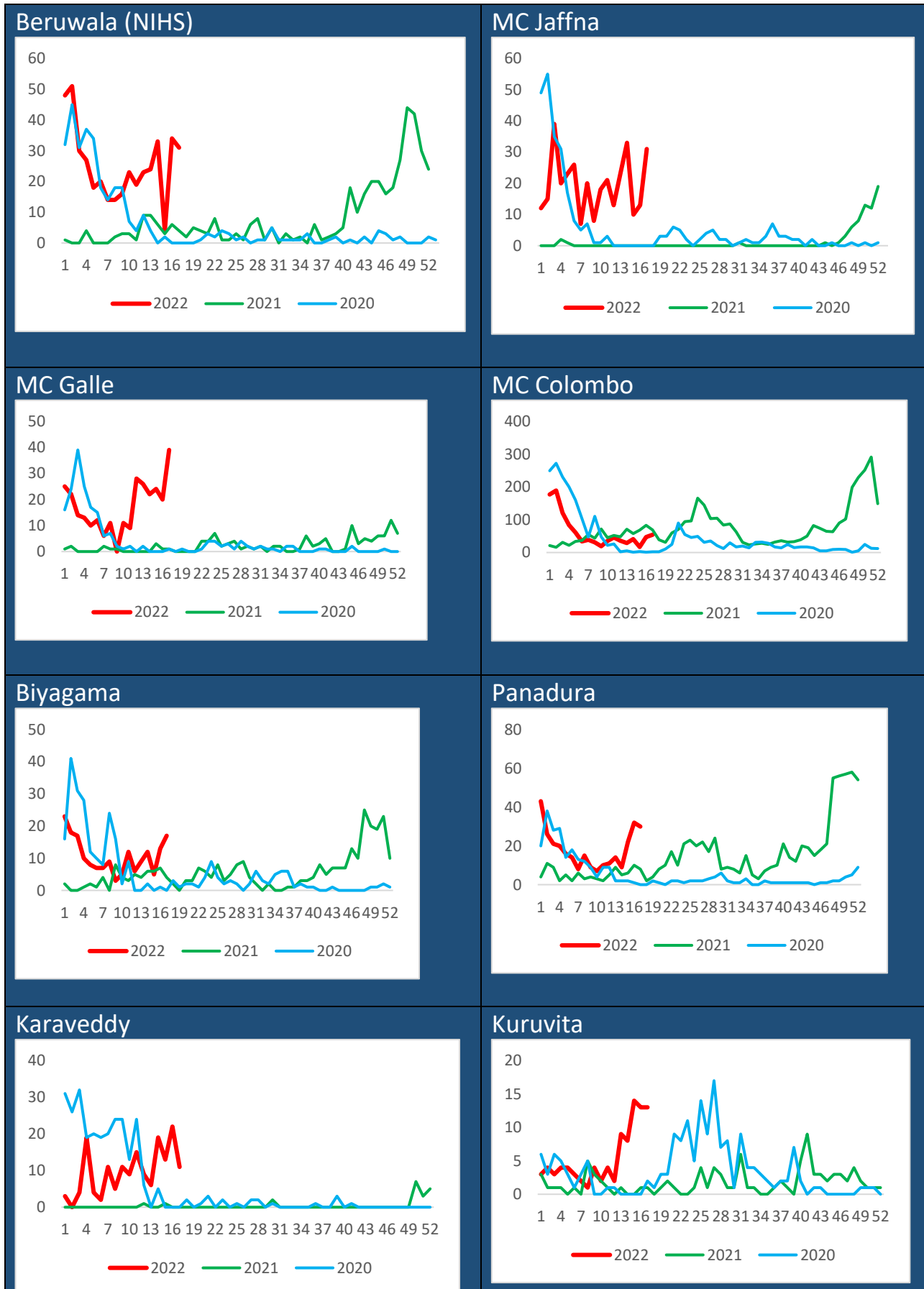
## 4. SUMMARY OF ENTOMOLOGICAL AND EPIDEMIOLOGICAL SURVEILLANCE DATA - April 2022

SUMMARY OF ADULT VECTOR SURVEYS				
District	MOH	GN area	Findings	
Matara	Matara Mc	Walgama South	Outdoor findings (7.40am -3.45pm)	<i>Aedes albopictus</i> Females 02 (unfed); Males 05
Kalmunai	Akkaraipattu	Jinnah road	Indoor findings (8.15 a.m-12.15 pm)	<i>Aedes aegypti</i> Females 04 (Unfed 2, Blood fed 2); Males 06
Kalutara	Horana	615, Horana South	Outdoor findings (8.10am -2.05 pm)	<i>Aedes albopictus</i> Females 02 (Blood fed 02)
	Horana	621, Maputugala	Outdoor findings (9.20am -6.00 pm)	<i>Aedes albopictus</i> Females 01 (Blood fed 01)
	Horana	604, Palannoruwa	Outdoor findings (8.10am -2.05 pm)	<i>Aedes albopictus</i> Female 02 (Blood fed 02)

## 2. SUMMARY OF ENTOMOLOGICAL AND EPIDEMIOLOGICAL SURVEILLANCE DATA

Province	District	Entomological surveillance data				Epidemiologica l surveillance data	
		(Source - returns of entomology surveys received by NDCU)				(Source- DenSys)	
		No. of Premises			Main type of containers positive for larvae and percentage positivity	Month	
		Inspected	Positive Found	Positive %		April	Cumulative
W P	Colombo	938	93	9.9	Discarded items (32.5%), Temporary removed items (18.4%), Concrete slabs (15.3%)	758	3925
	Colombo MC	122	12	9.8	Temporary removed items (23.8%), Concrete slabs (14.3%), Tyres(14.3%)		
	Gampaha	1632	177	10.9	Discarded items (35.2%), Temporary removed items (18.4%), Covering items (9.7%)	396	2604
	Kalutara	900	94	9.3	Discarded items (28.4%), Temporary removed items (21.3%), Pet feeding (11.8%)	460	1674
	NIHS	700	91	13	Temporary removed items (31.9%), Discarded items (30.8%), Water storage barrel (8.8%)		
C P	Kandy	2399	169	7	Water storage barrel (17.5%), Discarded items (14.4%), Water storage other items (12.9%)	191	792
	Matale	900	42	4.7	Discarded items (49%), Water storage barrels (17.6%), Water storage cement tanks (11.8%)	36	159
	Nuwara Eliya	500	22	4.4	Discarded items (22.3%), Water storage barrel (18.2), Covering items (13.6%)	4	44
S P	Galle	2400	199	8.3	Discarded items (25.9%), Ornamental items (17.8%), Water storage barrel (14.4%)	334	1146
	Hambantota	1048	74	7.1	Ornamental items (21.1%), Water storage barrel (15.4%), Discarded items (15.4%)	108	310
	Matara	1700	113	6.7	Ornamental items (23.7%), Water storage other item (19.6%), Discarded items (18.6%)	126	387
N P	Jaffna	720	20	2.8	Ornamental items (25%), Water storage other item (20.9%), Water storage cement tanks (16.7%)	336	1075
	Kilinochchi	108	5	4.6	Discarded items (80%), Wells (20%)	9	53
	Mannar	1100	20	1.8	Water storage cement tank (35%), Water storage other items (25%), Tyres (1%)	8	151
	Vavuniya	1384	77	5.6	Discarded items (42.1%), Water storage other items (18.9%), Tyres (13.7%)	3	42
	Mullativu	135	7		Water storage barrels (28.6%), Pet feeding items (28.6%), Tyres (14.3%)	5	9
E P	Ampara	145	3	2.1	Ornamental items (50%), Tyres (33.3%), discarded items (16.7%)	17	57
	Batticaloa	1461	141	9.7	Other items (24.3%), Temporary Removed items (14.4%), Water storage other items (11.5%)	167	464
	Trincomalee	595	49	8.2	Water storage barrels (26.9%), Water storage cement tank (13.5%), Other items (11.5%)	227	581
	Kalmunai	1300	107	8.2	Ornamental items (21.5%) Other items (18.2%), Temporary removed items (16.5%), Discarded items (16.5%)	130	432
N W P	Kurunegala	1261	114	9	Discarded items (18.2%), Ornamental items (15.7%) AC and refrigerators (10.7%)	95	871
	Puttalam	569	22	3.9	Discarded items (18.8%), Water storage barrel (18.8%), Water Storage cement tank (18.8%),	108	982
N C P	Anuradhapura				Data not Received by NDCU	25	169
	Polonnaruwa	400	33	8.3	Discarded items (34.3%), Water storage other items (20%), Ornamental items (14.3%)	8	44
U P	Badulla	51	10	19.6	Covering items (26.7%), Discarded items (20%), Water storage other items(20%)	42	317
	Monaragala	1260	178	14.1	Discarded items (53.1%), Water Storage barrels (14.6%), covering items (8.8%)	24	126
S G P	Rathnapura	1100	173	15.7	Discarded items (37.6%), Tyres (9.9%), Water storage other items 8.5%)	254	831
	Kegalle	2315	155	9.04	Discarded items (15.3%), Ornamental items (14.7%), Water storage barrel (12.8%)	148	478
<b>Sri Lanka</b>		<b>24325</b>	<b>2198</b>	<b>9.04</b>	<b>Discarded items (26.5%), Water storage barrel (10.1%), Ornamental items (9.9%)</b>	<b>4019</b>	<b>17723</b>

Current High Risk MOH Areas - Epidemiological Trends (Source: DenSys)



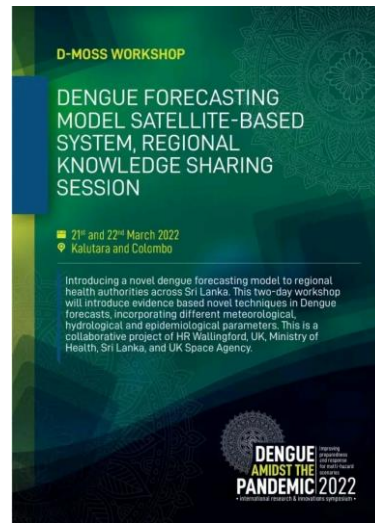
## 5. High-risk areas based on Entomological forecast

District	MOH Area	GN Division
Colombo	Gothatuwa	Welewatta
	Nugegoda	Welikada East
	Rathmalana	Pirivena Road
	CMC D3	Marikkar Place
Gampaha	Attanagalla	Thihariya
	Biyagama	Makola North
Kalutara	Beruwala	766
	Kalutara	727C
	Horana	Koralaima
	Kalutara	732
Puttalam	Puttalam	Pudukudirippuwa
Kurunegala	Mc Kurunegala	Main Street
Kandy	Kundasale	Kengalla
	Ampitiya	Ulpathakumbura
	Werellegama	Haloluwa
	Akurana	Pallevalikatiya
	Kundasale	Pallekele
Moneragala	Buttala	Yudaganawa
Mannar	Mannar Town	Pallimunai West
Rathnapura	Embilipitiya	Pallegama
Matara	Matara MC	Welegoda
	Matara MC	Walgama South
	Kamburupitiya	Benthishena
	Weligama	Mirissa
Galle	Ambalangoda	Patabendimulla
	Ambalangoda	Karittakanda
Batticaloa	Eravur	Eravur 1
	Koralai Pattu Central	206
	Chenakalady	Ellai Nagar & Eravur 4
	Kattankudy	167A
	Oddamavadi	Mancholai 207A
Kalmunai	Sainthamaruthu	Sainthamaruthu-10,12,13,15
	Kalmunai North	Kalmunai-02
	Akkaraipattu	TD-3
	Nintavur	Nintavur-5,6
	Addalaichchenai	Addalaichchenai

Dengue vector surveys were conducted in 347 GN areas inspecting 24325 premises in April. Here, the Entomological forecasting has been done by considering the districts currently recording a high number of Dengue cases that are also recorded high values for entomological indices against their conventional threshold values.

6. SPECIAL ACTIVITIES AND EVENTS CONDUCTED BY THE NATIONAL DENGUE CONTROL UNIT

Post Congress Session: D-MOSS workshop – 21,22.03.2022



Post Congress Session: Jaffna – 24,25.03.2022



Knowledge Sharing Sessions 27.04.2022



**National Dengue Control Unit  
Public Health Complex,  
555/5, Elvitigala Mawatha,  
Colombo 05.**

**Address**

Any comments, suggestions, and contributions for the MDU Sri Lanka are welcome.

**National Dengue Control Unit, Ministry of Health, Sri Lanka**  
555/5, Public Health Complex, Elvitigala Mawatha, Narahenpita, Colombo 05.  
Tel: +94(0) 112368416/ 7 Fax: +94(0) 11 2369893  
Email: [ndcu2010@yahoo.com](mailto:ndcu2010@yahoo.com) Web: <http://www.dengue.health.gov.lk>