IMPACT OF COVID-19 PANDEMIC ON TUBERCULOSIS NOTIFICATIONS (2019- 2021)

Internship report submitted to

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by

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CHAPTER 1: INTRODUCTION

TITLE*: IMPACT OF COVID-19 ON TUBERCULOSIS NOTIFICATIONS DURING THE TIME PERIOD (2019-22)*

INTRODUCTION:

In 2020 and 2021, the coronavirus (COVID-19) pandemic had a significant negative influence on health, society, and the economy. This includes effects on the availability of and access to essential tuberculosis (TB) services, the number of cases identified by national disease monitoring systems as TB cases, and the burden of TB disease (incidence and mortality).

The nationwide number of monthly or quarterly notifications of people diagnosed with TB is a generally accessible metric that can be used to evaluate the impact of interruptions induced by the COVID-19 pandemic on crucial TB services at the country level. This indicator reflects the effects on demand and supply sides (e.g., ability to continue providing services) of access to diagnosis and treatment (e.g., willingness and ability to seek care in the context of lockdowns and associated restrictions on movement, concerns about the risks of going to health care facilities during a pandemic, and stigma associated with similarities in symptoms related to TB and COVID-19).

Nearly one-fourth of the world's cases of tuberculosis are caused by India. The current coronavirus 2019 disease (COVID-19) pandemic has cast a shadow over this quiet epidemic at the moment. Our National Tuberculosis Elimination Program has suffered a significant setback as a result of many gaps that have appeared since tuberculosis lost its priority status in public health and politics (NTEP). All notifications for tuberculosis in India are sent electronically via the NIKSHAY platform run by the Indian government. Particularly, there is still a problem with the frequency and timing of alerts of newly discovered cases.

CHAPTER 2 - OBJECTIVES OF INTERNSHIP:

- To assess impact of Covid-19 on Tuberculosis notifications.
- To monitor the implementation of NTEP.
- To monitor the trends in the notifications over a span of four years.

- To understand the effectiveness of treatment and its success rate across the span of four years.
- To understand the reasons behinds the rise/fall of tb notifications over the time period of four years.

CHAPTER 3 - ORGANISATIONAL PROFILE:

3.1 NATIONAL HEALTH MISSION (NHM):

The National Health Mission (NHM) encompasses its two Sub-Missions, The National Rural Health Mission (NRHM) and The National Urban Health Mission (NUHM). National Rural Health Mission was launched in April 2005 by the then Hon'ble Prime Minister of India, Dr Manmohan Singh for addressing the health needs in the Rural Areas in the country specifically focusing on 18 States having weak public health indicators. In the year 2012 (12th Five Year Plan), the NRHM was strengthened as National Health Mission by expanding health coverage to Urban areas and including Non-Communicable Diseases Programme. In the year 2013, Government of India Launched National Urban Health Mission as a Sub Mission of National Health Mission.

Mission of NHM:

The NHM envisages achievement of universal access to equitable, affordable & quality health care services that are accountable and responsive to people's needs.

- **Core Values of NHM:**

- Safeguard the health of the poor, vulnerable and disadvantaged and move towards a rights'-based approach to health through entitlements and service guarantees,
- Strengthen public health systems as a basis for universal access and social protection against the increasing costs of healthcare,
- Build environment of trust between the consumers and providers of healthcare,
- Encourage and empower the community for active participation in the process of attainment of highest possible levels of health,

- Institutionalise transparency and accountability in all the related processes and mechanisms and,
- Improve efficiency to optimise the best use of both monetary and non-monetary available resources.

- **Goals of NHM:**

- Reduction in Infant Mortality Rate and Maternal Mortality Ratio by at least 50% from existing levels in next seven years.
- Universalize access to public healthcare services for women's health, child health, water, hygiene, sanitation, and nutrition.
- Prevent and reduce mortality & morbidity from communicable, non- communicable, injuries and emerging diseases.
- Reduction of household out-of-pocket expenditure on total health care expenditure.
- Reduction of annual incidence and mortality from Tuberculosis by half.
- Reduction of the prevalence of Leprosy to <1/10000 population and incidence to zero in all districts.
- Access to integrated comprehensive primary healthcare.
- Ensuring population stabilization, gender, and demographic balance.
- Promotion of healthy lifestyle.

3.2 DIRECTORATE OF HEALTH AND FAMILY WELFARE (PARIVAAR KALYAN BHAWAN)

Strictly to the tune of constitutional directives and sincerely to the commitment for "Health for All", The Health and Family Welfare Department of Punjab is committed to provide preventive, Promotive and curative Health Services to the people of the State through a good network of medical institutions such as sub-centres, subsidiary health centres (dispensaries/Clinics etc.), primary health centres, community health centres, health and wellness centres and Sub-Divisional and District Hospitals.

-Primary Health Care

Primary Health Care Services in the rural areas of the State are provided through a network

of Medical Institutions comprising of Sub- Centres (2950) i.e., each for approximately 5000 population, SHCs/Rural Dispensaries/Clinics (1336) i.e., each for approximately 10000 population, PHCs (395) i.e., each for approximately 30000 population and CHCs (129) i.e., each for approximately 100000 population. There are currently 2820 Health and Wellness Centres (HWCs) operational across the state of Punjab. The various National and State Health Programmes which have been launched to provide Primary Health Care include a crusade against Malaria, Tuberculosis, Blindness, Leprosy and AIDS. All the programs are being successfully implemented in the State.

- Secondary Level Health Care Delivery System

While the CHCs established in rural areas serve as the first level of referral services, the Hospitals at Sub-Divisional level and District Hospitals serve as secondary level of health care system and give support to the services being provided in the Primary Health Care System. Since CHCs in a way also provide specialist services, these can be considered as a part of the secondary level health care system.

Delivery of Family Planning Services:

In order to provide Family Planning Services in the urban areas, 23 Urban Family Planning Centres, 64 Urban Revamping Centres and 52 Post-Partum Units are functioning in the State.

- Schemes/Programs Provided by Organization:

- Outbreak Cell
- Cancer Control Programme
- Civil Registration System
- Drug and Cosmetic ACT
- Integrated Disease Surveillance Programme (IDSP)
- Implementation of PC & PNDT Act
- Maternal & Child Health Programme
- National Tuberculosis Elimination Program (NTEP)
- National Leprosy Elimination Program (NLEP)
- Mukh Mantri Punjab Hepatitis C Relief Fund
- National Iodine Deficiency Disorders Control Programme

- National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases & Stroke
- National Viral Hepatitis Control Programme
- National Vector Borne Disease Control Programme
- Tobacco Control Program

CHAPTER 4 - STATE PROFILE:

The state of Punjab is bordered from all sides by the domestic states of Himachal Pradesh, Haryana, Rajasthan, Union Territory Chandigarh and Jammu and Kashmir. With Punjab, a Pakistani province to the west, it shares an international boundary. The state is the 19th-largest by area among the 28 Indian states, with a total area of 50,362 square kilometres (19,445 square miles), or 1.53 percent of all of India's geographical area (20th largest, if UTs are considered). Punjab, which consists of 23 districts, is the 16th-largest Indian state by population with about 27 million residents. Sikhs and Hindus are the two most common religious groups, and Punjabis make up the majority of the ethnic groups. Chandigarh, a union territory and the capital of the neighbouring state of Haryana, serves as the state capital. The Sutlej, the Beas, the Ravi, the Chenab, and the Jhelum are the five rivers that flow into the Indus River and give the area its name. The first three of them pass through Pakistani Punjab, whereas the last two totally pass-through Indian Punjab.
There are 23 districts in Punjab, and they are divided into the Majha, Malwa, Doaba, and Puadh regions by geography. as under:
Majha: Amritsar, Gurdaspur, Pathankot, Tarn Taran
Doaba: Hoshiarpur, Jalandhar, Kapurthala, Shaheed Bhagat Singh Nagar
Malwa: Barnala, Bathinda, Ferozepur, Fazilka, Faridkot, Ludhiana, Moga, Malerkotla, Mansa, Sri Muktsar Sahib, Patiala, Sangrur, and
Puadh: SAS Nagar (Mohali), Rupnagar and Fatehgarh Sahib.

- These districts are officially divided among 5 administrative divisions: Faridkot, Ferozepur, Jalandhar, Patiala and Ropar.
- The capital city of the state is Chandigarh and largest city of the state is Ludhiana.
- Out of total population of Punjab, 37.48% people live in urban regions. The absolute urban population living in urban areas is 10,399,146 of which 5,545,989 are males

and while remaining 4,853,157 are females. The urban population in the last 10 years has increased by 37.48%.

- The major cities: Ludhiana, Amritsar, Jalandhar, Mohali, Patiala and Bathinda.

NATIONAL TUBERCULOSIS ELIMINATION PROGRAM (NTEP) - OVERVIEW:

Since 1962, India has operated a TB Control Program. Since then, it has undergone two organisational changes: the first was in 1997 when it became the Revised National Tuberculosis Control Program (RNTCP), and the second was in 2020 when it became the National Tuberculosis Elimination Program. Consolidating a series of rapid and progressive advancements in RNTCP from 2016 onward, and with Government of India's commitment to achieve the END TB targets 5 years earlier, RNTCP was re-named as the National TB Elimination Program. Beginning on January 1, 2020, the modification took effect.

The Government of India conducts its anti-tuberculosis initiatives under the National Tuberculosis Elimination Program (NTEP). It serves as a focal point of the National Health Mission (NHM) and oversees the technical and administrative aspects of national anti-tuberculosis initiatives. According to the National Strategic Plan 2017–25, the program's goal is to create a "TB free India," and its techniques fall into the categories of "Prevent, Detect, Treat, and Build Pillars for Universal Coverage and Social Protection." Through the national health system, the programme offers a range of high-quality, free services for diagnosing and treating tuberculosis across the nation.

Program Structure

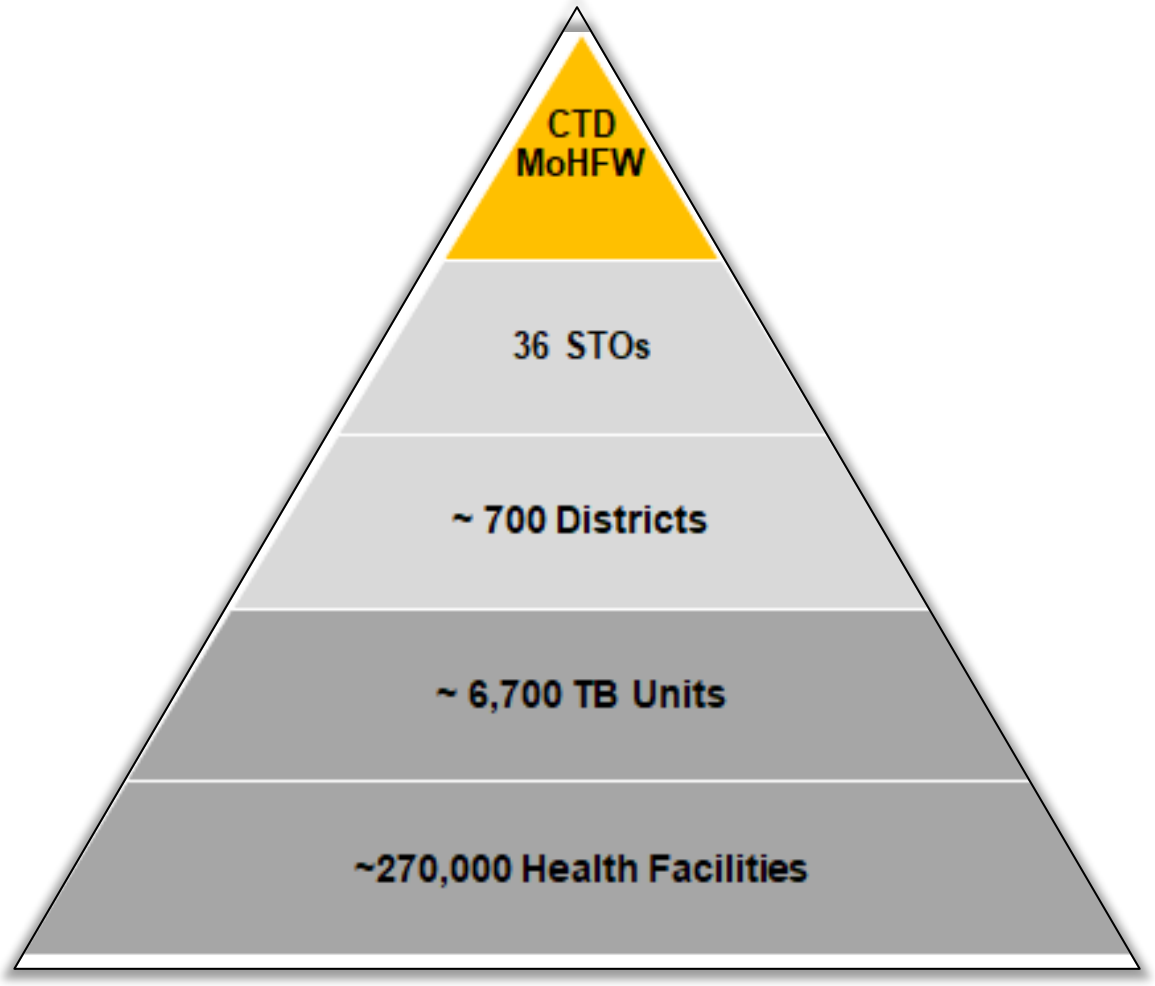

Figure 1: NTEP program structure

From the national level down to the sub-district (Tuberculosis Unit) level, the programme is controlled through a four-level hierarchical structure. The Central TB Division of the Ministry of Health and Family Welfare oversees the programme at the national level. At the state and district levels, respectively, the State TB Cell and the District TB Office oversee the program's operations. Activities are organised under the Tuberculosis Unit at the sub-district and block levels (TB Unit). The National Program Manager for the Central TB Division is the Deputy Director General for TB (DDG-TB). The Additional Secretary and Director General (NTEP and NACO) as well as the Joint Secretary-TB are in charge of the administrative command. Under the Central TB Division, a number of National Level Expert Committees and National Institutes for Tuberculosis, advise and assist in various programmatic functions. At the State level, a State TB Officer and at District level a District TB Officer manages the program.

Public private partnership under RNTCP

A large fraction of those in India who exhibit pulmonary tuberculosis-related symptoms go to the private sector for their urgent medical needs. The private sector, however, is overworked and unable to provide care for such a large number of patients. Private-Provider Interface Agencies (PPIAs) that are suggested by the RNTCP assist in treating and monitoring large numbers of patients by providing treatment vouchers, electronic case notification, and patient tracking information systems.

Treatment Services

The programme offers standardised treatment plans made up of several anti-tuberculosis medications. An intensive period of two to six months and a lengthier continuation phase of four to one and a half years make up the typical medication regimen.

Different treatment regimens are made available through the programme depending on the type of anti-microbial resistance to the disease. The four first-line medications, Isoniazid-H, Rifampicin-R, Pyrazinamide-Z, and Ethambutol-E are given in a six-month short course to new cases and those who don't show any signs of resistance. Fixed Dose Combinations, consisting of HRZE for the intense phase of two months and HRE for the continuation phase of four months, are used to provide the medications in daily weight band-based doses. For drug resistant cases, depending upon the pattern of drug resistance a number of regimens are available composed of a combination of 13 drugs.

CHAPTER 5 - Key Activities/ Projects Undertaken Other than Dissertation

- Assisted in the research project as required by ICMR with the research question: Do the social determinants namely gender and religion have an impact on incident of tuberculosis in India?
- Analysis of NTEP data for key indicators.
- Prepared report on actions taken upon the recommendations of Joint Supportive Supervision Mission (JSSM)

5.2 Key Learnings from Internship

- Healthcare delivery system
- Administration of various state health programs
- Analysis of reports on Nikshay portal
- Extraction and analysis of data.

THANK YOU!