सत्यमेव जयते

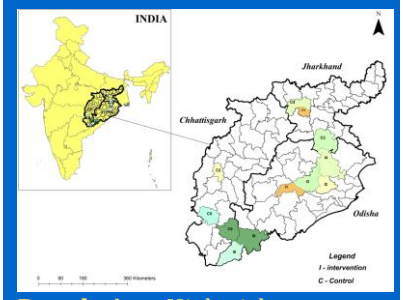
Health Technology Assessment in India (HTAIn)

INDIAN COUNCIL OF MEDICAL RESEARCH | REGIONAL MEDICAL RESEARCH CENTRE, BHUBANESWAR

Policy Brief **05 March 2024**

Assessment of Cost-effectiveness of Mass Testing and Treatment (MTaT) of Malaria in Inaccessible Areas in India

This policy brief aims to review the malaria trend between mass testing and treatment (MTaT) intervention and control settings before and after the intervention and assess the cost-effectiveness of MTaT of malaria along with routine NVBDCP programs.



Population: High-risk groups for malaria transmission (all age groups)
Intervention: Mass Testing and Treatment of Malaria
Comparator: Routine malaria control program NVBDCP
Outcome: Averted cases (through API) and cost-effectiveness
Time Horizon: Six-year time period

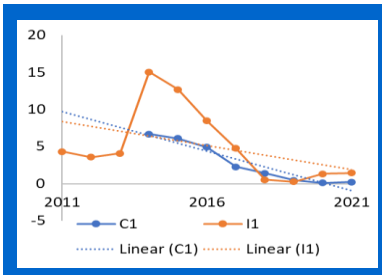
Key Messages

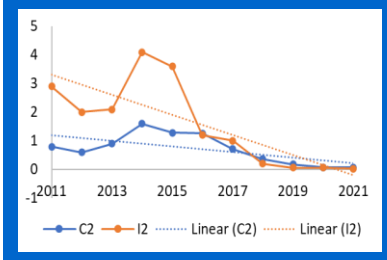
- Malaria is a significant public health concern in India, particularly in inaccessible terrains, with asymptomatic cases impacting transmission dynamics.
- The World Health Organization (WHO) emphasizes the importance of expedited efforts by malaria-endemic countries towards elimination, with Mass Testing and Treatment (MTaT) being a crucial strategy in areas with widespread transmission.
- MTaT has shown effectiveness in reducing Annual Parasite Incidence (API) and lowering the financial burden on routine malaria control programs like National Vector Borne Diseases Control Programme (NVBDCP).
- States at high risk for malaria transmission in India are encouraged to implement MTaT interventions to control the malaria burden effectively.
- States are encouraged to classify districts for MTaT interventions, focusing on those with an API of 2 or more per 1000 population. MTaT is also encouraged in geographically inaccessible villages due to factors like dense forest areas and tribal population density.

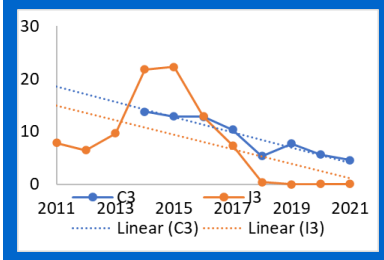
What is the problem and why is it important?

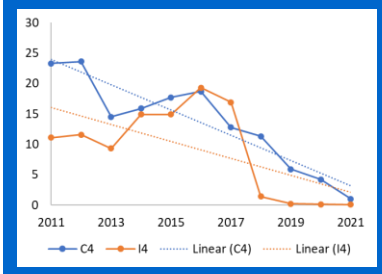
Mass Testing and Treatment (MTaT) for malaria involves testing individuals in endemic areas and promptly treating those infected, irrespective of symptoms. This strategy aims to reduce the parasite reservoir, interrupt transmission, and ultimately control or eliminate malaria. Despite progress, malaria remains a significant public health concern in India, contributing to millions of cases annually. Certain states, particularly in the northeastern and central regions, bear a disproportionate burden.

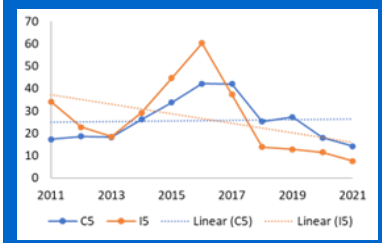
Despite investments in control measures like bed nets and antimalarial drugs, the disease persists, straining public health systems and communities. Beyond health impacts, malaria imposes a substantial economic burden. MTaT research informs evidence-based strategies, enhancing intervention effectiveness. Integrating research findings into policy and programs can bolster India's malaria control efforts, advancing toward elimination goals.

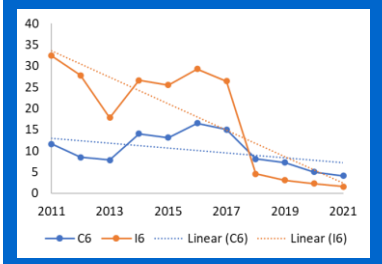












Reference:

World Health Organization. World malaria report 2022. World Health Organization; 2022 Dec 8

How did we measure it?

We selected six intervention sites from Odisha (MTaT implemented in 2017 along with regular NVBDCP) and six API-matched control sites i.e. three each from Jharkhand and Chhattisgarh (only NVBDCP).

Specific Objectives	Design, Settings, and Participants	Analysis
Malaria Trend	· Desk review of programmatic data · Programmatic data of State NVBDCP	Trend of API 2011-21 in MTaT Interventions and Control Sites
Cost-effectiveness of MTaT	· Health system cost · API of Malaria · Data was collected from primary and secondary sources.	Decision Tree

What did we find?

Costing Heading	Total NVBDCP Cost Interventions blocks (Year 2021), INR	Total NVBDCP Cost Control blocks (Year 2021), INR
Human Resource	2,06,33,083	2,12,71,824
Incentives	21,29,130	14,07,270
Training cost	19,33,800	29,55,600
Cost of consumables – testing and treatment	28,14,744	18,14,090
Indirect cost (Travel to PHCs)	28,59,900	13128600
IEC/BCC activities	1,75,200	1,92,600
Total NVBDCP cost	3,05,45,857	4,07,69,984
Total individual tested (RDK + Microscopy)	1,55,018	1,66,007
NVBDCP cost per individual	197	246
Total cost for MTaT	69,30,400	NA
MTaT (per unit cost)	57	NA
Total cost (NVBDCP+MTaT)	3,74,76,257	NA
Total unit cost (per person) (NVBDCP+MTaT)	254	NA

Implications

- An additional cost of INR 8 is incurred by the intervention sites with a notable reduction in API.
- This highlights that MTaT not only reduced API but also decreased the NVBDCP cost in the long run as the intervention sites spent INR 197 per person whereas the control sites spent INR 246 per person on the routine NVBDCP programme.
- States at high risk of malaria transmission, such as Odisha, Chhattisgarh, Jharkhand, Madhya Pradesh, Maharashtra, Tripura, Meghalaya, and Mizoram, could be targeted for MTaT implementation. Districts with an API of two or more per thousand people may be targeted for MTaT intervention.