



WEEKLY EPIDEMIOLOGICAL REPORT

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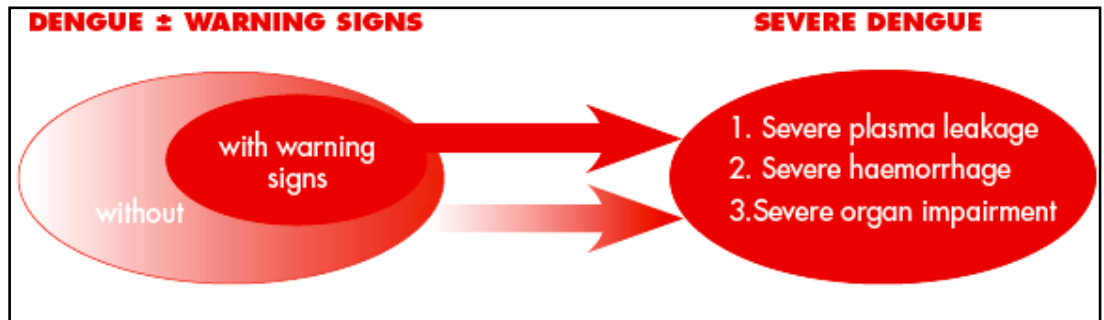
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Guidelines on Clinical Management of Dengue –1

Case classification of Dengue



CRITERIA for DENGUE ± WARNING SIGNS		CRITERIA FOR SEVERE DENGUE
Probable dengue live in /travel to dengue endemic area. Fever and 2 of the following criteria: • Nausea, vomiting • Rash • Aches and pains • Tourniquet test positive • Leukopenia • Any warning sign Laboratory-confirmed dengue (important when no sign of plasma leakage)	Warning signs (requiring strict observation and medical intervention) • Abdominal pain or tenderness • Persistent vomiting • Clinical fluid accumulation • Mucosal bleed • Lethargy, restlessness • Liver enlargement >2 cm • Laboratory: increase in HCT concurrent with rapid decrease in platelet count	Severe plasma leakage leading to: • Shock (DSS) • Fluid accumulation with respiratory distress Severe bleeding as evaluated by clinician Severe organ involvement • Liver: AST or ALT \geq 1000 • CNS: Impaired consciousness • Heart and other organs

Dengue has a wide spectrum of clinical presentations, often with unpredictable clinical evolution and outcome. While most patients recover following a self-limiting non-severe clinical course, a small proportion progress to severe disease, mostly characterized by plasma leakage with or without haemorrhage. Intravenous rehydration is the therapy of choice; this intervention can reduce the case fatality rate to less than 1% of severe cases. The group progressing from non-severe to severe disease is difficult to define, but this is an important concern since appropriate treatment may prevent these patients from developing more severe clinical conditions.

Triage, appropriate treatment, and the decision as to where this treatment should be given are influenced by the case classification for dengue.

Suggested dengue case classification on levels of severity (Figure 1)

- Severe dengue
- Non-severe dengue

Course of Dengue

However, for practical reasons it was desirable to split the large group of patients with non-severe dengue into two subgroups -patients with warning signs and those without them

After the incubation period, the illness begins abruptly and is followed by the three phases

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febrile, critical and recovery.

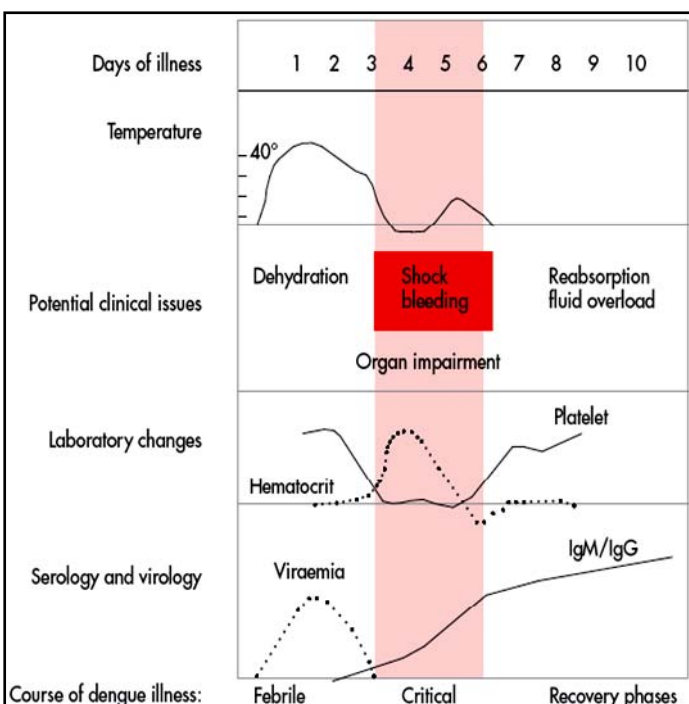
Triage and management decisions at the primary and secondary care levels (where patients are first seen and evaluated) are critical in determining the clinical outcome of dengue. A well-managed front-line response not only reduces the number of unnecessary hospital admissions but also saves the lives of dengue patients. Early notification of dengue cases seen in primary and secondary care is crucial for identifying outbreaks and initiating an early response. Differential diagnosis needs to be considered.

Fig.2 Differential diagnosis of dengue fever

<p>Conditions that mimic the febrile phase of dengue infection</p> <ul style="list-style-type: none"> ■ Flu-like syndromes Influenza, measles, Chikungunya, infectious mononucleosis, HIV seroconversion illness ■ Illnesses with a rash Rubella, measles, scarlet fever, meningococcal infection, Chikungunya, drug reactions ■ Diarrhoeal diseases Rotavirus, other enteric infections ■ Illnesses with neurological manifestations Meningoencephalitis, Febrile seizures 	
<p>Conditions that mimic the critical phase of dengue infection</p> <ul style="list-style-type: none"> ■ Infectious Acute gastroenteritis, malaria, leptospirosis, typhoid, typhus, viral hepatitis, acute HIV seroconversion illness, bacterial sepsis, septic shock ■ Malignancies Acute leukaemia and other malignancies ■ Other clinical pictures Acute abdomen <ul style="list-style-type: none"> - acute appendicitis - acute cholecystitis - perforated viscus Diabetic ketoacidosis Lactic acidosis Leukopenia and thrombocytopenia ± bleeding Platelet disorders 	

Fig. 3 The course of dengue illness

Source: adapted from Yip (2) by chapter authors



Febrile phase

Patients typically develop high-grade fever suddenly. This acute febrile phase usually lasts 2–7 days and is often accompanied by facial flushing, skin erythema, generalized body ache, myalgia, arthralgia and headache. Anorexia, nausea and vomiting are common.

It can be difficult to distinguish dengue clinically from non-dengue febrile diseases in the early febrile phase. Therefore monitoring for warning signs and other clinical parameters (Fig.1) is crucial to recognizing progression to the critical phase. The earliest abnormality in the full blood count is a progressive decrease in total white cell count, which should alert the physician to a high probability of dengue.

Critical phase

when the temperature drops to 37.5–38°C or less and remains below this level, usually on days 3–7 of illness, an increase in capillary permeability in parallel with increasing haematocrit levels may occur. This marks the beginning of the critical phase.

The period of clinically significant plasma leakage usually lasts 24–48 hours. Progressive leukopenia followed by a rapid decrease in platelet count usually precedes plasma leakage. At this point patients without an increase in capillary permeability will improve, while those with increased capillary permeability may become worse as a result of lost plasma volume. Pleural effusion and ascites may be clinically detectable depending on the degree of plasma leakage and the volume of fluid therapy. Shock occurs when a critical volume of plasma is lost through leakage. It is often preceded by warning signs. The body temperature may be subnormal when shock occurs.

With prolonged shock, the consequent organ hypoperfusion results in progressive organ impairment, metabolic acidosis and disseminated intravascular coagulation.

Recovery phase

If the patient survives the 24–48 hour critical phase, a gradual reabsorption of extravascular compartment fluid takes place in the following 48–72 hours. General well-being improves, appetite returns, gastrointestinal symptoms abate, haemodynamic status stabilizes and diuresis ensues.

Respiratory distress from massive pleural effusion and ascites will occur at any time if excessive intravenous fluids have been administered.

Severe dengue

As dengue vascular permeability progresses, hypovolaemia worsens and results in shock. It usually takes place on day 4 or 5 (range days 3–7) of illness, preceded by the warning signs (Fig.3)

Massive bleeding may occur without prolonged shock in instances when acetylsalicylic acid (aspirin), ibuprofen or corticosteroids have been taken

Source: <http://apps.who.int/tdr/svc/publications/training-guideline-publications/dengue-diagnosis-treatment>

Table 1: Vaccine-preventable Diseases & AFP

12th -18th December - 2009(51stWeek)

Disease	No. of Cases by Province									Number of cases during current week in 2009	Number of cases during same week in 2008	Total number of cases to date in 2009	Total number of cases to date in 2008	Difference between the number of cases to date in 2009 & 2008
	W	C	S	N	E	NW	NC	U	Sab					
Acute Flaccid Paralysis	01	00	01	00	01	00	00	00	00	03	04	76	99	-23.2 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	01	-
Measles	01	00	00	01	00	00	00	01	00	03	01	174	107	+62.6 %
Tetanus	00	00	00	00	00	00	00	00	00	00	00	29	36	-19.4 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	02	65	55	+18.2 %
Tuberculosis	122	10	18	01	01	28	01	05	01	187	149	10069	8181	23.1 %

Table 2: Newly Introduced Notifiable Disease

12th -18th December - 2009(51stWeek)

Disease	No. of Cases by Province									Number of cases during current week in 2009	Number of cases during same week in 2008	Total number of cases to date in 2009	Total number of cases to date in 2008	Difference between the number of cases to date in 2009 & 2008
	W	C	S	N	E	NW	NC	U	Sab					
Chickenpox	07	07	04	02	04	07	05	04	11	51	84	14253	5424	+ 162.8 %
Meningitis	02 CB=1 KT=1	08 NE=8	07 GL=6 MT=1	00	00	05 KR=3 PU=2	17 PO=4 AP=13	01 BD=1	11 RP=10 KG=1	51	18	1812	1280	+ 41.6 %
Mumps	03	00	04	00	06	00	00	00	02	15	21	1691	2860	- 36.6 %
Leishmaniasis	00	00	02 MT=2	00	00	00	03 AP=3	00	00	05	Not available*	663	Not available*	-

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.
 DPDHS Divisions: CB: Colombo, GM: Gampaha, KL: Kalutara, KD: Kandy, ML: Matala, 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, Whooping Cough, Chickenpox, Meningitis, Mumps.

Special Surveillance: Acute Flaccid Paralysis.

Leishmaniasis is notifiable only after the General Circular No: 02/102/2008 issued on 23 September 2008.

Table 4: Surveillance of Communicable diseases among

12th -18th December - 2009(51stWeek)

Area	Disease	Dysentery	Enteric fever	Viral Hepatitis	Chicken Pox	Watery Diarrhoea	Dengue fever/ DHF
Vavunia		6	4	2	1	-	148
Chendikulam		1	6	2	1	0	0
Total		07	10	04	02	00	148

Table 4: Selected notifiable diseases reported by Medical Officers of Health

12th-18th December - 2009(51stWeek)

DPDHS Division	Dengue Fever / DHF*		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Returns Received Timely**
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	
Colombo	24	4434	1	242	0	13	1	226	0	120	12	1171	0	6	0	157	0	7	62
Gampaha	34	4351	0	170	0	23	0	52	0	38	3	480	0	10	2	266	0	6	47
Kalutara	7	1510	2	359	0	14	0	62	0	47	1	582	0	1	0	97	0	3	50
Kandy	18	4109	13	330	0	8	0	30	0	67	2	237	2	172	2	150	0	0	56
Matale	37	2007	3	158	0	4	0	33	0	39	3	334	0	5	3	94	0	2	75
Nuwara	9	284	4	415	0	2	12	198	0	803	0	47	1	81	3	102	0	0	85
Galle	9	629	4	261	0	10	0	5	0	111	5	256	0	15	0	37	0	6	79
Hambantota	7	965	0	103	0	8	0	8	0	16	1	104	2	89	0	53	0	0	64
Matara	4	1143	2	270	1	9	0	11	0	27	2	245	3	154	1	70	0	1	100
Jaffna	10	157	1	141	0	3	3	349	0	30	0	1	5	132	1	204	0	5	38
Kilinochchi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mannar	0	6	1	125	0	1	1	124	0	23	0	0	0	1	0	77	0	0	25
Vavuniya	154	703	6	1657	0	25	5	705	0	5	0	8	0	6	2	3780	0	0	50
Mullaitivu	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Batticaloa	10	585	5	343	0	15	0	26	0	56	0	13	1	6	0	24	0	6	55
Ampara	0	256	0	137	0	1	0	12	0	8	0	14	0	3	0	100	0	1	14
Trincomalee	7	349	5	228	0	4	0	24	0	9	0	23	0	19	0	61	0	1	70
Kurunegala	16	2845	7	301	0	13	1	87	0	15	8	177	1	99	2	172	0	4	75
Puttalam	7	671	9	186	0	7	1	80	0	11	1	97	0	31	0	44	0	1	67
Anuradhapu	14	591	7	178	0	8	0	9	0	55	1	97	0	31	1	205	0	4	58
Polonnaruw	2	196	0	136	0	4	0	21	0	10	1	69	0	10	1	97	0	0	86
Badulla	5	373	4	419	0	5	4	65	0	37	0	101	0	136	2	324	0	1	60
Monaragala	1	189	6	174	0	2	1	25	0	36	0	17	0	68	0	94	0	2	73
Ratnapura	5	2083	3	529	0	22	0	55	0	45	4	372	0	37	4	265	0	2	56
Kegalle	11	3795	0	193	0	10	1	58	0	7	3	343	0	38	0	283	0	1	64
Kalmunai	9	293	2	127	0	2	0	15	0	8	0	7	0	3	1	25	0	0	38
SRI LANKA	400	32524	85	7184	01	213	30	2281	00	1623	47	4795	15	1153	25	6781	00	53	61

Source: Weekly Returns of Communicable Diseases WRCD).

*Dengue Fever / DHF refers to Dengue Fever / Dengue Haemorrhagic Fever.

**Timely refers to returns received on or before 18th December, 2009 Total number of reporting units =311. Number of reporting units data provided for the current week: 236

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

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