WEEKLY EPIDEMIOLOGICAL REPORT

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231, de Saram Place, Colombo 01000, Sri Lanka
Tele: + 94 11 2695112, Fax: +94 11 2696583, E mail: epidunit@sltnet.lk
Epidemiologist: +94 11 2681548, E mail: chepid@sltnet.lk
Web: http://www.epid.gov.lk

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The threat of dengue, when will we change?

Dengue is a common mosquito borne infection found in tropical and sub tropical regions in Sri Lanka there are four distinct but closely related virus sub types that can cause dengue. It is a flu like infection that can cause severe lethal complications like dengue haemorrhagic fever (DHF) which is a leading cause of death among children as well as in adults. Dengue infection is now well established disease in Sri Lanka. The diverse climatic condition environment pollution and overcrowding provide a good media to the female Aedes mosquito to breeds in places where water collects. In south western monsoon peak and north eastern monsoon peak more dengue cases have been reported. Nearly one-third of the dengue cases have been reported in the costal area. Colombo, Kalutara, Gampaha, Hambanthota, Galle, Puttalum and Batticaloa are the most affected districts in the present situation. More Dengue deaths have been reported in Colombo- MC area so far this year.

In the year 2009 the disease burden of dengue in Sri Lanka was unprecedented with 35,010 cases and 346 deaths the highest recorded mortality to date. Given the known epidemiological trend be a reduction in the disease burden cannot be foreseen in the near future. Under the circumstances our role should be to ensure that no patient dies of dengue. This is a realistic goal which responsible clinicians should strive to achieve. This assertion is not speculative but based on an in-depth analysis of dengue related deaths, new knowledge about the disease and personal experience.

Of the 38 patients who have died of dengue from January to April in 2011, 68% have been adults. This disparity is not due to a change in the disease but because the paediatricians have changed the way they manage their patients. It is unfortunate however that some of the physicians are resistant to change and have not kept pace with what is new. Consequently patients are deprived of a novel approach of care that has added a new dimension, particularly to fluid therapy which is the cornerstone of management. In view of the relatively good results obtained, clinicians often tend to think and justify their management as correct and remain complacent. This is so because the vast majority of symptomatic patients have dengue fever and will recover in any case. The few who develop dengue hemorrhagic fever are often slow leakers and even when the fluid therapy is less than optimal they too have a high chance of recovery.

Against this background what needs to be appreciated is that vast strides have been made in the understanding of the disease and refinements to fluid therapy. A clear understanding of the course of the disease makes one realize the high predictability of the outcomes. Such insight paves the way for a rational and scientific way to manage each stage of the disease. Blind and empirical therapy is thus neither needed nor advocated in the basic management of dengue fever and dengue hemorrhagic fever. Properly timed appropriate specific interventions regarding both the quality and quantity of fluid as well as adjuvant therapy can thwart progression to a fatal outcome amidst cascading complications triggered by profound shock provided it is detected early and addressed aggressively within 4 hours of onset. Such success stories, of which there have been many in the recent past by both paediatricians and physicians, reflect what can be achieved even from a seemingly hopeless position by those who have mastered the profundity of the disease and are committed to apply national guidelines with diligence to suit individual patient requirements.

The time is ripe, though belated, for those physicians who are still in a slumber to wakeup and cast aside the pervading dogma and open up their hearts and minds to understand the basics of the disease and the subtleties of fluid management. It is only then, that they too can ex-

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perience the delight of treating scientifically a truly fascinating disease with a highly predictable and favourable outcome.

The readers are requested to refer to the National Guidelines on Management of DF (Dengue fever)& DHF(Dengue haemorrhagic fever) of the Ministry of Health Sri Lanka for details on management. Copies are available at the Epidemiology Unit 231, De Saram Place, Colombo 10

Electronic version is available on: www.epid.gov.lk

For the benefit of busy physicians I have highlighted a few **practice points** of practical importance aimed to reduce morbidity and mortality.

Practice points

1. **Diagnose** dengue infection **early** (not later than D3(third day)) Remember that dengue is hyper endemic in Sri Lanka and hence the need to think about dengue first in all acute febrile illnesses. ***Be vigilant.***

2 **Early diagnosis** requires only the intelligent application of data from **full blood counts** done from D2 or D3 (day 2 and day 3) onwards to the clinical features. Always check for **diffuse blanching erythema** which is a very common and an exceedingly ***useful sign to diagnose dengue early*** among adults.

3. Identify the clinical type as **DF**(no plasma leakage) **or DHF** (evidence of plasma leakage & platelet count equal to or below 100,000/c.mm)

4. **Monitor vital signs and FBC** even if the patient is haemodynamicaly stable to detect entry into the critical phase early. **Be alert Shock after admission reflects delayed or misdiagnosis, poor monitoring and or improper fluid therapy**

5.Once early entry into the critical phase is suspected by the dynamics of the monitored vital signs and the serial changes in the FBC(full blood count); **Confirm plasma leakage** by ultrasonography or CXR (chest x-ray) -Right lateral decubitus or biochemical data .(non fasting serum cholesterol, serum albumin)

6. Determine as accurately as possible the time of onset of plasma leakage and the predicted time of end of the critical phase. This information is a **basic prerequisite for accurate fluid therapy.**

7. **Calculate the fluid quota** for the entire period of plasma leakage i.e. **M+5% for 48 hrs.** Fluid rate has to be **adjusted hourly** based on the **capillary haematocrit** and **vital signs** during this period to match the dynamics of plasma leakage. **Do NOT give fluid at a flat rate.**

8. **Manipulate** the use of **crystalloids**, **Dextran**, and **6% starch** intelligently in relation to the point in the time scale of the disease in the critical phase, and the balance of the fluid quota to prevent both shock as well as fluid overload***. Be aggressive.***

9. **Dextran** is given as a **bolus** and **NOT as an infusion.**

10. Do not give intravenous fluids nor Dextran during convalescence when the leaked fluid is being reabsorbed and tends to augment the risk of fluid overloading. ***Ensure a smooth convalescence.***

11. Always consider dengue shock syndrome first, in the initial diagnostic evaluation of any patient with a history of fever presenting in shock who is found to be afebrile at the time of shock. **Clue** to the correct diagnosis would be a **high haematocrit** with **thrombocytopaenia**. ***FBC is an urgent mandatory investigation.***

12. Accurate and rational management of all stages of the disease from its inception (particularly the beginning of the critical phase) can prevent potentially fatal complications like liver, renal & respiratory failure as well as life threatening bleeding & DIC.

Message to the public

Let us be protected from Dengue

- **Vigilance is vital to detect Dengue early.**
- **Early Identification and Health care seeking can minimize severity.**
- **Dengue Fever should be suspected if,**
  - High Fever
  - Headache
  - Muscle and bone pains
  - Rash
  - Nausea & Vomiting
- **Dengue Patients detected from your neighbourhood should be a warning to you**
- **Like other viral fevers, Dengue fever lasts for few days. Supportive treatment during this period involves;**
  - Minimum physical exertion
  - Adequate amount of fluids (Milk, Fruit juices, Kanji, Jeewani) and a soft balanced diet
  - Avoid Red/black coloured fluids
  - Correct dose of Paracetamol to keep fever down
  - **Pain relieving drugs such as Aspirin, Diclofenac Sodium, Ibuprofen, Mefenamic acid (as tablets, syrup, injections or suppositories) must not be used to bring down fever**
- **If fever persists for over 2 days, seek medical advice. Your Doctor may consider a Full Blood Count (FBC)**
- **More severe form of Dengue may become evident as the fever settles. Seek medical advice in the presence of the following symptoms when fever goes down:**
  - Severe vomiting / abdominal pain
  - Increased thirst
  - Continued drowsiness and sleepiness
  - Refusing to eat or drink
  - Abnormal bleeding manifestations – e.g.: Heavy menstrual bleeding or menstruation starting earlier than usual
- **If following features are present seek medical attention immediately;**
  - Cold, clammy skin and extremities
  - Restlessness and Irritability
  - Skin mottling
  - Decreased/ no urine output
  - Behaviour changes – Confusion

This article was compiled by..

Dr Kolitha Sellahewa *Consultant Physician Epidemiology Unit (formerly NHSL)*

Dr Jayantha Weeraman

Consultant Paediatrician, Epidemiology Unit (formerly TH Karapitiya)

Table 1: Vaccine-preventable Diseases & AFP

09th– 15th April 2011(15th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2011	Number of cases during same week in 2010	Total number of cases to date in 2011	Total number of cases to date in 2010	Difference between the number of cases to date in 2011 & 2010
	W	C	S	N	E	NW	NC	U	Sab					
Acute Flaccid Paralysis	00	00	00	00	00	00	00	00	00	00	00	24	29	- 17.2 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	-
Measles	00	00	00	00	00	00	00	00	00	00	01	33	45	- 26.6 %
Tetanus	00	00	00	00	00	00	00	00	00	00	00	06	08	- 25.0 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	12	05	+ 140.0 %
Tuberculosis	00	00	00	00	00	00	00	00	00	00	00	2243	2467	- 08.8 %

Table 2: Newly Introduced Notifiable Disease

09th– 15th April 2011(15th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2011	Number of cases during same week in 2010	Total number of cases to date in 2011	Total number of cases to date in 2010	Difference between the number of cases to date in 2011 & 2010
	W	C	S	N	E	NW	NC	U	Sab					
Chickenpox	09	00	04	01	04	04	01	01	02	23	25	1507	1166	+ 29.2 %
Meningitis	00	00	00	00	01 TR=1	02 KN=2	00	00	01 RP=1	04	10	289	301	- 04.0 %
Mumps	03	00	02	00	00	05	00	04	03	17	08	603	535	+ 12.7 %
Leishmaniasis	00	00	00	00	00	00	04 AP=4	00	00	04	00	218	349	- 37.5 %

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**: 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, 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. .

Correction….

Please note that in the article pandemic influenza –A/H1N1- 2011 which appeared in volume 38 issued in the week 15th -21st January 2011, the 1st line in the very 1st paragraph should be corrected as"the influenza H1N1 2009 pandemic which was 1st reported from Mexico in March 2009…

Our sincere apologies for this oversight and appreciation to Dr. Ranjan De Silva who pointed it out.

WER team

Dengue Prevention and Control Health Messages

Reduce, Reuse or Recycle the plastic and polythene collected in your home and help to minimize dengue mosquito breeding.

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

09th– 15th April 2011(15th Week)

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	46	1273	0	68	0	2	1	57	0	7	2	130	0	4	0	15	0	1	**92**
Gampaha	8	441	0	36	0	6	0	18	0	8	3	244	1	12	0	30	0	2	**73**
Kalutara	3	206	0	48	0	3	0	24	0	10	1	82	0	0	0	3	0	0	**50**
Kandy	3	102	1	126	0	4	1	12	0	23	1	42	3	36	1	19	0	0	**65**
Matale	2	51	1	45	0	2	0	9	1	4	1	62	1	7	0	4	0	0	**67**
Nuwara	2	32	2	95	0	1	0	13	0	12	1	19	2	29	0	5	0	0	**62**
Galle	5	76	0	27	0	2	0	2	0	5	1	44	0	13	0	7	0	0	**47**
Hambantota	0	61	0	14	0	3	0	1	0	7	2	192	0	19	0	0	0	0	**73**
Matara	1	89	0	21	0	1	0	5	0	1	1	126	0	22	0	8	0	1	**59**
Jaffna	0	125	0	53	0	2	2	102	0	10	0	2	0	153	0	12	0	2	**58**
Kilinochchi	2	2	0	5	0	3		5	0	1	0	1	0	4	0	1	0	0	**50**
Mannar	0	17	0	5	0	0	0	7	0	0	0	11	0	27	0	1	0	0	**17**
Vavuniya	0	34	1	13	0	9	0	5	0	3	0	31	0	2	1	1	0	0	**50**
Mullaitivu	0	5	0	20	0	1	0	1	0	0	0	3	0	1	0	1	0	0	**0**
Batticaloa	22	253	5	158	0	3	0	3	0	8	0	12	0	0	0	1	0	1	**64**
Ampara	0	27	0	35	0	0	0	7	0	20	0	41	0	0	0	4	0	0	**29**
Trincomalee	3	62	22	248	0	0	0	1	0	6	0	51	0	1	0	3	0	0	**73**
Kurunegala	1	169	2	91	0	5	0	40	0	26	6	1037	1	37	0	13	0	0	**86**
Puttalam	0	194	2	68	0	0	0	8	0	1	0	56	0	6	0	3	0	1	**33**
Anuradhapu	2	63	0	39	0	1	0	2	0	8	1	178	0	12	0	4	0	0	**42**
Polonnaruw	1	85	0	19	0	1	0	5	0	8	1	54	0	1	0	4	0	0	**71**
Badulla	3	66	1	45	0	3	0	19	0	3	0	22	1	11	0	16	0	0	**27**
Monaragala	2	69	0	22	0	1	1	14	2	6	3	86	0	30	1	28	0	0	**45**
Ratnapura	8	164	6	155	0	3	1	15	0	7	3	149	0	16	0	17	0	0	**44**
Kegalle	3	84	0	33	0	7	0	22	0	12	2	107	1	9	2	30	0	0	**55**
Kalmunai	0	11	4	135	0	0	0	0	1	4	0	3	0	2	0	2	0	0	**69**
SRI LANKA	**117**	**3784**	**47**	**1624**	**00**	**63**	**06**	**397**	**04**	**200**	**29**	**2785**	**10**	**454**	**05**	**232**	**00**	**08**	**57**

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 15th April, 2011 Total number of reporting units =320. Number of reporting units data provided for the current week: 184
A = Cases reported during the current week. **B** = Cumulative cases for the year.

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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.**

ON STATE SERVICE

Dr. P. PALIHAWADANA
CHIEF EPIDEMIOLOGIST
EPIDEMIOLOGY UNIT
231, DE SARAM PLACE
COLOMBO 10