

TUBERCULOSIS: CURRENT SCENARIO & CHALLENGES IN INDIA**Sunita Patel* and Manisha N. Sodha**

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370205.**ABSTRACT**

Tuberculosis (TB) is a communicable disease that is a major cause of ill health and one of the leading causes of death worldwide. Until the corona virus (COVID-19) pandemic, TB was the leading cause of death from a single infectious agent, ranking above HIV/AIDS. The most obvious impact is a large global drop in the number of people newly diagnosed with TB and reported. This fell from 7.1 million in 2019 to 5.8 million in 2020, an 18% decline back to the level of 2012 and far short of the approximately 10 million people who developed TB in 2020. 16 countries accounted for 93% of this reduction, with India, Indonesia and the Philippines the worst affected. Major

challenges to control TB in India include poor primary health-care infrastructure in rural areas of many states; unregulated private health care leading to widespread irrational use of first-line and second-line anti-TB drugs; spreading HIV infection; lack of political will; and, above all, corrupt administration. Multidrug-resistant TB (MDR-TB) is another emerging threat to TB eradication and is a result of deficient or deteriorating TB control program. For this review article, data available at the official websites of WHO; and from the Ministry of Health, Government of India, were consulted, and search engines PubMed® and Google Scholar® were used.

KEYWORDS: Tuberculosis, National TB Program, Multidrug-resistant TB, RNTCP (revised national TB control program).

INTRODUCTION

Tuberculosis (TB) is one of the most ancient diseases of mankind. Molecular evidence reveals it to be over 17,000 years old. WHO declared TB as a ‘global public health emergency’ in 1993.^[1]

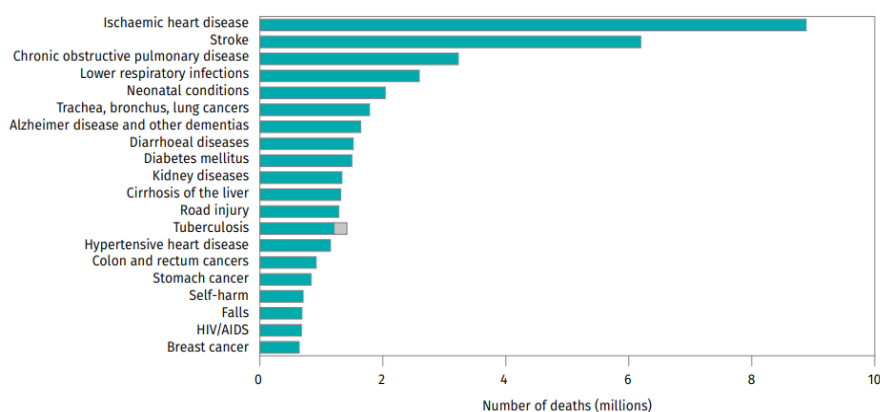
Tuberculosis (TB) is a communicable disease that is a major cause of ill health and one of the leading causes of death worldwide. Until the corona virus (COVID-19) pandemic, TB was the leading cause of death from a single infectious agent, ranking above HIV/AIDS. TB is caused by the bacillus *Mycobacterium tuberculosis*, which is spread when people who are sick with TB expel bacteria into the air (e.g. by coughing). The disease typically affects the lungs (pulmonary TB) but can affect other sites. Most people (about 90%) who develop the disease are adults, with more cases among men than women. About a quarter of the world's population is infected with *M. tuberculosis*.

The World Health Organization (WHO) has published a global TB report every year since 1997. The purpose of the report is to provide a comprehensive and up-to-date assessment of the status of the TB epidemic and progress in the response at global, regional and national levels, in the context of global commitments, strategies and targets.

The latest year for which WHO has published estimates of global deaths by cause is 2019. TB was the 13th leading cause of death worldwide and the top cause from a single infectious agent. In 2020, it is anticipated that TB will rank as the second leading cause of death from a single infectious agent, after COVID-19.^[3]

Top causes of death worldwide in 2019^{a,b}

Deaths from TB among HIV-positive people are shown in grey.



^a This is the latest year for which estimates for all causes are currently available. See WHO estimates, available at <https://www.who.int/data/gho/data/themes/mortality-and-global-health-estimates/ghs-leading-causes-of-death>

^b Deaths from TB among HIV-positive people are officially classified as deaths caused by HIV/AIDS in the International Classification of Diseases.

Figure 01

Indian scenario

Globally the year 2020 witnessed a sweeping COVID-19 pandemic devastate lives, economies, health system and public health programs across the world with record-breaking

speed. In just a few months, the pandemic reversed years of progress made in the fight against TB. The onset of the pandemic in March triggered lockdowns, restrictions in movement, near complete closure of OPD services in public as well as private sector, repurposing of available NTEP and health system resources, infrastructure, diagnostics treatment centers and manpower to fight Covid-19, disrupted ongoing TB elimination efforts and services all over the country.

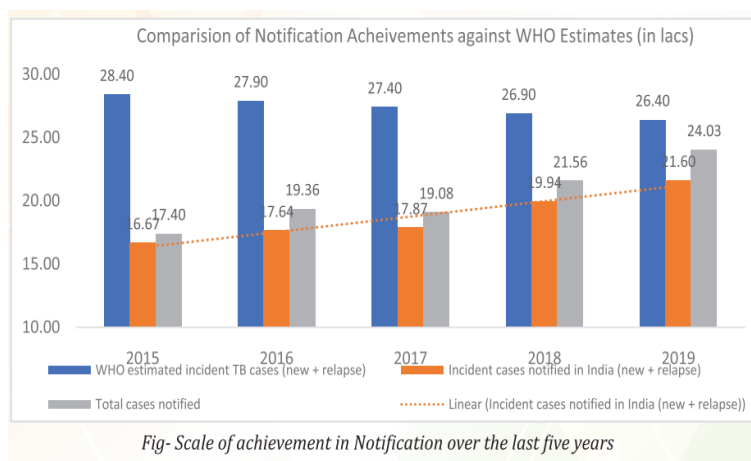
Over the recent years, WHO estimated number of incident (new+ relapse) TB cases and the number of incident TB cases notified by the National TB Elimination Program (NTEP). In 2019, the NTEP achieved a notification rate of ~159 TB cases/lakh. Although the NTEP missed notifying around 2, 40,000 cases of the estimated 26, 40,000 incident cases of TB in 2019, the number of missing millions of the previous years.

In 2020, after the initial 2 months of pandemic (March and April) TB notifications decreased by 38% as compared to January and February. As a result, TB case notifications of 2020, a total of 18, 05,670 cases could be notified, a rise of 11% from the projections made around April end. Apart from Ladakh, Lakshadweep, Mizoram and Sikkim all states and UTs showed a decrease in TB Notification rates in March and April compared to January and February 2020. Since may 2020 states took rigorous steps to increase TB case notification through Active case search and TB-COVID bi directional screening.^[4]

Fall & rise of TB notification across states and UTs during 2020 (% decrease and increase in last 2 columns has been calculated on average notifications for 1 month for the period mentioned)

States and UTs	Total Notification Jan-Feb 2020	Total Notification Mar-April 2020	Total Notification May-Dec 2020	% Decrease between B and A	% Increase between C and A
Andaman & Nicobar	111	61	306	45%	20%
Andhra Pradesh	15972	8976	39117	44%	8%
Arunachal Pradesh	452	403	1667	11%	3%
Assam	7787	5365	22106	31%	3%
Bihar	21945	10832	66217	51%	35%
Chandigarh	1109	660	2525	40%	-5%
Chhattisgarh	7253	5447	16644	25%	-31%
Dadra & Nagar Haveli & Daman & Diu	250	174	541	30%	-29%
Delhi	18748	12866	55230	31%	7%

Goa	353	258	1049	27%	2%
Gujarat	28763	17664	74131	39%	5%
Haryana	125111	9858	40341	21%	2%
Himachal Pradesh	2666	2098	8659	21%	2%
Jammu & Kashmir	2103	1373	5354	35%	-3%
Jharkhand	9659	5835	30008	40%	22%
Karnataka	15848	10629	39308	33%	-8%
Kerala	4506	3230	13096	28%	1%
Ladakh	37	43	159	-16%	-8%
Lakshadweep	1	3	16	-200%	25%
Madhya Pradesh	31207	18217	88220	42%	17%
Maharashtra	37551	24649	97459	34%	-1%
Manipur	430	207	926	52%	11%
Meghalaya	839	686	2614	18%	-5%
Mizoram	439	444	1451	-1%	-22%
Nagaland	747	477	2263	36%	16%
Odessa	9010	7607	29009	16%	-5%
Pondicherry	789	475	1498	40%	-27%
Punjab	9837	7276	29084	26%	0%
Rajasthan	27787	17970	91588	35%	22%
Sikkim	254	291	781	-15%	-49%
Tamil Nadu	18297	10251	41753	44%	2%
Telangana	14033	9153	40023	35%	9%
Tripura	423	351	1297	17%	-8%
Uttar Pradesh	87684	43445	235580	50%	26%
Uttarakhand	4330	3141	12529	27%	0%
West Bengal	17511	12692	48833	28%	-4%
Total	411242	253107	1141382	38%	11%



Current challenges

Even today in India, two deaths occur every three minutes from TB. Major challenges to control TB in India include poor primary health-care infrastructure in rural areas of many states; unregulated private health care leading to widespread irrational use of first-line and

second-line anti-TB drugs; spreading HIV infection; poverty; lack of political will; and, above all, corrupt administration. A collaborative effort is in progress between NTCP and National Rural Health Mission (NRHM), which is a reform initiative of which the goal is to improve primary health care in rural areas.

Poor socioeconomic status and living conditions are considered as strong risk factors linked with Latent Tuberculosis Infection in addition to malnourishment. BCG is the vaccine commonly available against TB. It does offer some protection against serious forms of TB in childhood but its protective effect wanes with age. Latent TB is also becoming a major issue in ageing population.^[5] All countries and age groups are affected by TB but most cases (90%) in 2016 were in adults. Almost two-third was accounted for by eight developing countries with India contributing 27% of 10.4 million cases. In 2017, only 64% of the global estimated incident cases of TB were reported, there maining 36% of 'missing' cases was undiagnosed, untreated or unreported. These 'missing TB cases' have generated much hype for the challenges they present in achieving the End TBS strategy. Many people with TB (or TB symptoms) do not have access to adequate initial diagnosis. In many rural area, TB diagnosis is still reliant on sputum microscopy, a test with known limitations.^[6] Wide spread misuse of anti-tubercular drugs has also resulted in emergence of drug resistant TB including Multi Drug Resistant TB (MDR-TB) and Extensively Drug Resistant TB (XDR-TB) globally. India has the highest incidence of new and MDR-TB cases in the world. It is difficult to diagnose MDR-TB and XDR-TB as compared to regular TB. TB treatment default, missing medical appointments for two consecutive months or more, is a serious problem not only for individuals but also for societies and health-care systems. An increasing burden of MDR-TB patients, especially in the young population with increased risk of transmission posing a major challenge in achieving TB elimination targets.^[7] People who are HIV-positive and infected with TB are 20 to 40 times more likely to develop active TB than people not infected with HIV living in the same country.^[8]

CONCLUSION

As is evident from the above discussion, we have come to conclusion that in our fight against this Tuberculosis disease, "... miles to go", we still have miles to go before we will make this India TB free. WHO with its "STOP TB" strategy& other The National TB Program (NTP) has given a vision to eliminate TB as a public health problem from the face of this earth by 2050. For making this India TB free we have to provide strengthen to this program by strong

surveillance system to accurately estimate the TB cases. There is strong need of awareness and regulation of rational use of first and second line anti TB drugs. There should absolutely prohibition required over the counter drugs. In India and in other developing countries, local governments should put in and encourage wholehearted efforts for local manufacturing of anti-TB drugs, thus resulting in more efficient monitoring of their manufacturing and quality control standards. Monitoring the quality of products available in the marketplace should involve identifying products that are defective because of poor manufacturing practices; deteriorated because of inadequate distribution and storage; and adulterated, tampered or counterfeit because of vested interests. If counterfeit drugs belonging to this category are circulating in the markets, then there is every reason to assume that the counterfeit anti-TB drugs are also available in these markets. Another most important point that we have to conclude that Working association between all government health sector, Private sector, non-Governmental Organization should be strengthened for better dissemination of awareness about diagnosis, management and control of this disease. Existing diagnostic laboratories need to be strengthened with routine training, refresher courses for the involved personnel for better utilization of these already scarce resources. There must be great need to develop or available better, quick diagnostic tests for quick screening of this disease at all the health sectors including PHC, CHC & all the hospitals. To provide strengthened to Government policies the links between primary health centers and DOTS centers should be, and special attention should be given to prioritizing the groups which need to be followed first; utilizing human resources of related public health programs, e.g., programs for HIV/malaria; promoting development of new drugs and vaccines against TB. Vaccination of our livestock against TB and routine screening of livestock should be mandatory.

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