WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit
Ministry of Health, Nutrition & Indigenous Medicine

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WEEKLY EPIDEMIOLOGICAL REPORT SRI LANKA 2023

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DENGUE

Key facts

- **Dengue is a viral infection caused by the dengue virus (DENV), transmitted to humans via the bite of infected Aedes species mosquitoes.**
- **Dengue is found in tropical and sub-tropical regions throughout the world, mostly in urban and semi-urban areas.**
- **Nearly 100–400 million dengue infections occur each year while over 20,000 dengue-related deaths occur annually.**
- **A person may be infected with dengue up to 4 times during their lifetime.**
- **Many Dengue infections are asymptomatic or produce mild illness, while occasionally it may cause more severe disease or death.**
- **Although there is no specific treatment for dengue, early detection and access to proper management may significantly lower the risk of death.**

Prevention and control of dengue mainly depend on mosquito control.

INTRODUCTION

Dengue is a viral infection transmitted by the bite of an infected Aedes type of mosquito primarily the Aedes aegypti mosquito. Once infectious, the mosquito can transmit the virus for the rest of its life. Though this mosquito originated in Africa, it is now found in tropical, subtropical and temperate regions throughout the world. Although there are around 140 species of mosquitoes could be found in Sri Lanka, only Aedes *aegypti* and *Aedes albopictus* mosquitoes transmit the dengue virus to humans. There are four serotypes of the virus which can cause dengue (DEN1, DEN2, DEN3 and DEN4). Discarded receptacles (plastic containers, tins, cans, coconut shells etc.), water storage containers, automobile tyres and machinery parts, building structures (roof gutters etc.), household /institutional appliances (refrigerator trays, flower vases, ornamental ponds) are identified as major mosquito breeding sites. Female mosquitoes lay their eggs on the inner walls of containers with water. The entire life cycle of the mosquito lasts 8-10 days at room temperature but may vary with environmental conditions.

Dengue is becoming a major health problem which is both global and local, mainly among urban and semi-urban settings. It is now endemic in more than 100 countries in the WHO Regions of Africa, the Americas, the Eastern Mediterranean, South-East Asia and the Western Pacific. Around 70% of the global disease burden is represented by Asia. There are around 3.9 billion of people are at risk of infection with dengue viruses worldwide. The global incidence of dengue infections per year may range between 100 million and 200 million. Recent estimates identified with cartographic approaches revealed this number is closer to almost 400 million and over 20,000 dengue-related deaths occur annually.

Although clinical dengue-like illness has been reported in Sri Lanka since the early 20th century (serologically confirmed in 1962), Dengue fever and Dengue Haemorrhagic fever became nationally notifiable diseases in Sri Lanka in 1996. Dengue shows a seasonal transmission in Sri Lanka with two peaks occurring with the monsoon rains in June to July and October to December respectively while the majority of cases occur during June to July.

There was an island-wide epidemic of dengue with 51 cases of DHF and 15 deaths during the period 1965-1968. Thereafter, from the early 1990s, progressively

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large epidemics with more severe and fatal DHF were reported at regular intervals. There were two epidemics of dengue reported in 2002 and 2004 with 8931 cases and 15463 cases respectively. In 2017, a total of 186 101 suspected dengue cases and 440 dengue-related deaths were reported to the Epidemiology Unit which is the highest number of suspected cases reported in a single calendar year in Sri Lanka since 1996.

In 2019, the mid-year peak in reported cases was shifted to the latter half of the year and this trend continued into early 2020 with a total of 11 607 cases reported in January 2020 which was higher than the reported cases for the same period during 2017. Thereafter the reported number of dengue cases during April- June 2020 dropped below the past five-year national average. This could be due to population-wide mobility restrictions imposed as a response to the COVID-19 pandemic and people were encouraged to stay at home and work from home. The 2022 year has recorded the highest mid-year peak reported during the past five years while more than 54% of the reported cases are from five districts (Colombo, Gampaha, Kaluthara, Kandy and Galle) of the country with Colombo reporting the highest. At present, almost all districts in the country are reporting cases.

Symptoms

Most people who get dengue won't have symptoms while symptomatic illness may vary from undifferentiated fever, dengue fever (DF), dengue haemorrhagic fever (DHF) and dengue with unspecified manifestations. The Onset of sudden high fever, severe headache, pain behind the eyes, nausea and pain in muscles and joints are major symptoms of dengue fever while some may also have a rash and varying degrees of bleeding from various parts of the body including nose, mouth and skin etc. Most patients get better in 1–2 weeks while some people develop severe dengue and need care in a hospital. Dengue Haemorrhagic Fever could be seen only in a small proportion of those infected and is the most severe form with significant bleeding manifestations. Patients who are suffering from Severe vomiting, abdominal pain, increase thrust, drowsiness and excessive sleepiness, abnormal bleeding manifestations – eg: heavy menstrual bleeding or menstruation starting earlier than usual, and reduced urine output must seek medical advice even though they don't have a fever. It is essential to seek medical attention immediately if the person is suffering from cold clammy skin and extremities, restlessness and irritability, skin mottling, decreased/no urine output, or behaviour changes like confusion.

Diagnosis and treatment

Dengue often goes unrecognized or is misdiagnosed as other fever-causing tropical diseases**.** Early identification and management of Dengue may minimize morbidity and mortality. When a patient presented with a high fever with flushed face/extremities and a positive tourniquet test (even with a normal platelet count) with leukopenia (WBC <5000 /mm3) without a focus of infection, mostly suggestive that the patient is having Dengue illness. Detection of NS1 antigen from blood is a laboratory diagnostic test for dengue during the early febrile phase but NS1 does not help in differentiating Dengue fever from Dengue Haemorrhagic Fever.

Dengue patients may also present with atypical manifestations like respiratory symptoms like cough, rhinitis etc. and gastrointestinal symptoms like constipation, colicky abdominal pain, diarrhoea or vomiting without classical clinical presentation. Most cases of dengue fever can be treated at home with pain medicine while for people with severe dengue, hospitalization is often needed. There is no specific treatment for dengue. Acetaminophen (paracetamol) can be used to control pain while Nonnon-steroidal anti-inflammatory drugs like ibuprofen and aspirin should be avoided as they may increase the risk of bleeding. There is a novel vaccine called Dengvaxia for people who have had dengue at least once in their lives and live in places where the disease is more common. Patients who are being managed at home must first contact doctors and should also ensure adequate oral fluid intake to maintain normal urine output.

Prevention

There are no vaccines or specific antiviral therapies currently existing to control the growing threat of dengue globally. Early case detection and appropriate clinical management can reduce mortality. Effective mosquito control is the mainstay of dengue prevention and control. Surveillance and improved reporting of dengue cases is also essential to prevent and control the disease as indicated in the objectives of the WHO Global Strategy for Dengue Prevention and Control, 2012–2020. The mosquitoes that spread dengue are active during the day. Therefore, personal protective measures should be applied especially during the hours of highest mosquito activity (mid-morning and late afternoon). Lowering the risk of getting dengue by protecting yourself from mosquito bites could be done by using protective clothes to cover the body, especially for children in the mornings and afternoons, using physical barriers such as screening doors and windows of premises using mosquito-proof meshes, using mosquito nets, ideally, nets sprayed with insect repellent, application of natural repellents such as citronella oil, lemon grass oil, neem oil and chemical repellents containing DEET (*N*, *N*-Diethyl-*m*-toluamide). Repellent use must be strictly done in accordance with the instructions noticed on the product label.

Dengue transmission is predominantly seen in urban and semi-urban areas usually as family or immediate neighbourhood groups of patients. Therefore, if a member of the family or anyone in the immediate neighbourhood is found with dengue, those patients and contacts must be protected from mosquito bites.

Travellers, especially children, pregnant women, and people with immune disorders or severe chronic illnesses, should contact their doctor to receive personalized recommendations on the use of repellents and protection before travelling. Similar protective measures could be applied to symptomatic patients in order to prevent the disease from being transmitted to non-infected mosquitoes. Mosquitoes lay eggs in stagnant water which can survive up to one year while eggs can withstand dry environmental conditions and thereafter hatch when water is available, and the environment is favourable. Therefore, it is very important to keep neighbourhoods clean and free of receptacles which attract mosquitoes.

Compiled by Dr Nuwandika Siriwardena of the Epidemiology Unit.

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Table 1: Selected notifiable diseases reported by Medical Officers of Health 27th– 02nd June 2023 (22nd 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	546	7321	0	5	0	9	0	1	0	6	15	149	0	0	0	3	0	0	10	148	1	19	0	5	**22**	**100**
Gampaha	345	7146	0	7	0	10	0	1	0	2	3	269	0	6	0	9	0	0	8	133	0	35	0	19	**1**	**95**
Kalutara	239	2413	0	14	0	1	0	0	0	5	26	384	0	1	0	2	0	1	9	227	0	40	0	1	**5**	**100**
Kandy	237	2331	0	18	0	0	1	4	0	12	7	124	1	34	0	2	0	1	2	135	0	11	0	14	**83**	**100**
Matale	44	680	0	2	0	0	0	1	0	5	10	82	2	9	0	3	0	0	0	27	0	3	10	154	**19**	**100**
NuwaraEliya	13	104	7	68	0	1	1	1	0	38	3	50	0	28	0	3	0	0	3	57	0	8	0	0	**55**	**100**
Galle	92	1091	1	22	1	11	0	5	3	18	19	478	0	26	1	1	0	1	7	173	0	11	0	1	**31**	**100**
Hambantota	41	731	0	4	0	1	0	1	0	8	12	160	0	46	0	7	0	0	4	84	0	14	15	286	**26**	**100**
Matara	65	828	2	17	0	5	0	0	1	7	30	297	1	18	0	2	0	1	8	136	0	9	3	80	**48**	**100**
Jaffna	44	1472	2	43	0	1	0	8	1	16	0	8	4	457	0	1	0	1	2	109	1	5	0	2	**60**	**93**
Kilinochchi	2	62	0	4	0	0	0	0	0	16	0	7	0	5	0	0	0	0	0	8	0	0	0	0	**16**	**99**
Mannar	1	62	1	6	0	0	0	1	0	0	0	24	1	5	0	0	0	0	0	1	1	3	0	0	**23**	**100**
Vavuniya	3	102	0	5	0	1	0	0	0	0	2	25	0	6	0	1	0	0	0	11	0	3	2	5	**1**	**100**
Mullaitivu	11	65	0	8	0	0	0	3	0	11	0	26	0	4	0	0	0	0	0	10	0	0	0	3	**20**	**98**
Batticaloa	79	1574	7	124	0	6	0	3	1	12	9	56	0	1	0	3	1	1	2	36	1	22	0	1	**51**	**100**
Ampara	0	42	0	1	0	1	0	0	0	0	0	12	0	0	0	1	0	0	0	17	0	7	0	2	**16**	**45**
Trincomalee	82	1620	0	5	0	1	0	0	0	4	6	49	1	13	0	0	0	0	4	28	1	17	0	1	**20**	**98**
Kurunegala	82	1511	4	19	1	7	0	0	1	2	17	177	0	9	0	8	0	2	2	252	3	75	7	217	**20**	**98**
Puttalam	46	2429	1	7	0	1	0	1	0	0	2	24	0	7	0	1	0	0	2	67	0	28	1	14	**13**	**100**
Anuradhapur	47	354	0	3	0	0	0	1	0	1	3	182	0	23	0	2	0	0	4	128	1	22	5	261	**20**	**98**
Polonnaruwa	22	365	1	10	0	5	0	0	0	6	9	110	0	5	0	10	0	0	1	41	0	13	14	219	**31**	**100**
Badulla	21	569	0	15	0	3	0	0	0	26	5	149	0	26	3	57	0	0	3	84	1	20	1	13	**63**	**100**
Monaragala	12	295	0	14	0	3	0	0	0	0	12	351	0	27	1	15	0	0	1	39	0	39	2	87	**23**	**100**
Ratnapura	65	1045	1	20	0	10	0	1	0	9	22	567	0	16	0	12	0	1	5	91	6	96	1	93	**33**	**100**
Kegalle	99	1442	0	10	0	1	1	2	0	8	30	319	0	18	0	3	0	0	6	211	7	32	0	16	**27**	**99**
Kalmune	23	1419	1	31	0	7	0	0	0	0	3	26	0	0	0	0	0	0	0	31	0	15	0	0	**40**	**99**
SRILANKA	**226**	**37073**	**28**	**482**	**2**	**85**	**3**	**34**	**7**	**212**	**24**	**4105**	**10**	**790**	**5**	**14**	**1**	**9**	**83**	**2284**	**23**	**547**	**61**	**1494**	**33**	**98**

Source: Weekly Returns of Communicable Diseases (esurvillance.epid.gov.lk). T=Timeliness refers to returns received on or before 02nd June, 2023 Total number of reporting units 358 Number of reporting units data provided for the current week: 326 C**-Completeness

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

Table 2: Vaccine-Preventable Diseases & AFP

27th– 02nd June 2023(22nd Week)

Disease	No. of Cases by Province									Number of cases during current week in 2023	Number of cases during same week in 2022	Total number of cases to date in 2023	Total number of cases to date in 2022	Difference between the number of cases to date in 2023 & 2022
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	00	00	00	00	00	01	00	00	01	01	41	36	13.8 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	00	01	00	00	00	00	00	00	00	01	03	93	27	244.4 %
Measles	00	02	00	00	00	00	01	00	02	05	00	22	12	83.3 %
Rubella	00	00	00	00	00	00	00	00	00	00	00	01	00	0 %
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Tetanus	01	00	00	00	00	00	00	00	01	02	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	02	07	- 71.4 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	04	01	300 %
Tuberculosis	124	10	18	25	05	01	16	02	17	218	47	3768	2807	34.2 %

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

Take prophylaxis medications for leptospirosis during the paddy cultivation and harvesting seasons.

It is provided free by the MOH office / Public Health Inspectors.

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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