



# OPERATIONAL RESEARCH PROGRAM

Tamil Nadu Health System Reform Program

Dissemination Workshop - 09.10.2023



Impact of Covid 19 on RCH  
services in Tamil Nadu

Strengths and Weaknesses  
of Mental Health  
Program in Tamil Nadu

Effect of CoVID-19 on  
Tuberculosis in Tamil Nadu

## About the Operational Research Program

The Operational Research Program (ORP) is an innovative and pioneering initiative launched by the Department of Health and Family Welfare, as part of the Tamil Nadu Health System Reform Program (TNHSRP) supported by the World Bank.

The primary purpose of this program is to encourage and support “Operational Research” studies that would help in strengthening the public healthcare delivery system in Tamil Nadu. Research teams from across the country are encouraged to take part in this program. The program has a rigorous evaluation process for selecting research proposals, as these studies are expected to (i) identify current challenges and operational impediments in the implementation of various healthcare interventions and (ii) suggest operational measures to enhance the overall effectiveness and efficiency of the delivery system.

So far, the program has commissioned 23 studies (from 155 research proposals received during 2020-23) on diverse topics ranging from primary health care to higher tertiary care services in Tamil Nadu. Research teams from several private and public Institutions have been engaged in this program. Indian Institute of Technology (Madras) serves as the Nodal Agency for implementing this program.

This brochure provides details of the eight studies commissioned under the OR program for the year 2021-2022. It provides the overall objectives, study settings, key findings/results, and suggestions/recommendations.

Operational Research Program is expected to (a) provide evidence for introducing operational measures to improve the performance of the public health care delivery system, (b) build “research capacity” in the public health system, and (c) promote networking among research groups within Tamil Nadu and other parts of the country.

I am very glad to note here that the studies carried out so far have contributed substantially in fulfilling the above-mentioned objectives of the Operational Research Program.

I wish the very best for the successful continuation of this pioneering initiative of the Dept of Health and Family Welfare, GoTN.



**Thiru. M. Govinda Rao, I.A.S.,  
Project Director, TNHSRP**

## Themes (2020-2021)

(Dissemination held on 21.01.2023)

**01** Patient Safety

**02** Antimicrobial Use

**03** Bio-Medical Waste  
Management

**04** 108 Ambulance Services

**05** Tamil Nadu Accident and Emergency  
Care Initiative (TAEI)

**06** Screening of Breast and  
Cervical Cancer

## Themes (2021-2022)

**01** Strengths and Weaknesses of Mental Health Program in TN

**02** Impact of Covid 19 on RCH services in TN

**03** Effect of CoVID-19 on Tuberculosis in TN

## Themes (2022-2023)

(Ongoing)

**01** Quality Accreditation Process  
(NQAS Certification)

**02** Equipment Utilization and cost  
benefit Analysis of High  
End Equipment

**03** Evaluation of Health and Wellness  
Centres

**04** Cancer Management and Outcomes  
for Solid Tumours

**05** Emergency Care and Recovery Centre  
-Mentally ill People

**06** Chronic Kidney Disease of  
Undetermined Aetiology

# STRENGTHS AND GAPS OF THE DISTRICT MENTAL HEALTH PROGRAM TO REDUCE SUICIDE RATES IN TAMIL NADU – INSTITUTE OF MENTAL HEALTH, ICMR– NIE, SCARF, CHENNAI

STUDY 1

## OBJECTIVES

- To identify the strengths and weaknesses of the District Mental Health Program (DMHP) in reducing the suicide rates in Tamil Nadu
- To identify the strengths and weaknesses of the Health Help Line (HHL-104) in the reducing suicide rates in Tamil Nadu

## STUDY SETTING

- District Mental Health Program (DMHP) units from Ramanathapuram, Theni, Kanyakumari, Cuddalore, Nilgiris and Perambalur
- Health Help Line (HHL-104) from Chennai

## STUDY POPULATION

- DMHP team, DMHP administrators at the district and state level, and persons with mental disorders utilizing the services from DMHP
- HHL-104 counselors and persons with suicidal behaviors reached out to by the HHL-104 counselors

## STUDY BUDGET

INR 24,35,580



## RESULTS

- Nearly 90% of the persons with mental disorders seeking care with DMHP had high levels of satisfaction, trust, confidence, respect and dignity with the DMHP services.
- From the estimated prevalence of suicidal death after one month of suicidal attempts of 5.4%, the prevalence was reduced to 0.9% after the intervention by HHL-104.
- No separate suicide prevention clinic was conducted, but incorporated into the routine OPD services of DMHP.
- No periodic audits and/or training programs were conducted to evaluate and upskill DMHP services.
- The poor linkage between HHL-104 and DMHP with less satisfactory follow-up of suicide survivors.
- Cohort/Follow-up monitoring is not happening.

## RECOMMENDATIONS

- Follow-up/cohort monitoring of the HHL beneficiaries to be implemented.
- Decentralization of the HHL-10 activity at the district level for better coordination with DMHP and follow-up of the persons with suicidal behaviour.
- A dedicated health information system for the program to be established to ensure monitoring and evaluation, which includes follow-up monitoring.
- Program management training for the DMHP team to implement the program effectively.
- Monitoring and evaluation framework to be developed with appropriate indicators.



# STRENGTHENING THE EXISTING MENTAL HEALTH PROGRAMME TO REDUCE SUICIDE RATES IN TAMIL NADU: OPERATIONAL RESEARCH TO REDUCE SUICIDE RATES IN TAMIL NADU – ST. JOHN'S MEDICAL COLLEGE, BANGALORE

## OBJECTIVES

- To assess the feasibility of training Community Health Workers (CHW) on the World Health Organization's Psychological First Aid
- Assessment of Mental Health Literacy among CHWs
- Community-level screening for depression/suicidal ideation/suicidal attempts by GLHWs

## STUDY SETTING

- Kaniyambadi PHC, Vellore District
- Jamunamarathur PHC, Thiruvannamalai District
- Athimanjeerpet and Poonamallee PHC, Thiruvallur District

## STUDY POPULATION

- Health Workers: 117
- Community participants: 1365 (Quantitative), 162 (Qualitative)

## STUDY BUDGET

INR 24,71,513



## RESULTS

- Community Health Workers can be trained in Psychological First Aid to promote the mental health of the community members.
- In the baseline, all CHWs have inadequate knowledge regarding identification and referral of mental illnesses.
- PHQ-2 can be used for depression screening by all health workers. Overall, 13.2% of the population were screened positive for depression and 38% had at least one suicide risk.
- Social determinants of mental health need to be addressed in tribal community before strengthening the health care access and capacity building of CHWs.

## RECOMMENDATIONS

- DMHP staff can train CHWs of their District in basic Psychological First Aid, PHQ-2 Screening in the community.
- Promotion of enabling environment in Primary Health Centres by Medical Officers facilitating the training and follow-up care provided by CHWs.
- Multisectoral engagement in addressing inequities in tribal area.

**ANALYSIS OF DISTRICT MENTAL HEALTH AND PRIMARY CARE PERSONNEL  
INVOLVEMENT IN SUICIDE PREVENTION AND MENTAL HEALTH PROMOTIONAL  
ACTIVITIES: A COMMUNITY-BASED QUALITATIVE STUDY  
– KARUR GOVT. MEDICAL COLLEGE**

**STUDY 3**

## OBJECTIVES

- ▶ **Primary Objective:** To understand about the knowledge and perspectives of DMHP staffs on the strategies and mechanisms used to prevent the suicides and promote mental health in the community and the challenges faced by them while working for the same.
- ▶ **Secondary Objective:** To understand about the availability of non-pharmacological services under DMHP and about the level of satisfaction of the beneficiaries.

## STUDY SETTING

- ▶ **Primary Objective:** 25 face-to-face interviews with DMHP staff and PHC Medical officers of Erode, Namakkal, Salem, Karur, Tenkasi and Tiruchirapalli districts and two focussed group discussions with village health nurses (Namakkal and Karur separately)
- ▶ **Secondary Objective:** 77 patients were receiving care from DMHP of Karur District.

## STUDY BUDGET

INR 8,05,098



## RESULTS

- All 6 DMHP teams offer mental health services in Taluk GH and PHC through outreach clinics.
- 44 % of participants in face-to-face interviews reported they have difficulty in keeping the patients in follow-up.
- 4 DMHP psychiatrists (Salem, Namakkal, Tenkasi and Tiruchirapalli) highlighted the lack of separate psychiatry wards at their District HQ hospitals.
- 5 of the 6 interviewed PHC medical officers and VHNs in focussed group discussions reported that reproductive and child health-related work keeps them preoccupied.
- 60 % of face-to-face interview participants said human resource shortage has significantly challenged them.
- All participated DMHP beneficiaries (n=77) received free medications. However, there was no adequate documentation related to the non-pharmacological services provided to the patients.

## RECOMMENDATIONS

- Restructure the referral mechanism at PHC to prevent case drops and ensure adequate follow up to implement Zero Suicide Model.
- Strengthen the surveillance and reporting of suicidal attempts/self-harm.
- Utilisation of indicators to monitor inpatient service and hospital efficiency.
- Introduction of tele-based training modules on DMHP services for medical officers and healthcare workers at PHC.
- Evaluate the advantages of combining the available mental health human resources employed under different health directorates in a district.

**IMPACT OF COVID-19 ON THE UTILIZATION OF REPRODUCTIVE, MATERNAL  
AND CHILD HEALTH SERVICES IN SELECTED DISTRICTS OF TAMIL NADU: A MIXED METHOD STUDY**  
– SCHOOL OF PUBLIC HEALTH, SRM IST, KATTANKULATHUR

**STUDY 4**

## OBJECTIVES

- To find out the utilization of RMNCH services during COVID-19 Pandemic
- To evaluate the direct and indirect impact of COVID-19 on utilization of RMNCH services

## STUDY SETTING

- Ariyalur, Nilgiris, Ramanathapuram, Dharmapuri, Thirunelveli and Virudunagar districts

## STUDY POPULATION

- Qualitative: Conceived/delivered women with COVID-19, primi mothers  
Stakeholders: VHN, ASHA, AWW  
Total - 127 interviews
- Quantitative: Women: 15-49 years  
Eligible to access RMNCH services, Pregnant Women  
ANC, PNC Mothers. 1800 ((Total for 6 districts)

## STUDY BUDGET

Rs. 24,48,264 /-



## RESULTS

- Overall, no significant disruptions in the utilization of RMNCH services
- 2.5 % of our eligible study population did not receive sterilization.
- Low utilization of contraceptive services- 40.5 % (NFHS-5 – 67.6%)
- Teenage pregnancy at 8 % (NFHS-5 - 5%)
- An increased trend was seen in ANC care
- C-section deliveries in public facilities 48.2 % (NFHS-5: 36 %) private facilities 51.8 % (NFHS-5: 63.8 %)
- Door-to-door and technology-based AN and PN care services offered
- No reduction in immunization coverage. However, delays in receiving immunization (39.6 %)
- 32 & 64 % of participants perceived services rendered by the HCWs were very good and good respectively

## RECOMMENDATIONS

- During the pandemic or outbreaks, sterilization services are likely to be disrupted. In these circumstances, spacing methods should be promoted
- Poor knowledge, awareness, and usage of RMNCH services were seen in Dharmapuri and Ariyalur districts and this could be the cause for the higher percentage of teen pregnancy in those districts
- Door-to-door delivery of services under the MTM scheme has positive benefits. Therefore should be further strengthened
- Need to start a strategic campaign among women of reproductive age about the merits of vaginal deliveries



# IMPACT OF COVID-19 PANDEMIC ON UTILISATION OF MATERNAL AND CHILD HEALTH SERVICES IN THREE PRIORITY DISTRICTS OF TAMIL NADU: AN EXPLANATORY MIXED METHODS STUDY – JAWAHARLAL INSTITUTE OF POSTGRADUATE MEDICAL EDUCATION AND RESEARCH, PUDUCHERRY

## OBJECTIVES

- To compare the MCH services, neonatal outcome and contraceptive uptake during covid and pre-covid period
- To explore the challenges faced by healthcare workers and mothers in delivering and availing services during covid period.

## STUDY SETTING

- Three districts of Tamil Nadu covering a total of five health unit districts (Tiruvannamalai, Cheyyar, Theni, Thoothukudi and Kovilpatti)

## STUDY POPULATION

- Quantitative: 5000 records of mothers registered for antenatal care during January to March 2019 (pre-covid period) & January to December 2020 (covid period)
- Qualitative: In-depth interviews and focus group discussions were conducted among various cadres of health workers (Doctors, AWWs, ASHA, SHN); mothers and their first-degree relatives (mother/ mother-in-law/ husband).

## STUDY BUDGET

Rs. 8,59,950/-



## RESULTS

- Three antenatal visits were completed by about 29% and 32% of mothers during pre-covid and covid respectively.
- Proportion of abortion was 7% Vs 9% and stillbirth was 0.7% Vs 1.5% during the pre-covid and the covid period respectively.
- Contraceptive uptake remained almost similar in both time points. (87.8% Vs 87.2%)
- Postnatal visits increased during the time of covid (96% Vs 84%) and vaccination delay remained almost similar during the two time periods. (26.1% Vs 29.5%)
- Health system was resilient and able to provide most of the MCH services during covid.
- Case overload and work overload at tertiary care centres for USG and delivery due to the closure of private facilities and time/ travel restrictions during the pandemic.
- Difficulties in travel to the field and to the higher centers (referrals) for VHNs and mothers during covid.

## RECOMMENDATIONS

- Strengthening of mobile healthcare services in difficult-to-reach pockets in rural blocks of Theni, Thoothukudi and Tiruvannamalai districts.
- Filling the existing vacancies at all levels of the healthcare system (LTs in particular).
- Preparedness and mobilization of manpower during the pandemic or any other disaster
- Optimization of ambulance services for transportation to referral centres during pandemics.



# STUDY ON THE EFFECT OF COVID-19 ON THE INCIDENCE OF TB IN TAMIL NADU - SAATHII & STATE TB CELL, TAMIL NADU

## OBJECTIVES

- To assess the impact of COVID-19 on incidence of TB in Tamil Nadu, to inform preparedness for future COVID and other similar pandemic situation

## STUDY SETTING

- Secondary data review of the entire state
- Primary data collection through qualitative interviews from six districts, Kancheepuram, Dharmapuri, Madurai, Tiruchirappalli, Viluppuram and Coimbatore

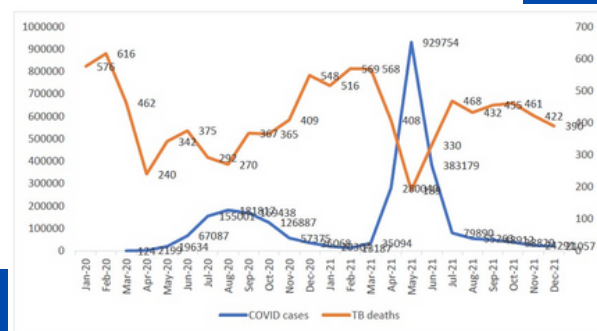
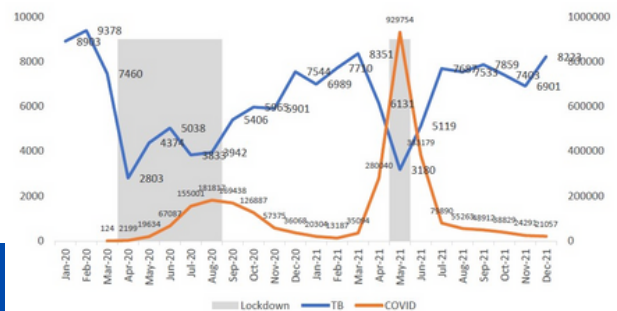
## STUDY POPULATION

- Primary data collection:

The study participants included health care providers (HCPs) – Medical officers, staff nurses, NTEP staff, frontline workers; program stakeholders, patients (COVID positive patients, Presumptive TB and TB patients) and a family member of a deceased TB patient, from six study districts

## STUDY BUDGET

Rs. 27,66,357/-



## RESULTS

- TB notifications in the state declined by 36% in 2020 (Range of 47% to 24% in districts) and increased by 18% (0% to 36%) in 2021. However, the increase in 2021 is below the TB notification recorded in 2019.
- The substantial increase in TB reporting following Wave 2 in 2021 was due to ACF campaigns, Targeted case finding in NCD clinics, Bi-directional screening, program follow-up with the post-COVID patients, ILI and SARI cases, presumptive TB investigated based on the CT scan reports in District hospital or medical college hospitals.
- In the years 2020 and 2021, 30% and 74% of TB patients were screened for COVID and among them 1.7% and 0.8% of patients were detected TB with COVID.
- 23%(2020) and 60%(2021) of female TB patients were screened for pregnancy, 1.2% and 1.4% were TB with pregnancy.

## RECOMMENDATIONS

- Increase NAAT testing machines at sub-district level in all high TB burden districts.
- Prioritize the case-finding strategies including screening vulnerable populations, use of mobile vans for screening in hard-to-reach areas and leveraging existing community engagement and integrated activities, multisectoral convergence, use of telemedicine/ counselling, advocacy campaigning by TB champions and coordination with the professional medical associations (IMA/IAP/ Others), lab and chemist associations.

# THE POTENTIAL IMPACT OF COVID-19 PANDEMIC ON TB EPIDEMIC IN TAMIL NADU – ICMR–NATIONAL INSTITUTE OF RESEARCH IN TUBERCULOSIS, CHENNAI

## OBJECTIVES

- To estimate the prevalence & incidence of TB before & during COVID-19 pandemic in Tamil Nadu
- To find out the notification trend of TB cases before & during COVID-19 pandemic in Tamil Nadu

## STUDY SETTING

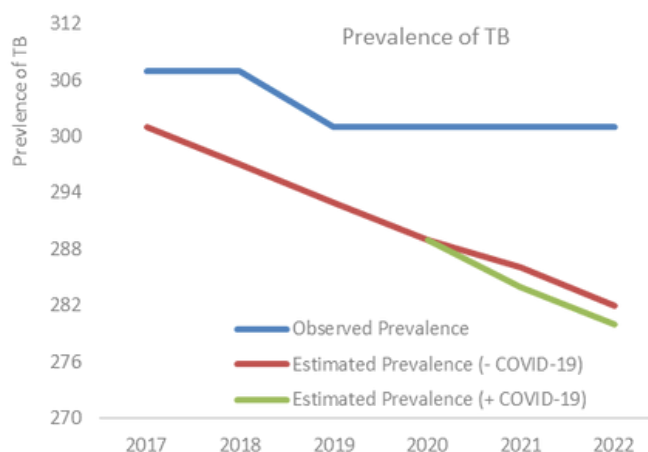
- Secondary data review of entire state
- This study employs mathematical models to predict TB prevalence and incidence in Tamil Nadu over a period.

## STUDY POPULATION

- Adult population (people who are 18 years of age or older)

## STUDY BUDGET

Rs. 23,18,715/-



## RESULTS

- The average percentage reduction of TB prevalence and incidence without COVID-19 is 1.320 and 1.307; with COVID-19 is 1.475 and 1.454.
- There was an annual decline in TB prevalence and incidence in Tamil Nadu from 2017 to 2025.
- There was also a declining trend during the COVID-19 pandemic.
- TB notification rate was reduced during lockdowns due to COVID-19.
- There is no impact on TB due to the COVID-19 pandemic.

## RECOMMENDATIONS

- To accelerate the declining trend of TB, there is a need for intervention strategies like close monitoring of the impact of COVID-19 pandemic, implementing effective control measures and prevention strategies in Tamil Nadu.

# SURVIVAL RATES OF PAST-TUBERCULOSIS PATIENTS DURING THE PANDEMIC AND THE FACTORS AFFECTING IT –A MIXED METHOD STUDY – CHRISTIAN MEDICAL COLLEGE, VELLORE

## OBJECTIVES

- To estimate the survival rates among past TB patients and factors affecting survival.
- To measure the quality of life of the survivors.
- To explore in depth the causes of death among patients who have completed treatment.

## STUDY SETTING

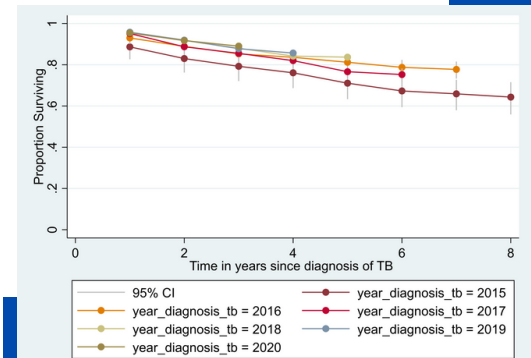
- Vellore & Tiruvannamalai districts

## STUDY POPULATION

- Patients over the age of 15, registered under the NTEP between 2015-2020, residents of TN, patients diagnosed with DS-TB, recorded outcome of completed / cured.
- Current health status: Telephonic interview Quality of life: SF36, face to face interviews
- In-depth interviews with the TN NTEP verbal autopsy tool used to explore medical and non-medical factors associated with death.

## STUDY BUDGET

Rs. 24,50,000/-



## RESULTS

- Annual survival rates from the time of diagnosis are similar between 2017 and 2020, with the 1st year survival being 95%.
- Death rates when adjusted for age and calendar period did not show a higher death rate in 2020.
- SMR was 441% when compared to the residents of the Kaniyambadi block.
- The proportion of survivors with physical problems was 25.42% (19.91-30.93%) & proportion with mental health problems was 23.33% (17.98-28.60%).
- Causes of death in the first 2 years after diagnosis were mostly related to infectious disease and complications (47.2%).
- Causes of death after the first 2 years were mostly related to noncommunicable diseases (>55%).

## RECOMMENDATIONS

- Post treatment follow up for 2 years after completing treatment.
- Creating linkages with mental health services and NCD programmes for patients who have completed treatment.
- Respiratory rehabilitation for patients who have persistent lung symptoms after completing treatment.
- Creating linkages with the livelihood support programmes for patients who have completed TB treatment.

## Operational Research Program Team

**Project Director: Thiru. M. GOVINDA RAO, I.A.S., TNHSRP**

**Expert Advisor: Dr. S. Shobha, TNHSRP**

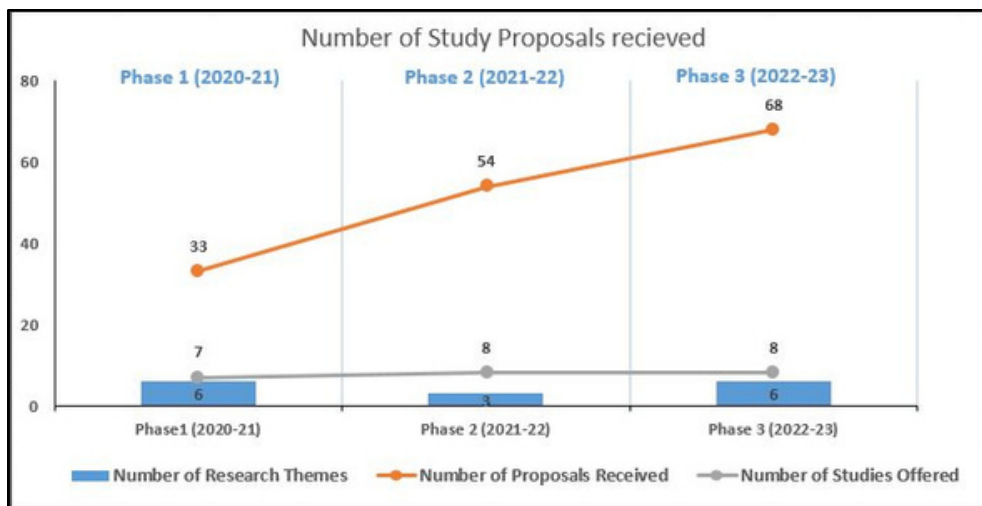
**Project Co-ordinator: Prof. V. R. Muraleedharan, IIT Madras**

**Program Officer: Dr. I. Nivedita, TNHSRP**

**Consultant: S. Iniyazh, TNHSRP**

**Project Associate: M. Aswini Nachiyar, IIT Madras**

**Project Consultant: M. Rajesh, IIT Madras**



We have received  
155 Proposals and  
commissioned 23  
studies during  
2020-23.



We wish to thank Dr. S. Uma, I.A.S.,(former Project Director, TNHSRP) for  
succesfull launching and completion of the studies undertaken during  
the year 2021-2022.