WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit
Ministry of Healthcare and Nutrition

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WER

Survey on Dengue Epidemic 2009 (Part2)

Factors that have contributed to deaths as mentioned by the clinicians

Factors	Yes	%	No	%	NM	%	Total
Delay in health care seeking	24	63.1	1	2.6	13	34.1	38
Delay / misdiagnosis	10	26.3	12	31.5	16	42.1	38
Delayed referral	13	34.1	8	21	17	44.7	38
Prolonged shock	24	63.1	3	7.8	11	28.9	38
Fluid overload	13	34.1	10	26.3	15	39.4	38
Massive Bleeding	16	42.1	8	21	14	36.8	38
Lack of equipment/ Laboratory support	10	26.3	11	28.9	17	44.7	38

NM: Not mentioned

Table 10: *Factors that have contributed to deaths as noticed by the clinicians*

Suggestions by clinicians to avoid deaths due to dengue in the future

1. Importance of adhering to National Guidelines for management.
2. Management guidelines to be strengthen in accordance to Thailand / International experience.
3. Patients who need special care should be managed in referral centers and early referral is also important.
4. Update the knowledge of management teams by CME programmes.
5. Update the knowledge of primary care doctors on management and timely referral.
6. Increase laboratory / investigation facilities.
7. Improve ICU and other facilities in hospitals / train ICU staff.
8. Early diagnosis and early detection of impending shock.
9. Try to manage with oral fluids as much as possible and avoid giving more IV fluids.
10. Avoid usage of NSAIDs for fever.
11. Put up dedicated Dengue Unit in major hospitals, and small hospitals should have support from consultants and senior registrars from larger hospitals.
12. Strengthening of preventive strategies
13. Proper health education of patients – rest, adequate fluid, blood tests
14. Improve public awareness on importance of early admission and detecting danger signs.
15. Further studies needed before wider use of steroid in dengue management.

Special characteristics of disease pattern noticed during 2009 epidemic by above clinicians

- Higher incidence of shock.
- Higher incidence of complications like hypocalcaemia, hypoglycaemia, multiorgan failure (liver failure myo carditis, encephalopathy).
- Young adults presenting with more complications.
- Higher involvement of infants.
- Higher incidents of coinciding septicaemia.
- Significant atypical presentations.
- Prolonged hospital stay due to slow recovery.

Conclusions

- It would have been better if wider representation of clinical had expressed their opinion.
- The experience of the clinicians that have responded, and the large number of Dengue/DHF/ DSS cases and deaths seen by them and analyzing the deficiencies and drawbacks they were faced with in doing so, during this epidemic would be of much use in planning/ prioritizing of services and setting up of programmes for the management of Dengue in Sri Lanka.
- The concerns most have raised with regard to health seeking behavior of patients for example : Inadequate rest while having the disease and failure to recognize early warning signs/ symptoms, delay in seeking medical care, use of NSAIDS will have to be addressed in public educational campaigns.
- Separate CME programmes need to be carried out for primary care doctors, and doctors at smaller hospitals and other referring centers to improve the quality of management. Special consideration to be given at the documentation during transfer. It is important to introduce a common format for documentation in transferring patients.
- Concerns with regard to the existing facilities at each institution and the suggestions for improvements to be taken into account when planning, prioritizing service provision and deciding on new strategies and programmes e.g. Screening facilities at OPD, Dedicated Dengue unit for

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management of severe dengue patients.

- The management related factors that have contributed to deaths eg: fluid over load, delayed referral, deviation from guide lines etc should be continuously highlighted at CME programmes, and Service related factors such as inadequate investigating facilities, ICU/Critical care facilities will have to be brought to the notice of National level decision makers.
- The special clinical features noticed during this epidemic should be directed for further research as necessary.

Dengue outbreak in a Maternity Hospital

In December 2009 an outbreak of Dengue fever among the staff at a leading Maternity Hospital was reported to the Epidemiology Unit. One Nursing Officer has succumbed to the disease creating a lot of panic among the staff. Few others were receiving inward care including one staff member in ICU. The Epidemiology unit decided to carry out a preliminary investigation on the matter. A Medical Officer from the Epidemiology Unit , visited the Hospital to conduct the investigation.

Objectives of the investigation

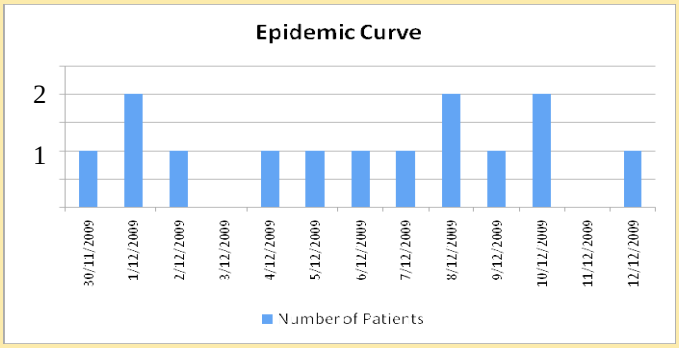
- Establish the existence of an out break and describe the problem with regard to time, place and person.
- To find out the possible source of infection and precipitators for rapid transmission.
- To give recommendations to control and prevent further spread of the outbreak.

Background information was obtained from the Director of the Hospital, Infection Control Nurses of the hospital and other Nursing officers .

- The Nursing Officer who passed away has reported fever and left for her hometown on the same day. She was admitted to the local general hospital and diagnosed and passed away in her home town.
- During the previous week to the above incidence and the week after approximately 10 N/Os have reported fever with symptoms suggestive of dengue (headache/myalgia etc) but their diagnosis and the accurate number is not verified as they too have left for their hometowns.
- Details of any other cases from other categories of staff were not available.
- Three patients were notified as Dengue Fever in the Hospital Notification register.
- There were no new fever cases among staff/patients at the time of investigation.

Observations made during the Investigation

- The wards from which the staff patients were reported and the respective dormitory of the Nurses hostel are at the same location of the hospital all in line adjoining the main road.
- The roof gutters of hostel were blocked with leaves fallen from trees within the premises as well as out side leading to stagnation of rain water.
- The dormitory at the nurses hostel where the cases were reported mainly, were partitioned with wood, were compact, without a connection to the roof from above allowing free passage of mosquitoes in to quarters.
- The general cleanliness of the hospital premises was satisfactory but there were some areas of water stagnation on the floor due to improper sloping.
- The drainage system on the side of the main road was not properly maintained and contains stagnant water collections.
- It was noticed that there was some delay in treatment seeking and tendency for self medication among staff members.
- *No. of fever/dengue fever patients among staff members reported over time (approximate data)*



Conclusion

There is a clustering of cases among staff members staying at the nurses hostel. Even though there were no past records, based on the information by key informants overall numbers are high compared to the rest of the months in 2009 but quite similar to the same period during last year. It was reasonable to believe by observations that the persistence of common sources (possible breeding places for mosquitoes) and inadequate measures taken to block the transmission has led to the current outbreak.

Recommendations

- The ICN s to actively look for additional cases reported from staff members/patients in the hospital, keep proper records and direct them for early treatment.
- The members of the staff should be made aware of the situation and advised to seek treatment **early** if there is fever as well as to have adequate rest during the illness.
- The MOH/PHI staff to continue surveillance and provide necessary advice and support to control the situation until the outbreak is declared over.
- The hospital authorities in collaboration with local authorities to take prompt action to clean roof gutters remove overlying trees and maintain free flow of water in drains as well as to maintain the cleanliness of the hospital premises.
- As an immediate action to carry out chemical control activities (mainly fogging) at the hospital premises and surroundings according national guidelines.
- The ward staff should take note on the fact that adequate measures to be taken to prevent spread of the virus (e.g; use of bed nets) whenever there is a suspected Dengue fever patient.
- The housing conditions at the nursing quarters to be improved so that the free flow of mosquitoes could be minimized.

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Table 1: Vaccine-preventable Diseases & AFP

05th - 11th December 2009 (50th Week)

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	00	00	00	00	01	00	00	00	01	02	03	73	92	-20.6%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	-
Measles	00	00	00	01	00	01	00	00	00	02	05	171	107	+59.8%
Tetanus	00	00	00	00	00	00	00	00	00	00	00	29	36	-19.4%
Whooping Cough	00	00	00	00	02	00	00	00	00	02	04	65	48	+35.4%
Tuberculosis	17	01	00	06	03	25	00	07	00	59	80	9882	7952	24.3%

Table 2: Newly Introduced Notifiable Disease

05th - 11th December 2009 (50th Week)

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	18	03	09	10	04	04	03	02	03	56	86	14198	5189	+173.6%
Meningitis	12 CB=7 KT=12	07 KN=1 NE=3 ML=3	11 GL=6 MT=4 HB=1	01 VU=1	15 TR=15	5 KR=5	24 PO=24	01 BD=1	05 RP=5	81	14	1753	1234	18.8%
Mumps	01	00	01	00	01	00	02	01	01	07	19	1673	2761	-39.4%
Leishmaniasis	00	00	00	00	00	00	03 AP=3	00	00	03	Not available*	658	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: 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.

Table 4: Surveillance of Communicable diseases among IDP's 05th -11th December 2009 (50th Week)

Area \ Disease	Dysentery	Enteric fever	Viral Hepatitis	Chicken Pox	Watery Diarrhoea	Dengue fever/DHF
Vavunia	2	0	2	4	0	134
Chendikulam	102	4	0	61	0	0
Total	**104**	**04**	**02**	**65**	**00**	**134**

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

05th - 11th December 2009 (50th 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	48	4354	3	241	0	13	2	225	0	120	20	1159	0	6	4	157	0	7	**85**
Gampaha	60	4298	2	165	0	23	2	52	0	38	1	474	1	10	0	259	0	6	**67**
Kalutara	18	1503	6	357	0	14	1	62	0	47	14	579	0	1	5	95	0	3	**92**
Kandy	36	4091	8	316	0	8	0	30	0	67	5	233	4	17	3	148	0	0	**84**
Matale	49	1970	10	155	0	4	0	33	0	39	4	331	0	5	0	91	0	2	**92**
Nuwara	8	275	6	411	0	2	5	186	0	803	1	47	3	80	2	99	0	0	**92**
Galle	5	620	7	257	0	10	1	5	0	111	7	251	0	15	2	37	0	6	**89**
Hambantota	17	958	3	103	0	8	0	8	0	16	5	103	1	87	0	53	0	0	**91**
Matara	9	1139	5	268	0	8	1	11	0	27	2	243	4	151	0	69	0	1	**100**
Jaffna	16	114	2	137	0	3	13	337	0	30	0	1	2	127	3	202	1	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	9	124	0	1	0	123	0	23	0	0	0	1	1	77	0	0	**75**
Vavuniya	143	549	3	1651	0	25	0	700	0	5	1	8	0	6	0	3778	0	0	**75**
Mullaitivu	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	**0**
Batticaloa	4	575	6	338	0	15	2	25	0	56	1	12	0	5	0	24	0	6	**73**
Ampara	6	256	4	134	0	1	0	12	0	8	0	14	0	3	0	100	1	1	**57**
Trincomalee	3	342	12	211	0	4	4	24	3	9	2	23	0	19	0	61	0	1	**50**
Kurunegala	9	2825	9	293	0	13	1	86	0	15	6	167	3	98	1	170	0	4	**80**
Puttalam	23	664	5	177	0	7	3	79	0	11	0	96	0	31	0	44	0	1	**89**
Anuradhapu	18	576	21	170	1	8	1	9	0	55	1	95	1	31	1	204	0	4	**79**
Polonnaruw	1	194	1	136	0	4	0	21	0	10	3	68	0	10	1	96	0	0	**86**
Badulla	7	368	8	415	0	5	0	60	3	37	0	101	1	136	1	321	0	1	**87**
Monaragala	3	187	11	168	0	2	0	24	0	36	1	17	0	68	0	94	0	2	**82**
Ratnapura	7	2077	1	525	0	22	0	55	0	45	1	367	0	36	1	257	0	2	**56**
Kegalle	17	3779	2	193	0	10	0	57	0	7	8	337	0	38	5	283	0	1	**82**
Kalmunai	12	283	9	124	0	2	0	15	0	8	0	7	0	3	0	24	0	0	**46**
SRI LANKA	**519**	**32003**	**153**	**7071**	**01**	**212**	**36**	**2240**	**06**	**1623**	**93**	**4733**	**20**	**1137**	**30**	**6743**	**02**	**53**	**76**

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 11th 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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