WEEKLY EPIDEMIOLOGICAL REPORT

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Dengue Epidemic 2017: Evidence and Lessons Learnt — Part 2

This article, discussed here as the second of 5 parts, summarizes the events behind the epidemic in 2017.

(Continued from Previous WER)

All districts had generally reported an increased number of cases in 2017 (compared with the 5-year reference values). In the Western Province, Colombo showed an increase of 3-fold while Kalutara and Gampaha districts had a 5-fold rise in Dengue incidence. In the Central Province, Kandy and Matale districts recorded a 6-fold and 5-fold rise respectively while Nuwara-Eliya showed only a 3-fold increase in case incidence compared to the last 5 years. In the Southern Province, Matara district showed a very high incidence with an 11-fold increase while Galle and Hambantota had only a 4-fold rise in Dengue cases. Trincomalee district in the Eastern Province also showed an 11-fold increase in Dengue incidence compared to the last 5 years. Batticaloa had a 6-fold rise, while Kalmunai and Ampara RDHS areas each showed a 5-fold increase. In the Northern Province, Jaffna district showed only a 4-fold rise while Vavuniya and Killinochchi showed a 6-fold increase and Mannar and Mullaitivu had only a 3-fold rise during the year compared to last 5 years. Puttalam district in the North-Western Province showed an 8-fold increase in the incidence of Dengue cases while Kurunegala district had a 5-fold rise. Interestingly, Moneragala district in the Uva Province had an incidence ten-times that of the last 5 years reference value while Badulla district showed only a 5-fold rise during the year 2017. Kegalle and Ratnapura districts in the Sabaragamuwa Province showed a 6 & 5-fold increase, respectively. In the North-Central Province, Anuradhapura district showed a 5-fold increase in the Dengue incidence while Polonnaruwa had a 3-fold rise.

These districts illustrate a distinct spatial dispersion of the dengue cases from all over the island, and it is notable, that relatively more Dengue patients were reported, in 2017, from districts in the dry zone, compared to previous years.

As expected with the monsoonal rains, an increase in the dengue cases was seen during the final few weeks of 2016. There was an average of 1,000 to 1,500 cases per week, mainly from the southern, northern and eastern parts of the country during the last months of 2016. This trend continued during the initial periods of 2017, resulting in high caseloads being reported compared to last 5 years.

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In January, a general increase in cases with an unusually high number of cases being reported from RDHS areas of Galle, Hambantota, Matara, Killinochchi, Mannar, Kalmunai, and Trincomalee was seen (which are mostly dry-zone districts). Galle and Kalmunai had already experienced an outbreak during the latter part of 2016 while the Kinniya MOH division in the Trincomalee district had reported Dengue outbreaks, starting from early 2017. Characteristically, these are densely populated areas with scarcity of drinking water due to the drought conditions. People tend to store water inside their houses, in ground-level, open cement tanks and other water containers, which resulted in abundant mosquito breeding sites in these areas. Wells in these water-scarce dry zones, were not adequately covered and were without any larvivorous fish, possibly contributing to the increased population of Aedes mosquitoes.

February 2017, saw an almost doubling of the caseload (compared to the 5-year mean+2SD value), with Trincomalee district reporting more than a twelve-fold increase in cases, mainly from the Kinniya area. Kilinochchi showed a nine-fold increase while Galle, Mannar, and Vavuniya also showed a sharp increase during this month. Galle reported a 6-fold rise in cases mainly due to an outbreak in Balapitiya and Ambalangoda areas.

Dengue cases recorded during March 2017 were nearly 4-times greater compared to the last 5-year average value. The outbreak in Kinniya in Trincomalee district saw a sharp increase in the caseload with 15 deaths being reported within a span of 3 weeks. The inadequacy of human and physical resources at local hospitals, to handle the large influx of patients, was a main reason for the high mortality from these areas. Other dry-zone districts like Hambantota, Jaffna, Kilinochchi, Mannar, Vavuniya, Batticaloa, and Moneragala, also reported a high incidence of Dengue during this month.

In April, there was a 4-fold increase compared to the 5-year base-line (Mean+2SD) in the caseload from all corners of the island. This was the beginning of the outbreak with a total of 61 deaths being recorded. More than a five-fold rise was seen in Gampaha, Hambantota, Mannar, Kilinochchi, Batticaloa and Trincomalee districts.

May and June were critical months in the 2017 outbreak, with Health Department resources being stretched beyond their capabilities, as dengue was being reported from all parts of the island in very large numbers. There was an almost 3½ times increase in the caseload during the month of May compared to the same mid-year values of the last 5 years. It should be noted that some districts like Hambantota, Matara, Batticaloa, Kurunegala, Puttalam, and Moneragala had more than a 5-fold increase in the cases during this month.

(to be continued…)

Compiled by Dr. M. B. Azhar Ghouse,
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Table 1 : Water Quality Surveillance
Number of microbiological water samples December 2017

District	MOH areas	No: Expected *	No: Received
Colombo	15	90	47
Gampaha	15	90	NR
Kalutara	12	72	NR
Kalutara NIHS	2	12	NR
Kandy	23	138	NR
Matale	13	78	NR
Nuwara Eliya	13	78	61
Galle	20	120	NR
Matara	17	102	88
Hambantota	12	72	NR
Jaffna	12	72	82
Kilinochchi	4	24	31
Manner	5	30	NR
Vavuniya	4	24	NR
Mullatvu	5	30	NR
Batticaloa	14	84	95
Ampara	7	42	26
Trincomalee	11	66	38
Kurunegala	29	174	59
Puttalam	13	78	98
Anuradhapura	19	114	68
Polonnaruwa	7	42	24
Badulla	16	96	118
Moneragala	11	66	101
Rathnapura	18	108	81
Kegalle	11	66	22
Kalmunai	13	78	37

* No of samples expected (6 / MOH area / Month)
NR = Return not received

Table 1: Selected notifiable diseases reported by Medical Officers of Health 13th – 19th Jan 2018 (03rd Week)

RDHS Division	Dengue Fever		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Chickenpox		Meningitis		Leishmania-sis		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	291	881	0	2	0	1	3	4	0	1	4	14	0	0	0	0	0	0	17	33	2	6	0	1	**52**	**95**
Gampaha	162	564	2	6	1	1	3	3	3	5	5	10	0	0	0	2	0	0	14	34	1	1	0	0	**78**	**100**
Kalutara	87	331	2	5	0	0	0	0	0	0	2	19	0	0	0	0	0	0	9	29	2	6	0	0	**63**	**100**
Kandy	97	368	0	2	0	0	0	0	0	0	2	6	1	8	0	0	0	0	3	15	0	1	0	1	**64**	**100**
Matale	24	106	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	3	1	1	0	1	**69**	**100**
NuwaraEliya	10	18	0	0	0	0	0	1	1	1	1	2	4	5	0	0	0	0	11	20	0	1	0	0	**18**	**100**
Galle	3	42	1	1	0	0	0	0	0	0	0	16	0	3	0	0	0	0	1	4	0	0	0	1	**44**	**42**
Hambantota	36	100	0	1	0	0	0	0	0	0	0	6	1	3	0	0	0	0	7	15	0	1	3	75	**58**	**100**
Matara	36	97	0	2	0	0	0	1	2	12	2	17	0	0	0	0	0	0	4	14	0	0	3	22	**62**	**98**
Jaffna	131	517	6	12	0	0	1	6	0	5	1	1	24	76	0	0	0	0	5	14	0	0	0	0	**33**	**93**
Kilinochchi	6	25	0	3	0	0	1	3	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	**33**	**100**
Mannar	4	11	0	5	0	0	0	1	0	0	1	1	0	0	0	0	0	0	1	7	1	1	0	0	**33**	**100**
Vavuniya	17	63	0	0	0	0	1	4	5	5	2	3	1	2	0	0	1	1	1	1	0	1	0	0	**67**	**100**
Mullaitivu	1	9	0	0	0	0	0	0	0	0	1	2	0	1	0	0	0	0	0	0	0	0	0	0	**55**	**73**
Batticaloa	142	453	8	17	0	0	0	0	0	0	1	1	0	0	0	1	0	0	1	2	1	2	0	0	**69**	**100**
Ampara	8	14	1	3	0	0	0	0	0	0	7	11	0	0	0	1	0	0	5	9	0	0	0	0	**48**	**100**
Trincomalee	12	72	1	5	0	0	0	1	0	0	1	5	0	3	0	0	0	0	6	16	0	0	0	1	**38**	**97**
Kurunegala	143	414	5	10	1	2	2	2	0	1	1	14	0	3	0	1	0	0	7	26	6	8	4	10	**65**	**100**
Puttalam	119	394	1	3	0	0	0	0	1	1	4	5	1	1	0	0	0	0	1	6	1	3	0	0	**72**	**100**
Anuradhapura	24	81	2	7	0	0	1	1	0	0	9	18	2	5	0	0	0	0	6	16	0	0	5	11	**49**	**95**
Polonnaruwa	13	34	2	2	0	1	0	0	5	5	10	24	0	0	0	1	0	0	4	10	0	2	12	16	**71**	**100**
Badulla	18	64	1	12	0	0	0	2	0	0	1	9	0	3	0	2	0	0	4	21	2	7	0	0	**52**	**96**
Monaragala	53	151	3	9	0	0	0	1	0	1	12	40	4	7	0	1	0	0	3	11	0	0	1	3	**45**	**100**
Ratnapura	51	147	2	18	1	5	1	4	0	0	7	27	1	2	0	1	0	1	6	18	5	12	1	46	**39**	**100**
Kegalle	66	145	1	4	0	0	0	0	13	13	3	9	1	2	0	3	0	0	10	18	1	1	0	0	**70**	**100**
Kalmune	150	459	1	2	0	0	0	0	0	2	1	1	0	0	0	0	0	0	5	8	0	1	0	0	**44**	**100**
SRILANKA	**1704**	**5560**	**39**	**132**	**3**	**10**	**13**	**34**	**30**	**52**	**78**	**262**	**41**	**126**	**0**	**14**	**1**	**2**	**133**	**350**	**23**	**55**	**29**	**188**	**55**	**95**

Source: Weekly Returns of Communicable Diseases (WRCD).

*T=Timeliness refers to returns received on or before 19th January , 2018 Total number of reporting units 349 Number of reporting units data provided for the current week: 325 **C****-Completeness

A = Cases reported during the current week. **B** = Cumulative cases for the year.

Table 2: Vaccine-Preventable Diseases & AFP

13th – 19th Jan 2018 (03rd Week)

Disease	No. of Cases by Province									Number of cases during current week in 2018	Number of cases during same week in 2017	Total number of cases to date in 2018	Total number of cases to date in 2017	Difference between the number of cases to date in 2018 & 2017
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	01	00	00	00	00	00	01	00	02	01	03	05	- 40 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	00	00	02	01	00	00	00	00	00	03	03	10	16	-37.5 %
Measles	01	01	00	00	00	01	00	00	00	03	11	06	26	-76.9%
Rubella	00	00	00	00	00	00	00	00	00	00	00	02	00	0 %
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Tetanus	00	00	00	00	00	00	00	00	01	01	00	04	00	0 %
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Japanese Encephalitis	00	00	00	01	00	00	00	00	00	01	00	04	04	0 %
Whooping Cough	00	00	00	00	00	00	00	00	01	01	00	02	01	100 %
Tuberculosis	108	19	14	05	12	11	02	02	02	175	171	462	460	- 0.4%

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

Influenza Surveillance in Sentinel Hospitals - ILI & SARI

Month	Human				Animal		
	No Total	No Positive	Infl A	Infl B	Pooled samples	Serum Samples	Positives
January	360	76	20	56	789	421	0

Source: Medical Research Institute & Veterinary Research Institute

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ON STATE SERVICE

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