WEEKLY EPIDEMIOLOGICAL REPORT

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WER SRI LANKA 2008

JE– Sri Lankan situation

Though there have been speculations about a possible outbreak of Japanese encephalitis [JE] in Ceylon in 1948 (Tsai et al, 1990), JE virus was isolated for the first time in Sri Lanka in 1968. However, the first recorded major outbreak occurred in Sri Lanka in 1985-86 in the North Central Province.

Three hundred and eighty five cases were reported in the outbreak with 64 deaths due to the disease with a case fatality rate (CFR) of 17%. Predominantly affected age groups in this out break were 5-9 years and 20-29 years. The sex ratio of the affected was 2:1 (male: female).The disease occurred in epidemic proportions in 1986-87 and 1987-88 too. The latter outbreak was the largest outbreak reported so far with 812 cases and 192 deaths (CFR- 24%). What was noteworthy in the above said epidemic was the spread of the disease outbreak to two new districts adjoining the North Central Province [Kurunegala and Putttalam].

Epidemiologically, these enzootic viral transmission areas have intensive paddy cultivation supported by moderate to heavy rainfall and a network of irrigation canals. The increase in incidence of JE was reported to be consistent with the rainy season. Though the disease occurs throughout the year it shows a marked increase with the North-East monsoonal rains [November to February] as a result of increased mosquito breeding, due to water logging in paddy fields and ground pools. Man mosquito contact is also observed to be high when adult insect densities build up to a maximum during this period.

Deforestation and expansion of agricultural areas at a very rapid rate with new canals being built or reconstructed from ancient remnants have attributed extensively to the emergence of JE in outbreak proportions. State sponsored colonization programmes with a view to expanding agricultural activities has attracted a vast majority of non immune people from various parts of the country posing a threat of an outbreak among susceptible population .Another disposing factor to the disease was pig breeding in closer proximity to residential areas providing amplifying hosts. These dynamic changes in conditions receptive to viral transmission have been a key for JE transmission in Sri Lanka.

While it was apparent that JE was endemic in certain areas of Sri Lanka gradually it was becoming prevalent in areas where low level of enzootic transmission previously maintained or in new areas. Therefore, immunization appeared to be the most cost effective public health tool to cope with this emerging challenge of JE. Thus, as a remedy, immunization against JE was introduced on phase basis in 1988 in Sri Lanka. The target group identified for vaccination was children in the age group of 1-10 years living in Anuradhapura, Polonnaruwa Kurunegala and Putttalam divisions. They were vaccinated with four doses of the Nakayama strain of the inactivated JE vaccine during the inter epidemic period. Vaccination has been carried out by using campaign approach in high endemic districts.

This continued till 1994 when the Ministry of health shifted from Nakyama strain to Beijing strain.

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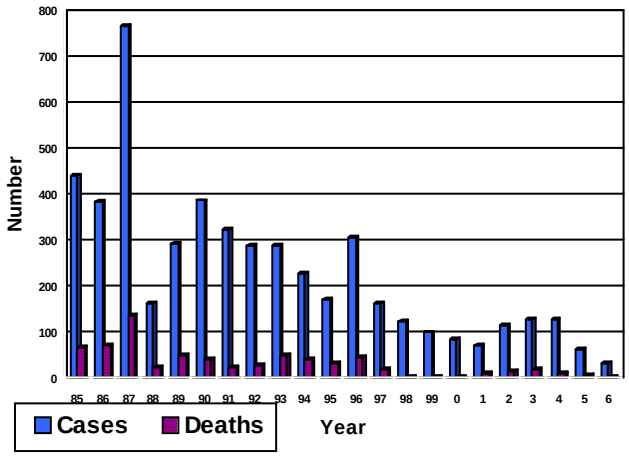
Similar to trends exhibited by other EPI antigens, over the years immunizationcoverage increased and simultaneously the incidence of the disease started to decrease.

However, disease has emerged in other areas where immunisation has not been carried out. The latest outbreak occurred in the district of Ratnapura in 2002. Emergence of the disease in areas where enzootic viral transmission was low or non existent and highlighted the need for introduction of vaccination as the major means of prevention . Accordingly, Ratnapura and Jaffna districts were also added to the JE vaccination programme. Based on the JE surveillance data , currently JE immunization programme is conducted in western, Northwestern, North central, Eastern provinces and Rathnapura and Jaffna districts [18 high risk districts] targeting children of 1 –10 years.



Reported JE Cases, Sri Lanka, 1995-2006 (Source Epidemiology Unit)

Epidemiology Unit has noted a relatively increased trend of reported AEFIs with inactivated JE vaccine compared to other routine EPI vaccines during the recent years. Overall improved reporting of AEFIs in the country may be partly responsible for this increased reporting..

When we consider the cost factor, the price per dose of inactivated JE vaccine for the Sri Lankan government in year 2006 was US$4.50. Given the 3-dose primary series and a booster dose required at 5 years of age, the annual cost of JE vaccine in Sri Lanka is now well over the three-quarters of the Sri Lankan government's entire budget for all vaccines. Thus, the cost of inactivated JE vaccine is becoming prohibitive and jeopardizing the Sri Lankan government's ability to sustain a public policy of immunization against JE.

JE Surveillance

In accordance with the routine disease surveillance system, all the clinically suspected cases of encephalitis are reported from the health institutions to the relevant MOH offices where field investigations are carried out to confirm or discard the JE cases. Further to the field investigations during routine surveillance of JE, special investigation is carried out by using special investigation form for each clinically confirmed case of JE. Special investigations are aimed at obtaining more details than the data available through the routine preliminary field investigations. Information targeting through the special investigation includes patient's clinical presentation, laboratory investigations, Clinical conclusions and immunization details. It also helps to select the confirmed cases out of the notified suspected cases. MOH and his team are responsible for investigating these cases [for the second time] and for sending the dully completed special investigation forms back to the Epidemiology Unit. Same time all the clinicians who are attending to the suspected patient with JE are suppose to send a blood sample to the Virology Department of the MRI for the confirmation of the diagnosis.

According to the JE surveillance data, for the year 2007, a total of 44 laboratory confirmed cases of JE were reported from medical institutions and there were two deaths giving a case fatality rate of 4.5%. More than half of the total cases was reported in 1—24 years age group. There was a one casesin the under 1 year age group.

A programme for immunization of pigs was also carried out in some areas by the Department of Animal Husbandry, with the assistance of the Public Health Veterinary Services Unit of the Ministry of Health.

The Entomology Department of the MRI and regional entomology teams in the RDHS divisions carried out entomological surveillance activities in high risk areas. Health education activities are carried out by the MOH, the Health Education Bureau and other specialized units of the Ministry of Health.

Sources

Proceedings of the Sri Lanka National Immunization Summit—2007 , Epidemiology Unit , Ministry of Health Sri Lanka.

Quarterly Epidemiological Bulletin—2007, Epidemiology Unit , Ministry of Health Sri Lanka.

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Table 1: Vaccine-preventable Diseases & AFP

1st – 7th March 2008 (10th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2008	Number of cases during same week in 2007	Total number of cases to date in 2008	Total number of cases to date in 2007	Difference between the number of cases to date between 2008 & 2007
	W	C	S	N	E	NW	NC	U	Sab					
Acute Flaccid Paralysis	01 Gm=1	01 ML=1	00	00	00	00	00	01 BD=1	01 KG=1	04	02	17	16	+6.25%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	00.0%
Measles	00	00	00	00	00	00	00	00	00	00	01	27	10	+170.3%
Tetanus	00	00	00	00	00	00	00	00	00	00	00	08	09	-11.1%
Whooping Cough	00	00	00	00	00	00	00	00	00	00	02	07	10	-30.0%
Tuberculosis	43	01	14	07	04	00	03	15	00	87	224	1809	1899	-4.7`%

Table 2: Newly Introduced Notifiable Diseases

1st – 7th March 2008 (10th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2008	Number of cases during same week in 2007	Total number of cases to date in 2008	Total number of cases to date in 2007	Difference between the number of cases to date between 2008 & 2007
	W	C	S	N	E	NW	NC	U	Sab					
Chicken-pox	30	07	16	06	06	13	03	04	23	108	74	1099	554	+98.3%
Meningitis	06 GM=2 CO=4	00	00	01 VA=1	02 BT=2	04 KR=3 PU=1	02 PO=2	00	10 RP=2 KG=8	25	07	363	46	+689.1%
Mumps	07	02	04	00	07	03	00	01	11	35	19	436	134	+225.3%

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.

Table 3: Laboratory Surveillance of Dengue Fever

1st – 7th March 2008 (10th Week)

Samples	Number tested		Number positive *		Serotypes									
					D_1		D_2		D_3		D_4		Negative	
	GT	AH	GT	AH	GT	AH	GT	AH	GT	AH	GT	AH	GT	AH
Number for current week	09	01	01	00	00	00	01	00	00	00	00	00	00	00
Total number to date in 2008	36	19	04	06	00	00	02	02	00	00	00	00	02	00

Sources: Genetech Molecular Diagnostics & School of Gene Technology, Colombo [GT] and Genetic Laboratory Asiri Surgical Hospital [AH]
* Not all positives are subjected to serotyping.
NA= Not Available.
Data 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.

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

1st – 7th March 2008 (10th Week)

DPDHS Division	Dengue Fever / DHF*		Dysentery		Encephal-itis		Enteric Fever		Food Poisoning		Leptos-pirosis		Typhus Fever		Viral Hepatitis		Human-Rabies		Returns Re-ceived Timely**
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	%
Colombo	25	372	02	35	00	04	03	38	01	53	07	34	00	00	01	27	01	01	**92**
Gampaha	14	254	05	32	00	03	01	17	01	16	09	46	00	01	03	37	00	00	**100**
Kalutara	09	123	07	87	00	06	05	26	07	11	08	51	00	02	01	13	00	00	**92**
Kandy	06	50	02	52	00	01	00	11	01	08	04	43	01	17	03	42	00	00	**71**
Matale	02	25	02	55	00	00	01	11	00	00	03	124	00	01	01	11	00	00	**83**
Nuwara Eliya	00	05	07	41	00	00	13	64	00	62	01	10	01	21	01	42	00	01	**100**
Galle	02	29	00	30	00	06	05	09	00	37	07	60	00	06	01	03	00	02	**94**
Hambantota	01	38	00	25	00	02	02	04	05	06	02	24	00	24	00	03	00	00	**91**
Matara	03	61	06	51	00	02	00	15	00	02	10	43	01	47	00	02	00	02	**100**
Jaffna	00	29	00	30	00	00	00	96	00	02	00	00	00	83	00	16	00	00	**00**
Kilinochchi	00	00	00	01	00	00	00	00	00	00	00	01	00	00	00	01	00	00	**00**
Mannar	02	10	00	01	00	06	02	68	00	00	00	00	00	00	00	08	00	00	**50**
Vavuniya	00	10	00	09	00	01	00	01	00	04	00	00	00	00	00	02	00	00	**100**
Mullaitivu	00	00	00	01	00	00	00	05	00	00	00	00	00	00	00	04	00	00	**40**
Batticaloa	06	43	00	19	00	00	01	04	03	03	00	00	00	00	03	40	01	02	**73**
Ampara	00	06	03	62	00	00	00	01	00	00	00	05	00	00	00	01	00	00	**100**
Trincomalee	06	94	01	20	00	00	02	04	00	01	01	05	02	09	01	08	00	00	**70**
Kurunegala	06	115	03	97	00	05	01	16	00	01	00	08	01	11	01	11	00	00	**72**
Puttalam	16	133	01	26	00	01	00	35	01	03	00	02	00	09	03	14	00	00	**78**
Anuradhapur	09	70	00	19	00	03	00	04	00	04	03	23	00	07	00	04	00	00	**89**
Polonnaruwa	02	24	07	31	00	01	02	09	00	04	00	06	00	00	02	10	00	00	**86**
Badulla	02	17	13	99	00	01	01	26	00	01	00	06	00	28	01	43	00	01	**80**
Monaragala	00	18	04	50	00	01	00	10	00	07	00	15	00	29	00	06	00	00	**73**
Ratnapura	04	77	08	57	01	13	03	32	00	42	01	25	01	44	01	24	00	00	**81**
Kegalle	08	72	14	123	00	13	02	08	00	00	03	19	04	20	13	104	00	00	**91**
Kalmunai	01	04	01	41	00	00	00	00	00	03	00	00	00	01	01	10	00	00	**46**
SRI LANKA	**124**	**1679**	**86**	**1094**	**01**	**69**	**44**	**514**	**19**	**270**	**59**	**550**	**11**	**360**	**37**	**486**	**02**	**09**	**79**

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 15 March , 2008 Total number of reporting units =290. Number of reporting units data provided for the current week: 238

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