



TAMIL NADU HEALTH SYSTEM REFORM PROGRAM

OPERATIONAL RESEARCH PROGRAM DISSEMINATION WORKSHOP



Date : 28th March 2025

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. 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 30 studies (from 206 research proposals received during 2020-24) 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 six studies commissioned under the OR program for the year 2023-2024. 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.

**Dr. S. Vineeth IAS.,
Project Director, TNHSRP**

Operational Research Program : 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

Operational Research Program : 2021-2022

(Dissemination held on 09.10.2023)

- 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

Operational Research Program : 2022-2023

(Dissemination held on 23.01.2025)

- 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

Operational Research Program : 2023-2024

This brochure highlights the Objectives, Methodology, Results and Recommendations for the six studies commissioned under following six themes - Dissemination 28th March 2025

- 01** Screening of Non-communicable Disease in the Organized sectors
- 02** Tamil Nadu Quality Enhancing Structured Training (TAN-QuEST)
- 03** TAEI-Trauma Care Registry in TN
- 04** Progress of Anemia Mukth Bharath Program among Adolescents in TN
- 05** Chief Minister's Comprehensive Health Insurance Scheme Tamil Nadu (CMCHIS TN)
- 06** Labour Room Quality Improvement Initiative (LaQshya)

OBJECTIVES

- ▶ To describe the enabling factors and disabling factors related to the implementation of worksite screening of hypertension and diabetes among organized sector in Tamil Nadu
- ▶ To assess the short-term outcomes of worksite intervention in the organized sectors of Tamil Nadu

STUDY SETTING

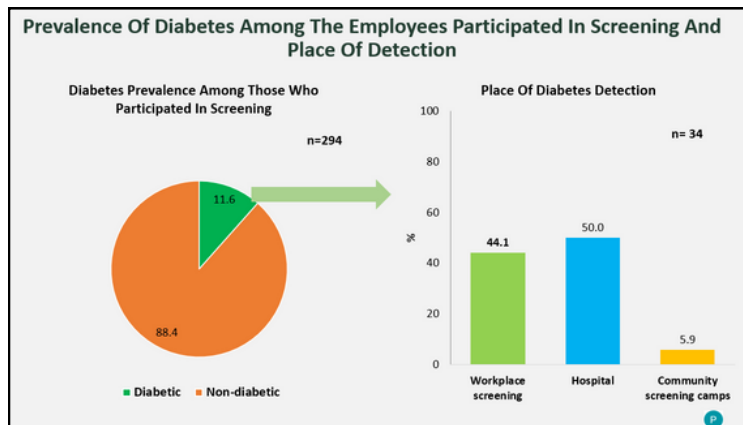
- ▶ Districts: Kancheepuram, Tiruvannamalai, Krishnagiri, Salem, Tiruppur, Perambalur, Tiruchirapalli, Madurai, Dindugul, Tuticorin
- ▶ Stakeholders: Health systems, Industrial decision makers, Employees



STUDY POPULATION

Industry: HR manager / Employee welfare officer / Workplace safety officer / OHC Doctor/ OHC staff nurse/ Representative of employee union & Employee

Health System: District NCD coordinator / Block medical officer/ PHC medical officer / PHC staff nurse (NCD)/ BHS/Health Inspector, WHV, MLHP



STUDY BUDGET

INR 22,00,000/-

RESULTS

Disablers and Enablers

- Industries face challenges with transient workers, time, and infrastructure gaps.
- Low awareness, beliefs, and attitudes among employees hinder participation.
- Industry support through planning and infrastructure boosts implementation.
- Employee engagement and coordinated processes drive successful screening outcomes.

Outputs

- 91% of employees participated in the screening program
- Prevalence of Conditions: Diabetes: 14.3% Hypertension: 12.3%
- 44.1% of diabetes cases and 51.7% of hypertension were detected through the screening
- 73% of participants reported being satisfied with the workplace screening program

RECOMMENDATIONS

Scalability – Health Systems

- Step-by-step guidelines with details on implementation process
- Ensuring availability of Human Resources and Infrastructure / Consumables
- State-wide DM/HTN Screening doable provided the guidelines and HR are available, & accessible
- Scalability to include other NCD screening is possible in a phased manner
- Industries with non-functional or unavailable OHCs can be serviced by MMU.
- Strengthen inter-departmental collaboration (DMS / ESI & DISH)

Adaptability

- Utilizing NCD screening data from large industries with functional OHC compliant with statutory requirements
- Successful strategies from one district can be replicated in other districts

OBJECTIVES

- Evaluate the organizational approach in preparing and implementing the training module.
- Assess the perception of trainees regarding the training process, content, and benefits.
- Identify barriers in operationalizing the training and strategies to overcome them

STUDY SETTING

- Tirunelveli Medical College

STUDY POPULATION

- Mixed-methods study (quantitative and qualitative analysis).
Participants: 1,272 healthcare workers, including doctors, staff nurses, paramedics, and support staff.

STUDY BUDGET

INR 24,88,500/-



RESULTS

- Significant improvement in knowledge post-training ($p < 0.05$).
- 95% of participants found the training relevant and applicable.
- Increased confidence in communication skills post-training.
- 87% of trainees reported applying learned communication techniques in their workplace.
- Thematic analysis revealed that participants valued role-playing exercises the most.
- Identified barriers: trainer availability, time constraints, and infrastructure limitations.
- The TANQuEST training at Tirunelveli Medical College was well-received and improved communication skills among healthcare workers. Addressing identified barriers can enhance future training effectiveness and sustainability.

RECOMMENDATIONS

- Expand training to other institutions.
- Platform can be used for other training modules

OBJECTIVES

- To describe the intended & in-practice functioning of Tamil Nadu Accident and Emergency Care Initiative(TAEI) Trauma Registry portal in Tamil Nadu, India
- To evaluate the TAEI Trauma Registry portal in Tamil Nadu with respect to its completeness & correctness
- To explore the challenges in implementation of trauma registry portal in Tamil Nadu



STUDY SETTING

- Selected Twelve TAEI centres

STUDY POPULATION

- Document review – All retrievable documents related to the Trauma Registry, Tamil Nadu | Case record review – 22 records randomly selected per health facility from the cases admitted in July 2024 | The registry data between February 2021 to July 2024 | Health staff interview – Nodal officers at state and facility level, Medical Officers, Data entry staff, Ambulance staff



STUDY BUDGET

INR 24,00,000/-

RESULTS

- Human resource vacancies largely filled
- Data entry devices available & functional
- Entries in rehabilitation remained low
- Persisting challenges: perceived as low priority work, lack of clarity in roles and responsibilities & limited inter-departmental coordination
- Lack of formal training to people involved in data entry
- Registry data is used sub-optimally for administrative, clinical decisions and quality improvement purposes
- No structured internal quality reviews; reliance on informal monitoring methods
- Portal complexity contributes to inaccurate and incomplete data entries
- Ambiguities in operational definitions → No detailed user manual available

RECOMMENDATIONS

- Develop user manuals with operational definitions for variables and implement structured, regular training programs
- Shift from mimicing case sheet to actual trauma registry with focused purpose
- Make the portal user-friendly by simplifying the login process and reducing the number of data fields—include only purpose-driven variables, clearly distinguishing between mandatory and optional ones based on the registry's core objectives
- Make steps to improve the entry of outcome data and data in rehabilitation module
- Structured processes to use the registry data for planning and decision making (administrative and clinical) to be established and documented
- Implement periodic evaluation mechanism to assess completeness, correctness and utility of the registry

OBJECTIVES

- Assess the progress of Anemia Mukth Bharath in reduction of anemia among adolescents in Krishnagiri and Dharmapuri Districts
- Assess the challenges in implementation of strategies of Anemia Mukth Bharath among adolescents



STUDY SETTING

- Five Government schools each from Kelamangalam Block of Krishnagiri District and Theerthamalai Block of Dharmapuri District

STUDY POPULATION

- Cross-sectional study among school going 400 Adolescents aged 10-19 from Classes 6-12
- 100 parents of adolescents
- 25 Teachers of adolescents



STUDY BUDGET

INR 24,90,325/-

RESULTS

- 190 (45.8%) were boys and 225 (54.2%) were girls.
- Most of them were in the early adolescence age group 230 (57.5%).
- Mean age at menarche was 11.94 (± 1.09) and mean days of menstruation was 7.8 (± 8.9).
- 407 (98%) of the children reported that they have been given WIFS weekly in the last one month.
- Prevalence of anemia was 19% (Mild 11%, moderate 7% and severe 1%).
- Prevalence of anemia among girls was 22.6% and boys was 14.7%.
- As per body mass index, thinness was present among 8% and severe thinness was present among 1% of the population.
- Parents and teachers had adequate knowledge of anemia and WIFS.
- Middle adolescence stage was associated significantly with anemia (Adjusted odds ratio 1.8, 95% CI 1.1-2.9)

RECOMMENDATIONS

- Line listing of anemia cases and follow-up by RBSK Team
- Appropriate healthcare workforce management in RBSK
- Annual training of RBSK Nodal teachers at schools in anemia, WIFS and diet
- Increase the uptake of mid day meals in schools
- Strengthen Menstrual Hygiene scheme
- Address child marriage, child sex abuse in study area and increase school enrolment among tribal children

OBJECTIVES

- Factors leading to low utilization: Identify and analyze the factors that influence utilization in public hospitals.
- Comparative analysis between Insured & Non-Insured: Assess claim trends, patient satisfaction, and challenges in public facilities among insured and non-insured patients.
- Recommending improvement strategies: Recommend measures to increase utilization in public hospitals.

STUDY SETTING

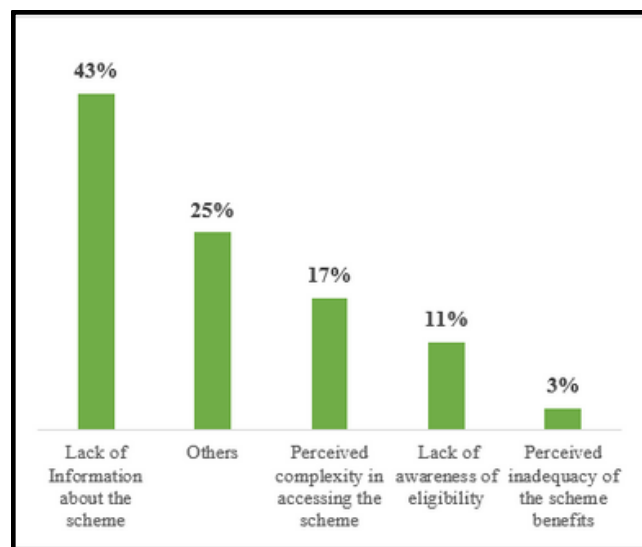
- Perambalur, Cuddalore, Tirunelveli, Salem, and Erode, covering public (including district and medical college hospitals) and private hospitals.

STUDY POPULATION

- Public Hospitals: Hospital administrators, medical superintendents, specialists, TPA and non-beneficiaries of CMCHIS
- Private Hospitals: CMCHIS beneficiaries
- Scheme Administration: Insurance company, Third-Party Administrators (TPAs), and District and State Health officials
- A total of 252 interviews were conducted.

STUDY BUDGET

INR 23,27,940/-



RESULTS

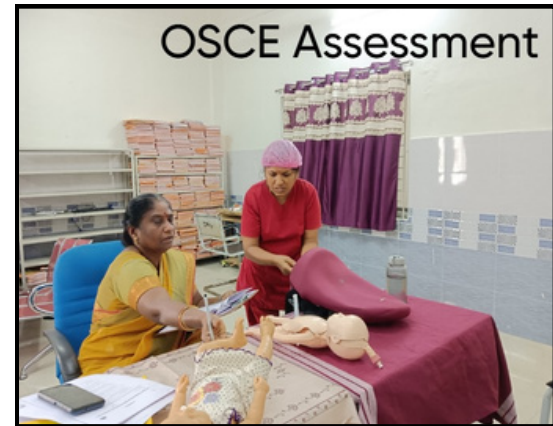
- **Awareness gap:** 41% of eligible patients in public hospitals did not use CMCHIS. Key reasons for the same are shown in the given graph. Others include card-related issues like unexpired cards, non-availability of necessary documents like ration cards, name mismatches, etc.
- **Challenges in Public Hospitals (Demand Side):** Long waiting times (reported by 32% of patients), perceived quality in medical care (16%), lack of amenities (16%), human resource limitations (12%), limited availability of specialized services (8%), card-related issues (7%), proximity to residence (4%), lack of privacy (2%) and difficulty in assessing prescribed medicines, Reputation, Infrastructure maintenance (1% each).
- **Challenges in Public Hospitals (Supply Side):** Process-related: Claim rejections due to clerical errors and card related issues, 48-hour pre-authorization rule delaying admissions, Package-related: Low package rates, some essential procedures not covered., Hospital-related: Shortage of specialists, limited beds and diagnostic services, lack of dedicated CMCHIS staff, TPA-related: High claim rejection rates and communication gaps in the claim processes.

RECOMMENDATIONS

- **Care Coordination System for CMCHIS patients** - Ensuring a "Care Coordination" system which can facilitate the patient to navigate through multiple administrative hurdles, and reduce patient friction through an integrated referral system to CMCHIS hospitals.
- **Enhancing Awareness & Outreach:** Conduct targeted IEC (Information, Education, and Communication) campaigns on the processes involved in use of CMCHIS scheme.
- **Strengthening Public Hospital Infrastructure:** Expand specialty services in secondary hospitals, improve diagnostic and treatment facilities, and upgrade medical equipment.
- **Streamlining CMCHIS Administration:** Simplify claim management processes, improve coordination with TPAs, and strengthening communication between hospitals and TPA's.
- **Policy Reforms:** Introduce flexibility in insurance contract to incorporate scheme improvements based on evidence generated from field level implementation challenges.

OBJECTIVES

- To understand the facilitators and barriers in implementing LaQshya across select government health facilities from the health care providers, sanitary workers, patients, and family members' perspectives.
- To determine the LaQshya-related training needs and job satisfaction of the health care providers in the facility.
- To assess the respectful maternity care provided at health facilities for mothers.
- To develop recommendations for addressing identified challenges and barriers.



STUDY SETTING

- Facilities across 10 Districts of Tamil Nadu (High MMR districts and 2 Aspirational districts)
- Facilities – LaQshya certified or in the process

STUDY POPULATION

- Healthcare providers (Leaders – Dean, Matron, HOD)
- Doctors and staff nurses, Pharmacist, Sanitary supervisors and workers
- Mothers who had recently delivered, from selected government facilities



STUDY BUDGET

INR 23,48,500/-

RESULTS

- Most of the facilities scored above 80% in the infrastructure and service provision area of concern, but scored below 70% in the quality management area of concern of the labor room and OT assessment checklist.
- Median Respectful Maternity Score (RMC) is 77.3 with scores ranging from 34.5 to 91, IQR is (72.3 – 82.5).
- Main factors contributing for poor were poor supportive care, communication and autonomy.
- Thematic areas of challenges for all facilities were – Data for quality improvement, Motivation and team culture, Knowledge and skill gap. District/Sub-district hospitals faced challenges in dedicated resources and staff availability.
- Skill assessment revealed that majority scored below 60% in providing essential Obstetric and Newborn care and emergencies, however majority exceeded 80% in knowledge assessment.
- 93% of Employees were happy to serve the needy, while almost half the participants felt the work stressful and the job challenging.

RECOMMENDATIONS

- Strengthening of Quality circles in each facility and the functioning of District Quality Assurance Units and Committees.
- Ensuring data-driven quality improvement under the guidance of leaders (HOD/Dean/CMO/District Administrators) and the Obstetricians, Anesthesiologists and Pediatricians
- Enhance patient-centered care by improving birth companion practices and Zero separation policy. Improve adherence to modern obstetric practices.
- Implementing non-rotation policy in labor room as per standards. Staggered rotation of labor room staffs – retaining at least 50% of trained Staffs. Incentives and Extra offs for staffs in Emergency care.
- Skill based continued refresher training, including drills and OSCE at facility level under the guidance of District Quality training team and the Labour Room and MOT nodal officers to ensure that all the healthcare providers are trained to provide Quality care, identify and manage Obstetric and Newborn emergencies.

Operational Research Program Team

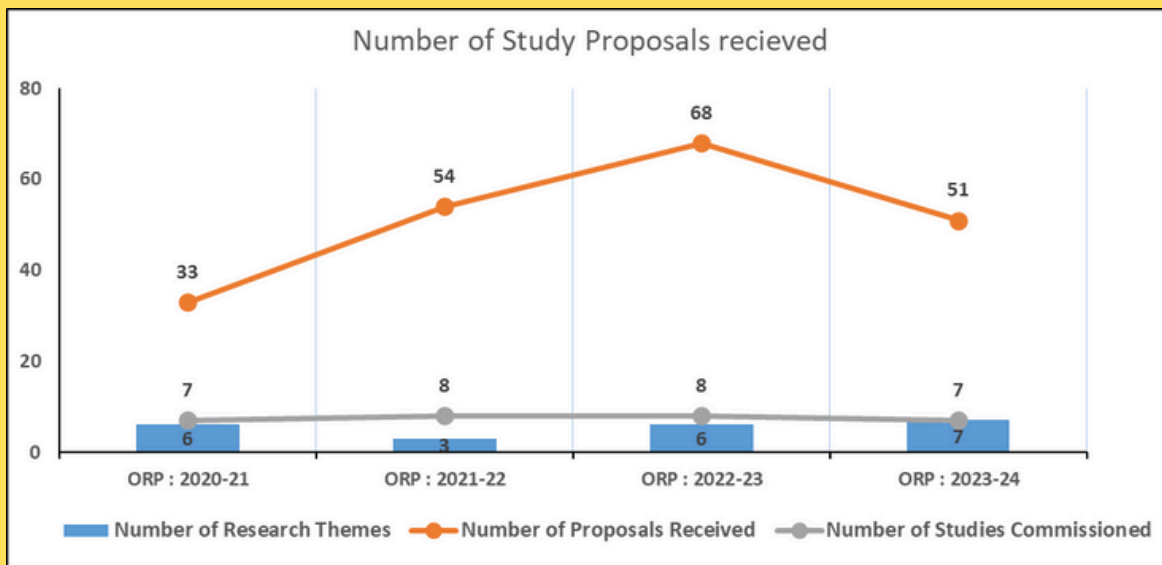
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We have received 206 Proposals and commissioned 30 studies during 2020-24.

ORP: 2020-21 – Study Results Disseminated on 21-1-2023

ORP: 2021-22 – Study Results Disseminated on 09-10-2023

ORP: 2022-23 – Study Results Disseminated on 23-01-2025
