WEEKLY EPIDEMIOLOGICAL REPORT

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Ministry of Health, Nutrition & Indigenous Medicine

231, de Saram Place, Colombo 01000, Sri Lanka
Tele: + 94 11 2695112, Fax: +94 11 2696583, E mail: epidunit@sltnet.lk
Epidemiologist: +94 11 2681548, E mail: chepid@sltnet.lk
Web: http://www.epid.gov.lk

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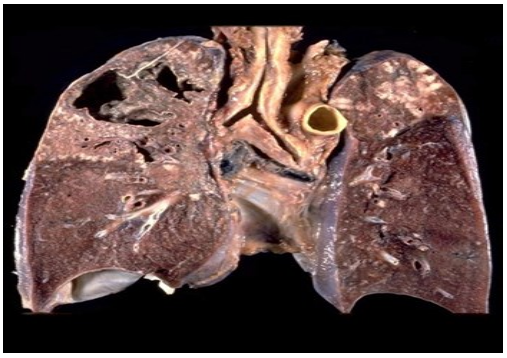
Tuberculosis: the best public health practices

Tuberculosis (TB) is an infectious disease caused by Mycobacterium tuberculosis that mainly affects the lungs but can involve any body part except hair and nails.TB is occasionally caused by Mycobacterium Bovis and Mycobacterium Africanum. TB spreads through respiratory droplets. When a pulmonary TB patient coughs/sneezes/ laughs, the bacilli are expelled as droplets, which may suspend in the air for several hours if not clear/dilute by fresh air. If a healthy person shares the same atmosphere with the patient, he/she may inhale these droplets. But the risk of infection depends on the extent of exposure and individual susceptibility. So, the high-risk categories are Children less than 5 years, the elderly more than 60 years, Patients with diabetes, HIV, immune-compromised individuals, patients on immunosuppressive drugs such as long-term steroid therapy, Cancer patients on anti-cancer treatment, and Patients who have undergone transplant surgery. So, the close contacts of a Tb patient belonging to these categories should be screened and chemoprophylaxis should be started even if they are asymptomatic. The following categories are also at a higher risk due to their lifestyle and social and environmental conditions. They are Prisoners, inmates of elderly homes, destitute homes, rehabilitation centres for drug addiction, Current and former workers in workplaces with silica exposure, migrant population and returning refugees, healthcare workers in high-risk settings such as MDR-TB wards and laboratories, and People living in risk environments (eg. slums, estates, internally displaced, migrants). These should be screened regularly even if they are not obvious close contacts.

According to WHO, in 2020 an estimation of 10 million people was infected with TB. Out of them, 5.6 million were males, 3.3 million were females and 1.1 million were children. Most new TB cases have occurred in the WHO Southeast Asian region (43%) while 25% were from the WHO African region and 18% from the WHO Western Pacific region. Globally incidence of TB is falling at about a rate of 2% per year during 2015-2020. But still, it is the 2nd leading infectious disease killer (after covid 19) causing 1.5 million death each year. Currently, MDR-TB is a major threat to public health as only 1 out of 3 people with drug-resistant TB accessed treatment in 2020.



Sri Lanka is a country with a low prevalence of TB. In the year 2018, Sri Lanka's WHO estimated new and relapse TB cases were 64 per 100 000 population. By the end of 2018, the estimated number of TB deaths was 3.8 per 100 000 population (excluding TB/HIV deaths).

To reduce TB caseload, the most important is breaking the chain of transmission. That is to identify and treat the index case to prevent transmission of infectious droplets to a healthy person either at the community or institutional level. Other methods are BCG vaccination and chemoprophylaxis.

The goals of the END TB strategy are achieving a 90 % reduction in TB incidence and a 95% reduction in TB deaths in 2035 (compared to 2015).

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Implementation of policies and procedures is the first thing in the TB control strategy. These will help in guiding health care facilities and practitioners. National Program for TB control and Chest Diseases (NPTCCD) is the centre for the development of policies where responsibility is divided among government and non-government health institutions (both curative and preventive) and the community. Maintaining an accurate, timely reporting system in hospitals, and sub- and district chest clinics are essential for surveillance of suspected/ confirmed TB cases. Therefore, the notification system of each TB case from all health sectors, and data collection from microscopic centres by PHs and DTCOs of District chest clinics are very important to identify, and treat TB patients, reduce transmission and change control strategies if necessary. External and internal evaluation of the control program, chest clinics, microscopic centres, NTRL labs, and even health institutions provide guidance for the improvement of preventive strategies. Also, hospitals, primary caregivers, community clinics, HIV clinics, nursing homes etc. should be updated with the guidelines on TB.

Basic microbiological investigation to diagnose Tuberculosis is 03 sputum samples for AFB smears. AFB culture + DST, newer methods like XPERT MTB/RIF are done in some special indications. XPERT MTB/RIF has more sensitivity and specificity than AFB smears, is quick, and can detect drug resistance through rifampicin resistance. But it can't differentiate between dead and live bacilli. Though AFB culture + DST takes about 6-8 weeks to give results, it is the most specific and sensitive investigation, can detect any type of drug resistance, and can identify the type of live organism, unlike XPERT MTB/ RIF. X-rays and other radiological investigations, some biochemical investigations are all supportive. Investigations like HIV status, Liver function tests, renal function tests, and full blood count are needed before starting and sometimes during treatment to assess the patient's health status. Therefore, maintaining access to microbiological, radiological, and biochemical investigations recommended for TB helps diagnose the disease, drug resistance, when to start treatment (in HIV +TB co-infection), decide treatment regimen and treatment duration, assess response to treatment, and screening close contacts and other high-risk groups. The establishment of island-wide microscopic centres, district-, and sub-chest clinics, reduce waiting and turnaround time for an investigation, and free availability of necessary investigations are all necessary for achieving the End TB strategy.

Once a patient is diagnosed with TB, the patient should continue regular treatment for a specified period under DOTS (directly observed treatment) by a health care worker or another suitably appointed person at a DOT centre. This will help to identify any complications of disease and side effects of drugs and any other mental or socio-economic problems leading to reducing the number of defaulters, MDR-TB cases, and total caseload. Health education of the patient and the family is essential. They should adhere to standard precautions of respiratory hygiene. The patient should be isolated in a separate room, if possible, at least in the first two weeks when the viral load is very high. If there is no separate room patient should at least spend most of his/ her afternoon in an open, well-ventilated space outside the house, and should keep a container with a lid to collect sputum, bury it or flush it in the command after it is full and wear a tight-fitting mask, covering mouth and nose with a handkerchief when coughing. Also, ensure the patient and family about a well-balanced diet with high proteins clearing myths about the foods to eat when there is TB, advice about foods should not eat while on treatment, and avoiding any foods patient is allergic to. All these help in the speedy recovery and lessen complications. Patients should educate that only the correct drugs with the correct combination for the correct duration will give a better outcome. It is also important to address social stigma, economic problems, and mental issues like depression and anxiety by doing necessary referrals, giving medical leave, and helping to get financial assistance through divisional social workers and secretariats. These will improve compliance with TB treatment and reduce the TB spread and development of more drug-resistant TB cases.

Screening of all close contacts of TB patients including family members helps to identify any other people already infected with TB and people who are at high risk for TB. So infected contacts should be treated promptly and high-risk contacts should be given chemoprophylaxis. This will reduce the near future possibilities of new Tb cases.

Also at the community level, it is very important to conduct screening clinics in urban flats, prisons, desolated homes, rehabilitation centres for illicit drug users, etc. as TB bacilli reside for several hours as droplets in dark, ill-ventilated places and if crowded have a high risk of spread if one case was missed. This will help in the early identification, treatment, and reduction of TB cases and mortality.

Train all health staff about the disease and treatment, identifying complications of the disease as well as side effects of treatment, how to communicate with a patient empathically, when to admit a patient, and standard precautions of respiratory hygiene.

Maintaining environmental control at all levels of treatment is important. Natural ventilation where airflow is maintained through opened windows is the best and easiest way. If it is not possible, a combination of exhaust fan and natural ventilation or the least effective method of gamma irradiation are the options. In MDR TB wards heap filters are the best method of infection control.

Not only NPTCCD can control TB and achieve the target of elimination of TB in 2035, but other government and nongovernment health institutions, non-government organizations, community stakeholders, and the families of TB patients should also get together to work ahead for a better future.

Compiled by :
Dr.T.G.Pathirana
MBBS (Sri Jayewardenepura), Pg. Dip in TB and Chest Diseases

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Table 1: Selected notifiable diseases reported by Medical Officers of Health 03rd– 09th Sep 2022 (36th Week)

RDHS	Dengue Fever		Dysentery		Encephaliti		Enteric Fever		Food Poi-		Leptospirosis		Typhus		Viral Hepa-		Human		Chickenpox		Meningitis		Leishmania-		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	83	9689	0	4	0	3	0	1	0	6	6	145	0	0	2	5	0	2	2	32	0	10	0	2	**15**	**97**
Gampaha	73	6058	0	5	0	1	0	1	0	12	11	146	0	0	1	9	0	4	1	41	0	31	0	29	**6**	**87**
Kalutara	32	3087	1	22	0	1	0	1	0	6	3	289	0	4	0	4	0	3	0	56	0	19	0	2	**3**	**53**
Kandy	11	4011	1	19	0	0	0	3	0	11	3	124	1	30	0	9	0	0	1	57	0	7	3	24	**12**	**99**
Matale	13	862	0	8	0	0	0	0	0	0	0	79	0	5	0	5	0	1	2	33	0	1	0	258	**18**	**100**
NuwaraEliya	3	186	0	19	0	0	0	3	0	5	0	62	0	12	0	6	0	0	0	33	0	6	0	0	**26**	**94**
Galle	56	2996	0	9	0	1	0	0	0	0	9	328	3	27	0	5	0	0	0	60	1	17	0	0	**12**	**100**
Hambantota	34	1337	1	29	0	0	0	0	0	2	2	191	0	35	0	6	0	0	2	24	3	15	29	395	**15**	**100**
Matara	43	1367	0	12	0	2	0	0	0	0	4	195	0	12	0	1	0	0	4	37	0	6	3	209	**29**	**100**
Jaffna	29	2542	2	50	0	2	0	58	0	30	0	20	0	415	0	6	0	4	4	88	0	11	0	0	**64**	**93**
Kilinochchi	0	102	0	7	0	0	0	3	0	24	0	11	1	10	0	0	0	0	0	4	0	2	0	2	**27**	**98**
Mannar	0	177	0	2	0	0	0	0	0	0	0	23	0	3	0	2	0	0	0	6	0	15	0	0	**18**	**78**
Vavuniya	0	70	0	3	0	1	0	2	0	0	0	18	0	1	0	0	0	0	0	27	0	0	0	4	**1**	**97**
Mullaitivu	0	54	1	5	0	0	0	2	0	6	0	25	0	5	0	0	0	0	0	6	0	1	0	1	**21**	**93**
Batticaloa	1	1020	3	53	0	7	0	0	0	20	0	36	0	0	0	1	0	1	0	25	1	30	0	1	**38**	**98**
Ampara	0	134	0	10	0	1	0	0	0	17	0	84	0	1	0	1	0	0	1	42	2	23	0	12	**11**	**94**
Trincomalee	2	996	0	23	0	0	0	1	0	2	2	24	0	3	0	4	0	0	1	33	0	6	0	1	**17**	**86**
Kurunegala	28	2203	0	18	0	2	0	0	0	4	4	124	0	25	0	1	1	2	2	72	1	32	5	358	**9**	**98**
Puttalam	15	1686	0	3	0	0	0	0	0	0	0	22	0	7	1	1	0	0	0	13	0	23	0	4	**14**	**90**
Anuradhapur	1	350	0	9	0	2	0	1	0	5	0	135	0	21	0	2	0	1	2	52	0	38	0	291	**9**	**90**
Polonnaruwa	0	121	0	6	0	1	0	0	0	1	3	97	0	0	0	3	0	0	1	15	0	3	5	374	**14**	**98**
Badulla	13	845	0	19	0	2	0	1	0	13	9	188	1	41	5	117	0	0	2	44	0	11	0	17	**16**	**100**
Monaragala	8	390	0	6	0	1	0	4	0	3	2	235	1	24	1	46	0	0	0	51	1	37	2	112	**11**	**99**
Ratnapura	17	2321	4	39	0	6	0	3	0	27	9	733	0	21	0	21	0	0	1	63	0	48	4	168	**12**	**94**
Kegalle	50	2316	0	12	0	8	0	1	0	8	5	388	1	18	0	8	0	0	0	81	2	41	0	18	**9**	**99**
Kalmune	25	890	1	29	0	1	0	1	0	6	0	21	0	1	0	1	0	0	0	48	0	32	0	0	**30**	**99**
SRILANKA	**63**	**45810**	**14**	**421**	**0**	**42**	**0**	**86**	**0**	**208**	**72**	**3743**	**8**	**721**	**10**	**264**	**1**	**18**	**26**	**1043**	**11**	**465**	**51**	**2282**	**17**	**95**

Source: Weekly Returns of Communicable Diseases (esurvillance.epid.gov.lk). T=Timeliness refers to returns received on or before 09th Sep , 2022 Total number of reporting units 357 Number of reporting units data provided for the current week263 **C****-Completeness

Table 2: Vaccine-Preventable Diseases & AFP

03rd– 09th Sep 2022 (36th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2022	Number of cases during same week in 2021	Total number of cases to date in 2022	Total number of cases to date in 2021	Difference between the number of cases to date in 2022 & 2021
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	00	00	00	01	00	00	00	01	02	04	55	43	27.9 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	00	00	01	00	00	03	00	00	00	04	00	63	57	10.5 %
Measles	00	00	00	00	00	00	00	00	00	00	00	16	11	45.4 %
Rubella	00	00	00	00	00	00	00	00	00	00	00	00	00	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	05	02	150 %
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	01	01	03	- 66.6 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	01	00	0 %
Tuberculosis	00	00	06	12	10	00	00	02	33	53	196	4790	3625	32.1 %

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

Covid-19 Prevention & Control

For everyone's health & safety, maintain physical distance, often wash hands, wear a face mask and stay home.

Comments and contributions for publication in the WER Sri Lanka are welcome. However, the editor reserves the right to accept or reject items for publication. All correspondence should be mailed to The Editor, WER Sri Lanka, Epidemiological Unit, P.O. Box 1567, Colombo or sent by E-mail to **chepid@sltnet.lk. Prior approval should be obtained from the Epidemiology Unit before publishing data in this publication**

ON STATE SERVICE

Dr. Samitha Ginige
Actg. CHIEF EPIDEMIOLOGIST
EPIDEMIOLOGY UNIT
231, DE SARAM PLACE
COLOMBO 10