MONTHLY DENGUE UPDATE

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

CONTENTS

Dengue Prevention: Why People Do Not Learn?

Over the years many researchers and policy makers in public health domain have been baffled by one fundamental question, 'Why people do not learn?".

Public compliance to vital health messages constitutes an integral part of any prevention strategy including Dengue. Numerous communication interventions and behavioral approaches have been tested, yet public compliance on Dengue prevention messages was not adequate to produce lasting results.

Health Belief Model (HBM), a time-tested model in health promotion might provide the million-dollar answer. Application of HBM for Dengue prevention and control would help us understand public psyche and modus operandi for a sustainable solution to this age-old problem (Siddiqui et al. 2016).

What is Health Belief Model?

HBM is a one of the most widely used models for understanding health related human behaviour. It predicts and explains health behaviour at an individual level. Accordingly, there are key constructs that predict and influence individual health behaviour.

- Perceived susceptibility - Person's belief in the likelihood of contracting a particular disease

- Perceived severity - Person's belief in the consequences of a disease

- Perceived benefits - Person's belief in benefits of his or her actions

- Perceived barriers - Person's belief on obstacles to achieve an intended action

- Cues to action - Exposure to conditions that prompt action

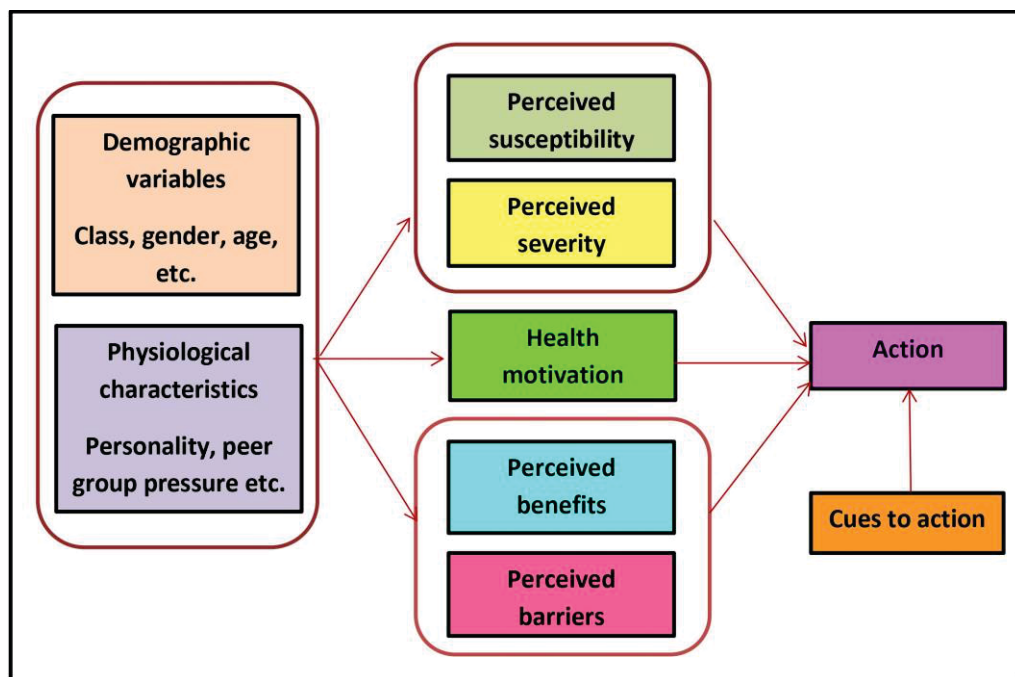- Self-efficacy - Individual's confidence to carry out intended action

Figure 1: Health Belief Model and Constructs

Demographic variables such as age, gender and psychological aspects like personality and peer pressure might influence these constructs too. Accordingly, to initiate a successful health action, there should be a perceived threat to health as well as a potential benefit that outweighs perceived barriers for a positive behaviour.

How can we apply HBM in Dengue prevention?

A contemporary Sri Lankan setting will provide a perfect backdrop to test this model.

Perceived susceptibility: An apparently healthy individual in home environment believed be tidy and clean, is less likely to suspect, being ill with Dengue.

Perceived severity: Although it has been communicated that Dengue can kill, comparatively less mortality rates might give a false sense of reassurance and security about the severity of the disease.

Perceived benefits: Individual might not see any benefit from diverting his or her routine work schedule to clean a water clogged roof which might harbour mosquito larva.

Perceived barriers: Difficulty in finding time from a busy schedule might be perceived as a barrier to clean home environment.

Cues to action: Not seeing similar actions being performed by neighbours would further defer the individual from intended action.

Self-efficacy: Lack of self confidence in his or her ability to clean the environment and remove mosquito breeding places at home might delay the intended action.

Hence, any heath message that does not address these individual factors are designed to fail. Although public would barely listen to the message, a sustainable action could not be materialized.

What are the solutions available to address these construct issues?

•Susceptibility could be emphasized by communicating the existence of Dengue threat in the vicinity of the neighborhood and community. For example, Singapore has successfully implemented a model where localities with high Dengue incidence are highlighted according to a risk-based criteria (Sim et al. 2020). Risk is categorized as a color-coded message. Threat levels are displayed in public places in that locality through public communication material (Billboards, Posters etc.).

•To highlight the severity of the disease, it should be communicated that late diagnosis and delayed treatment seeking in Dengue could be fatal. In Philippines, short public service announcements on the consequences of being late in admitting to a hospital, aired through radio channels have been successful in improving early health seeking behaviour (Lennon 2005).

•Barriers for action should be addressed by introducing a checklist to investigate dengue breeding places inside the houses and in the garden. A practical suggestion on a possible time frame for eliminating breeding places (e.g., twice a week cleaning schedule) could facilitate more productive action (Lwin et al. 2016)

•Benefits should be coupled with possible sentimental values such as "save your loved one's life by spending half an hour on cleaning the environment". Highlighting Dengue prevention at home front as a parental responsibility has been practiced in some of the Dengue endemic Southeast Asian countries.

•Cultural sensitivities of each community could be applied to improve cues to action which might enhance community ownership and engagement. In rural Thailand, Dengue prevention messages coupled with folk stories have been successful in promoting sustainable action (Phuanukoonnon, Brough, and Bryan 2006).

However, it is important to make provisions for a meaningful community participation and specific plan of action in Dengue prevention while addressing all above constructs (Baum and Fisher 2014). Repeating the same message without addressing the barriers and ground realities for action will not produce sustainable results. Innovative message development based on above individual constructs, would help in achieving intended individual action and thereby sustainable community engagement in Dengue prevention.

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Compiled by Dr.Lahiru Kodituwakku, Medical Officer, National Dengue Control Unit
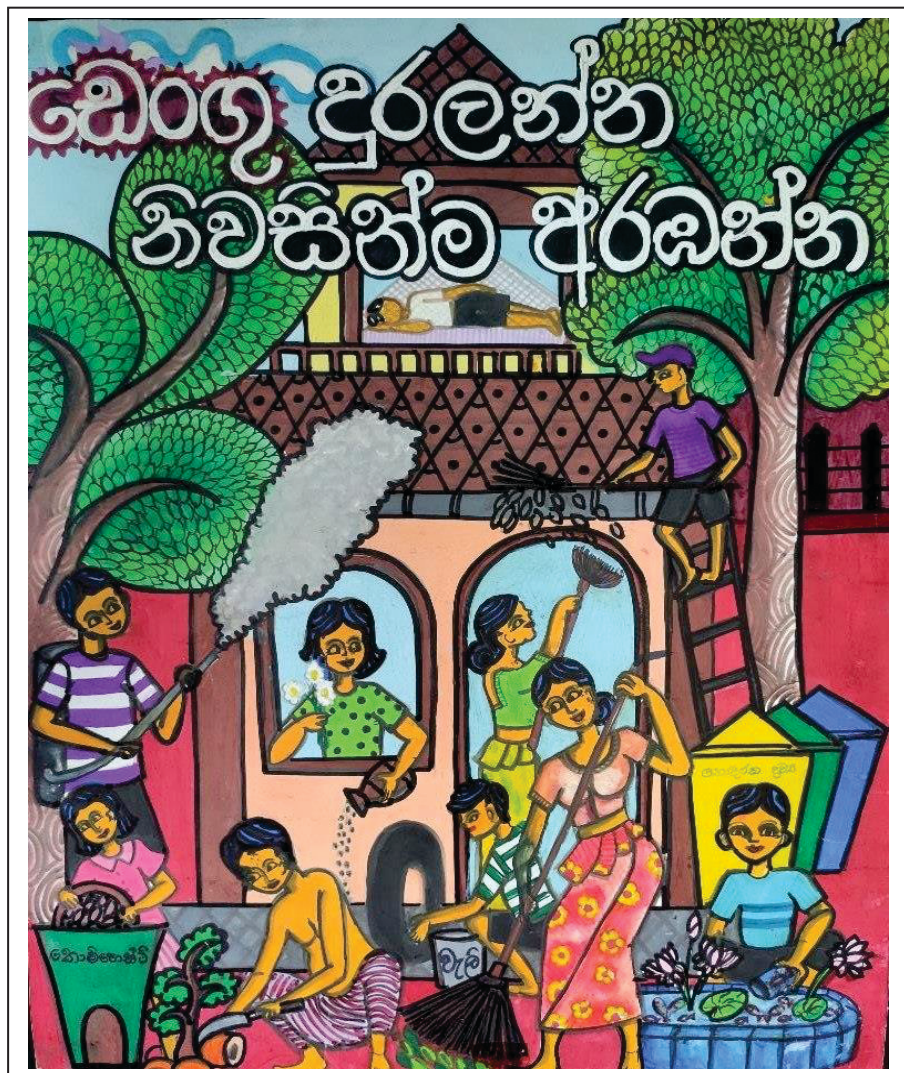
2. SUMMARY OF ENTOMOLOGICAL AND EPIDEMIOLOGICAL SURVEILLANCE DATA –May 2021

Province	District	Entomological surveillance data				Epidemiological surveillance data	
		(Source - returns of entomology surveys received by NDCU)				(Source – Epidemiology Unit)	
		No. of Premises			Main type of containers positive for larvae and Percentage positivity	Month	
		Inspected	Positive Found	Positive %		May	Cumulative
WP	Colombo	1100	124	11.3	Discarded items 43%, temporary removed items 15%, tyres 8%	159	893
	Colombo MC				Data not received to NDCU	109	384
	Gampaha	350	55	11.4	Covering items 20%, discarded items 17%, temporary removed items 15%	58	585
	Kalutara	1510	148	9.8	Discarded items 27.9%, Covering items 18%, Temporary Removed items 9.8%	38	425
	NIHS	300	68	22.7	Temporary removed items 39.8%, Discarded items 19.3%, Water storage barrels 6%		
CP	Kandy	1035	139	13.4	Discarded items 35%, Ornamental 5%, Tyres 8.8%	40	282
	Matale				Data not received to NDCU	10	43
	NuwaraEliya				Data not received to NDCU	5	26
SP	Galle	1404	143	10.01	Discarded items 30%, Water storage 15%, other, Ornamental 11.5%	18	112
	Hambantota	1111	117	10.5%	Water storage other 17.5%, Ornamental items 16.3% , Discarded items 16.3%	22	142
	Matara	700	88	12.6%	Discarded items 36%, Water storage other items 25%, Ornamental items 12%	18	158
NP	Jaffna	1246	22	1.8%	Water storage barrell 24%, Discarded items 20%, Other 20%	11	105
	Kilinochchi				Data not received to NDCU	1	21
	Mannar	800	95	11.9	Discarded items 30.4%,Water storage other21%, Water storage cement tanks 9.5%	1	19
	Vavuniya				Data not received to NDCU	1	28
	Mullativu				Data not received to NDCU	1	4
EP	Batticaloa	885	37	4.2	Other 20.9%, Temporary removed item 16.7%, Pet feeding 10.4%	129	2891
	Ampara				Data not received to NDCU	3	20
	Trincomalee				Data not received to NDCU	8	90

	Kalmunai	1000	107		Other items 32%, temporary removed items 15%, discarded items 11%		39	238
NWP	Kurunegala	423	56		Discarded items 29%, temporary removed items 16%, tyres 12%		48	450
	Puttalam	398	45	11.3%	Discarded items 32.7% , Water storage other items 17.9%, Temporary Removed Items 16.8%		16	181
NCP	Anuradhapura	330	40	13.6%	Temporary removed items 34%, Ornamental items 15.1%, Tyres 13.2%		23	88
	Polonnaruwa				Data not received to NDCU		11	36
UP	Badulla	102	0	-	-		15	55
	Monaragala	1283	148	11.5%	Discarded items 53.2%, Water storage barrels 14.6%, Covering items 9.1%,		5	49
SGP	Rathnapura	913	109	11.9%	Discarded items 58%, Natural items 19%, Covering items 14.1%,		34	252
	Kegalle	1526	134	8.8%	Discarded items (26%), ornamentals (14%), natural items (14%)		43	234
Sri Lanka		**17513**	**1589**	**9.07%**	**Other water storage containers 16%, discarded containers 15%, temporary removed items 13%**		866	7811

| Summaries of Adult Surveys				
District	**MOH**	**GN area**	**Findings**	
Kalmunai	Akkaraippattu	Kathiriya (sentinel site)-PHI area	No premises examined (10) 8.45am-12.15pm	*Aedes aegypti* (2 males, 3 females)
	Sainthamaruthu	Sainthamaruthu - III - PHI area	8.25am-10.30pm	*Aedes aegypti* (2 males, 5 females)

3. DENGUE FORECAST

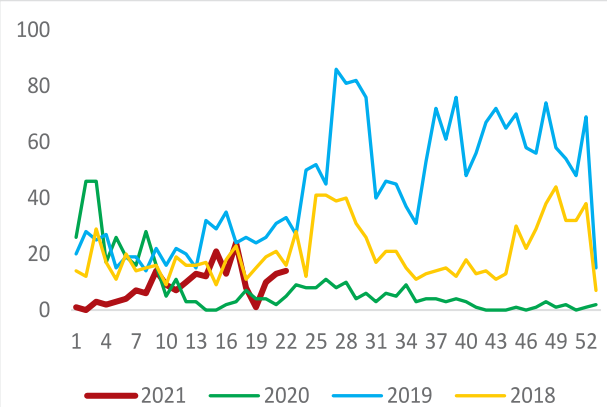| Entomological forecast of high risk areas		
RDHS	MOH	GN Division
Jaffna	Velanar	J/34
Colombo Municipal Council	D4,D3	
Trincomalee	Gomarankadawala	Adampanai
Gampaha	Ragama	Neligama
Colombo	Dehiwala	Kalubovila

4. High risk MOOH – May 2021

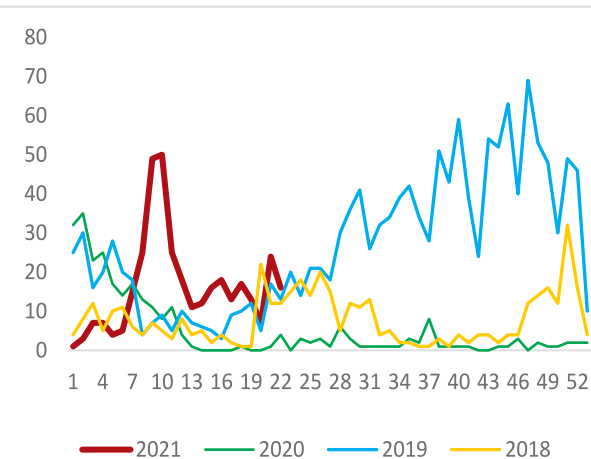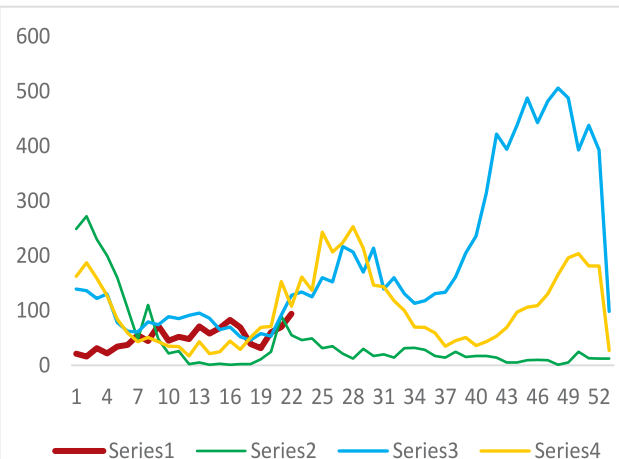**Epidemiological trends (Source: DenSys data)**
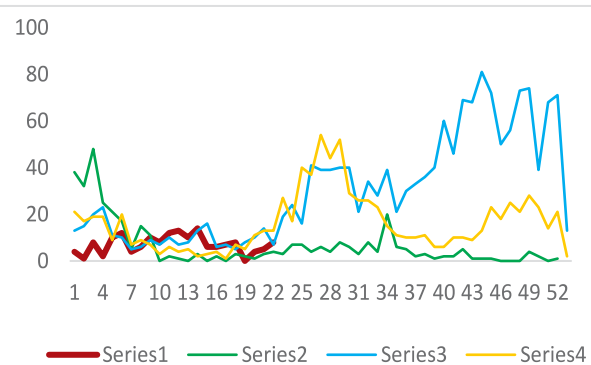

MOH Homagama
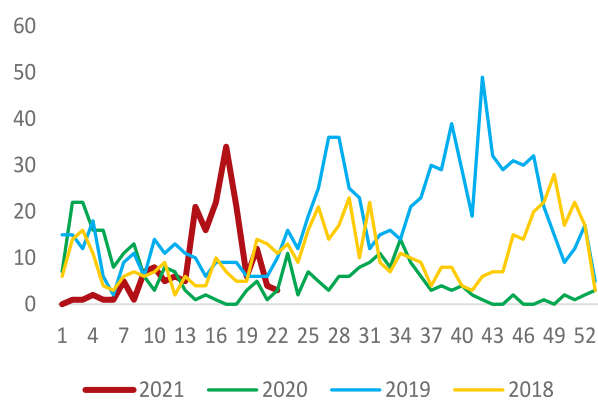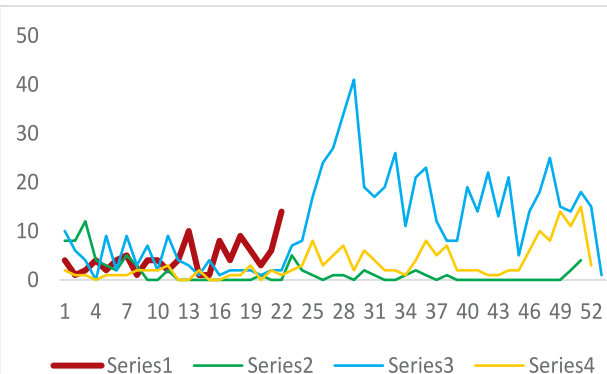

MOH Maharagama

MOH Battaramulla

MC Colombo

MOH Kelaniya

MOH Ragama
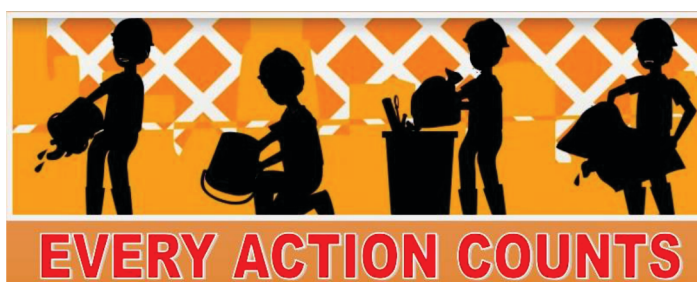
MOH Panadura
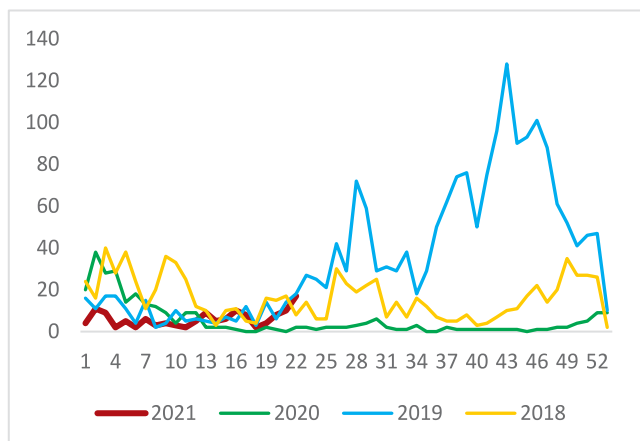
MOH Eravur
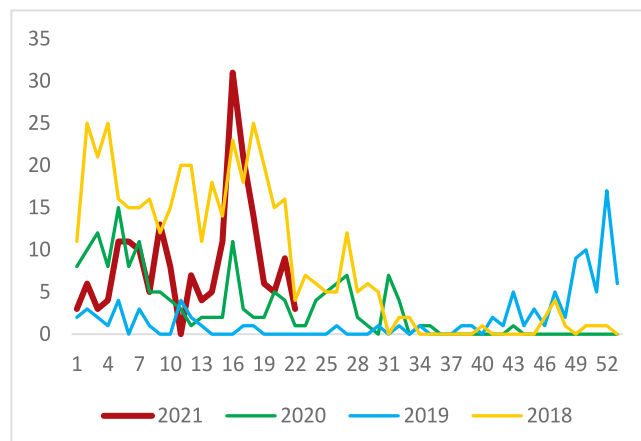
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Comments and contributions for publication in the MDU Sri Lanka are welcome.

Prior approval should be obtained from the NDCU before publishing data in this publication.