WEEKLY EPIDEMIOLOGICAL REPORT

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Dengue Part III

This is third part of the series of five articles

Vector surveillance

is important to determine the common breeding sites and feeding and resting habits of the Aedes mosquito. It describes their distribution both temporally and spatially with seasonal variation, provides early warning and predicts possible outbreaks (sentinel sites) and assesses the effectiveness of programmes carried out for vector control (spot checks). The NDCU carries out entomological surveillance. It is done by the Health Entomological Officers under the guidance of Entomologists and reports the distribution of the vector; *Aedes aegypti* and *Aedes albopictus*, in a GN area-wise distribution. Larval surveys, pupal surveys, indoor and outdoor resting mosquito collections, insecticide susceptibility tests and bioefficacy tests for larvae and adults are the techniques used. The three most commonly used larval indices are the container index (CI), premise index (PrI) and the Breteau index (BI). The CI gives the percentage of water holding containers with larvae+/- pupae, the PI gives the percentage of premises having larvae +/- pupae and the BI shows the number of positive containers per 100 houses inspected[19].

The fluctuation of the vector density can predict the occurrence of an outbreak several weeks earlier than the disease surveillance[19], and it also provides valuable information on the area and time-specific breeding sites for streamlining the control effort, as manpower and logistics are limited.

The CI is useful to identify the important container types to direct control measures to eliminate them, develop health education material and orient the community actions. In Sri Lanka, PrI and BI of 3 are considered a pre-warning of a possible dengue outbreak according to the national vector surveillance guideline[19], and activities for control are initiated at this level. However, it must be borne in mind that the larval density indices are a crude approximation of larval productivity, as not all breeding sites have the same number of larvae; eg: coconut shell vs water tank and the resulting number of adult mosquitoes varies accordingly. Therefore the level at which control activities are initiated may vary from district to district

Laboratory surveillance

Contents

of dengue is done by the Medical Research Institute, which collects samples of blood from dengue patients around the country and reports on the serotyping, providing the data necessary to identify the circulating serotype/s. Routine surveillance allows the early identification of changes in circulating serotypes, and the identification of an impending outbreak if the population is not immune to the change.

Dengue Prevention

The success and sustainability of dengue control depend on the control of the vector. Integrated Vector Management (IVM) for dengue, uses a range of interventions, in combination and synergistically to make the most use of available resources to prevent and mitigate dengue outbreaks[8]. The decision is made rationally, considering the cost-effectiveness, efficacy, sustainability and ecological plausibility of multi-pronged approaches in comparison to single measures[20]. Proactive IVM has been carried out in Sri Lanka to increase the efficacy of the control programme. Its main components are environmental management, use of chemical methods, use of biological and biochemical methods, inter-sectoral collaboration, health education and law enforcement as a last resort. Its effectiveness depends on continuous action.

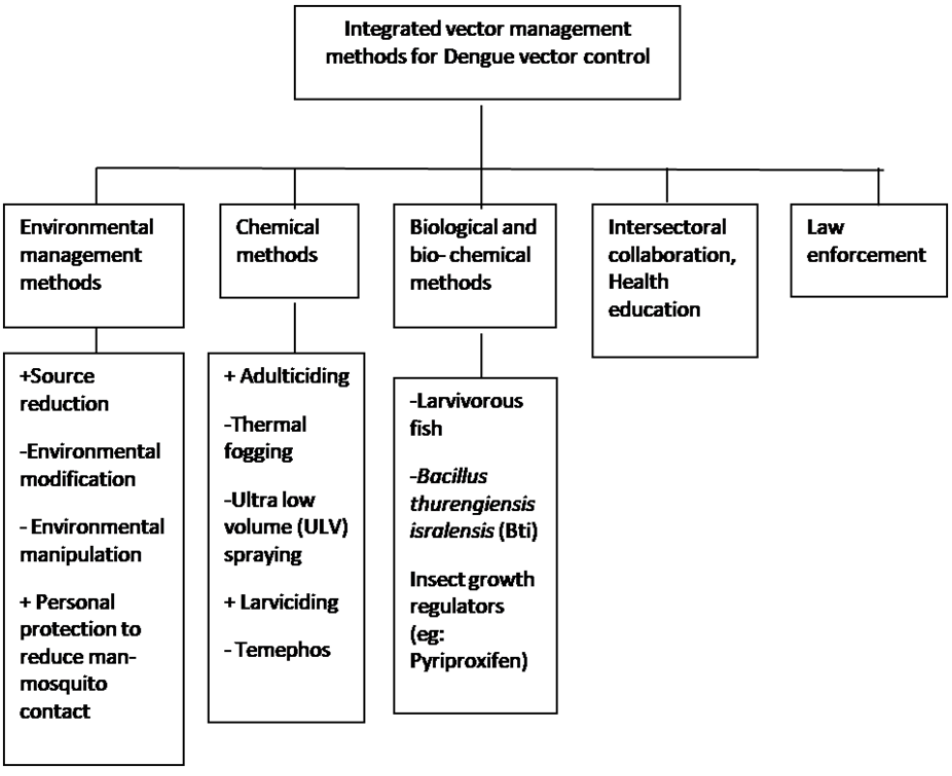

Figure 3. IVM in Sri Lanka

Source: (National Action Plan Prevention and Control of Dengue in Sri Lanka, 2019)

Environmental management for IVM is done through source reduction and prevention of man-mosquito contact. Environmental modification is the long-lasting physical transformation of land, water, and vegetation; aimed at reducing vector habitats, without causing unduly adverse effects on the environment. This is not routinely practised in Sri Lanka. We practice the more user-friendly and low-cost environmental manipulation; which requires repeated, planned activities, such as 'shramadana'/community clean-up campaigns, entomology surveys etc..., at regular intervals to temporarily change vector habitats. It involves the removal or modification of natural or man-made breeding sites. It is not effective/ sustainable unless done properly and regularly.

Chemical and biological methods are also used in conjunction with environmental manipulation. Inter-sectoral collaboration of government health and non-health (water supply and drainage, waste disposal, urban planning and development, education, industry, agriculture, fisheries...) sectors, non-governmental organizations, civic groups and community groups is essential for the success of dengue control programmes. Law enforcement is used as the last resort, to ensure compliance with dengue control activities.

Human behaviour plays a pivotal role in Dengue control. The most important behaviours are those that are linked to preventing the production of adult mosquitoes/ vectors. Preventing exposure to mosquito bites, prompt treatment seeking and patient care.

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to be continued...

Table 1: Selected notifiable diseases reported by Medical Officers of Health 06th– 12th Nov 2021 (46th Week)

RDHS	Dengue Fever		Dysentery		Encephaliti		Enteric Fever		Food Poi-		Leptospirosis		Typhus		Viral Hep-		Human		Chickenpox		Meningitis		Leishmania-		WRCD	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	T*	C**
Colombo	23	4871	0	10	0	1	0	5	0	3	4	187	0	1	0	2	0	3	0	22	0	12	0	1	**46**	**100**
Gampaha	15	2598	1	5	1	6	0	1	0	0	22	307	2	8	0	4	0	5	0	26	0	14	0	13	**23**	**74**
Kalutara	43	1291	1	12	0	2	0	3	0	5	30	619	0	3	0	1	0	1	1	70	0	23	0	0	**34**	**95**
Kandy	25	716	1	21	0	1	0	3	0	8	24	235	1	38	0	3	0	0	0	37	0	17	1	29	**57**	**100**
Matale	5	213	0	13	0	4	0	0	0	0	1	81	1	6	0	2	1	1	0	12	0	7	5	247	**50**	**100**
NuwaraEliya	4	48	0	15	0	2	0	4	0	0	1	63	1	40	0	4	0	0	0	28	0	7	0	1	**28**	**100**
Galle	15	415	0	10	0	1	0	5	0	7	14	679	0	27	0	2	0	0	0	57	0	35	0	2	**38**	**100**
Hambantota	6	333	0	14	0	2	0	2	0	6	4	249	0	75	0	7	0	0	1	51	0	34	19	464	**68**	**100**
Matara	10	487	0	6	0	1	0	1	0	0	13	305	0	17	0	3	0	0	3	58	0	11	15	293	**43**	**100**
Jaffna	1	133	0	45	0	3	0	15	0	27	0	18	3	446	0	0	0	6	1	32	0	3	0	2	**21**	**88**
Kilinochchi	0	25	1	25	0	0	0	2	0	10	0	56	1	83	0	1	0	0	0	10	0	0	0	1	**52**	**100**
Mannar	0	29	0	7	0	1	0	4	0	0	1	28	0	2	0	0	0	0	0	6	0	19	0	1	**35**	**100**
Vavuniya	0	38	0	4	0	2	0	1	1	2	0	23	0	2	0	1	0	0	0	6	1	2	0	1	**37**	**100**
Mullaitivu	1	7	0	3	0	0	0	0	0	1	0	33	0	9	0	0	0	0	0	9	0	6	0	0	**21**	**100**
Batticaloa	2	3024	0	35	1	6	0	3	0	36	0	46	0	0	0	1	0	0	0	14	0	24	0	0	**47**	**100**
Ampara	0	44	0	10	0	0	0	1	0	7	0	56	0	1	0	3	0	0	0	41	1	17	0	14	**56**	**100**
Trincomalee	11	146	0	0	0	0	0	0	0	2	0	4	0	0	0	2	0	0	0	18	0	2	0	0	**25**	**100**
Kurunegala	54	1161	0	19	0	4	0	0	7	10	12	456	0	30	0	4	0	2	2	52	1	87	6	357	**36**	**100**
Puttalam	4	319	0	2	0	1	0	0	0	0	0	26	0	16	0	1	0	1	0	19	0	34	0	9	**38**	**96**
Anuradhapur	5	204	0	13	0	1	0	1	0	3	3	226	0	25	2	6	0	0	1	33	0	47	5	275	**23**	**91**
Polonnaruwa	3	76	1	8	0	1	0	3	0	9	2	124	0	3	0	3	0	0	0	31	0	3	36	452	**36**	**100**
Badulla	55	405	1	12	0	0	0	3	0	0	6	298	1	45	2	37	0	0	2	44	1	19	0	20	**43**	**100**
Monaragala	2	134	0	15	0	0	0	3	0	6	3	358	1	35	6	100	0	1	1	26	0	61	1	40	**51**	**100**
Ratnapura	18	497	0	31	1	8	0	0	0	5	25	755	0	22	0	9	0	1	1	52	2	86	3	110	**34**	**95**
Kegalle	8	427	0	4	0	11	0	0	0	2	24	434	0	13	0	1	0	0	2	88	0	31	0	27	**41**	**100**
Kalmune	4	289	8	28	0	2	0	4	0	4	1	21	0	1	0	2	0	2	0	16	0	17	0	2	**44**	**100**
SRILANKA	**66**	**17930**	**14**	**367**	**3**	**60**	**0**	**64**	**8**	**153**	**19**	**5687**	**11**	**948**	**10**	**19**	**1**	**23**	**15**	**858**	**6**	**618**	**91**	**2361**	**40**	**97**
																									41	

Source: Weekly Returns of Communicable Diseases (esurvillance.epid.gov.lk). T=Timeliness refers to returns received on or before 12th Nov , 2021 Total number of reporting units 361 Number of reporting units data provided for the current week: 349 C**-Completeness

Table 2: Vaccine-Preventable Diseases & AFP

06th– 12th Nov 2021 (46th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2021	Number of cases during same week in 2020	Total number of cases to date in 2021	Total number of cases to date in 2020	Difference between the number of cases to date in 2021& 2020
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	00	00	00	01	01	00	01	01	04	00	60	38	57.8,%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Mumps	00	00	00	00	00	00	01	00	00	01	01	64	159	- 59.7 %
Measles	00	01	00	00	00	00	00	00	01	02	00	13	48	- 72.9 %
Rubella	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Tetanus	00	00	00	00	00	01	00	00	00	01	00	05	05	0 %
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Japanese Encephalitis	00	00	00	00	00	00	00	00	00	00	00	04	31	- 87 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	00	09	- 100%
Tuberculosis	00	09	05	18	09	13	06	08	15	83	38	4481	5537	- 19.0 %

Key to Table 1 & 2

Provinces: **W**: Western, **C**: Central, **S**: Southern, **N**: North, **E**: East, **NC**: North Central, **NW**: North Western, **U**: Uva, **Sab**: Sabaragamuwa.

RDHS Divisions: **CB**: Colombo, **GM**: Gampaha, **KL**: Kalutara, **KD**: Kandy, **ML**: Matale, **NE**: Nuwara Eliya, **GL**: Galle, **HB**: Hambantota, **MT**: Matara, **JF**: Jaffna, **KN**: Killinochchi, **MN**: Mannar, **VA**: Vavuniya, **MU**: Mullaitivu, **BT**: Batticaloa, **AM**: Ampara, **TR**: Trincomalee, **KM**: Kalmunai, **KR**: Kurunegala, **PU**: Puttalam, **AP**: Anuradhapura, **PO**: Polonnaruwa, **BD**: Badulla, **MO**: Moneragala, **RP**: Ratnapura, **KG**: Kegalle.

Data Sources:

Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Neonatal Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps., Rubella, CRS,

Special Surveillance: AFP* (Acute Flaccid Paralysis), Japanese Encephalitis

CRS =**Congenital Rubella Syndrome

NA = Not Available

Covid-19 Prevention & Control

For everyone's health & safety, maintain physical distance, often wash hands, wear a face mask and stay home.

Comments and contributions for publication in the WER Sri Lanka are welcome. However, the editor reserves the right to accept or reject items for publication. All correspondence should be mailed to The Editor, WER Sri Lanka, Epidemiological Unit, P.O. Box 1567, Colombo or sent by E-mail to **chepid@sltnet.lk. Prior approval should be obtained from the Epidemiology Unit before publishing data in this publication**

ON STATE SERVICE

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