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, 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 pediatric 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.
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. Multidrug-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:


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

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* No of samples expected (6 / MOH area / Month)
NR = Return not received
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Note: Timeliness = Cases reported during the current week.

Source: Weekly Reports of Communicable Diseases (WRCD)
### Table 2: Vaccine-Preventable Diseases & AFP

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<tr>
<th>Disease</th>
<th>No. of Cases by Province</th>
<th>Number of cases during current week in 2018</th>
<th>Number of cases during same week in 2017</th>
<th>Total number of cases to date in 2018</th>
<th>Total number of cases to date in 2017</th>
<th>Difference between the number of cases to date in 2018 &amp; 2017</th>
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</thead>
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<td>AFP*</td>
<td>W 01 C 00 S 00 N 00 E 00 NW 00 NC 00 U 00 Sab 00</td>
<td>01</td>
<td>01</td>
<td>07</td>
<td>16</td>
<td>- 56.2 %</td>
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<td>00</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>0 %</td>
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<tr>
<td>Mumps</td>
<td>W 04 C 00 S 00 N 00 E 01 NW 01 NC 02 Sab 07</td>
<td>04</td>
<td>07</td>
<td>04</td>
<td>35</td>
<td>- 7.8 %</td>
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<td>Measles</td>
<td>W 00 C 00 S 00 N 00 E 00 NW 00 NC 00 U 00 Sab 00</td>
<td>00</td>
<td>03</td>
<td>13</td>
<td>49</td>
<td>-73.4%</td>
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<td>00</td>
<td>00</td>
<td>03</td>
<td>01</td>
<td>100 %</td>
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<tr>
<td>CRS**</td>
<td>W 00 C 00 S 00 N 00 E 00 NW 00 NC 00 U 00 Sab 00</td>
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<td>00</td>
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<td>00</td>
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<td>1036</td>
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<td>- 12.6 %</td>
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**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.
- **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**

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<th>Month</th>
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<td></td>
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<tr>
<td>February</td>
<td>298</td>
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**Source:** Medical Research Institute & Veterinary Research Institute

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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**

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