



WEEKLY EPIDEMIOLOGICAL REPORT

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Paediatric Tuberculosis: Are we detecting enough?

Tuberculosis (TB) is an infectious disease caused by the bacillus- Mycobacterium tuberculosis (MTB). Tuberculosis commonly affects the lungs (pulmonary TB) but can affect any other organ in the body (Extrapulmonary TB). It is an airborne infection. When a patient with infectious pulmonary tuberculosis coughs, sneezes or laughs, bacilli are expelled into the air in the form of tiny droplets. When a healthy person inhales these droplets containing tubercle bacilli, he/she may become infected. The risk of infection depends on the extent of the exposure, infectiousness and susceptibility of the person for infection.

The children do get the infection in the same way as adults and household contact is the commonest source of infection for young children. The source of infection for older children can be close contact outside the household.

Poverty, overcrowding and poor living conditions are contributing to the increased transmission of TB.

TB affects people of all ages. But some people are more vulnerable to get TB. Young children are among them. Other vulnerable groups include old people, malnourished, people living with HIV, persons with weekend immune systems, persons suffering from chronic diseases like diabetes, alcoholics, drug addicts and institutionalised people.

Due to the immaturity of the immune system, children are at higher risk of progressing to active disease than adults and developing complicated forms such as TB meningitis and miliary TB. This risk is much higher among infants and very young children. Most of the children develop active disease within the first year of acquiring the infection. As it reflects recent infection, paediatric disease burden in a country can be taken as an indicator of current transmission

status within the community.

According to the recent estimates, there were 10 million peoples with active TB around the globe in 2017. Out of this, 1 million (10%) were children below 15 years of age. Both girls and boys were almost equally affected. There were an estimated 1.3 million deaths among HIV negative TB patients in 2017. Out of the total deaths, 15% were among children with TB. HIV has a great impact on the survival of children with TB. Children accounted for 10% of the total deaths among HIV-TB co-infected patients.

In countries with a high burden, children account for around 25 % -40 % of the new cases and in low burden countries, it is around 4% – 7 %. But the actual caseload may be much higher than this.

Sri Lanka is considered as a middle burden country for Tuberculosis. There are around 8500 to 9500 cases of TB detected each year. Out of this, childhood TB cases ranged from 250 to 350 which were around 3% of the total case burden of the country.

In 2017, 250 child TB cases were reported to the central unit of NPTCCD out of which 101 patients were below 5 years of age and 149 cases belong to the 5-15 age group. There was an almost similar number of girls and boys in the below 5 years age group. But female TB patients were more in the age group of 5-15 years in 2017. There is a district variation of childhood TB cases. It varies from 0% - 5% in 2017. Not a single case of TB below 15 years was detected in Polonnaruwa & Kilinochchi Districts. The detection of child TB cases was very low in districts such as Colombo (3.5%), Gampaha (1.5%), Kalutara (2.3%), Ratnapura (2.5%) and Galle (0.7%) even though overall TB burden is high. Only Kandy and Matale districts had shown adequate detection of paediatric cases with over 5% case burden.

When considering the site of TB, the majori-

Contents	Page
1. Leading Article – Paediatric Tuberculosis: Are we detecting enough?	1
2. Summary of selected notifiable diseases reported (02 nd – 08 th February 2019)	3
3. Surveillance of vaccine preventable diseases & AFP (02 nd – 08 th February 2019)	4

ty of cases were with extrapulmonary TB (EPTB). The commonest form of EPTB among children was TB lymphadenitis.

Among pulmonary TB cases, the majority were clinically diagnosed cases of TB. Severe forms of TB such as TB meningitis among children were very low.

There are several reasons for the low detection of paediatric cases.

- Diagnosis of TB among children is often difficult. Children may be presented with nonspecific symptoms or most of the times asymptomatic, in the case of primary TB infection. TB can mimic common childhood diseases too.
- Confirmation of diagnosis microscopically will be an issue due to difficulty in obtaining samples from younger children.
- Inadequacy in contact tracing. This may happen due to deficiencies in service provision or due to patient factors. People are reluctant to come or bring children for screening when they are healthy or due to social reasons and economic difficulties.
- Lack of awareness among health workers, that TB may cause important morbidity among children.
- Inadequacy of using field level public health workers for identification of TB symptomatic in the community.

In addition underreporting may be an issue in Paediatric TB.

Early detection of paediatric TB cases and treatment is very important in reducing mortality and complications of TB among children. It will further control the transmission of infection in the community.

All the health workers including medical specialists and medical officers should be made aware of the Global trends, country situation, diagnosis and management of child TB patients. Field level public health staff should be educated on the identification of children having symptoms suggestive of TB in clinics and in the field. Attempts should be made to establish a definite diagnosis. This should be supported by a sensitive diagnostic algorithm inclusive of detailed history with exposure status and symptoms, clinical examination including growth assessment, Laboratory investigations including tuberculin skin test, X-ray, Xpert MTB/RIF etc., for detection of TB among children.

Contact tracing should be strengthened in order to improve paediatric TB case detection. The close contacts of all tuberculosis patients should be identified and screened. All the child contacts below 5 years irrespective of the symptoms and children above 5 years with symptoms should be evaluated for TB using appropriate investigations.

All the close child contacts below 5 years of bacteriologi-

cally positive pulmonary tuberculosis patients should be given Isoniazid preventive therapy for 6 months after excluding active TB.

The risk of developing active TB is more during the first two years following exposure. Therefore, it is essential that all the close contacts of TB patients should be followed up for a two year period in six months intervals by the field PHI.

Children with active TB should be treated with appropriate treatment regimens.

BCG (Bacille Calmette-Guérin) vaccine should be given to all newborns at birth or before discharge from the hospital. It is a live attenuated vaccine made from *Mycobacterium bovis*. It protects young children against developing complications of Primary infection, such as TB meningitis and miliary TB. The BCG vaccination coverage is over 98% in Sri Lanka and it has impacted on the very low number of the disseminated forms of TB in the country.

The improved coordination with pedestrians, physicians and maternal and child care services will contribute to the timely detection of child TB cases and proper management.

In addition, community awareness in general is very much important in improving health-seeking behaviour, and to reduce stigma. Special health education programmes need to be carried out in schools if a school going child is found with TB in the focus of identifying possible contacts and to avoid stigmatization.

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Table 1: Selected notifiable diseases reported by Medical Officers of Health 02nd - 08th Feb 2019 (6th 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	201	1658	1	7	0	1	0	2	0	1	1	19	1	6	0	2	0	0	6	61	0	9	1	1	47	100	
Gampaha	118	990	0	1	0	1	0	0	0	11	3	6	1	1	0	0	0	0	8	55	1	3	2	16	52	98	
Kalutara	31	435	2	10	0	3	0	1	0	25	7	76	0	1	0	0	0	0	12	130	3	18	0	3	63	83	
Kandy	54	412	2	7	0	0	0	0	0	2	1	17	2	13	1	1	0	1	2	26	0	5	1	3	58	100	
Matale	14	93	0	2	0	0	0	0	0	0	2	17	0	0	0	2	0	1	0	14	0	2	3	54	58	97	
NuwaraEliya	1	35	0	2	0	0	0	0	0	0	2	8	5	11	0	1	0	0	2	9	0	8	0	0	17	100	
Galle	32	204	1	7	0	2	0	1	0	0	3	32	1	13	0	1	0	0	8	53	4	12	0	1	63	96	
Hambantota	20	189	0	3	0	0	0	0	0	0	1	8	5	30	0	1	0	0	18	66	1	5	20	114	71	100	
Mataru	29	302	0	1	0	3	0	1	0	1	4	16	0	14	0	3	0	0	5	44	0	2	10	76	63	100	
Jaffna	129	1182	5	21	0	2	0	2	0	1	4	15	13	151	0	0	0	0	5	27	1	4	0	0	23	93	
Kilinochchi	3	46	0	4	0	1	0	4	0	0	0	10	1	8	0	1	0	0	0	1	1	1	0	4	42	100	
Mannar	7	38	0	0	0	0	3	7	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	50	93	
Vavuniya	12	61	0	1	0	1	0	7	0	2	2	11	0	3	0	0	0	0	0	11	0	1	0	1	50	92	
Mullaitivu	0	15	0	2	0	0	0	1	0	0	0	2	0	2	0	0	0	0	0	0	0	0	1	0	1	57	58
Batticaloa	41	268	2	22	0	0	2	2	0	0	0	7	0	0	0	0	0	1	7	20	1	2	0	0	55	100	
Ampara	5	36	2	8	0	0	0	0	0	0	0	9	0	0	0	4	0	0	6	29	0	1	0	0	50	100	
Trincomalee	21	157	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	6	12	0	0	0	0	30	79	
Kurunegala	37	288	2	10	0	5	1	2	0	2	3	32	1	6	1	9	0	0	21	101	1	8	25	117	56	98	
Puttalam	20	111	0	6	0	0	0	0	0	0	1	7	0	4	0	0	0	0	7	25	1	1	0	1	58	100	
Anuradhapura	16	90	0	3	0	5	0	0	0	0	12	46	2	10	0	4	0	0	12	63	4	13	14	71	40	97	
Polonnaruwa	2	47	0	5	0	1	0	0	0	0	2	13	0	1	0	2	0	0	4	44	1	5	9	35	60	94	
Badulla	17	115	2	8	0	1	0	2	51	54	6	38	3	15	0	4	0	0	10	34	7	28	0	2	60	100	
Monaragala	10	83	2	10	1	1	0	0	0	0	5	45	1	20	3	6	0	0	4	33	4	20	1	5	65	100	
Ratnapura	45	270	2	17	0	9	1	2	0	2	16	89	3	5	1	3	0	0	9	60	7	29	0	13	43	100	
Kegalle	14	197	0	4	2	5	0	0	1	15	3	22	0	4	0	1	0	0	9	62	1	3	1	4	58	100	
Kalmune	20	151	1	12	0	0	0	0	0	0	2	10	0	0	0	0	0	0	6	29	0	1	0	0	55	100	
SRILANKA	899	7473	24	173	3	41	7	34	52	116	80	555	40	321	6	45	0	3	167	1009	38	182	87	522	53	97	

Source: Weekly Returns of Communicable Diseases (WRCD).

*T=Timeliness refers to returns received on or before 08th February, 2019 Total number of reporting units 353 Number of reporting units data provided for the current week: 335 C**=Completeness
A = Cases reported during the current week. B = Cumulative cases for the year.

Table 2: Vaccine-Preventable Diseases & AFP

02nd – 08th Feb 2019 (6th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2019	Number of cases during same week in 2018	Total number of cases to date in 2019	Total number of cases to date in 2018	Difference between the number of cases to date in 2019 & 2018
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	00	00	00	01	00	01	00	00	02	02	13	06	116.6 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	00	00	01	00	03	02	01	00	01	08	09	42	28	50 %
Measles	00	01	00	01	01	00	00	00	00	03	02	27	13	107.6 %
Rubella	00	00	00	00	00	00	00	00	00	00	01	00	03	0 %
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Tetanus	00	00	00	00	00	00	00	00	00	00	00	02	04	-50 %
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Japanese Encephalitis	00	00	00	00	00	00	00	00	00	00	02	02	09	- 77.7 %
Whooping Cough	00	00	00	00	00	00	00	01	00	01	01	10	07	42.8 %
Tuberculosis	51	11	11	17	06	13	29	02	35	177	271	1039	911	14 %

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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