



WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiological Unit,

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Managing the Viral Hepatitis Outbreak in Gampola

A sudden increase in the number of cases presenting with jaundice to Teaching Hospital, Gampola was reported during the latter part of the 2nd week of May, 2007. Subsequent tests carried out by the Medical Research Institute, Colombo confirmed the diagnosis of Hepatitis A as the cause of this outbreak. Outbreak control measures were adopted by the local health authorities following investigations conducted by provincial health authorities and the Epidemiology Unit. A week after the outbreak was first reported, a comprehensive review of the outbreak management activities was done.

Some areas of the central hills are endemic for viral hepatitis. In 2007, up to 14th of May, 96 patients diagnosed with viral hepatitis had been admitted for treatment to Teaching Hospital, Gampola. Out of these, 49 had been admitted during the second week of May alone. This had prompted the regional health authorities to notify the officials in the centre of an existing viral hepatitis outbreak.

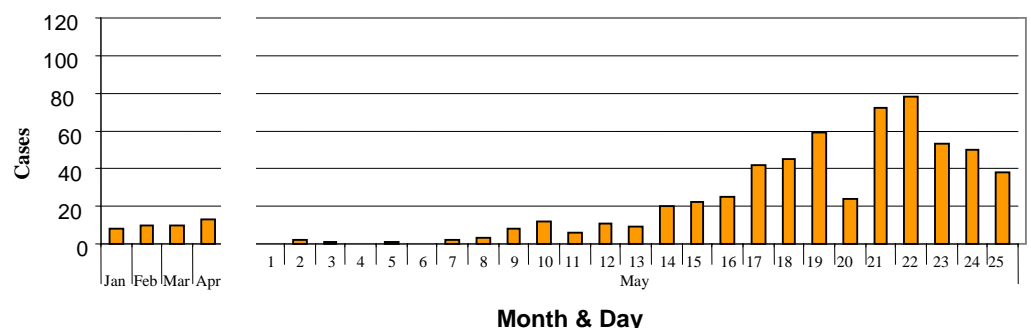
A preliminary investigation carried out at the beginning of the outbreak identified probable contamination of a water supply source feeding

a large area of distribution in the area as the probable source of infection. Several control measures were adopted, and surveillance activities were strengthened after the preliminary investigation. By the time the follow-up review was conducted a week later, the caseload had started to drop (refer Figure). But the possibility of a 2nd wave probably of a lower magnitude during the 3rd week of June had made continuous surveillance and the adoption of preventive measures imperative.

In spite of preliminary measures taken to control the outbreak, faecal contamination of the water supply system was still evident during the visit of the epidemiologists to the water intakes of Paradeka and Pitakanda Ela. This had made the boiling of drinking water and super-chlorination the only acceptable options for the consumers.

The epidemiologists had instructed that infection prevention protocols be adhered to, and the intensity of surveillance activities to be strengthened in the hospitals where suspected and confirmed cases of Hepatitis A were being

Figure: Viral Hepatitis admissions at Teaching Hospital, Gampola during 2007 (as of 25.05.2007)



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WEEKLY Epidemiological Report Sri Lanka - 2007

Viral Hepatitis: Facts At a Glance

- Hepatitis A is transmitted via the faecal-oral route, most often through contaminated water and from person to person.
- It leads to infection and inflammation of the liver. The illness starts with an abrupt onset of fever, body weakness, loss of appetite, nausea and abdominal discomfort, followed by jaundice within a few days. The disease may range from mild (lasting 1-2 weeks) to severe disabling disease (lasting several months).
- In areas highly endemic for Hepatitis A, most infections occur during early childhood. The majority of cases may not show any symptoms; fatal cases due to fulminant acute hepatitis are rare. Nearly all patients recover completely with no long-term effects.
- Occasionally, extensive necrosis of the liver occurs during the first 6-8 weeks of illness. In such cases, high fever, marked abdominal pain, vomiting, jaundice, and hepatic encephalopathy (with coma and seizures) are the signs of fulminant hepatitis, leading to death in 70-90% of the patients.
- There are no specific antiviral drugs against Hepatitis A. Vaccines are available, but are of limited value during outbreaks. Prevention remains the most important weapon in its control.

treated. The OPD Medical Officers willingly agreed to do notification of suspected cases of viral hepatitis presenting at Teaching Hospital, Gampola. They agreed to do this on the same day of presentation to hospital, by hand, to the Medical Officer of Health, Gampola. They were instructed to identify, and report the geographical distribution of the cases to the hospital and local health authorities.

The Infection Control Nurses were put in charge of disinfecting the linen and utensils used for Hepatitis A patients, ensuring hand washing by the hospital staff and patients, maintaining the cleanliness of the toilets, checking the chlorine levels of the hospital water supply daily and supervising the hospital kitchen and the canteen.

Health educational activities were entrusted to the Sister-in-charge of the Infection Control Unit. She was asked to educate the staff (mainly the minor staff), Hepatitis A patients and their visitors especially regarding the steps to be taken to prevent disease spread.

Hospital ward staff was requested to use only boiled cool water, practise hand washing amongst themselves and to promote it among patients, designate separate toilets for Hepatitis A patients, use separate equipment including thermometers for the Hepatitis A and other patients, and to avoid

cross-infection during distribution of food by serving the non-hepatitis patients first.

The following public health initiatives, which were deemed important in order to control the outbreak, were discussed with the regional health authorities.

- The Senior Public Health Inspector (SPHI) was asked to check chlorine levels in the water supply system daily at several points selected randomly.
- The Additional MOH was instructed to visit the Water and Drainage Board authorities daily to discuss the random checking of water supplies in the Gampola area for chlorine levels, mechanisms to prevent contamination at water intakes and ensure proper chlorination.
- PHII were designated to compile a daily report of the notifications to the MOH, and the geographical distribution of cases. This was to study the epidemiology of the outbreak, and to identify any impending secondary outbreaks.
- All range PHII were instructed to promptly investigate the notified cases suspected with viral hepatitis. This was thought to be important in preventing the spread of disease among the contacts.
- PHII (and MOH) were requested to pay regular visits to schools for health education, promotion of boiled cool/chlorinated water in schools, checking chlorine levels in school water supplies, ensuring food safety in school canteens, ensuring clean toilets and encouraging home-made meals to be consumed at school.
- They were also instructed to carry out regular inspection of food handling establishments in the area.
- The Public Health Nursing Sister (PHNS) and the Health Education Officers (HEOO) were entrusted with the task of carrying out targeted health educational activities.

It was envisaged that with the above measures, the outbreak could be controlled within a short period of time. But the real issues of preventing the contamination of drinking water supplies would need major interventions from the provincial authorities. Until such time, the option available for people of the area is to adhere to the practice of using boiled cooled water. In fact, it is perhaps the only option available to all of us who consume water from the common water distribution system as we have no clue as to the water quality.

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Table 1: Vaccine-preventable Diseases & AFP

19th - 25th May 2007 (21st Week)

Disease	No. of Cases by Province								Number of cases during current week in 2007	Number of cases during same week in 2006	Total number of cases to date in 2007	Total number of cases to date in 2006	Difference between the number of cases to date between 2007 & 2006
	W	C	S	NE	NW	NC	U	Sab					
Acute Flaccid Paralysis	00	00	00	00	00	00	00	00	00	02	34	56	-39.3%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00.0%
Measles	00	00	00	01 TR=1	00	00	00	01 RP=1	02	01	32	09	+255.5%
Tetanus	00	00	01 GL=1	00	00	00	00	00	01	01	14	22	-36.4%
Whooping Cough	00	00	00	00	00	01 AP=1	00	00	01	02	18	37	-51.3%
Tuberculosis	81	89	70	48	25	00	00	00	313	57	4180	4265	-2.0%

Table 2: Diseases under Special Surveillance

19th - 25th May 2007 (21st Week)

Disease	No. of Cases by Province								Number of cases during current week in 2007	Number of cases during same week in 2006	Total number of cases to date in 2007	Total number of cases to date in 2006	Difference between the number of cases to date between 2007 & 2006
	W	C	S	NE	NW	NC	U	Sab					
DF/DHF*	14	08	05	07	02	00	03	03	42	111	1902	3897	-51.2%
Encephalitis	03 GM=3	00	01 MT=1	02 VA=1 KM=1	00	00	00	00	06	03	96	55	+74.5%
Human Rabies	01 KL=1	00	00	00	00	01 AP=1	00	00	02	01	28	26	+7.7%

Table 3: Newly Introduced Notifiable Diseases

19th - 25th May 2007 (21st Week)

Disease	No. of Cases by Province								Number of cases during current week in 2007	Total number of cases to date in 2007
	W	C	S	NE	NW	NC	U	Sab		
Chickenpox	19	14	04	03	09	04	04	14	71	1543
Meningitis	00	00	00	00	00	00	00	00	00	49
Mumps	10	01	00	03	04	02	01	08	29	564

*DF / DHF refers to Dengue Fever / Dengue Haemorrhagic Fever.
NA= Not Available.
Sources:
Weekly Return of Communicable Diseases:
Diphtheria, Measles, Tetanus, Whooping Cough, Human Rabies, Dengue Haemorrhagic Fever, Japanese Encephalitis, Chickenpox, Meningitis, Mumps.
Special Surveillance:
Acute Flaccid Paralysis.
National Control Program for Tuberculosis and Chest Diseases:
Tuberculosis.
Details by districts are given in Table 5.

Provinces:

W=Western, C=Central, S=Southern, NE=North & 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.

Table 4: Laboratory Surveillance of Dengue Fever

19th - 25th May 2007 (21st Week)

Samples	Number tested	Number positive *	Serotypes				
			D ₁	D ₂	D ₃	D ₄	Negative
Number for current week	08	01	00	00	01	00	00
Total number to date in 2007	280	16	00	05	05	00	05

Source: Genetech Molecular Diagnostics & School of Gene Technology, Colombo.

* Not all positives are subjected to serotyping.

Table 5: Selected notifiable diseases reported by Medical Officers of Health
19th - 25th May 2007 (21st Week)

DPDHS Division	Dengue Fever / DHF*		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Returns Received Timely**
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	
Colombo	06	518	12	121	00	04	00	33	00	42	00	59	00	01	01	17	62
Gampaha	07	211	08	115	03	14	00	32	00	28	01	119	00	06	02	43	36
Kalutara	01	137	27	169	00	01	01	26	01	14	00	56	00	01	00	31	73
Kandy	03	211	10	116	00	03	01	29	00	06	00	36	02	37	58	210	36
Matale	02	55	09	92	00	04	00	08	00	03	00	18	00	03	00	76	42
Nuwara Eliya	03	25	05	107	00	01	00	35	00	366	00	06	00	23	27	137	43
Galle	02	47	02	62	00	06	00	06	00	03	03	30	01	17	00	10	38
Hambantota	00	26	03	28	00	04	01	13	00	09	02	25	00	19	00	07	36
Matara	03	70	09	114	01	06	00	20	00	10	08	98	00	104	03	14	50
Jaffna	00	15	00	65	00	02	00	274	00	02	00	00	00	79	00	14	00
Kilinochchi	00	01	00	00	00	00	00	03	00	00	00	00	00	02	00	02	00
Mannar	00	07	00	11	00	00	00	38	00	00	00	00	00	00	00	05	00
Vavuniya	00	10	02	22	01	04	00	09	03	13	00	02	00	00	00	03	75
Mullaitivu	00	00	00	06	00	04	00	12	00	00	00	00	00	00	00	00	00
Batticaloa	07	42	23	292	00	08	01	13	00	02	00	00	00	00	17	214	55
Ampara	00	01	00	40	00	00	00	03	00	00	00	00	00	00	00	13	00
Trincomalee	00	36	11	93	00	01	00	12	01	23	01	03	01	03	08	44	78
Kurunegala	01	161	36	175	00	01	02	29	00	12	02	12	00	24	05	21	22
Puttalam	01	68	03	42	00	09	00	34	00	00	00	14	00	00	00	54	78
Anuradhapura	00	33	02	36	00	07	00	16	03	09	00	14	01	17	00	26	42
Polonnaruwa	00	32	00	44	00	02	00	04	00	01	00	16	00	00	00	11	71
Badulla	02	17	20	227	00	00	01	38	00	08	00	23	00	63	10	113	40
Monaragala	01	09	12	123	00	01	01	19	02	10	01	25	00	30	02	13	50
Ratnapura	02	87	00	259	00	09	00	33	01	08	00	24	01	07	01	38	50
Kegalle	01	81	13	110	00	04	00	25	00	04	00	44	00	10	03	28	64
Kalmunai	00	02	06	70	01	01	00	06	00	00	00	00	00	02	02	76	54
SRI LANKA	42	1902	213	2539	06	96	08	770	11	573	18	624	06	448	139	1220	66

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 2 June 2007. Total number of reporting units = 290. Number of reporting units data provided for the current week: 191.

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

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