WEEKLY EPIDEMIOLOGICAL REPORT

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Ministry of Health, Nutrition & Indigenous Medicine

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Measles Elimination Strategic Plan

Background

Measles is one of the most contagious diseases of humans. It is caused by the Measles virus and occurs as a seasonal disease in endemic areas. In tropical zones, most cases of Measles occur during the dry season, whereas in temperate zones, incidence peaks during late winter and early spring.

Disease Situation - Global

Before the introduction of Measles vaccine in 1963, major epidemics occurred approximately every 2 to 3 years and it is estimated that 30 million cases of Measles and more than 2 million deaths occurred globally each year, and more than 95% of them were below the age of 15 years.

Measles is a preventable disease and can be eliminated by vaccination. Although a remarkable reduction in global morbidity and mortality of Measles has been achieved with the introduction of safe and effective vaccine, it remains an important cause of death among young children globally. Global Measles deaths have decreased by 84 percent worldwide in recent years — from 550,100 deaths in 2000 to 89,780 in 2016. During 2000–2015, the global annual reported Measles incidence declined by 75% from 146 to 35 cases per million population. An estimated 7 million people were affected by Measles in 2016. The overwhelming majority (more than 95%) of Measles deaths occur in many developing countries, particularly in some parts of Africa and Asia with low per capita incomes and weak health infrastructures.

Disease Situation - Sri Lanka

During 1961–1970 and 1971–1980, the incidence of Measles varied from 18 to 38 and 12 to 49 per 100,000 population, respectively. In 1982, a large epidemic occurred, with reported 13,273 cases (87/100,000 population). The Measles vaccine was introduced into the National Immunization Programme of Sri Lanka towards the latter part of 1984 by routinely administering Measles vaccine to infants on completion of 9 months of age. Since then, the morbidity and mortality due to Measles reduced remarkably. Despite a relatively low incidence of Measles during the next decade (by 1998, only 263 cases were reported (0.5/100,000 population), an outbreak of the disease occurred in Sri Lanka during the period of September 1999 – June 2000. This was due to the accumulation of susceptible individuals over the years since the Measles vaccine has only 85% vaccine efficacy. Over 15,000 infected cases of Measles and five deaths were reported to the Epidemiology Unit during this outbreak. Nearly 54 % of the cases were ≥15 years of age at the time of disease onset. The highest morbidity was observed in the age group of <9 months (114 cases per 100,000 population), followed by the 15–19

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age group (87 per 100,000 population). After the 1999–2000 Measles outbreak, the second dose of Measles containing vaccine (MR) was introduced into the EPI in 2001. National Supplementary Immunization Activities were carried out in 2003 (Measles vaccine to children between 10-15 years – coverage 95%), 2004 (MR to adolescents from 16 to 20 years- coverage 72%) and in 2013 (Measles vaccine to infants between 6-12 months – coverage 96%). It was possible to reach the elimination target of <5 cases per million population in 2011. But again, Sri Lanka experienced an island-wide Measles outbreak during the period from 2013 to 2015 .

Pathogen

Measles virus is a single-stranded, enveloped, RNA virus in the family of Paramyxoviridae. There is no significant animal reservoir and humans are the only natural host. Recent evidence suggests that Measles virus infection initially occurs in the lower respiratory tract, where the virus probably enters alveolar macrophages and sub epithelial dendritic cells. Subsequently, the virus is transported to regional lymph nodes resulting in replication in the lymphatic system, viraemia and leukopaenia. Transmission is primarily person-to-person by airborne respiratory droplets that disperse within minutes, and transmission can also occur through direct contact with infected secretions. The virus remains active and contagious in the air or on infected surfaces for up to two hours. It can be transmitted by an infected individual from four days prior to the onset of the rash to four days after the onset. There is only one antigenic type of Measles virus. As the virus has for decades retained its monotypic antigenic structure, there has been no observed change in vaccine effectiveness. The genome encodes 8 proteins including the haemagglutinin (H) and the fusion (F) proteins, which are surface proteins important for cell entry. The lifelong immunity that follows infection is attributed to neutralizing antibodies against the H protein.

Disease

The incubation period for measles usually lasts 10–14 days (range, 7–23) from exposure to onset of first symptoms, which generally consist of cough, fever, malaise, conjunctivitis, and coryza. The characteristic rash starting on the face and upper neck and gradually spreading downwards appears 2–4 days after onset of the prodrome. The lesions increase in number for 2 or 3 days, especially on the trunk and the face, where they frequently become confluent. Discrete lesions are usually seen on the distal extremities, and with careful observation, small numbers of lesions can be found on the palms of 25%–50% of those infected. The rash lasts for 3 –7 days and then fades in the same manner as it appeared, sometimes ending with fine desquamation that may go unnoticed in children who bathe daily. Exaggerated desquamation is commonly seen in malnourished children. Fever usually persists for 2 or 3 days after the onset of the rash and the cough may persist for as many as 10 days.

Prior to the onset of rash, bluish-white Koplik's spots, which are pathognomonic for measles, may be seen in the oral mucosa and occasionally on the soft palate, conjunctiva and vaginal mucosa. Koplik's spots usually persist for 2 or 3 days. Photophobia from iridocyclitis, sore throat, headache, abdominal pain and generalized mild lymphadenopathy are also common. Milder forms of Measles occur in children and adults with pre-existing partial immunity. Infants who have low levels of passively acquired maternal antibody and persons who receive blood

products that contain antibody often have subclinical infections or minimal symptoms that may not be diagnosed as Measles. In uncomplicated measles cases, patients improve by the third day after rash onset and fully recover 7–10 days after onset of disease.

The severity of measles varies widely, depending on several host and environmental factors. The risk of developing severe or fatal measles increases for children aged <5 years, and persons living in overcrowded condi-tions, those who are malnourished especially with vita-min A deficiency and those with immunological disor-ders such as AIDS.

Compiled By;

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to be continued ...

Table 1: Selected notifiable diseases reported by Medical Officers of Health 04th – 10th August 2018(32nd Week)

RDHS Division	Dengue Fever		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Chickenpox		Meningitis		Leishmaniasis		WRCD	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	T*	C**
Colombo	241	6736	3	57	0	5	1	33	1	28	4	130	0	8	0	3	0	0	6	455	2	33	0	2	**62**	**100**
paha	150	3619	4	53	0	7	1	16	0	14	3	145	0	4	1	11	0	0	13	495	1	32	3	29	**66**	**100**
Kalutara	51	2206	2	58	0	3	1	9	1	45	6	392	0	5	0	8	0	0	7	421	2	69	0	9	**52**	**100**
Kandy	93	2487	1	63	0	4	0	3	1	11	4	50	3	75	0	16	0	0	7	230	0	25	3	21	**59**	**100**
Matale	22	713	1	13	0	1	0	4	0	31	2	66	0	2	0	6	0	0	3	27	0	11	4	79	**60**	**100**
NuwaraEliya	5	144	1	40	0	3	0	9	0	47	2	26	2	100	0	21	0	0	1	168	0	26	0	0	**30**	**100**
Galle	13	723	3	37	0	9	3	4	0	3	6	277	0	30	0	2	0	1	7	218	1	43	0	5	**19**	**100**
Hambantota	14	649	0	11	0	4	0	2	0	4	7	45	2	42	0	2	0	1	6	184	1	6	13	504	**72**	**100**
Matara	30	716	0	28	0	5	0	4	0	22	2	162	4	30	2	11	0	0	3	198	0	8	4	275	**54**	**100**
Jaffna	50	2202	2	112	0	4	1	36	0	212	0	10	2	249	0	1	0	2	1	207	0	9	0	3	**36**	**93**
Kilinochchi	3	223	0	22	0	1	0	15	0	2	0	3	1	14	0	0	0	1	0	28	0	2	0	1	**52**	**100**
Mannar	10	180	0	17	0	0	0	3	0	2	0	1	0	0	0	0	0	0	0	27	1	3	0	3	**38**	**100**
Vavuniya	13	424	0	15	0	3	1	34	0	12	0	30	0	7	0	0	0	1	0	38	0	5	1	8	**58**	**100**
Mullaitivu	5	75	0	5	0	0	0	8	0	10	0	8	0	5	0	0	0	0	0	6	0	1	0	2	**21**	**100**
Batticaloa	31	4129	2	112	0	5	0	4	0	23	1	38	0	1	0	2	0	2	1	105	1	16	0	0	**65**	**100**
Ampara	10	188	2	48	0	3	0	2	0	5	0	33	0	0	0	5	0	1	7	168	1	19	0	2	**65**	**100**
Trincomalee	23	877	0	35	0	1	0	4	0	13	0	40	1	19	0	1	0	0	1	154	0	7	0	18	**27**	**100**
Kurunegala	45	1809	2	99	0	10	2	13	0	3	2	107	1	17	0	16	0	1	6	367	2	70	17	233	**65**	**100**
Puttalam	0	1363	0	32	0	6	0	4	0	4	0	31	0	11	0	2	0	0	2	100	2	61	0	2	**66**	**100**
Anuradhapura	17	677	2	34	0	7	0	3	0	38	0	102	0	17	0	7	0	1	6	305	0	30	12	279	**43**	**95**
Polonnaruwa	8	233	0	23	0	2	0	0	0	12	3	90	0	0	0	3	0	1	1	172	0	15	6	150	**59**	**88**
Badulla	15	374	1	88	0	5	0	7	0	10	5	116	2	50	4	28	0	0	17	327	4	80	1	7	**46**	**100**
Monaragala	12	667	6	55	0	2	0	1	0	2	2	214	4	100	1	20	0	0	4	112	3	76	0	28	**66**	**100**
Ratnapura	37	1667	1	120	1	32	2	19	0	5	17	446	0	22	0	13	0	2	4	214	0	81	1	150	**46**	**100**
Kegalle	47	1027	1	47	0	7	0	6	0	73	6	156	1	53	0	10	0	0	10	246	1	34	1	10	**65**	**100**
Kalmune	15	1477	0	29	0	3	0	2	0	31	1	5	0	1	0	1	0	0	5	135	0	8	0	1	**51**	**100**
SRILANKA	**960**	**35585**	**34**	**1253**	**1**	**132**	**12**	**245**	**3**	**662**	**73**	**2723**	**23**	**862**	**8**	**189**	**0**	**14**	**118**	**5107**	**22**	**770**	**66**	**1821**	**53**	**99**

Source: Weekly Returns of Communicable Diseases (WRCD).

*T=Timeliness refers to returns received on or before 10th August , 2018 Total number of reporting units 353 Number of reporting units data provided for the current week: 351 C**-Completeness

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

Table 2: Vaccine-Preventable Diseases & AFP

04th – 10th August 2018(32nd Week)

Disease	No. of Cases by Province									Number of cases during current week in 2018	Number of cases during same week in 2017	Total number of cases to date in 2018	Total number of cases to date in 2017	Difference between the number of cases to date in 2018 & 2017
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	00	00	00	00	00	00	00	00	00	02	38	45	- 15.5 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Mumps	01	02	03	00	02	01	01	00	01	11	04	224	213	5.1 %
Measles	00	00	00	00	00	00	00	00	00	00	01	81	151	- 46.3 %
Rubella	00	00	00	00	00	00	00	00	00	00	00	04	05	- 20 %
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	01	0%
Tetanus	00	00	00	00	00	00	00	00	00	00	00	15	11	36.3 %
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Japanese Encephalitis	00	00	01	00	00	00	00	00	00	01	00	20	21	- 4.7 %
Whooping Cough	00	00	00	00	01	00	00	00	00	01	00	35	10	250 %
Tuberculosis	79	31	01	01	03	06	03	14	06	144	102	5175	5171	- 0.07 %

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.

RDHS 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, Neonatal Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps., Rubella, CRS,

Special Surveillance: AFP* (Acute Flaccid Paralysis), Japanese Encephalitis

CRS =**Congenital Rubella Syndrome

NA = Not Available

Dengue Prevention and Control Health Messages

Look for plants such as bamboo, bohemia, rampe and banana in your surroundings and maintain them free of water collection.

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ON STATE SERVICE

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