5. India's 2030 Malaria Elimination Goal – S & T

As per the Malaria Elimination Technical Report, 2025 urban malaria has emerged as a national concern threatening India's goal of eliminating the mosquito-borne disease by 2030

Malaria in India- Current Context and Major Highlights

Drivers of Continued Transmission- Asymptomatic infections act as silent reservoirs, sustaining transmission despite reduced clinical cases. Difficult terrain and remote habitations, particularly in forested and tribal regions, hinder surveillance and timely treatment. Population mobility, including seasonal labour migration, disrupts treatment continuity and facilitates parasite spread. Cross-border transmission from Myanmar and Bangladesh continues to affect northeastern border districts, complicating elimination efforts due to

1. Porous borders
2. Weak synchronisation of surveillance systems

National and Global Targets

India aims to

1. Achieve zero indigenous malaria cases by 2027 (intermediate milestone).
2. Achieve complete malaria elimination by 2030, aligned with the World Health Organization Global Technical Strategy (GTS) for Malaria 2016–2030.

Emerging Invasive Threat- Anopheles stephensi- Anopheles stephensi is now recognised as a major invasive vector threat. Unlike traditional rural malaria vectors, it

1. Thrives in urban environments
2. Breeds in artificial water containers such as overhead tanks, tyres, construction sites, and storage drums

Its spread is linked to

1. Rapid urbanisation
2. Inadequate water management
3. Climate variability

Reasons for Rising Urban Malaria Transmission- Container breeding and water storage practices. Expansion of construction activities and informal settlements. High population density and urban slums. Fragmented urban healthcare delivery and weak vector surveillance.

Spatial Distribution- Shift to High-Burden Pockets- India has largely entered the pre-elimination phase, where malaria is no longer uniformly distributed. High-burden pockets persist, particularly in

1. Odisha
2. Tripura
3. Mizoram

These areas are characterised by

1. Forested landscapes
2. Tribal populations
3. Limited healthcare access

Key Challenges in Malaria Elimination

Surveillance and Reporting Gaps- Inconsistent reporting by the private healthcare sector, leading to underestimation of cases. Weak integration between public and private surveillance systems.

Vector and Drug Resistance- Rising insecticide resistance among mosquito vectors. Emerging drug resistance to antimalarial medicines, especially concerning *P.* falciparum.

Limited Entomological Capacity- Shortage of trained entomologists at district and state levels. Inadequate vector mapping and resistance monitoring.

Operational Challenges- Difficulties in delivering diagnostics and medicines in Remote tribal and forest areas. Sporadic shortages of Rapid diagnostic tests (RDTs), Antimalarial drugs

Recommendations for Strengthening Malaria Elimination

Strengthening surveillance systems with real-time, digital case reporting. Enhancing vector monitoring and entomological capacity, especially in urban and peri-urban areas. Improving supply chain reliability for diagnostics, drugs, and insecticides. Cross-border collaboration with neighbouring countries for synchronised elimination strategies. Integrating malaria control with

1. Urban planning
2. Water management
3. Climate resilience policies

Malaria

Nature and Transmission- Malaria is a life-threatening parasitic disease, prevalent mainly in tropical regions. Caused by Plasmodium protozoa, transmitted primarily through the bite of infected female Anopheles mosquitoes. Other rare transmission routes include

1. Blood transfusion
2. Contaminated needles

Plasmodium Species Affecting Humans- Five species infect humans-

1. Plasmodium falciparum
2. Plasmodium vivax
3. Plasmodium malariae
4. Plasmodium ovale
5. Plasmodium knowlesi

P. falciparum- Most deadly, Dominant in Africa
P. vivax- Predominant outside sub-Saharan Africa, including India
Symptoms- Fever with chills and rigors, Headache, Muscle pain and fatigue. Severe cases may lead to

1. Anaemia
2. Cerebral malaria
3. Multi-organ failure

Malaria Vaccines- Two WHO-prequalified vaccines

1. RTS,S
2. R21

Both act against P. falciparum, the deadliest malaria parasite globally. Vaccines are Safe and efficacious. Intended as complementary tools, not replacements for vector control and treatment.

Burden of Malaria- WHO Estimates

India reduced malaria cases by 69 percent, from 6.4 million in 2017 to about 2 million in 2023. In 2023

1. India accounted for around 50 percent of malaria cases in the WHO South-East Asia Region.
2. Indonesia accounted for just under one-third.

The Region

1. Had eight malaria-endemic countries.
2. Contributed 1.5 percent of global malaria cases.

Regional success stories

1. Bhutan and Timor-Leste reported zero malaria deaths since 2013 and 2015 respectively.
2. Sri Lanka was certified malaria-free in 2016.

Indian Government Initiatives for Malaria Control

National Framework for Malaria Elimination (NFME), 2016- Launched in alignment with WHO's Global Technical Strategy. Provides

1. State-wise elimination timelines
2. Surveillance and stratification approach
3. Integrated vector management

National Elimination Target- India has advanced its target to Eliminate malaria by 2027, ahead of the global 2030 goal.

MERA-India- Malaria Elimination Research Alliance India . Established by the Indian Council of Medical Research. Functions as a collaborative platform bringing together-

1. Researchers
2. Policymakers
3. Public health institutions

Strengthens evidence-based policymaking and innovation.

Conclusion

India's malaria elimination journey represents a major public health success, but the final phase is the most challenging. Persistence of high-burden pockets, urban malaria threats, and cross-border transmission require

1. Precision surveillance
2. Urban-focused vector control
3. Regional cooperation

Sustained political commitment, scientific innovation, and community engagement are essential for achieving zero indigenous malaria by 2027 and elimination by 2030.

Source- https-//www.thehindu.com/sci-tech/health/invasive-mosquito-species-that-thrives-in-cities-threatens-indias-2030-malaria-elimination-goal/article70440000.ece