



# WEEKLY EPIDEMIOLOGICAL REPORT

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## Update on TB

### Background

TB is an infectious disease caused by the bacterium *Mycobacterium tuberculosis*. The most affected organ from TB is the lung. Common symptoms of active lung TB include a cough, chest pain, weakness, weight loss, fever and night sweats. Most infections do not have symptoms, which is called latent TB. About one-quarter of the world's population has latent TB. People with latent TB cannot transmit the disease. TB is spread from person to person through the air by a cough, sneeze or spit of infected people. People infected with TB bacteria have a 5–15% lifetime risk of acquiring the disease. People with active TB can infect 10–15 other people through close contact over the course of a year. Without proper treatment, about 45% of HIV-negative people with TB and nearly all HIV-positive people with TB will die. Tuberculosis mostly affects adults in underdeveloped countries although it affects all ages around the world. Conditions that impair the immune system such as HIV, smoking, diabetes and malnutrition increase the risk of acquiring active TB. In the year 2016 one million children aged 0–14 years fell ill with TB, and 250,000 children including children with HIV associated TB died from the disease. In 2016, the largest number of new TB cases reported from Asia, followed by Africa, India, Indonesia, China, Philippines, Pakistan, Nigeria, and South Africa accounted for 64% of new TB cases.

### Diagnosis

Many countries still use sputum smear microscopy to diagnose TB. Disadvantages of microscopy are that it detects only half the number of TB cases and cannot detect drug-resistance. In 2010 WHO recommended the test Xpert MTB/RIF® which

detects TB as well, resistance to rifampicin, the first-line TB medicine. Diagnosis can be made within 2 hours by this test. WHO recommends this as the first line diagnostic test in all TB suspected patients. Already more than 100 countries are using this test. In 2016, WHO recommended 4 new diagnostic tests – a rapid molecular test to detect TB at peripheral settings where Xpert MTB/RIF cannot be used, and 3 other tests to detect resistance TB medicines. Xpert MTB/RIF assay has the added benefit of diagnosing TB in paediatric patients.

### Treatment

TB is a disease that can be cured if the medicines are provided and taken properly. Active, drug-susceptible TB disease is treated with 4 antimicrobial drugs over a 6 month period. Drugs are provided with information to the patient. The patient is supposed to take the drugs under direct observation of a health worker or trained volunteer. Such support is provided to increase drug compliance, without which there is poor prognosis. For the past 15 years, an estimated 53 million lives were saved through TB diagnosis and treatment.

### TB and HIV

People living with HIV have 20 to 30 times increased the risk of developing active TB disease than people without HIV. HIV and TB each facilitate other's progress. In 2016 about 0.4 million people died of HIV-associated TB. About 40% of deaths among HIV-positive people were due to TB in 2016, while there were estimated 1.4 million new cases of TB amongst people who were HIV-positive. 74% of them were living in Africa.

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**Multidrug-resistant TB**

Anti-TB drugs have been used for many years. Strains of TB bacteria that are resistant to at least one of the TB drugs have been reported in every country surveyed. Inappropriate use of anti-TB medicines, incorrect prescription, poor quality drugs and premature discontinuation of drugs by patients lead to drug resistance. Multi-drug-resistant tuberculosis (MDR-TB) is a form of TB caused by bacteria that do not respond to isoniazid and rifampicin. These two are the 2 most powerful, first-line anti-TB drugs. MDR-TB is treated with second-line anti-TB drugs. However, the option of using second-line drugs is not as easy as it requires extensive chemotherapy and toxic medicines which are expensive. Extensively drug-resistant TB (XDR-TB) is a more serious form of MDR-TB that does not respond to even second-line anti-TB drugs, often leaving patients without any further treatment options. India, China and the Russian Federation are reported to be the 3 countries largely affected by MDR-TB. These 3 countries together account for nearly half of the MDR-TB cases globally. Worldwide, only 54% of MDR-TB patients and 30% of XDR-TB are currently successfully treated. In 2016, WHO recommended a short, standardised regimen for MDR-TB patients who are not resistant to second-line TB medicines. This is not expensive as the conventional treatment and the duration is 9–12 months. Patients with XDR-TB or resistance to second-line anti-TB drugs have no use of this regimen. They require longer MDR-TB regimens which might need adding new drugs (bedaquiline and delamanid). More than 35 countries in Africa and Asia are already following shorter MDR-TB regimens. By June 2017, 89 countries introduced bedaquiline and 54 countries introduced delamanid, in order to improve the effectiveness of MDR-TB treatment regimens.

**WHO response**

WHO pursues 6 core functions in addressing TB:

1. Providing global leadership on matters critical to TB.
2. Developing evidence-based policies, strategies and standards for TB prevention, care and control, and monitoring their implementation.
3. Providing technical support to the member states, catalyzing change, and building sustainable capacity.
4. Monitoring the global TB situation, and measuring progress in TB care, control, and financing.
5. Shaping the TB research agenda and stimulating the production, translation and dissemination of valuable knowledge.
6. Facilitating and engaging in partnerships for TB action.

In May 2014, World Health Assembly adopted WHO End TB Strategy in order to end the TB epidemic by bringing down TB deaths, incidence and eliminating catastrophic

costs. To reduce TB deaths by 90%, to bring down new cases by 80% within 2015 and 2030, and to ensure that no family is burdened with catastrophic costs due to TB are its' main targets. Ending the TB epidemic by 2030 is among the health targets of Sustainable Development Goals as well. Taking another step forward, WHO has set a 2035 target of reducing TB deaths by 95% and a declining incidence of TB by 90%. The Strategy outlines 3 strategic pillars:

- Pillar 1: integrated patient centred care and prevention
- Pillar 2: bold policies and support systems
- Pillar 3: intensified research and innovation

**Source:**

WHO Weekly epidemiological record Fact sheet on Tuberculosis (update January 2018) (<http://www.who.int/w>)  
 Center for Disease Control-Tuberculosis (<https://www.cdc.gov/tb/topic/basics/default.htm>)

Compiled by Dr R.M.H.E.Ratnayake, Medical Officer, Epidemiology Unit, Ministry of Health, Sri Lanka

Table 1 : Water Quality Surveillance Number of microbiological water samples January 2018			
District	MOH areas	No: Expected *	No: Received
Colombo	15	90	89
Gampaha	15	90	90
Kalutara	12	72	NR
Kalutara NIHS	2	12	8
Kandy	23	138	NR
Matale	13	78	NR
Nuwara Eliya	13	78	48
Galle	20	120	NR
Matara	17	102	70
Hambantota	12	72	NR
Jaffna	12	72	143
Kilinochchi	4	24	28
Manner	5	30	26
Vavuniya	4	24	NR
Mullatvu	5	30	NR
Batticaloa	14	84	90
Ampara	7	42	45
Trincomalee	11	66	20
Kurunegala	29	174	74
Puttalam	13	78	56
Anuradhapura	19	114	40
Polonnaruwa	7	42	NR
Badulla	16	96	142
Moneragala	11	66	107
Rathnapura	18	108	83
Kegalle	11	66	14
Kalmunai	13	78	80

\* No of samples expected (6 / MOH area / Month)  
 NR = Return not received

Table 1: Selected notifiable diseases reported by Medical Officers of Health 10<sup>th</sup> - 16<sup>th</sup> Feb 2018 (07<sup>th</sup> 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	138	1640	0	7	0	1	1	8	0	2	2	28	0	1	0	1	0	0	0	11	106	1	7	0	1	60	95
Gampaha	80	1026	0	7	0	1	0	6	0	6	4	23	0	1	0	2	0	0	0	12	120	0	5	0	0	73	100
Kalutara	67	689	1	10	0	2	0	0	1	13	8	51	1	1	1	2	0	0	0	25	94	5	19	0	0	56	100
Kandy	67	703	2	9	0	3	0	1	0	1	1	8	3	15	0	2	0	0	6	42	42	1	4	1	3	61	100
Matale	8	191	1	2	0	1	0	0	0	5	1	5	0	1	0	1	0	0	2	8	0	2	0	5	66	100	
Nuwareliya	4	35	0	2	0	0	0	4	0	2	0	2	1	11	1	4	0	0	5	42	2	5	0	0	24	100	
Galle	14	111	0	3	0	0	0	0	0	1	3	32	2	6	0	0	0	0	1	7	0	1	0	1	36	38	
Hambantota	31	206	1	2	0	0	0	0	0	0	2	9	1	10	0	0	0	0	6	45	0	1	27	116	74	100	
Mataru	20	224	1	4	0	0	0	1	0	13	3	27	0	3	1	1	0	0	10	49	0	0	5	53	55	100	
Jaffna	68	884	3	22	0	0	3	12	2	8	0	2	18	146	0	0	0	0	13	50	0	5	0	0	34	92	
Kilinochchi	17	62	0	5	0	0	0	7	0	0	1	1	0	2	0	0	0	0	0	1	0	0	0	0	39	100	
Mannar	0	14	1	9	0	0	1	2	0	0	0	1	0	0	0	0	0	0	1	10	0	1	0	0	26	100	
Vavuniya	12	110	0	0	0	0	0	10	0	6	1	9	1	5	0	0	0	1	1	7	0	1	0	0	57	100	
Mullaitivu	0	12	0	1	0	0	0	1	0	5	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	33	60
Batticaloa	126	978	4	30	1	2	0	0	0	1	0	6	0	1	0	1	0	1	4	15	0	5	0	0	65	100	
Ampara	6	36	0	6	0	0	0	0	0	0	3	14	0	0	0	3	0	0	1	25	1	2	0	0	57	100	
Trincomalee	16	161	1	12	0	0	0	1	0	1	0	7	1	8	0	0	0	0	6	41	0	0	2	5	34	100	
Kurunegala	59	719	3	21	0	2	0	2	0	2	3	26	0	4	0	1	0	0	18	82	2	14	5	31	70	100	
Puttalam	57	745	3	8	0	2	0	1	0	1	1	7	1	3	0	0	0	0	3	17	5	12	0	0	73	100	
Anuradhapura	22	188	0	11	0	1	0	1	0	0	3	36	3	10	0	0	0	0	11	50	1	4	16	49	44	100	
Polonnaruwa	10	62	0	5	0	1	0	0	0	6	4	39	0	0	0	1	0	0	12	33	0	3	5	32	65	98	
Badulla	10	109	5	27	0	0	0	4	3	4	2	23	0	9	1	3	0	0	7	57	1	16	1	2	54	99	
Monaragala	20	270	1	22	0	2	0	1	0	2	2	68	5	26	0	4	0	0	2	26	0	3	0	6	56	100	
Ratnapura	57	335	3	31	4	12	0	4	0	2	3	46	2	5	0	2	0	1	6	42	4	20	8	67	41	100	
Kegalle	28	282	2	9	2	4	1	1	7	25	1	18	2	13	2	6	0	0	10	46	0	3	0	0	71	100	
Kalmune	48	775	0	5	0	0	0	0	7	12	0	1	0	0	0	1	0	0	3	23	1	2	0	0	48	100	
<b>SRILANKA</b>	<b>985</b>	<b>10567</b>	<b>32</b>	<b>270</b>	<b>7</b>	<b>34</b>	<b>6</b>	<b>67</b>	<b>20</b>	<b>118</b>	<b>48</b>	<b>491</b>	<b>41</b>	<b>282</b>	<b>6</b>	<b>35</b>	<b>0</b>	<b>3</b>	<b>176</b>	<b>1038</b>	<b>24</b>	<b>135</b>	<b>70</b>	<b>371</b>	<b>56</b>	<b>95</b>	

Source: Weekly Returns of Communicable Diseases (WRCD).  
 \*T=Timeliness refers to returns received on or before 16<sup>th</sup> February, 2018 Total number of reporting units 349 Number of reporting units data provided for the current week: 327 C\*\*\_Completeness  
 A = Cases reported during the current week. B = Cumulative cases for the year.

**Table 2: Vaccine-Preventable Diseases & AFP**

10<sup>th</sup> – 16<sup>th</sup> Feb 2018 (07<sup>th</sup> 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*	01	00	00	00	00	00	00	00	00	01	01	07	16	- 56.2 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	04	00	00	00	00	01	01	00	02	07	04	35	38	- 7.8 %
Measles	00	00	00	00	00	00	00	00	00	00	03	13	49	-73.4%
Rubella	00	00	00	00	00	00	00	00	00	00	00	03	01	100 %
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	04	02	100 %
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	00	09	04	125 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	07	02	250 %
Tuberculosis	18	37	08	11	02	17	00	03	29	125	214	1036	1185	- 12.6 %

**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

Influenza Surveillance in Sentinel Hospitals - ILI & SARI							
Month	Human				Animal		
	No Total	No Positive	Infl A	Infl B	Pooled samples	Serum Samples	Positives
February	298	45	16	29	784	472	0

Source: Medical Research Institute & Veterinary Research Institute

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