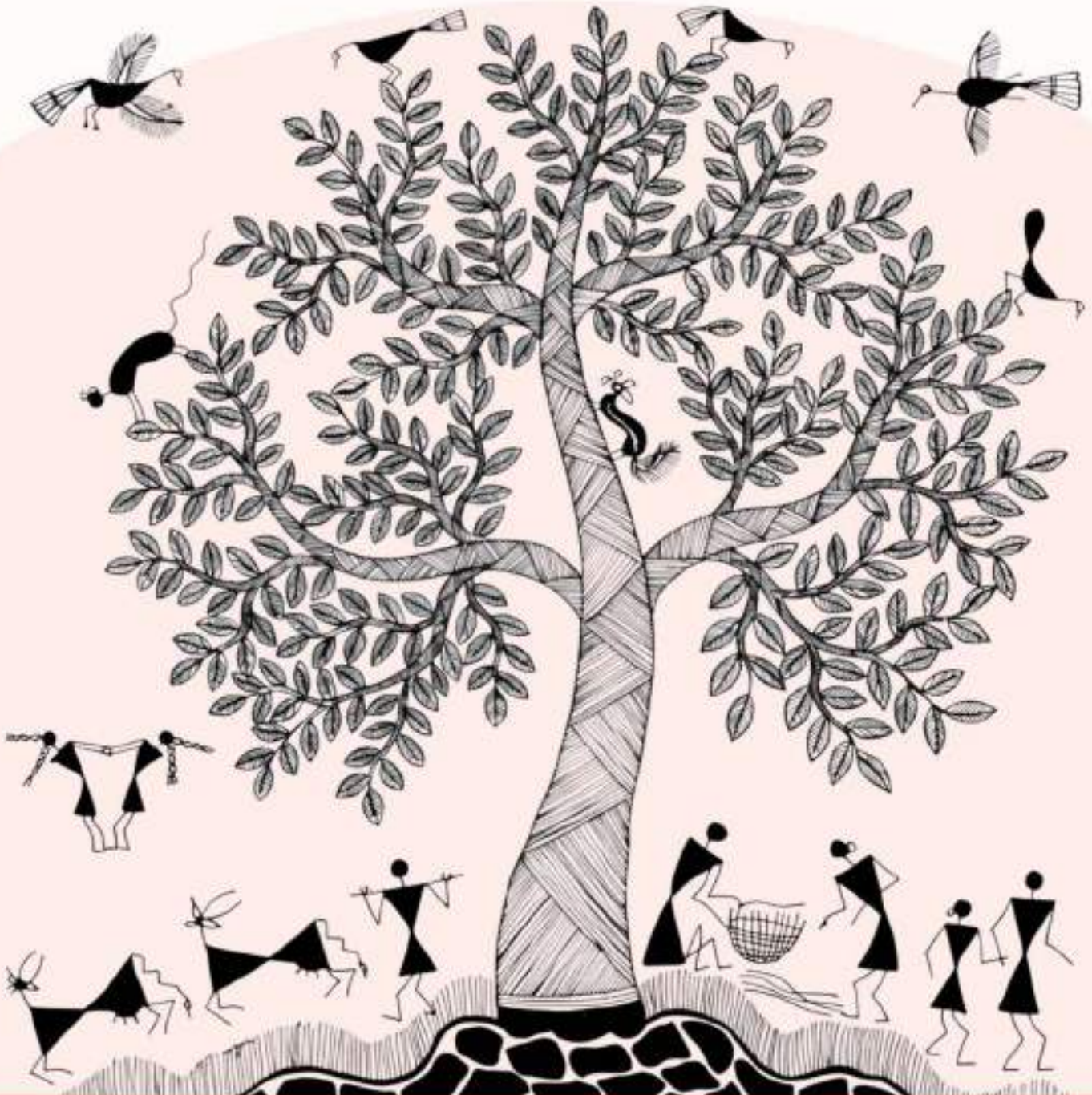




REACHING THE LAST HAMLET



STATE COMMITTEE REPORT
ON
STRENGTHENING TRIBAL HEALTH
IN
MAHARASHTRA





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DEDICATION

This report is dedicated to public health workers who work at the edges of the system, where care is most needed and least visible. Each chapter in this report carries a story in the beginning - these are real stories from the hinterlands of Maharashtra - shaped by the daily labor of these field workers, of lives protected, crises managed, and trust sustained. These pages are offered as a tribute to the work they do.



CHAIRPERSON'S MESSAGE

The constitution of the State Tribal Health Committee was, for all its members, an act of trust by the Government. The responsibility entrusted to the Committee was substantial, and it was made more so by the fact that such committees are rarely constituted with officers at an early stage of their professional lives. Speaking for the Committee, I can say that this awareness stayed with us throughout our work. It shaped how seriously we approached the task, how deliberately we listened, and how carefully we argued with one another.

The work of the Committee proved to be both demanding and unexpectedly transformative. It required us to move continuously between two worlds. One was the world of villages, hamlets, forests, hills, health sub centres, primary health centres, and district hospitals. The other was the world of files, data tables, programme guidelines, budgets, and institutional design. To experience ground realities closely and then to translate those experiences into policy language and system level recommendations was a rare professional opportunity. It was also among the most challenging and invigorating assignments many of us have undertaken.

The field engagements were particularly instructive. We travelled across tribal regions with very different histories, cultures, and geographies. We spoke with people who have spent decades working in public health, often in conditions that offer little visibility or reward. More than anything, we encountered the immense diversity of communities, practices, and ways of living that fall under the single administrative category of tribal health. These encounters resisted easy generalisation and repeatedly reminded us that uniform solutions are rarely adequate.

Some of the most enduring impressions came from interactions with frontline workers and community members. ASHAs, Anganwadi workers, auxiliary nurse midwives, and other field staff begin their work each day with limited resources, demanding terrain, and expectations that are often far greater than what the system formally equips them to handle. Yet they continue to show up, to negotiate with families, to walk long distances, to return the next day even when progress is slow or invisible. It became evident that the public health system in many tribal areas continues to function because of the persistence and sense of responsibility carried by such individuals. Their work also reflected the strength of community ties and local leadership that cannot be captured fully through indicators or reports.

These experiences challenged some of our own assumptions. Encounters with communities that organise their lives around collective responsibility, care for one another, and a deep relationship with land and nature prompted reflection on familiar frameworks through which we interpret wellbeing.

The hierarchies we often use to describe human motivation appeared less rigid in practice. Purpose, belonging, and responsibility were not deferred until material needs were fully met, but were interwoven into daily life in ways that demanded humility from those of us observing from outside.

The Committee's work was not without friction. There were moments of disagreement within the Committee, sometimes sharp, often uncomfortable. These debates were necessary and productive, even when consensus was not easily reached. They reflected the seriousness with which members engaged with the task and the diversity of perspectives brought to the table. Time constraints were real, and the pressures under which public decisions are made were felt throughout the process. At several points, the absence or fragmentation of data limited our ability to fully understand certain patterns. Over time, this absence itself became a finding, underscoring the need for stronger information systems that make vulnerability visible rather than obscure it.

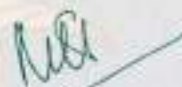
Despite these constraints, the Committee benefited from a spirit of collaboration. Members engaged with one another in good faith, tested arguments rigorously, and remained focused on what could realistically be achieved within the state system. The report reflects this collective process. Each chapter concludes with recommendations rooted in analysis and field experience, and the consolidated roadmap seeks to balance ambition with feasibility.

What also became clear through this work was that governance in tribal areas is shaped as much by relationships, trust, and local knowledge as by formal systems and procedures. Love for place, for community, and for people is often deeply embedded in how services are delivered and received. This reality poses a challenge to the state, but it is a constructive one. It invites governance to be more attentive, more adaptive, and more respectful of context.

Looking ahead, there is a shared desire within the Committee to see a markedly different reality for tribal communities over the next five years. This is not framed as a promise, but as a responsibility. The accompanying report and the Maharashtra State Tribal Health Policy are offered as instruments to support that change, grounded in what we have seen, learned, and debated together.

I would like to place appreciation on record for the members of the Committee for their commitment, candour, and willingness to engage deeply with difficult questions. The insights of the district administrations, health workers, and community members shaped this work in ways that extend beyond what can be captured in text.

This report is placed before the Government with the hope that it will inform decisions, guide implementation, and contribute to a more responsive and equitable health system for tribal communities. The lessons it carries are not only about health, but about how the state listens, learns, and acts.



Dr. Mittali Sethi (IAS)

District Collector, Nandurbar, Maharashtra

MEMBERS OF THE COMMITTEE



Dr. Mittali Sethi is a 2017-batch IAS officer and a trained dental surgeon/orthodontist, currently serving as District Collector, Nandurbar (Aspirational District), Maharashtra. She has held key field and leadership roles including SDM & Project Officer (ITDP) in Melghat (Dharni), CEO Zilla Parishad Chandrapur, and Director, VANAMATI. A top performer at LBSNAA, she received the IIPA SS Gadkari Award for innovation for her work on the Melghat Migration Tracking System. Her core areas of work span tribal development and Forest Rights, Public Health and Nutrition, Distress Migration, and Rural Development.



Minal Karanwal is a 2019-batch IAS officer, currently serving as Chief Executive Officer, Zilla Parishad Jalgaon. She has previously served as Sub-Divisional Magistrate and Project Officer (ITDP) in Nandurbar, and as CEO, Zilla Parishad Nanded, with extensive experience in rural governance and tribal development. Her work spans public health and nutrition, education initiatives, and governance innovation, including programme monitoring and dashboard-based implementation support.



M. Muruganantham is a 2020-batch IAS officer of the Maharashtra cadre, currently serving as Chief Executive Officer, Zilla Parishad, Gondia. He has administrative experience in tribal and resource-constrained districts including Gadchiroli and Chandrapur. His professional interests include rural development, strengthening public health systems, education reform, and public finance.



Kavali Meghana is a 2021-batch IAS officer currently serving as Chief Executive Officer, Zilla Parishad, Nanded. She has previously served as Sub-Divisional Magistrate and Project Officer in Kinwat, with administrative experience in tribal and rural regions. An MBA (IIM Lucknow) with specialisation in healthcare management, she brings a policy and management lens to public administration. Her work spans tribal welfare and rural development, including initiatives in health, education, rural housing, and livelihoods.



Suhas Gade is a 2021-batch IAS officer, currently serving as Chief Executive Officer, Zilla Parishad, Gadchiroli. He has previously served as Project Officer (ITDP) Pandharkawada, Sub-Divisional Magistrate in Pusad and Kelapur, and Assistant Collector, Kolhapur. His administrative experience spans tribal development and rural governance, with work across health, education, livelihood generation, and Community Forest Rights (CFR) management.





Dr. Apoorva Basur is a 2022-batch IAS officer currently serving in Palghar district as Sub-Divisional Officer, Jawhar, and holding additional charge as Project Officer, ITDP Jawhar. Working in a predominantly tribal and high-vulnerability region, she focuses on improving human development outcomes for tribal communities. Her work spans tribal education, malnutrition and maternal-child health, livelihoods promotion, and reducing seasonal distress migration, with an emphasis on convergence, community participation, and data-driven last-mile governance.



Akunuri Naresh is a 2022-batch IAS officer of the Maharashtra cadre, currently appointed as Municipal Commissioner, Chandrapur Municipal Corporation. He has previously served as Project Officer, ITDP Kalwan, and as Assistant Collector, Kalwan Sub-Division, Nashik. He brings field experience across tribal development and district administration.



Shri Pravin Madhukar Bhavsar is an administrative officer of the Maharashtra cadre, currently serving as Child Development Project Officer (Urban), Mulund (Suburban), Mumbai. He has held key field responsibilities across Buldhana, Amravati, Jalna, Jalgaon, Mumbai City, Thane, and Palghar, including tribal and remote regions. He focuses on strengthening grassroots institutions and improving last-mile delivery through integrated, people-centred governance.



Mr. Krishna Rathod has served in the Women and Child Development Department for over 30 years and is currently posted as Child Development Project Officer (Urban), Chhatrapati Sambhajnagar. He has held key administrative roles across tribal and rural districts including Nandurbar, Akola, and Yavatmal, supporting district administration and welfare scheme implementation.



Pravin Adhikarav Patil is Child Development Project Officer, Panvel (Rural), Raigad, in the Women and Child Development Department. He began his service in malnutrition- and Naxal-affected tribal areas of Kurkheda, Gadchiroli, and has worked continuously in child development in tribal settings for the past nine years. His project office has been recognised for strong implementation under the National Nutrition Mission and Poshan Pakhwada in 2022, 2023, and 2024.



Dr. Kapil Prakash Aher is Deputy Director, Health Services, Nashik Division, with postgraduate training in Preventive and Social Medicine. He has held key public health leadership roles including District TB Officer and District Health Officer (Nashik), and has led capacity-building as Principal of the Health & Family Welfare Training Centre, Nashik. His work spans TB control, TB-HIV coordination, HIV/STI programmes, and strengthening public health systems through training, planning, and monitoring. He has received state and national recognition for program performance, including TB reduction and COVID-19 response.



SPECIAL INVITEES



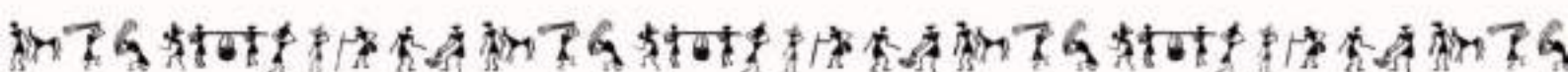
Prof. Satish B. Agnihotri is a Visiting Professor at CTARA, IIT Bombay, and has previously served as Head of CTARA and founding Head of the Centre for Policy Studies. A 1980-batch IAS officer of the Odisha cadre, he held senior leadership roles including Secretary (MNRE), DG (Defence Acquisition), Additional Secretary (Agriculture), DG Shipping, and key positions in the Cabinet Secretariat, with long administrative experience across sectors in Odisha. His work and research focus on gender, child malnutrition, and inequalities in energy access, including widely cited work on declining sex ratios in India. His current interests include maternal and child nutrition and health, public policy in practice, and mapping/data visualisation to trace inequalities.



Dr. Archana Patil is the former Director of Health Services, Maharashtra, with over 37 years of service in the state public health system. She has served as a member of multiple Government of India-level committees. Her academic contributions include over 20 research publications, primarily focused on maternal and child health.

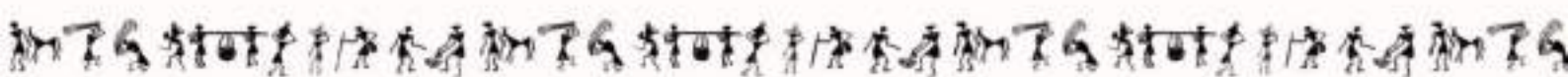


Dr. Raju Manohar Jotkar is a public health specialist (MD-PSM) and gold medalist from Shivaji University, Kolhapur, with a long career in Maharashtra's public health system. He progressed from Medical Officer at a difficult PHC in Kolhapur (1983) to Joint Director (NHM-Technical), and worked extensively on World Bank-assisted health system projects. He was deputed to the University of Toronto as a Research Scientist (2007-2011), contributing to the Million Death Study and evidence on India's burden of mortality. Post-retirement (2020), he has served as Senior Consultant (Public Health) with Rajmata Jijau Mother Child Mission / Khushi Baby Association, with ~25 publications including two in *The Lancet*.



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2. Dr. Ramdas Mahadu Marad, Civil Surgeon, Palghar
3. Dr. Kiran Patil, Addl. DHO, Palghar
4. Samadhan Patil, Medical Superintendent, Garu Peth, Nashik
5. Dr. Shyam Singh Pavara, Medical Officer, Raigad
6. Dr. Sunil Sonar Barela, Medical Officer, Jalgaon
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17. Dr. Nandkumar Neherkar, Addl. District Health Office, Ahmednagar



ACKNOWLEDGEMENTS

To be on the field and to write a policy report are, in many ways, opposing acts. One demands closeness, immersion, and attention to lived detail. The other requires distance, synthesis, and structure. This work would not have been possible if many individuals and institutions had not chosen to stand between these two spaces, carrying experience upward and bringing systems back down to the ground. These acknowledgements recognise those bridges.

The Committee places on record its gratitude to Dr Nipun Vinayak, Principal Secretary, Public Health Department, Government of Maharashtra, for initiating the constitution of the State Tribal Health Committee. The decision to entrust the study of an area as vast and complex as public health to a relatively young group of officers reflected institutional courage and an audacity to listen. That trust shaped both the seriousness of the process and the openness with which ideas were tested. The Committee is also thankful to Shri Virendra Singh, who was serving as Secretary 2, Public Health Department at the time of the Committee's constitution. Many conversations with him during the course of this work offered perspective, challenge, and clarity, and helped sharpen several lines of inquiry.

We are grateful to Dr Kadambari Balkawade, Commissioner, Health Services and Mission Director, National Health Mission; and Shri E. Ravendiran, Secretary 2, Public Health Department, for their sustained engagement with the issues raised in this report and for the example they continue to set through their work and action. The Committee also acknowledges the valuable inputs received from Shri Anup Kumar Yadava, Secretary, Women and Child Development Department, and Shri Vijay Waghmare, Secretary, Tribal Development Department, along with their respective teams. Discussions with these departments enriched the analysis and reinforced the centrality of convergence in addressing tribal health.

The Committee acknowledges all its members for their time, rigour, and willingness to engage deeply with difficult questions. There were disagreements, moments of tension, and days when consensus felt distant. Yet it was precisely this discomfort that allowed sharper thinking and better outcomes to emerge. The Committee believes that the ability to remain in dialogue through difference is one of the strengths of public institutions, and this report bears the imprint of that process. Special appreciation is due to the expert members of the Committee: Dr Satish Agnihotri, Dr Archana Patil, and Dr Raju Jotkar, whose years of experience and careful judgement brought depth, balance, and perspective to the deliberations. The Committee is also grateful to the extended Committee members and tribal representatives who participated in consultations and discussions, and who shared their lives and work with openness and dignity. Their contributions ensured that the report remained anchored in lived realities.

The Committee would also like to acknowledge the support extended by the Indian Institute of Technology, Bombay in hosting a national roundtable discussion on tribal health. Bringing together practitioners and scholars from across the country in a shared space for reflection and debate added depth to the Committee's work and helped situate Maharashtra's experience within a wider national discourse.

The work of the Committee was completed in less than a year, a timeframe that would have been implausible without an unusual coming together of people across institutions, disciplines, and geographies. Long nights, early mornings, and days that stretched well beyond plan became familiar. What sustained the process was a shared sense of purpose and a circle of goodwill that formed around the work, allowing intensity without fatigue and disagreement without fracture.

Over the course of its work, the Committee benefited from the generosity of many experts and practitioners who were not formally part of the Committee but nevertheless engaged closely with us. They gave their time freely, often on Sunday afternoons, late evenings, and between demanding professional commitments. Many conversations unfolded while travelling, between meetings, or alongside their own field responsibilities. The Committee gratefully acknowledges, in alphabetical order, Dr Abhay Bang, Dr Arlappa, Dr Anurag Bhargava, Dr Hemant Shewade, Dr John Oommen, Dr Pradip Awate, Dr Satish Gogulwar, Dr Sundarraman, Dr Tapas Chakma, Dr Tanya Sheshadri, Dr Yogesh Jain, Dr Yogeshwar Kalkonde, and Prof Dr Dileep Mavlankar. Their willingness to engage, to question assumptions, and to share long years of experience strengthened this report in ways that cannot be individually attributed but are deeply embedded in its substance.

We also acknowledge the support provided by Government Medical College, Nandurbar, especially the Department of Preventive and Social Medicine (PSM), for their assistance with proofreading, as well as the contribution of first- and second-year students in preparing the cover page sketches and in proofreading.

The Committee is deeply indebted to the communities across tribal regions who welcomed us, spoke with us, and allowed us to see their lives closely. Their openness transformed abstract discussion into grounded understanding. We are equally grateful to the field workers and district administrations who engaged with the Committee through extensive field visits and focused group discussions, and who shared both the possibilities and constraints of delivering public services in challenging contexts. We also acknowledge the many children we met during our travels. In their curiosity, resilience, and hope, we saw both the promise of a different future and the responsibility that public work must carry.

Finally, and most personally, the Chairperson wishes to acknowledge the core group of colleagues and friends who came together through voluntary effort to support this work. Translation, data analysis, visualisation, drafting, and design were undertaken entirely in house, through long hours of collective engagement. This labour was not outsourced, but shared. It reflected a belief that serious public work deserves care not only in substance but also in form. For this, heartfelt thanks are due to Abhinav Kolhe, Digvijay Bendrikar-Shinde, Harshali Ghule, Huzaifa Bilal, Dr Maitreyi Redkar, Mansi Endole, Oviya, Dr Pankaj Kadam, Dr Pawankumar Patil, Dr. Ruchit Nagar (& the Khushi Baby Team) Sakshi Deulwar, Sandhya Kumar, Sanika Naik, Dr Shambhavi Singh, Shanmukh Sonawane, Dr Sushilkumar Patil (& the PATH Team), Vinita Ugaonkar and Dr Yogesh Patil.

The responsibility for the contents of this report rests with the Committee. Any errors or omissions remain those of the Chairperson.

EXECUTIVE SUMMARY

The Government of Maharashtra constituted the State Tribal Health Committee in March 2025 to examine the health status of tribal communities in the state and to recommend measures to address persistent inequities. This decision emerged from the recognition that, despite sustained public investment, expansion of health infrastructure, and the implementation of multiple national and state health programmes, outcomes in tribal regions continue to lag behind state averages. The Committee was therefore tasked with examining not only what gaps persist, but why existing systems have not translated coverage into equitable outcomes, and what practical reforms are required to correct this course.

Maharashtra is home to more than ten million Scheduled Tribe citizens living across diverse and often difficult geographies. Tribal habitations are frequently dispersed, located in forested or hilly terrain, and characterised by limited connectivity and seasonal migration linked to livelihoods. While most public health programmes formally extend to these areas, their design assumptions are often misaligned with these realities. Service delivery models continue to rely on proximity to facilities, stable populations, and predictable access, conditions that do not hold in large parts of tribal Maharashtra. The result is a pattern of fragmented care, weak continuity, and uneven utilisation, despite the presence of schemes on paper.

The Committee adopted an approach that combined review of available data with extensive field engagement across tribal districts. Visits to health facilities, interactions with frontline workers, discussions with community members, and consultations with administrators and practitioners formed a central part of the inquiry. This was complemented by analysis structured around the World Health Organization's health system building blocks, allowing the Committee to examine service delivery, workforce, information systems, medicines and technologies, financing, and governance as interlinked components rather than isolated domains. The intent was to ground recommendations in how systems actually function on the ground.

The findings indicate that the persistence of poor tribal health outcomes is not the result of absent intent or inadequate programme coverage. Most national and state initiatives are operational in tribal areas. However, maternal and child health indicators among tribal populations remain significantly below state averages, with high prevalence of anaemia, undernutrition, low birth weight, and preventable mortality. Communicable diseases such as malaria, tuberculosis, and sickle cell disease continue to impose a disproportionate burden, often exacerbated by delayed detection and weak referral systems. At the same time, non communicable diseases and mental health concerns are emerging, creating additional pressure on a system already struggling to ensure continuity of basic care.

Field observations further show that access barriers extend beyond physical distance. Even where facilities exist, services are often unpredictable due to staff shortages, high turnover, infrastructure gaps, and interruptions in the supply of medicines and diagnostics. Referral pathways are fragile, emergency transport unreliable in remote areas, and follow up mechanisms weak. For pregnant women, young children, adolescents, and individuals with chronic conditions, this results in repeated breaks in care that erode both outcomes and trust in the public health system.

Each thematic chapter of the report examines these challenges within its specific domain and concludes with concrete recommendations grounded in the analysis presented. These chapter level recommendations address operational and systemic gaps related to service delivery, workforce deployment, health information systems, disease control, financing, and governance. They are intended to guide immediate corrective action as well as medium term system strengthening, and reflect what can realistically be implemented within the state's administrative context.

At the level of service delivery, the Committee recommends reorienting models to ensure proximity and predictability of care. This includes rationalising catchment areas based on terrain and habitation patterns, strengthening community level service points and mobile outreach with fixed schedules, establishing decentralised stabilisation and short stay facilities in the most remote clusters, and improving emergency transport and referral linkages. Particular emphasis is placed on continuity of care for migrant tribal populations through tracking mechanisms and coordination across districts.

With respect to the health workforce, the report recommends differentiated human resource policies for tribal areas. These include revision of hardship classifications and incentives, mandatory induction and cultural orientation for staff posted in tribal regions, improved housing and safety support, and phased recruitment and training of local tribal youth as frontline and paramedical workers. Strengthening supervisory and mentoring structures is also emphasised to support frontline performance and retention.

In the domain of health information systems, the Committee recommends integrating tribal specific indicators into existing platforms, improving reporting from remote areas, and institutionalising mortality surveillance and audits in tribal districts. Adoption of residence based reporting and stronger data validation mechanisms are proposed to ensure that concentrated disadvantage is visible and acted upon in routine administrative reviews.

The report also outlines focused recommendations for disease control and medical technologies in tribal areas. These include strengthening malaria, tuberculosis, sickle cell disease, anaemia screening, and maternal risk detection programmes, improving access to diagnostics and treatment at peripheral facilities, expanding blood storage capacity, and leveraging telemedicine and telemental health services. Ensuring reliable electricity, water, and internet connectivity at health facilities is identified as a foundational requirement for these measures.

On financing, the Committee recommends reorienting Tribal Sub Plan allocations towards core health system strengthening, improving the timeliness of fund flows, and enabling greater flexibility at the district level to respond to local needs. Strengthening financial protection for tribal households, including insurance enrolment and utilisation, is framed as an essential component of frontline service delivery rather than a purely administrative function.

In relation to governance, the report emphasises the need for clearer institutional ownership of tribal health. Recommendations include the establishment of dedicated coordination mechanisms within the Public Health Department, regular state and district level reviews focused specifically on tribal health outcomes, and stronger integration of health planning with Panchayati Raj institutions. Structured convergence with departments responsible for nutrition, water and sanitation, education, livelihoods, and tribal development is proposed to address underlying determinants that directly shape health outcomes.

Chapter 10 consolidates these chapter wise recommendations, resolves overlaps, and sequences them into a unified, time bound roadmap organised across health system pillars and implementation horizons. This consolidated chapter is intended as a decision support tool to guide prioritisation, accountability, and phased implementation.

In addition to the thematic chapters, the report includes two special chapters. One examines the socio economic determinants of tribal health in greater depth, focusing on nutrition, water and sanitation, education, livelihoods, and migration. The other documents best practices from Maharashtra and other states, highlighting implemented models that demonstrate the feasibility of improving access, continuity, and trust in tribal and hard to reach settings.

The Committee's work has culminated not only in this report but also in the drafting of a Maharashtra State Tribal Health Policy, which accompanies the report. The policy translates the Committee's findings and recommendations into an operational framework for state action, formalising differentiated planning norms, governance arrangements, and review mechanisms for tribal health. It is intended to provide continuity across administrative tenures and to support a shift from episodic interventions toward sustained system reform.

The Committee submits this report and the accompanying policy as a foundation for informed and timely decision making. With policy approval, institutional anchoring, and aligned budgeting, the recommendations outlined here can be operationalised to deliver measurable and durable improvements in tribal health outcomes across Maharashtra, in keeping with constitutional commitments to equity and inclusion.

SUBMISSION & CONTINUED ENGAGEMENT

This report is hereby submitted for consideration and implementation. The Committee remains committed to supporting the State Government beyond this submission for the next one year, particularly in facilitating the creation of Maharashtra's first comprehensive tribal-disaggregated health dataset.

Dr. Kapil Prakash
Aher

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ABBREVIATIONS

Abbreviation	Full Form
AAA	Accredited Social Health Activist, Anganwadi Worker and Auxiliary Nurse Midwife
ABHA	Ayushman Bharat Health Account
ACR	Annual Confidential Report
AIIMS	All India Institute of Medical Sciences
AMF	Assured Minimum Facilities
AMR	Annual Mortality Rate
ANC	Antenatal Care
ANM	Auxiliary Nurse Midwife
APS	Annual Progress Seminar
ASHA	Accredited Social Health Activist
AWC	Anganwadi Centre
BDO	Block Development Officer
BMI	Body Mass Index
BPL	Below Poverty Line
BSU	Blood Storage Unit
CDC	Child Development Centre
CDPO	Child Development Project Officer
CFR	Community Forest Resource
CHE	Current Health Expenditure
CHC	Community Health Centre
CHO	Community Health Officer
CIAF	Composite Index of Anthropometric Failure
CM	Chief Minister

CO	Chief Officer
COVID	Corona Virus Disease
CPD	Cephalopelvic Disproportion
CPR	Cardiopulmonary Resuscitation
CTC	Community-based Treatment Centre
DAMaN	Durgama Anchalare Malaria Nirakaranam (English)
DHO	District Health Officer
DHS	District Health Society
DOTS	Directly Observed Treatment Short-course
DPDC	District Planning and Development Committee
DPT	Diphtheria, Pertussis and Tetanus
DWCD	Department of Woman and Child Development
E-SUCHI	Electronic Secure Unified Comprehensive Health Interface
ECCE	Early Childhood Care and Education
EDNF	Energy Dense Nutritional Food
EHR	Electronic Health Record
FAO	Food and Agriculture Organisation
FCM	Ferric Carboxy-Maltose
FGD	Focus Group Discussion
FP	Family Planning
FRU	First Referral Units
COVID	Corona Virus Disease
GDP	Gross Domestic Product
GER	Gross Enrolment Ratio
GHE	Government Health Expenditure
GIS	Geographic Information System

GP	Gram Panchayat
GPDP	Gram Panchayat Development Plan
GR	Government Resolution
GSDP	Gross State Domestic Product
Hb	Haemoglobin
HAC	Health Action Centre
HAL	Health Action Lab
HBNC	Home-Based Newborn Care
HCM	Hot Cooked Meal
HDI	Human Development Indices
HFA	Health Facility Assessment
HIV/AIDS	Human Immunodeficiency Virus / Acquired
HMIS	Health Management Information System
HR	Human Resources
ICDS	Integrated Child Development Services
ICMR	Indian Council of Medical Research
ID	Identity Document
IDSP	Integrated Disease Surveillance Programme
IEC	Information, Education and Communication
IFA	Iron and Folic Acid
IIPS	International Institute of Population Sciences
IIT	Indian Institute of Technology
IMR	Infant Mortality Rate
ImTeCHO	Innovative Mobile Technology for Community Health
IPHS	Indian Public Health Standards

ITDA	Integrated Tribal Development Agency
ITDP	Integrated Tribal Development Project
IUGR	Intrauterine Growth Restriction
IVR	Interactive Voice Response
JSY	Janani Suraksha Yojana
KPI	Key Performance Indicator
LBW	Low Birth Weight
LHV	Lady Health Visitor
LPG	Liquefied Petroleum Gas
MADA	Modified Area Development Approach
MAM	Moderate Acute Malnutrition
MDPI	Multidimensional Poverty Index
MDT	Multidrug Therapy
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MIS	Management Information System
MMR	Maternal Mortality Ratio
MMTS	Maharashtra Migration Tracking System
MMU	Mobile Medical Unit
MNP	Minimum Needs Programme
MO	Medical Officer
MoHFW	Ministry of Health and Family Welfare
MoTA	Ministry of Tribal Affairs
MPI	Multi-Dimensional Poverty Index
MPJAY	Mahatma Phule Jan Arogya Yojana
MPJAY/PMJAY	Mahatma Jyotirao Phule Jan Arogya Yojana / Pradhan Mantri Jan Arogya Yojana

MPW	Multipurpose Health Worker
MTS	Migration Tracking System
MUHS	Maharashtra University of Health Sciences
NABARD	National Bank for Agriculture and Rural Development
NCD	Non-Communicable Disease
NFHS-3	National Family Health Survey-3
NFHS-4	National Family Health Survey-4
NFHS-5	National Family Health Survey-5
NHA	National Health Accounts
NHM	National Health Mission
NICU	Neonatal Intensive Care Unit
NGO	Non-Governmental Organisation
NQAS	National Quality Assurance Standards
NRC	Nutrition Rehabilitation Centre
NRHM	National Rural Health Mission
NTEP	National Tuberculosis Elimination Programme
NVD	Normal Vaginal Delivery
OBC	Other Backward Class
ODK	Open Data Kit
OoPE	Out-of-Pocket Expenditure
OSD	Officer on Special Duty
PDS	Public Distribution System
PESA	Provisions of the Panchayats (Extension to Scheduled Areas) Act
PHD	Public Health Department
PHC	Primary Health Centre

PLA	Participatory Learning and Action
PMJAY	Pradhan Mantri Jan Arogya Yojana
PNC	Post-Natal Care
POSHAN	Prime Minister's Overarching Scheme for Holistic Nutrition
PPP	Public-Private Partnership
PVTG	Particularly Vulnerable Tribal Group
RBSK	Rashtriya Bal Swasthya Karyakram
RCH	Reproductive and Child Health
RDD	Rural Development Department
RH	Rural Hospital
RNTCP	Revised National Tuberculosis Control Programme
Rs	Rupees
SAM	Severe Acute Malnutrition
SC	Scheduled Caste
SC (Health)	Sub-Centre
SD	Standard Deviation
SDH	Sub-District Hospital
SEARCH	Society for Education Action and Research in Community Health
SEWA	Society for Education Welfare and Action
SHA	State Health Accounts
SHG	Self-Help Group
SIHFW	State Institute of Health & Family Welfare
SMS	Short Message Service
SNCU	Special Newborn Care Unit
SRS	Sample Registration System

ST	Scheduled Tribe
TB	Tuberculosis
TCP	Tribal Component Programme
TDD	Tribal Development Department
Tele-MANAS	Tele Mental Health Assistance and Networking Across States
THE	Total Health Expenditure
THC	Tribal Health Committee
THO	Taluka Health Officer
THR	Take Home Ration
TRTI	Tribal Research and Training Institute
TSP	Tribal Sub-Plan
TT	Tetanus Toxoid
U-WIN	Universal Immunisation Programme
U ₅ MR	Under-5 Mortality Rate
UDISE	Unified District Information System for Education
USG	Ultrasound Sonography
UTI	Urinary Tract Infection
VCDC	Village Council Development Committee
VHSND	Village Health
WCD	Women and Child Development
WHO	World Health Organization
WIFS	Weekly Iron Folic Acid Supplementation
YASHADA	Yashwantrao Chavan Academy of Development Administration

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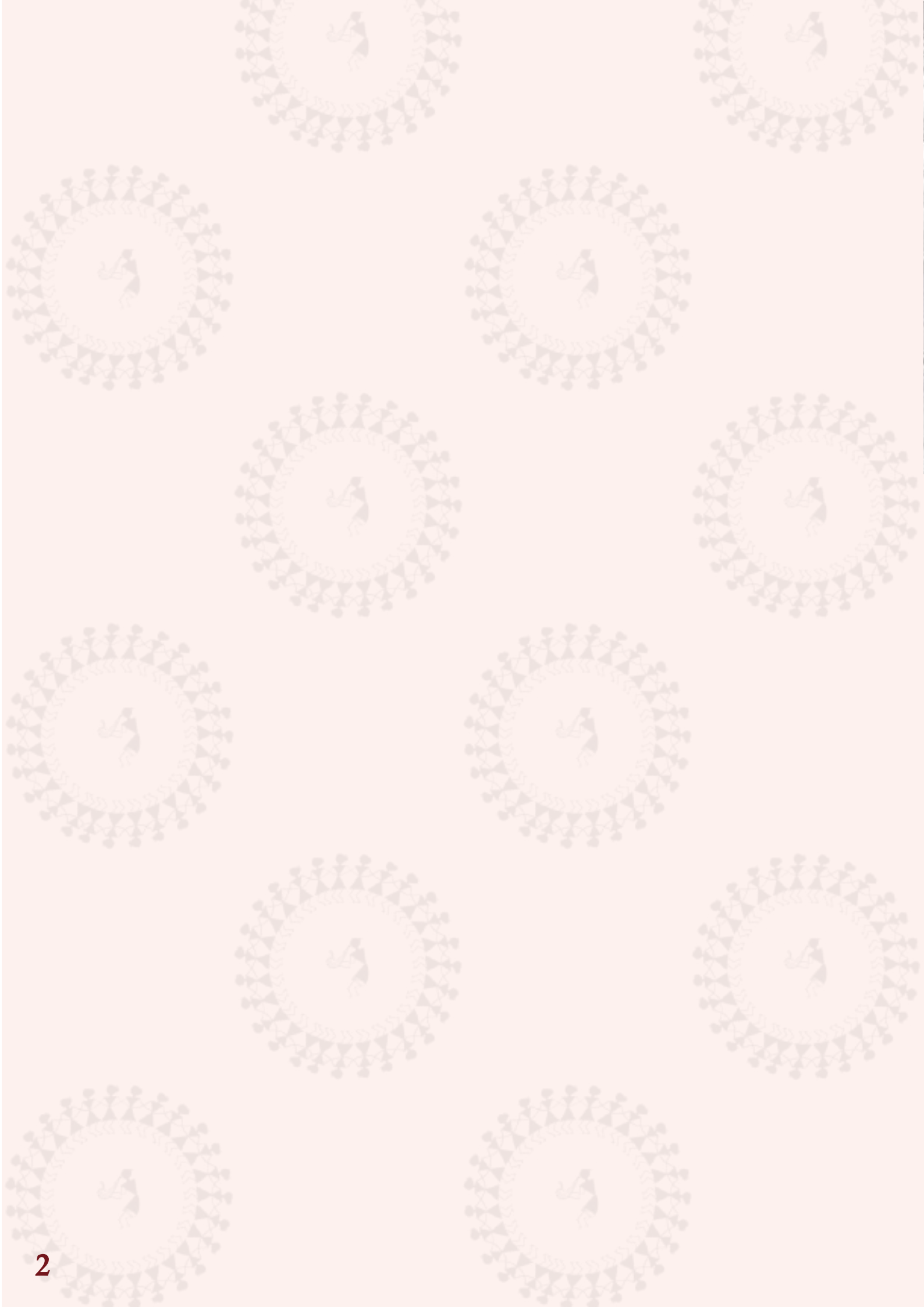
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1

Introduction and Context







✧ *Stories from Field*

First Step to Care

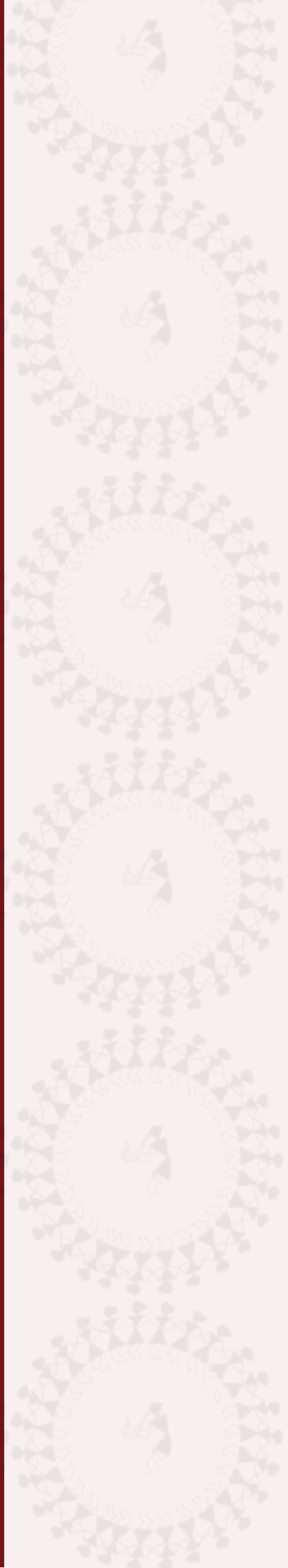
Collective effort enables the first institutional delivery from a remote hamlet

Nawad, Jalgaon

Note: For the purpose of confidentiality and privacy, the name of the patient has been changed.

Nawad Uttamnagar is a small, scattered tribal settlement under Satrasen Sub Centre, located nearly eight kilometres from PHC Lasur. With no proper road connectivity and only a handful of households spread across hilly terrain, access to health facilities has long remained a challenge. Until recently, no woman from this area had opted for institutional delivery. During a routine field visit, a pregnant woman from Nawad Uttamnagar was identified by the counsellor and ASHA worker as being at high risk of home delivery. At 34 weeks of pregnancy, she and her family were counselled on the importance of institutional care for her safety and the baby's health. Preparatory guidance was provided, and arrangements were made for regular follow up. She was also accompanied for ultrasound examination to Chopda. Late one evening, around 9:15 pm, the woman's husband reported that labour pains had begun. Immediate coordination was initiated. Although the ambulance was under repair and initial attempts to contact the Medical Officer were unsuccessful, the situation was escalated promptly. With support from the Taluka Health Officer, a private vehicle was arranged from Uttamnagar. In the absence of direct transport, the woman was first brought by motorcycle to Uttamnagar by her husband. From there, the counsellor and ASHA worker accompanied her to PHC Lasur for further care. On examination, she was found to be in full dilation. However, due to her short stature, the ANM suspected cephalopelvic disproportion. After close monitoring, referral to a higher facility was

advised. She was shifted to Chopda Sub District Hospital with a staff nurse and ASHA worker, while her condition was continuously communicated to the gynaecologist. At around 1:15 am, she safely delivered a healthy baby girl through normal vaginal delivery at Chopda SDH. A week later, the field team visited Nawad Uttamnagar to meet the mother and her family. They expressed deep gratitude for the sustained guidance and support that had made institutional delivery possible for the first time in their community. This case marked a milestone for Uttamnagar. It demonstrated how consistent counselling, timely coordination, and collective problem solving can overcome geographic isolation and system constraints. Sometimes, access is not created through infrastructure alone. It is built step by step through trust, persistence, and people who refuse to give up when the road disappears.



1.1 Preface

"A community's health is not the sum of its diseases; it is the sum of its distances: the distances people travel, the distances help must bridge, and the distance between what we intend and what actually reaches the last home in the last village."

In Maharashtra's tribal districts, these distances shape every health outcome. Field workers trek ridges, cross rivers, and sit for hours with families navigating illnesses they barely understand. And yet, even with such devotion, parents sometimes arrive at hospitals too late, their journeys marked by both endurance and uncertainty.

These stories remind us that tribal health cannot be captured by extremes: it is not a tale of an unresponsive system, nor of a flawless one. It is the story of a system straining against geography, inequity, and history, inclusive of the people who persist against these odds.

1.2 Context

To address the complex reality of tribal health, the Government of Maharashtra, through a Government Resolution (GR) dated 27 March 2025 (with a corrigendum on 9 April 2025), constituted the State-Level Tribal Health Committee to examine the health issues of tribal communities and recommend systemic solutions.^[1] The initiative emerged from the recognition that despite Maharashtra's robust public health infrastructure, its tribal population (approximately 10.5 million people, accounting for 9.35% of the state's population, as per the 2011 Census)^[2] continues to face significant health inequities. These disparities are rooted in structural, geographic, socio-economic, and cultural factors that conventional health planning often fails to address.

Maharashtra's tribal population is spread across diverse geographies: from the Sahyadri ranges of Palghar and Nashik to the dense forests of Gadchiroli and Gondia, inhabited by communities such as the Warli, Bhil, Gond,

Katkari, and Kolam. Each group possesses distinct languages, traditions, and health-seeking practices. However, health data in the state remains largely aggregated under general or rural categories, thereby masking stark intra-state disparities. The National Expert Committee on Tribal Health similarly noted that mainstream reporting creates a 'blissful unawareness' of the actual state of tribal health.^[3]

Recognising persistent and structural gaps in tribal health outcomes, the present State Tribal Health Committee has undertaken a comprehensive, data-driven and community-informed assessment of tribal health in Maharashtra. Beyond becoming a foundational base for the Tribal Health Policy for the state, the primary intention of this report is to enable systemic change by strengthening governance, integration, accountability and community-centred approaches to tribal health.



1.3 Systemic Challenges Identified

The Government Resolution establishing the Committee^[1] highlights multiple systemic barriers that continue to impede health equity in tribal areas:

Geographic and Infrastructure Barriers

Many tribal settlements are located in remote, hilly, or forested areas, making access to health facilities extremely difficult. In several regions, population and coverage radius norms have been relaxed, yet services remain inaccessible due to poor connectivity and the absence of transport infrastructure.

Human Resource Shortages

A persistent shortage of skilled health professionals: especially specialist doctors, laboratory technicians, and public health administrators (e.g., District Malaria Officer, District Sickle Cell Coordinator etc) is evident in tribal blocks. Vacancies and absenteeism reduce the quality of health services, especially in these areas that need more targeted focus, by overburdening the frontline workers.

Maternal and Child Health Concerns

Intergenerational malnutrition, high prevalence of anaemia, low birth weight, and elevated infant and under-five mortality rates are chronic problems. Genetic disorders such as sickle cell anaemia, particularly among certain tribes, compound these vulnerabilities.

High Burden of Communicable Diseases

Tribal regions exhibit a disproportionately high prevalence of Malaria,^[4] Leprosy,^[5] Tuberculosis, and vector-borne diseases. In districts like Gadchiroli and Nandurbar, periodic outbreaks reveal the gaps in disease surveillance and response systems.

Emerging Non-Communicable Diseases (NCDs)

Alongside infections, tribal populations increasingly face NCDs such as diabetes, hypertension, and cancers: resulting in a 'double burden' of disease, often compounded by malnutrition and poor sanitation.

1.4 Why is there a need for a Dedicated Tribal Health Report?

Despite decades of programmatic efforts under the National Health Mission (NHM), Tribal Sub-Plan (TSP), and various state initiatives, the health outcomes in tribal Maharashtra remain substantially below the state average.^[6] The aggregation of tribal data within district or state indicators can obscure deprivation and lead to the misallocation of resources. A separate report is essential to:

Disaggregate and Reframe Policy Focus

Present district and block-level disaggregated analyses to highlight hidden disparities, ensuring tribal regions receive proportionate attention and funding.

Capture Cultural and Behavioural Nuances

Understand the socio-cultural determinants of health, such as dietary patterns, gender norms, and reliance on traditional healers, to co-design culturally sensitive yet scientifically validated interventions.

Address Service Delivery Gaps

Identify bottlenecks in the coverage, quality, and utilisation of health services in difficult-to-reach areas and propose alternative delivery models such as mobile medical units, telemedicine, and *pada*-level (hamlet-level) health volunteers.



Tackle the 'Quadruple Burden'

Recognise that tribal populations face overlapping burdens: communicable diseases, non-communicable diseases, and maternal-child undernutrition (traditionally also termed as triple burden),^[3] requiring integrated and context-specific strategies. Additionally, the recent challenges of mental health, evidenced through substance abuse, are now slowly turning into a quadruple burden for them.^[7]

Reform Governance and Monitoring Mechanisms

Revisit the one-size-fits-all design of state monitoring frameworks. Many tribal habitations remain invisible to district-level reviews and digital dashboards.

Institutionalise Tribal Health within Policy Frameworks

The present report aims to create a sustained

institutional focus to ensure that tribal health is not treated as a subset of rural health, but as a distinct domain requiring special design, resources, and accountability mechanisms.

The Tribal Health Committee's report aspires to be both a diagnostic and strategic document, which is not limited to an academic exercise but is considered an evidence-based policy instrument. It responds to the constitutional promise of equity by ensuring that the health rights of Maharashtra's tribal communities are central to public health progress. Through this report, the State Tribal Health Committee presents a roadmap for bridging historical inequities and fostering an inclusive, resilient, and culturally grounded health system for tribal Maharashtra.

1.5 Evolution of Tribal Health Policy and Institutional Milestones

India's tribal health policy landscape has evolved steadily over the past five decades, reflecting the nation's deepening commitment to equity and evidence-based action. Its conceptual roots, however, go back even earlier- to the recommendations of the Bhole Committee (1946), which represents the first systematic attempt to examine health inequities in remote, underserved, and tribal regions. The Committee's emphasis on universal access, primary healthcare, and state responsibility for health laid the ethical and structural foundations upon which later tribal-specific interventions would be built.

This early vision found programmatic expression with the Tribal Sub-Plan (TSP) of 1974, which for the first time earmarked dedicated resources for Scheduled Tribes, followed by the 73rd Constitutional Amendment, which strengthened

decentralised governance and enabled community participation in planning and implementation.

The creation of the Ministry of Tribal Affairs (MoTA) in 1999 institutionalised a focused administrative mechanism for tribal welfare, followed by the launch of the National Rural Health Mission (NRHM) in 2005, which emphasised decentralised, community-led health delivery.

Subsequent years brought a sharper focus on tribal health outcomes at the National level. The Expert Committee on Tribal Health (2013) and the Virginius Xaxa Committee Report (2014) provided crucial national insights into the structural determinants of tribal health. Building on these, the 2018 report, 'Tribal Health in India: Bridging the Gap,' and the Tribal Health Action Plan Framework (2018-2020) outlined a comprehensive roadmap for



addressing persistent gaps. In Maharashtra, the Migration Tracking System (2021) introduced by the Department of Women and Child Development added a vital layer of data for understanding migration-linked health vulnerabilities. The tribal health trajectory

culminates in 2025, with the constitution of the Maharashtra State Tribal Health Committee, whose present report consolidates this policy evolution and sets the stage for the next phase of action.

Figure 1.1 Key Policy Milestones in Tribal Health: A timeline of major events and initiatives



1.6 Committee Composition and Interdisciplinary Representation

The composition of the present Tribal Health Committee was deliberately kept broad-based and interdisciplinary, ensuring that diverse administrative experiences and sectoral expertise were represented. As outlined in the GR, the Committee includes:

District-level Leadership from Tribal Areas

The Committee is chaired by a senior district officer from a predominantly tribal district (the District Collector of Nandurbar, who serves as Chairperson)^[1]. In addition, Chief Executive Officers of Zilla Parishad from other tribal districts (e.g. Gadchiroli, Gondia, Jalgaon, and Nanded) are included as members. Their on-ground perspective is invaluable in understanding local realities of service delivery in tribal villages.

Multiple Development Departments

Keyline departments that impact health determinants and services are represented. This includes officials from the Public Health Department (e.g. a Deputy Director of Health Services as Member-Secretary) and the Tribal Development Department (Project Officers of

Integrated Tribal Development Projects from regions like Jawhar and Kalwan are members)^[1]. Women and Child Development (WCD) officials (such as District Programme Officers and Child Development Project Officers) from tribal areas also sit on the Committee, reflecting the importance of nutrition and early childhood interventions in tribal health outcomes.

Expansion of Committee

As the work of the Tribal Health Committee deepened, the need for broader expertise and community representation became increasingly clear. The committee was therefore expanded on the 8th of August 2025 to include three distinguished experts whose experience spans the breadth of public health in Maharashtra.^[8]

Alongside these experts, the committee also welcomed representative doctors from each tribal district of Maharashtra. These district representatives went beyond data and reports: they engaged directly with communities through focus group discussions and dialogues, bringing forward the lived experiences and insights of tribal populations. The participatory process ensured that the committee's



recommendations are not only evidence-based but also rooted in the realities and voices of the people they serve.

Interdisciplinary Expertise

By bringing together administrators, healthcare officials, and development experts, the Committee embodies an interdisciplinary approach. Members' collective expertise spans clinical healthcare, public health administration, nutrition and child welfare, as well as tribal welfare and community development. Such a composition enables a holistic analysis – from healthcare facility gaps to socio-economic determinants – and encourages inter-departmental coordination in formulating solutions.

Inclusive of Tribal Voices

While the Committee is composed of

government officials, its working approach (described below) actively incorporates the voices of tribal community representatives and civil society experts. The inclusive ethos ensured that recommendations would be culturally appropriate and rooted in the actual needs of tribal populations, not just top-down directives.

The broad representation in the Committee was intended to break the conventional silos of systemic functioning. Health in tribal areas is not limited to the Health Department, but it intersects with Nutrition, Water, Sanitation, Education, Rural Development, and the Tribal Development administration, amongst others. The Committee's interdisciplinary nature set the stage for more coordinated and 'whole-of-government' recommendations for improving tribal health.

1.7 Methodology and Field Inquiry

Over the past ten months, the Tribal Health Committee undertook extensive fieldwork and research to fulfil its mandate. The approach was empirically-driven and consultative, combining quantitative data analysis with qualitative insights. The key components of the methods employed in the study are included:

Review of Data and Reports

These included analysis of district-wise health indicators (e.g. infant mortality, disease prevalence, nutrition levels), evaluation of service delivery statistics from the Health Management Information System (HMIS), and study of Census 2011 tribal population data. Relevant government reports and prior studies were reviewed, including the National Family Health Survey-5 (NFHS) data disaggregated for tribal sub-populations, to identify baseline conditions and gaps in outcomes.

Literature Review

A wide-ranging literature review was conducted

to learn from previous research on tribal health in India and Maharashtra. The Committee examined academic studies, evaluations of tribal health programs, and policy papers that provided a framework of known challenges and potential best practices from other states or countries.

These materials, covering both state and national contexts, have been compiled and attached in Annexure 1, which provides the evidentiary base for the committee's analysis and recommendations.

Field Visits to Tribal Areas

Committee members divided into teams and visited numerous tribal-dominated districts and villages across Maharashtra. These field visits covered regions such as Nandurbar, Nashik, Dhule, and Jalgaon in the north; Amravati, Gadchiroli, and Gondia in the east; and Thane, Palghar, and Raigad in the west. These visits allowed first-hand observation of healthcare facilities and living conditions. The



teams inspected primary health centres (PHCs), sub-centres, mobile health units, and nutrition rehabilitation centres serving tribal hamlets. They also met with local medical officers, ANMs (Auxiliary Nurse Midwives), ASHAs (Accredited Social Health Activists), Anganwadi workers, and patients to gain an understanding of service delivery on the ground. Representatives of tribal communities and local governance (such as Panchayat Samiti members from tribal blocks) were also consulted to ensure community voices were heard in strategy formulation.

The visit reports, along with photos of these consultations have been compiled and attached in Annexure 2.

Focus Group Discussions (FGDs)

Structured FGDs were held by tribal representatives with various stakeholders during the field visits. The stakeholders included tribal community members (on their health-seeking behaviors, traditional practices, and experiences with government health services), frontline health workers (on the challenges they face in delivering care in remote areas), and local NGOs/activists involved in tribal welfare. In some discussions, women's self-help groups and village health committees provided insight into gender and community perspectives. The FGDs enriched the Committee's understanding of socio-cultural factors such as beliefs around illness and healing, or barriers that tribal women face in accessing antenatal care.

The FGD reports, along with photos of these consultations, have been compiled and attached in Annexure 3.

Expert Consultations and Roundtables

The Committee convened multiple meetings and workshops to brainstorm solutions. Notably, a roundtable was organised at IIT

Bombay to bring together public health experts, tribal rights scholars, and technologists to discuss innovative approaches for tribal health. Subject matter experts from leading institutions (including medical colleges and the National Health Mission) provided inputs on specialised topics like sickle-cell anaemia management, telemedicine for remote areas, and strengthening primary healthcare.

The report of the IIT Bombay Round Table is attached in Annexure 4.

Committee Deliberations

Throughout the period, the Committee held regular meetings to discuss findings from field visits and data analyses. These meetings, often chaired by the Committee Chairperson, served to synthesise insights and develop consensus on key issues. Draft observations and preliminary recommendations were debated and refined. The interdisciplinary make-up of the Committee helped in scrutinising proposals from multiple angles, such as administrative feasibility, cultural acceptability, and financial practicality, to name a few.

The combined minutes of these meetings have been attached in Annexure 5.

This methodology ensured that the Committee's work was grounded in tribal reality. By triangulating quantitative data with grassroots narratives, the Committee gained a nuanced picture of tribal health issues. The process also built stakeholder buy-in; tribal community representatives and field officials who participated in discussions have a sense of ownership over the emerging recommendations. The extensive field inquiry underlines the credibility of this report, which is strengthened by months of engagement with the people and places at the heart of Maharashtra's tribal health landscape.



Figure 1.2 Focused Group Discussions



Figure 1.3 Expert Consultations & Roundtables



Figure 1.4 Field Visits & Committee Deliberations





1.8 Limitations of the Committee

The Committee recognises that this report is the outcome of a focused, time-bound exercise and does not claim to be exhaustive. Several limitations may have influenced the scope, depth, and framing of the findings and recommendations:

Time Constraints

The Committee operated within a defined and relatively short timeframe. This inevitably limited the number of field visits, the depth of district-level exploration, and the extent of primary data collection.

Data Limitations

A significant challenge lay in the availability and granularity of tribal-disaggregated data. While national datasets (such as NFHS, SRS, and HMIS) offer broad trends, block and community-level insights were often unavailable or inconsistent, restricting detailed quantitative analyses.

Despite being government officers, the authors and contributors did not have access to certain health datasets hosted on official portals, and access to some government documents was also restricted. In light of these limitations, the report has, in a few instances, relied on verified newspaper reports to contextualise and corroborate issues of public health relevance, alongside available official data and field observations. Such sources have been used cautiously and selectively, only where primary official data were unavailable, to reflect concerns affecting the broader population.

Limited Technical Expertise

The Committee did not include members with formal training in public health, epidemiology, health economics, or statistical modelling. While consultations with domain experts were conducted and relevant literature was reviewed, the interpretations and framing of the report reflect the Committee's own

understanding developed through administrative experience and on-ground engagement.

Partial Focus on Socio-Economic & Environmental Determinants

While social, cultural, environmental and economic determinants of health are acknowledged as critical, the Committee did not conduct a deep sectoral analysis of these domains, given their complexity and indirect relationship to immediate health service delivery. These interactions remain an area for further detailed exploration.

Relative Youth and Administrative Experience

The Committee was composed primarily of relatively young officers and professionals. While this enabled fresh thinking and a strong operational lens, it also meant that the report may not capture some historical institutional contexts or long-term policy shifts through the lens of an experienced administrator.

The report consciously adopts a broader public health lens rather than restricting itself strictly to the domain of tribal health. Many determinants that shape health outcomes in tribal districts, namely infrastructure, governance systems, nutrition, livelihoods, migration, and digital access, may lie outside the conventional boundaries of 'tribal health.' The wider framing may be seen as a methodological limitation for readers expecting a narrow, health-system-only analysis. However, without acknowledging these cross-sectoral determinants, any assessment of tribal health would be incomplete.

Despite these limitations, the Committee believes its positioning within the government machinery enabled a grounded understanding of how systems function at the operational level. The proximity to public service delivery has informed pragmatic and context-sensitive



recommendations that are rooted in implementation realities.

The Committee hopes that the present report will serve both as a roadmap and a

conversation-starter, which is open to iteration and refinement through future rounds of policy engagement and scholarly work.

1.9 Structure of the Report

This introductory chapter is followed by a series of chapters that collectively address both the contextual background and the six WHO Health System Pillars in the context of tribal health in Maharashtra. The report's structure interweaves general health system themes with Maharashtra-specific findings from the Committee's fieldwork and analysis. An outline of the chapters is given below (each chapter's title and a brief description of its content):

Chapter	Title	Brief Description
Chapter 1	<i>Introduction and Context</i>	<i>(Current section)</i> The chapter presents the rationale for establishing the Tribal Health Committee, its composition, and the methodology of work. It articulates the need for a dedicated tribal health report, given Maharashtra's tribal population and unique challenges, and situates the effort in the context of national initiatives.
Chapter 2	<i>Socio - Economic Demography and Determinants of Tribal Health in Maharashtra</i>	The second chapter describes the tribal populations of Maharashtra by highlighting their geographic distribution, demographic characteristics, and socio-economic conditions. It also reviews tribal sub-districts and villages, highlighting factors such as literacy rates, livelihoods, and cultural practices that influence health. The chapter establishes the socio-political and geographic context, enabling readers to understand the landscape within which health services operate.
Chapter 3	<i>Health Status and Disease Burden</i>	The third chapter examines the health outcomes of tribal communities using available data and field findings. It covers key health indicators (maternal and infant mortality rates, nutrition status, life expectancy) and the prevalence of diseases: communicable diseases (e.g. malaria, tuberculosis) and non-communicable diseases (e.g. hypertension, diabetes), along with endemic conditions like hemoglobinopathies. The chapter emphasises the disparities between tribal areas and state averages, framing the public health problem statement.



Chapter 4 *Health Service
Delivery*

The fourth chapter assesses the delivery of healthcare services in tribal regions, corresponding to the first WHO health system pillar (Service Delivery). By reviewing the network of health facilities (sub-centers, PHCs, CHCs, mobile units) in tribal blocks, their availability, accessibility (distance/travel time), and functionality, it identifies infrastructure gaps (e.g., facilities without electricity or staff quarters) and service delivery innovations currently in use (such as bike ambulances or boat clinics in riverine tribal hamlets). The chapter also discusses whether these services are aligned with community needs and what barriers (language, cultural, and gender) affect their utilisation.

Chapter 5 *Health Information
Systems*

The fifth chapter aims to address the second WHO pillar on health information systems, reviewing how data on health indicators and disease surveillance are collected in tribal regions. It evaluates the effectiveness of current monitoring mechanisms (eg: reporting through HMIS, Integrated Disease Surveillance Programme etc.) in capturing tribal health data. Additionally, it notes the challenges of a lack of disaggregated data, irregular reporting from remote sub-centres, and the absence of tribal identifiers in health records. The chapter recommends improvements, including better use of technology (e.g. GIS mapping of villages, mobile apps for field reporting) and community-based monitoring to ensure evidence-based planning for tribal health.

Chapter 6 *Strengthening the
Tribal Health
Workforce*

The sixth chapter focuses on the third WHO pillar of health workforce, analysing human resource availability in tribal health facilities. It details the cadre of health workers posted in tribal areas versus sanctioned posts (highlighting vacancies in doctors, specialists, nurses, and frontline workers). After the detailed discussion on factors behind staff shortages, such as difficult living conditions and limited incentives, the discussion highlights the impact on healthcare quality. The chapter also covers training and capacity-building efforts for tribal health providers, and proposes strategies to recruit, train, and retain qualified personnel (for example, hiring local youth as ASHAs or providing hardship allowances and career progression for those serving in tribal areas).



- Chapter 7** *Medical Products, Vaccines, and Technologies*
- The seventh chapter examines the state of medical products and technologies (the fourth health system pillar of the WHO framework) in tribal areas. The discussion reviews supply chains for essential medicines to explore whether remote health centres receive timely supplies of drugs, vaccines, and diagnostics. It also identifies any stock-out issues for critical medicines (like anti-malarials or anti-snake venom) and challenges in logistics (especially during the monsoon when roads are cut off). The chapter also scrutinizes the availability of medical equipment and point-of-care diagnostic tools in tribal clinics, and the role of traditional medicine. It explores how to leverage appropriate technology (such as telemedicine units or solar-powered cold chain equipment) to improve healthcare facility access in these regions.
- Chapter 8** *Leadership and Governance*
- The eighth chapter covers the leadership and governance pillar, including the structure of health governance in tribal areas. It discusses the roles of various agencies, including the Public Health Department, Tribal Development Department, local government bodies (Panchayati Raj Institutions in Schedule V areas), and community organisations, in planning and managing tribal health services. The chapter assesses the coordination mechanisms to identify governance challenges like fragmented accountability or limited community voice. Crucially, it emphasises community participation by examining how tribal communities are involved in decision-making. Noting the best practices of community engagement and inter-sectoral collaboration from within Maharashtra or other states, these are cited to recommend a strengthened governance approach.

Chapter 9 *Budget and Financing* The ninth chapter relates to the health financing pillar and analyses how health services for tribal populations are financed and sustained. It examines the overall contribution of government expenditure to tribal health, patterns of public and private health spending, and the extent of out of pocket expenditure borne by tribal households. The chapter reviews state budget allocations under the Tribal Sub Plan and the utilisation of National Health Mission funds in tribal blocks, with particular attention to financing flows across different levels of care. Due to limitations in the availability and granularity of district wise financial data, a detailed inter district comparative analysis could not be undertaken, and the assessment therefore focuses on aggregate trends and systemic patterns. The chapter also discusses the alignment of spending with service delivery outputs and health outcomes, highlighting the need for stronger links between financial allocations, programme performance, and population health gains. In addition, it assesses decentralised and flexible financing mechanisms, including the use of flexi funds at facility and block levels, and their role in enabling context specific responses in remote areas. Through this analysis, the chapter identifies structural constraints, gaps in financial protection, and opportunities for more responsive and equitable resource allocation to strengthen tribal health systems.

Chapter 10 *Recommendations:
Roadmap for Tribal
Health* The final chapter synthesises insights from all previous chapters and presents a consolidated set of recommendations and an action roadmap. It outlines short-term and long-term strategies across the six health system pillars: for example, an action plan to upgrade infrastructure and staffing in the most underserved tribal areas, initiatives to improve health awareness and nutrition, and enhancing data systems. The recommendations are designed to be practical and implementable, with clear roles for various departments and a timeline. The chapter will serve as the actionable blueprint emerging from the report, aimed at enabling the Government of Maharashtra to bridge the health equity gap for tribal communities. It also suggests monitoring and evaluation mechanisms to track progress on tribal health outcomes going forward.

Each chapter thus combines the WHO health systems framework with Maharashtra-specific evidence and context gathered by the Committee. The flow of chapters moves from establishing context, through detailed system analysis, to a forward-looking plan. The analytical rigour is coupled with strategic insights at each step, so that the report not only diagnoses problems but also guides solution-oriented action.

In addition to the thematic chapters structured around the WHO health systems framework, the Committee has included two special chapters that draw directly from field experiences and extensive consultations with experts. The first chapter highlights cross cutting determinants of tribal health, including nutrition, sanitation, water security, and environmental conditions, which fundamentally shape health outcomes but often fall outside the direct purview of routine health service delivery. The second chapter documents best practices from within Maharashtra and across India, showcasing innovative models, community centred approaches, and system strengthening

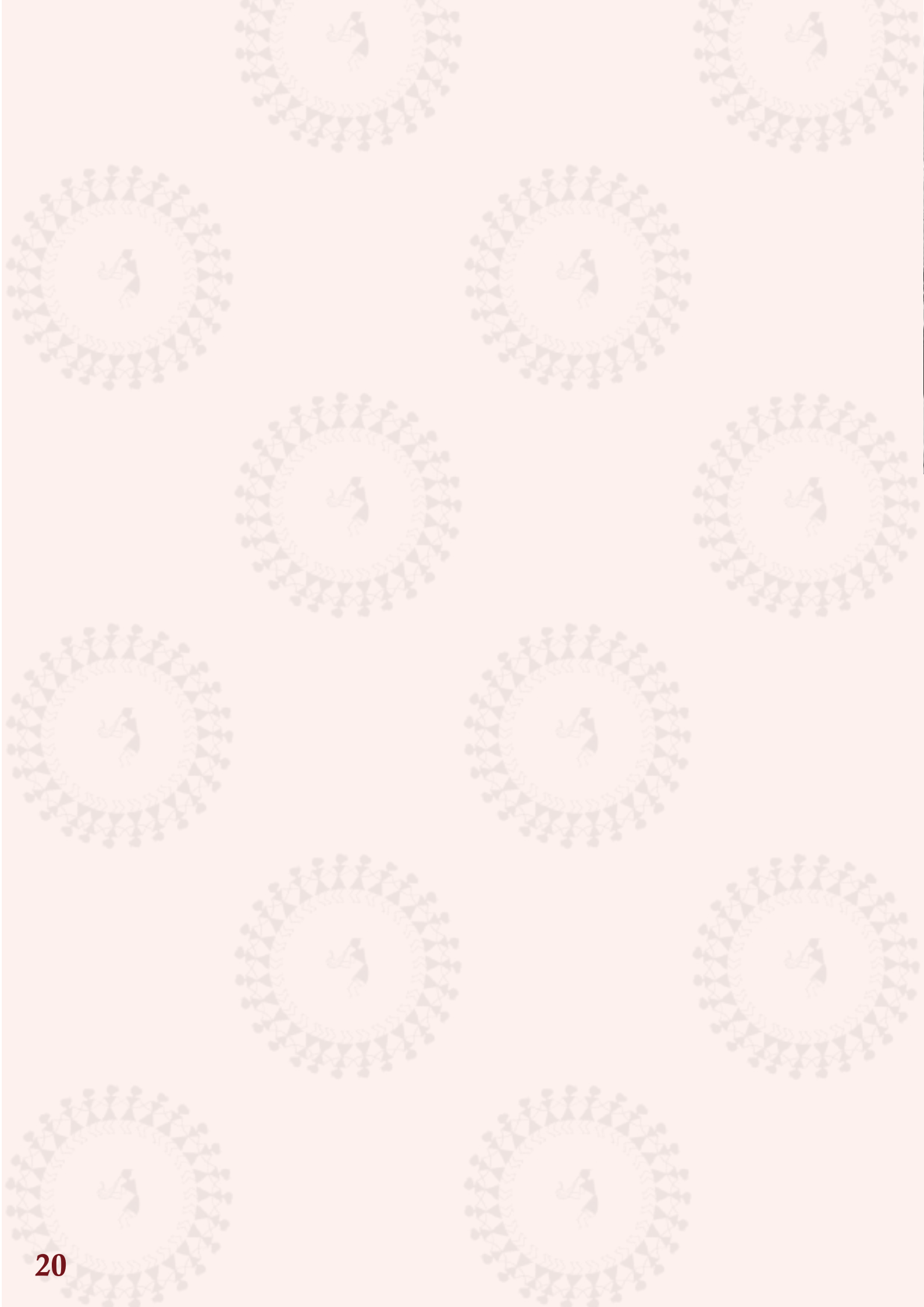
interventions that offer actionable lessons for improving tribal health. Drawing on these insights, the Committee has also drafted a comprehensive Tribal Health Policy to provide a coherent long term framework for action, which has been appended to this report as an annexure. Together, these chapters and the proposed policy seek to move tribal health from fragmented interventions to a coordinated, rights based, and community anchored system.

In conclusion, the Maharashtra Tribal Health Report is presented with a sense of urgency and purpose. It is the outcome of a committed, evidence-based exercise by the Tribal Health Committee to translate field realities into policy recommendations. The introductory context aims to outline the gravity of the issue and the comprehensive approach required to address it. The subsequent chapters will delve deeper into findings and proposals. The report is presented with an aim to catalyse focused efforts and institutional reforms that ultimately ensure our tribal fellow citizens enjoy equitable health and well-being, as is their right.



Socio-Economic Demography and Determinants of Tribal Health in Maharashtra







Targeted nutrition and coordinated care transform a high risk pregnancy

Vikramgad, Palghar

In Palghar district, high risk pregnancies, maternal undernutrition, and low birth weight remain persistent public health challenges, particularly in tribal blocks such as Vikramgad. At Malvad Primary Health Centre, a young pregnant woman from Onde village was identified early as being at extreme nutritional risk. At the time of registration, the 20 year old primigravida weighed only 28 kilograms, with a body mass index of 15.4, indicating severe undernutrition and high risk of intrauterine growth restriction and low birth weight. Her haemoglobin levels were also below recommended thresholds, further compounding the risk. Without timely intervention, the likelihood of adverse maternal and neonatal outcomes was high. Recognising the seriousness of the situation, ASHA worker Anita Govind initiated a structured, community based care plan focused on behaviour change and nutritional rehabilitation. She counselled the family on workload moderation, hygiene practices, and pregnancy related precautions, while reinforcing the importance of sustained support from both the household and the health system. Nutritional interventions were prioritised. Regular monitoring of iron, folic acid, and calcium supplementation was ensured. The mother was supported in accessing anomaly scans and encouraged to consume locally acceptable, nutrient rich foods such as Amrut Aahar, naagli ladoos, dates, and eggs to address severe weight deficiency. This effort was reinforced through coordinated field action. Arogya Sevak Mr. Akshay Lakhan facilitated timely access to supplementary nutrition. A partner civil society organisation provided limited financial support to reduce immediate economic constraints.

Staff at the Arogya Vardhini Kendras of Shil and Yashwant Nagar maintained close follow up through counselling, home visits, and clinical monitoring, ensuring continuity of care. Over the course of pregnancy, the mother's nutritional status improved steadily. Her weight increased from 28 kilograms to 35.5 kilograms by the time of delivery, accompanied by measurable improvement in overall health indicators. On 19 April 2025, she delivered a healthy baby boy weighing 2.5 kilograms through normal delivery. Given the initial risk profile, this represented a significant clinical and programmatic achievement. This case illustrates the impact of early identification, sustained counselling, and coordinated nutrition support in high risk settings. When frontline workers, health facilities, and community partners operate in alignment, even severe vulnerability can be converted into positive maternal and child health outcomes.



2.1 Tribal Population in Maharashtra: An Overview

In this chapter, the term ‘tribal population’ is used in a deliberately inclusive and service-delivery-oriented sense, rather than as a single administrative or legal category. It refers to communities notified as Scheduled Tribes under the Constitution, residing both within Fifth Schedule notified Scheduled Areas and in other regions of high tribal concentration such as Tribal Sub-Plan areas, MADA pockets, and forested or hilly belts outside formally notified Scheduled Areas. These categories overlap but are not identical: Scheduled Areas represent a distinct constitutional geography with a specific governance framework, while TSP and related classifications are planning and financing constructs designed to target resources to tribal populations wherever they reside. From a health systems perspective, the critical commonality across these settings is not administrative status alone but lived geography,

marked by remoteness, dispersed habitations, mobility, and weak connectivity. Recognising these distinctions is essential to avoid equating district averages with tribal realities and to ground subsequent analysis in the actual spatial, institutional, and social contexts within which tribal communities access health services.

Maharashtra is home to one of India’s largest tribal populations, with approximately 10.5 million Adivasis (Scheduled Tribes) as per the 2011 Census.^[1] In absolute terms, Maharashtra has the second-largest tribal population among Indian states, after Madhya Pradesh. As of 2011, tribal communities constitute about 9.35% of the state’s total population, compared to 8.6% at the national level, underscoring Maharashtra’s significance in India’s tribal landscape. However, in proportional terms, the

Table 2.1 Year-wise Total & Tribal Population in Maharashtra, Census Reports 1971-2011

Year-wise Total and Tribal Population in Maharashtra, (Census 1971–2011)

Population values in lakh; tribal share shown as percentage of total population.

Census Year	Total Population (Lakh)	Tribal Population (Lakh)	Percentage of Tribal Population (%)
1971	504	38	7.62%
1981	628	58	9.19%
1991	789	73	9.27%
2001	969	86	8.85%
2011	1,124	105	9.35%

Notes: 'Lakh' = 1,00,000. Percentages are as presented in the source table.

Source: Census of India (1971, 1981, 1991, 2001, 2011) - Created with Datawrapper



state’s tribal share is moderate, as several northeastern states have substantially higher concentrations of tribal populations, such as Mizoram and Nagaland. In effect, while Maharashtra accounts for over one-tenth of India’s total tribal population, tribal communities remain a numerical minority within the state.

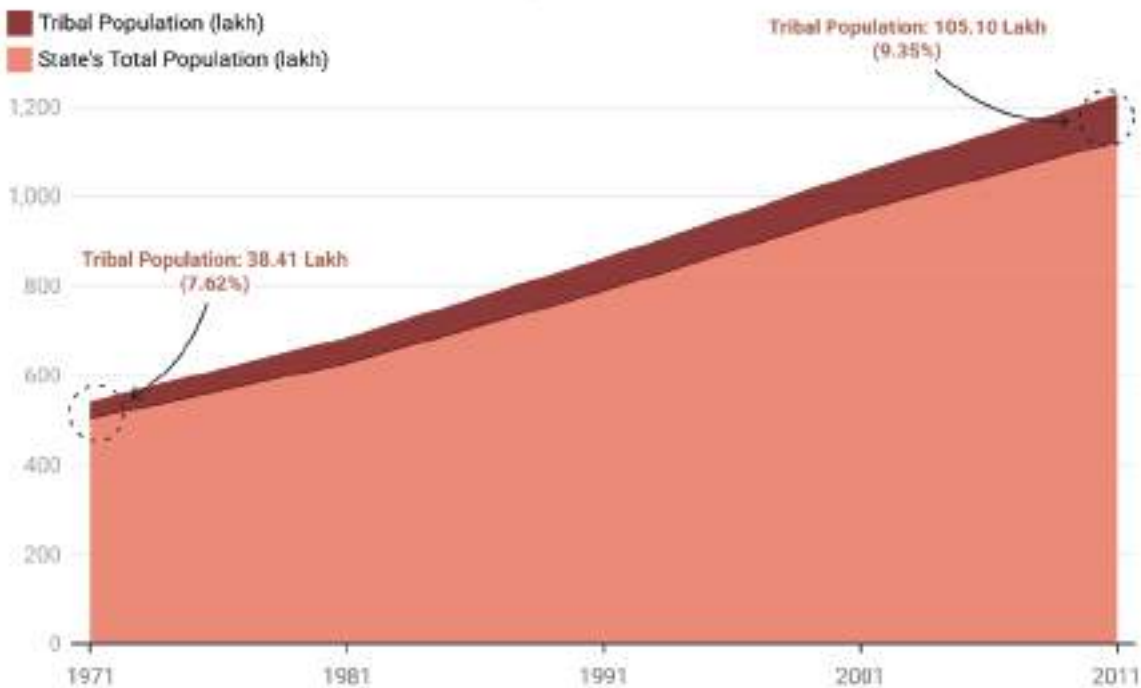
The trend analysis of Maharashtra’s tribal population from 1971 to 2011 in Figure 2.1 and Table 2.1 show a steady increase in both absolute population and the share of Scheduled Tribes (STs) within the state, rising from 7.62 percent in 1971 to 9.35 percent in 2011. A notable jump occurred in the 1981 Census, where the ST proportion rose from 7.62 percent to 9.19 percent. The Scheduled Castes and Scheduled Tribes Orders (Amendment) Act of 1976,^[3] through which several communities in Maharashtra were newly added or reclassified as Scheduled Tribes, resulted in their inclusion in the 1981

enumeration for the first time. This Act along with improved identification of tribal villages and padas, and enhanced Census outreach in remote and forest-dwelling areas, contributed to better enumeration in 1981. Overall, despite minor fluctuations, the long-term trend confirms a growing and increasingly significant tribal population in Maharashtra, underscoring the need for dedicated health investments, targeted interventions, and equitable service delivery in tribal regions.

Figure 2.2(a) shows the district-wise share of Scheduled Tribe (ST) population in Maharashtra (Census 2011) and sets the broader geographic context for the finer block-level patterns in Figure 2.2(b). ST concentration is clustered in two major belts: the north-western corridor along the Sahyadri-Satpura landscape, most prominently Nandurbar (69.3%), along with Palghar (37.4%), Dhule (31.6%), and Nashik (25.6%) and the eastern Vidarbha forest belt, led by Gadchiroli (38.7%). In contrast, many

Figure 2.1 Year-wise Total and Scheduled Tribe Population in Maharashtra (1971-2011)

Year Wise Total and Tribal Population in Maharashtra



Populations are in lakh. Between 1971 and 2011, total population grows from 504.12 to 1123.74 lakh, while tribal population grows from 38.41 to 105.10 lakh.

Source: Census 1971 to 2011 • Created with Datawrapper



urbanised and irrigated districts in western and southern Maharashtra (e.g., Satara, Kolhapur) have very low ST shares (often under 2%).

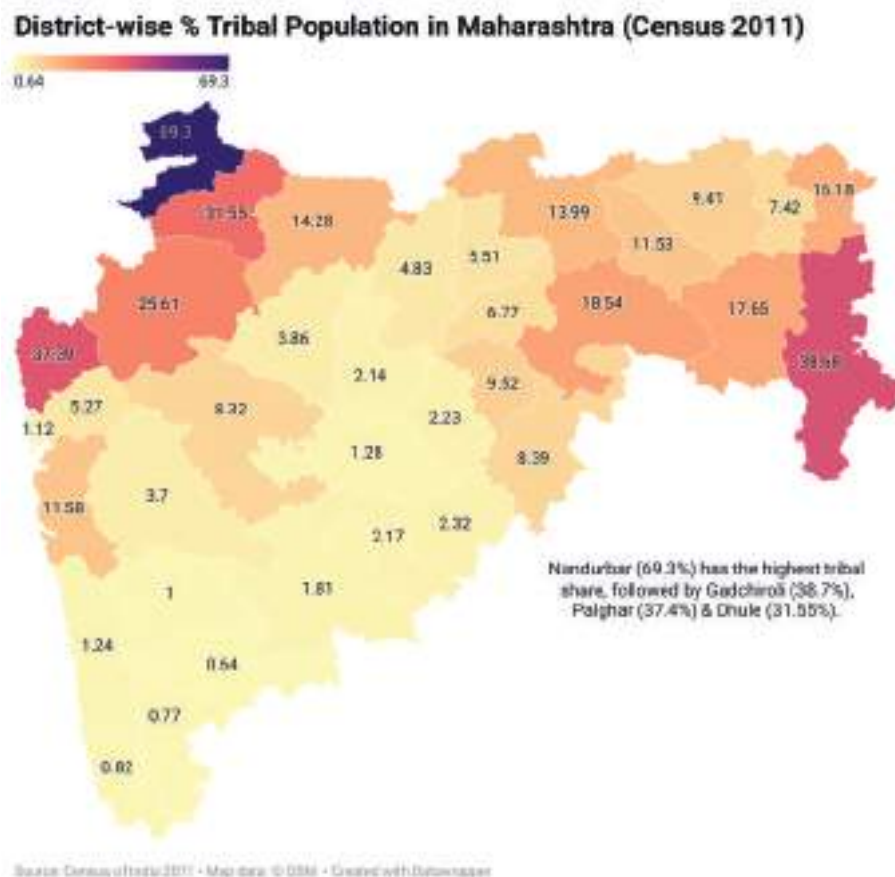
Read alongside the block-wise map (Figure 2.2(b), this district map helps interpret where 'tribal districts' are truly district-wide tribal majorities (e.g., Nandurbar) versus where tribal population is highly localised into specific blocks/forest and hill tracts within otherwise mixed districts (eg Amravati or Pune), an important distinction for planning service delivery, infrastructure, and human resources at sub-district level and for avoiding the 'burden of aggregation' that can mask concentrated pockets of disadvantage.

In absolute terms, Nashik has the largest tribal population (over 15 lakh), while Nandurbar (11.4 lakh) and Palghar (11.2 lakh) each have more than 10 lakh tribal residents; together they account for nearly one-third of Maharashtra's ST population.^[5] The spatial pattern also reflects the geographic isolation of

many tribal communities, who predominantly live in remote rural areas, often hilly and forested, historically remaining on the margins of the state's economic development.^[6]

Figure 2.3 complements Figures 2.2(a) and 2.2(b) by showing that the ST population is highly concentrated in a limited set of blocks, rather than being evenly distributed within districts. Maharashtra has 358 Blocks and of these, only 24 blocks across 6 districts have >50% tribal population, and several blocks, such as Surgana and Peth (Nashik), Akrani (Nandurbar), and Mokhada, Vikramgad, Jawhar, and Talasari (Palghar) exceed 90%. Many blocks in Nandurbar, Gadchiroli, and Amravati consistently fall in the 70-85% range, indicating predominantly tribal populations even beyond the highest-ranked blocks. This reinforces the risk of relying on district averages: aggregated district values can obscure predominantly tribal blocks and their distinct health, nutrition, and service-delivery needs, underscoring the importance of block and hamlet level planning

Figure 2.2(a) District wise % Tribal Population in Maharashtra, Census 2011



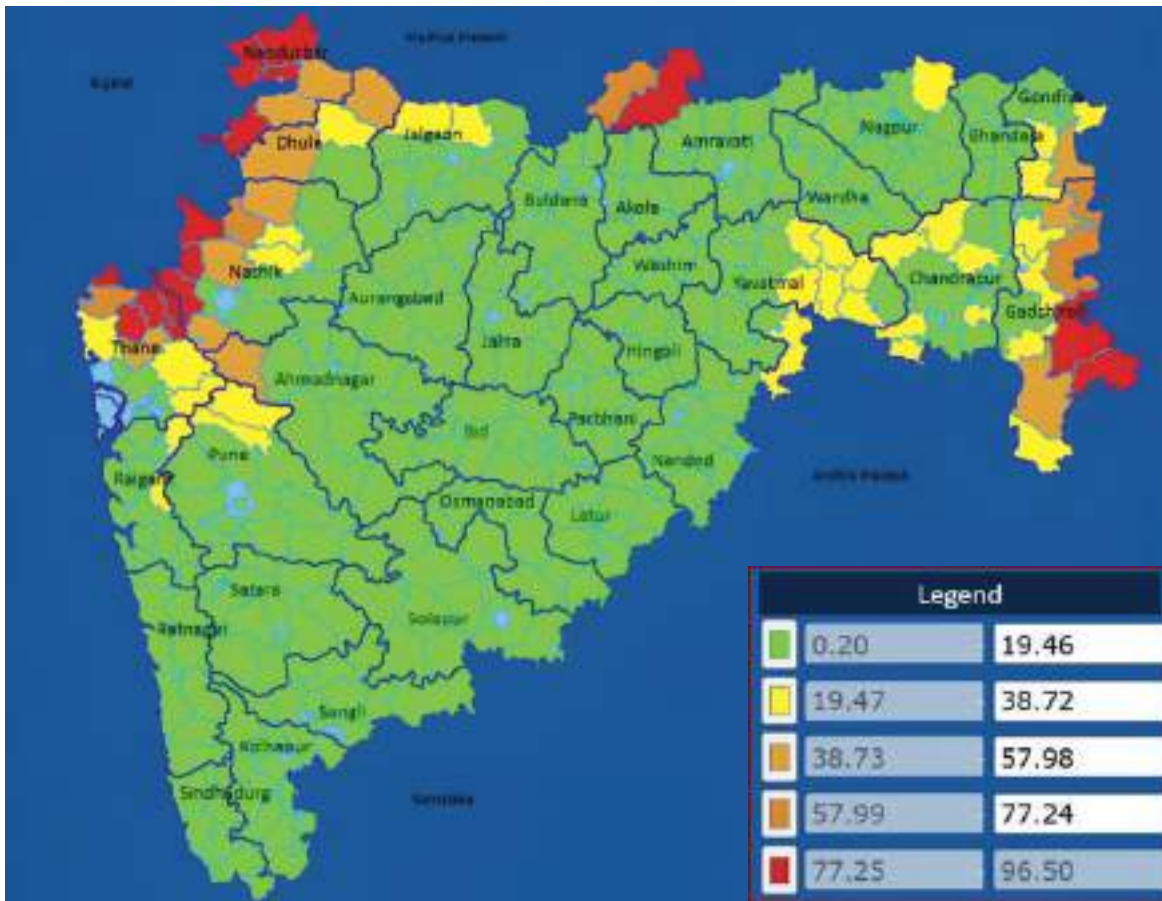
for targeted interventions.

Maharashtra’s tribal people are not a monolith but consist of 45 distinct Scheduled Tribe groups recognised in the state. The largest communities include the Bhil tribe (and subgroups such as Pawara and Tadvi, largely in Khandesh/northern Maharashtra) and the Gond tribe (scattered across central India, including eastern Maharashtra). Nationally, the Bhils and Gonds are India’s two most populous tribes, and both have a significant presence in Maharashtra.^[7] Other major tribes in the state are the Warli (Varli) of the Thane-Palghar region (famed for their art), the Kokana (Kukna) in north-western districts, the Koli Mahadev in Western Ghats districts, and the Korku of Melghat (Amravati). Each tribe has its own dialect and rich cultural heritage. For instance, Bhils and Koknas speak dialects of Bhili or Konkani, while Gonds speak Gondi, and the Warli community has its own dialect of

Konkani. Table 2.2 summarises the population of major tribes in Maharashtra.

Importantly, Maharashtra also has three Particularly Vulnerable Tribal Groups (PVTGs)- the Katkari, Kolam, and Madia Gond- identified for their traditional livelihoods, small population numbers, but low Human Development Indices (HDIs)^[12]. The Katkari community (found in Raigad, Palghar, and Pune districts) was historically forest-dependent, nomadic people who were even classified as a ‘criminal tribe’ during colonial times, a stigma that contributes to their marginalisation.^[13] The Kolam tribe (residing in Yavatmal and adjoining areas) and Madia Gond (a subgroup of Gonds concentrated in Gadchiroli’s Abujhmad region) also remain among the most underserved communities. The PVTGs are most often characterised by extremely poor literacy, nutritional deprivation, and a high degree of isolation. Overall, Maharashtra’s Adivasi

Figure 2.2(b) % Distribution of tribal population across Maharashtra by district & blocks, Census 2011



populations are heterogeneous, but most share a common experience of geographic isolation and historical socio-economic disadvantage.

Figure 2.4 illustrates the distinctive tribal geography of Maharashtra, highlighting that tribal populations are not uniformly distributed but are concentrated in specific belts that cut across administrative districts and divisions. Large contiguous tribal areas are visible in Nandurbar, Palghar, Nashik, Gadchiroli, parts of Amravati, and eastern Vidarbha, with

Scheduled Areas forming ecological and socio-cultural regions rather than neatly aligned district units. The map also depicts MADA pockets, clusters of tribal concentration, and additional Tribal Sub-Plan (TSP) areas, underscoring that a substantial proportion of tribal communities reside outside formally notified Scheduled Areas. From a tribal health perspective, this spatial pattern is critical: many of these regions are remote, forested, hilly, and border areas, characterised by dispersed

Table 2.2 Major Tribes in Maharashtra, Census 2011

Major Tribes in Maharashtra (Census 2011)

Population in Lakh and Share (%) of the Total Tribal Population.

Name of Tribe	Population (Lakh)	Population Percentage (%)
Bhil	2.58	25.04%
Gond	1.61	15.65%
Koli Mahadev	1.45	14.12%
Warli	0.79	7.70%
Konkana	0.68	6.65%
Thakur	0.56	5.49%
Andha	0.47	4.59%
Other Tribes	2.14	20.75%
Total	10.33	100.00%

Note: "Lakh" = 1,00,000. Percentages are as presented in the source table.

Source: Census of India, 2011 (Scheduled Tribe population) - Created with Datawrapper



hamlets, weak physical connectivity, seasonal migration, and fragmented service delivery jurisdictions. Consequently, conventional district or facility-centric health planning often fails to reflect the lived geography of tribal communities. Figure 2.4 therefore reinforces the need for area-based and population-based health planning, realignment of service delivery boundaries, and differentiated health system strategies tailored to tribal geographies rather than uniform, administratively defined approaches.

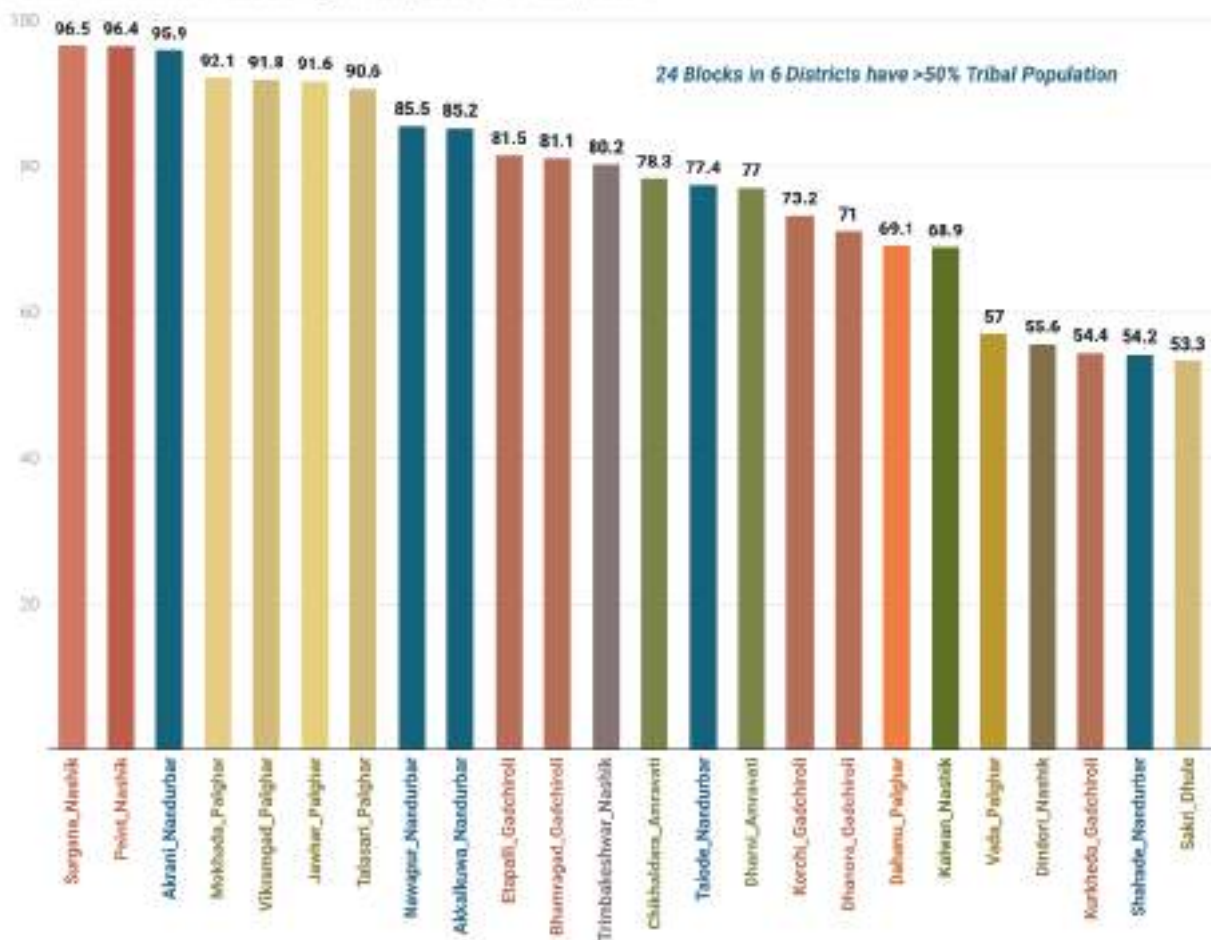
Across departments, the delineation of what constitutes a 'tribal' area or population is not uniform. Different sectors employ distinct operational definitions, drawing variously on Scheduled Area notifications, Tribal Sub-Plan

classifications, ITDP or MADA boundaries, population thresholds, or terrain-based criteria, often shaped by historical scheme guidelines and functional requirements. While some of this divergence is intentional and appropriate to specific programme objectives, these distinctions are not always explicitly articulated or aligned across departments. In practice, this can result in varying maps, denominators, and jurisdictional lists for the same geography, complicating convergence, planning, and accountability in service delivery. Recognising this multiplicity is important for interpreting data, coordinating interventions, and designing health strategies that operate effectively across sectoral boundaries.

Figure 2.3 Concentration of Tribal Population Across Blocks in Maharashtra, Census 2011

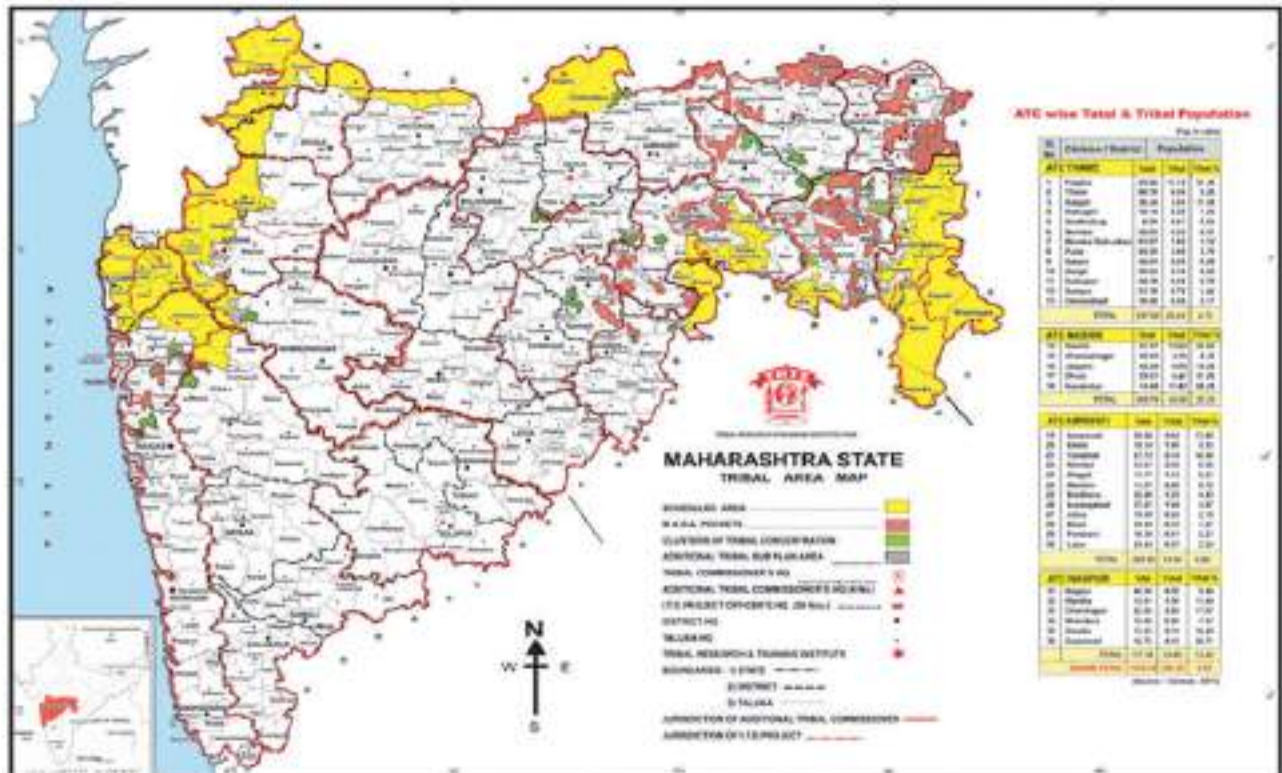
% Tribal Population | Blocks > 50% Tribal Population

Blocks in Maharashtra with the Highest Proportion of Tribal Population



Source: Census 2011 - Created with Datawrapper



Figure 2.4 Notified Scheduled Areas in Maharashtra, TRTI Pune

2.2 Socio-Cultural Factors and Public Health Practices

Socio-cultural norms deeply influence health practices among tribal communities. Traditional beliefs and indigenous knowledge systems play a prominent role in healthcare behaviour. Many Adivasi communities have their own healers (known by various names such as Bhagat, Bhumka Padiyal, Vaidu etc.) and rely on herbal remedies, rituals, and home treatments. National surveys indicate that the preference for traditional healing systems remains notable, especially in remote villages, due to the empathetic listening provided by faith healers and the shared psycho-spiritual, socio-ecological, and cosmological worldview held by the community.^[8] For example, illnesses may be seen as the result of spiritual factors or curses, leading families to consult them for remedies. While these practices can provide culturally comforting care, they sometimes delay or substitute for formal medical treatment, which can contribute to poorer outcomes. Bridging

the cultural gap is a public health challenge, compounded by the difficulties of addressing deep mistrust of outsider health providers and language barriers that deter the tribals from fully utilising government health services.

Many older Adivasi persons speak primarily in their native dialects such as Bhili, Gondi, or Katkari, while most doctors and nurses communicate in Marathi or Hindi. These linguistic barriers add to a deeper divergence in worldviews. Adivasi communities do not only speak different languages; they often inhabit a distinct way of relating to the world. Health and well-being are commonly understood as a state of balance between the individual, the community, and the natural environment, rather than as an isolated biomedical condition to be treated at the level of the individual alone.^[9]

Practices such as the Gotul as a community



space for learning and socialisation, menstrual seclusion practices such as Korma, or the offering of surplus ragi, the 'mother grain', to rivers in parts of Palghar instead of selling it, illustrate the ecological and communal ethos that underpins many Adivasi societies in Maharashtra.^[10] These practices reflect how healing, learning, restraint, and reciprocity are embedded in everyday life through spaces and rituals familiar to the community. Many such practices originate in older belief systems; while their original intent may have been protective or regulatory, their contemporary effects can be complex and, at times, misaligned with modern health and social outcomes. Practices involving physical seclusion, particularly around menstruation, may in present contexts contribute to social isolation and delayed access to health services.^{[11], [12], [13]} However, it is the continuity of these cultural systems, rather than individual practices in isolation, that shapes community behaviour and, when poorly understood by formal institutions, can contribute to social and institutional distance. Initiatives such as the Ma Danteshwari Dawakhana in Gadchiroli demonstrate how culturally grounded, participatory platforms can bridge this divide and foster trust between communities and the public health system.^[14] Indigenous protective, preventive, and curative health practices thus emerge from a worldview centred on harmony, reciprocity, and collective well-being.

Recognising and respecting these perspectives is essential for building a responsive healthcare system. However, front-line workers posted in tribal areas seldom receive any orientation to appreciate or adapt the delivery of modern medical healthcare systems to these cultural contexts. Consequently, behaviour change messages often conflict with local logic systems and lived experiences, resulting in resistance, disengagement, or mistrust toward formal healthcare services.

The absence of culturally sensitive, multilingual health services compounds the healthcare delivery gap. Miscommunication and hesitation are common, leading to low acceptance of

public health programmes. Vaccine hesitancy and resistance to family planning in certain tribal pockets have been linked to limited awareness and deeply rooted cultural beliefs. Common Review Mission reports that a lack of awareness and cultural norms around contraception restricts family planning uptake, necessitating sustained outreach and dialogue.^{[15], [16], [17]} Similarly, health workers recount instances where families initially refused immunisations or institutional deliveries, decisions shaped by traditional customs and unfamiliarity with the formal health system.

Another important socio-cultural determinant is the relative gender equity in many tribal societies. Several tribes have more egalitarian gender relations where women often participate in economic activities and decision-making, and social ills like dowry are typically less reported. Tribal women's workforce participation is high, and familial decisions (including health-seeking) are more joint than male-dominated. This can be a positive factor for health, especially by facilitating women's mobility (to visit a clinic) or by accepting female community health workers. However, tribal women also engage in hard physical labour and caregiving responsibilities from a young age. In fact, early marriage and teenage pregnancy are emerging concerns as many tribal girls drop out of school and marry in their late teens.^[18] Traditional expectations in some communities still tie girls to domestic roles early, which impacts their health and education.^{[19], [20]} The practice of child marriage, while not uniformly prevalent, persists in certain pockets and correlates with poorer maternal-child health outcomes.^[21]

Cultural attitudes towards food, hygiene, and lifestyle significantly influence health outcomes in Adivasi communities. Dietary practices are closely shaped by local ecology, with staples often including forest tubers, coarse grains, millets, and foraged foods.^[22] While these diets are frequently seasonal, organic, and high in dietary fibre, they can be low in protein and key micronutrients, contributing to under-nutrition in certain contexts. Some communities



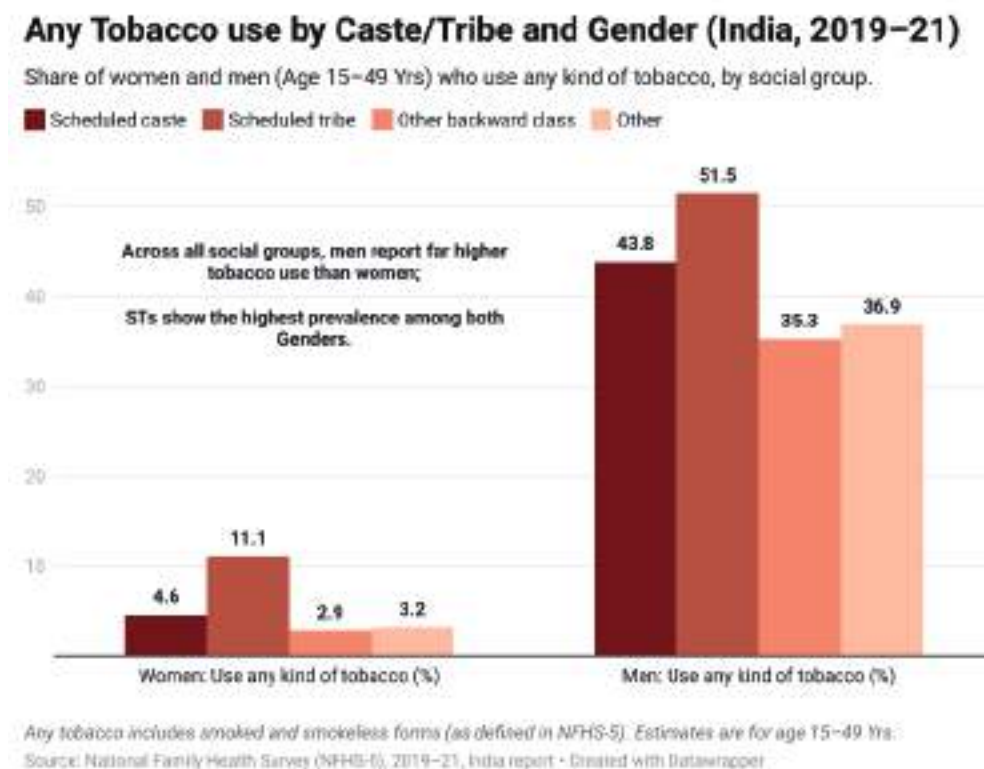
traditionally brew and consume alcoholic beverages, such as mahua liquor among Gond groups, and tobacco use is widely normalised within social and ritual life. National survey data show that tobacco consumption among Scheduled Tribe populations is substantially higher than among non-tribal groups for both men and women.^[23]

Figure 2.5 below underscores Scheduled Tribes (STs) as the group with the highest tobacco use for both women and men in India (NFHS-5, 2019–21), pointing to a disproportionately high behavioural risk burden in tribal communities. Among women aged 15–49 years, 11.1% of ST women report using any kind of tobacco, which is more than double the level among Scheduled Castes (4.6%) and notably higher than OBC (2.9%) and Other groups (3.2%). The disparity is even more pronounced among men: 51.5% of ST men use tobacco, exceeding the prevalence among Scheduled Castes (43.8%), OBC (35.3%), and Other groups (36.9%). This consistent concentration of tobacco use within ST communities strengthens the case for tribal-

focused tobacco control and cessation strategies, integrated with routine primary healthcare and NCD prevention outreach in tribal areas.

Following the tobacco pattern, Figure 2.6 on alcohol use (NFHS-5, 2019–21) again highlights a pronounced concentration of behavioural risk within Scheduled Tribe (ST) communities, alongside a large gender gap across all social groups. Alcohol consumption among women aged 15–49 is low overall, but ST women report the highest prevalence at 3.9%, far higher than Scheduled Castes (0.5%), OBC (0.4%), and Other groups (0.3%). Among men, alcohol use is substantially higher across categories, with ST men reporting the highest prevalence at 33.6%, closely followed by Scheduled Castes (31.1%), and markedly higher than OBC (20.4%) and Other groups (15.7%). The consistent peak among STs for both women and men suggests that, similar to tobacco, alcohol use represents a significant behavioural risk factor in tribal settings and warrants targeted prevention and counselling interventions integrated within

Figure 2.5 Tobacco Use Among Women & Men Aged 15 Years and Above by Caste/Tribe (India, NFHS-5)



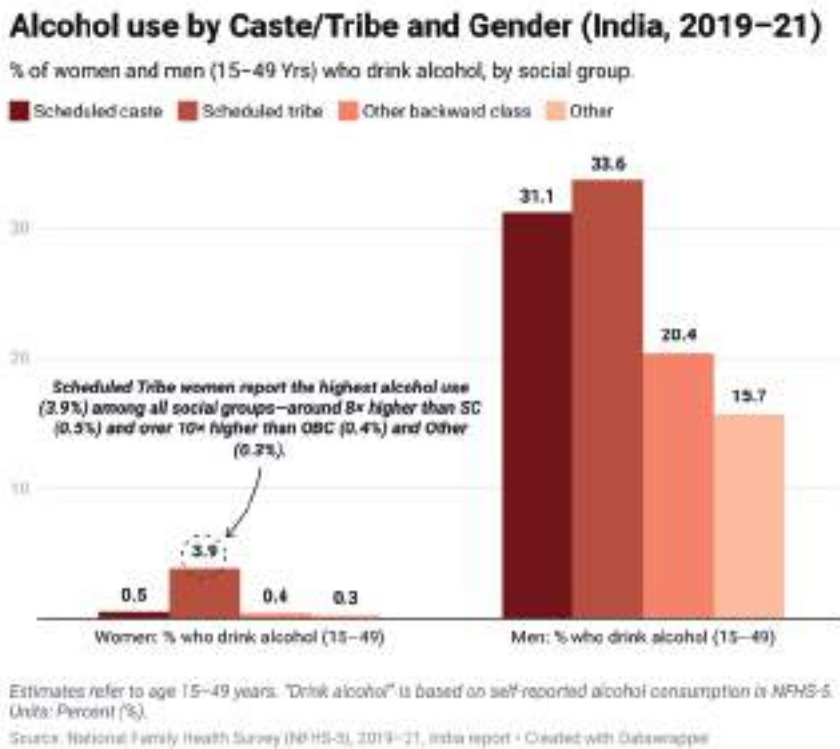
routine primary healthcare and community outreach in tribal areas.

Such social group segregated data is not available at state level reports in NFHS. Hence we are not able to present the state level figures.

Evidence from community-based studies suggests that initiation of tobacco use among tribal women often occurs in adolescence or early adulthood, increasing cumulative exposure during the reproductive years. These patterns are associated with increased risks of adverse pregnancy outcomes, low birth weight,

anaemia, tuberculosis, hypertension, chronic respiratory disease, and certain cancers over time.^{[24], [25], [26]} Housing practices such as cooking on indoor wood fires, often in enclosed dwellings, further increase exposure to household air pollution.^[27] In the hilly and forested regions of Maharashtra, this exposure, combined with low winter temperatures, contributes to a higher burden of respiratory illness, particularly among women due to prolonged exposure related to domestic and caregiving roles.^{[28], [29]}

Figure 2.6 Alcohol Use Among Women & Men Aged 15 Years and Above by Caste/Tribe, India, NFHS-5

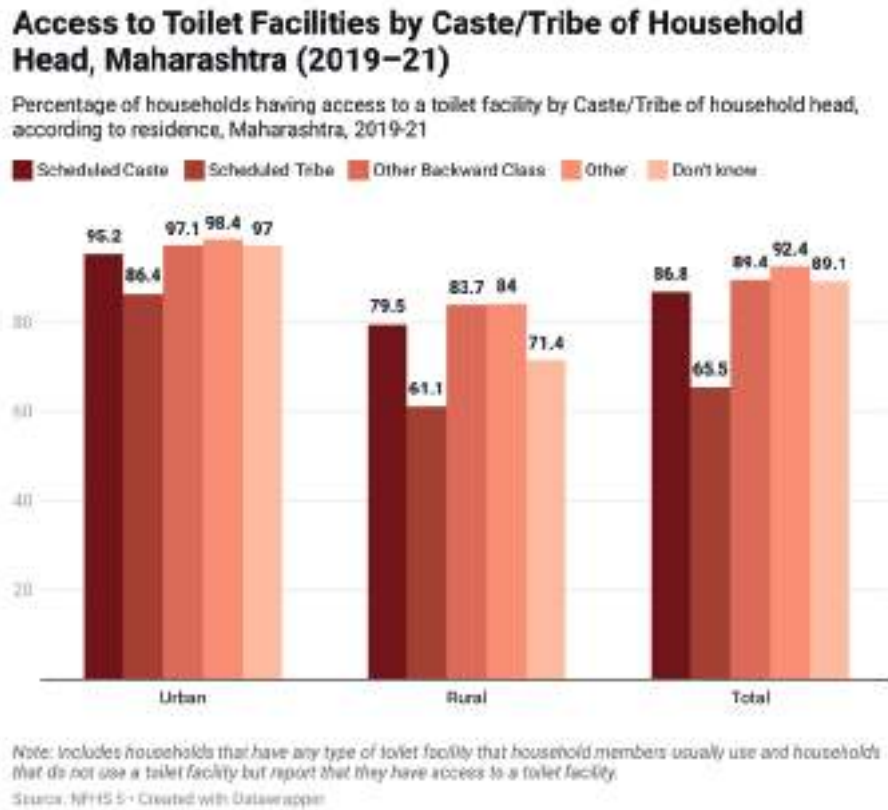


2.3 Water, Sanitation and Hygiene

Sanitation practices in tribal areas have historically been shaped by settlement patterns, ecological conditions, and local norms, with open defecation common in dispersed rural hamlets lacking household latrines. While government programmes have substantially expanded toilet coverage, this has

not translated uniformly into sustained usage.^[30] NFHS-5 data show that although over 90 per cent of rural households in Maharashtra report access to a toilet, Scheduled Tribe households are less likely to report consistent use, even where facilities exist.^[31] Figure 2.7(a) presents caste-wise access to toilet facilities across

Figure 2.7(a) Caste/Tribe-wise Access to Toilet Facilities in Maharashtra, NFHS-5, 2019-21



urban, rural, and total households in Maharashtra (NFHS-5, 2019-21). Across all social groups, access is substantially higher in urban areas compared to rural areas, reflecting the broader urban-rural infrastructure divide. However, Scheduled Tribe (ST) households show the lowest levels of access in every category. In urban areas, 86.4 percent of ST households have access to a toilet facility, significantly lower than Scheduled Castes (95.2%), OBCs (97.1%), and other groups (98.4%).

The disparity widens sharply in rural regions, where only 61.1 percent of ST households have toilet access—the lowest among all social groups and nearly 20 percentage points below groups such as OBCs (83.7%) and Others (84%). Overall, only 65.5 percent of ST households in Maharashtra report access to a toilet facility, compared to 86.8 percent among Scheduled Castes, 89.4 percent among OBCs, and over 92 percent among 'Other' caste groups. These findings highlight a persistent sanitation gap for tribal communities, indicating structural disadvantages in basic household amenities

that directly affect health, dignity, and disease prevention.

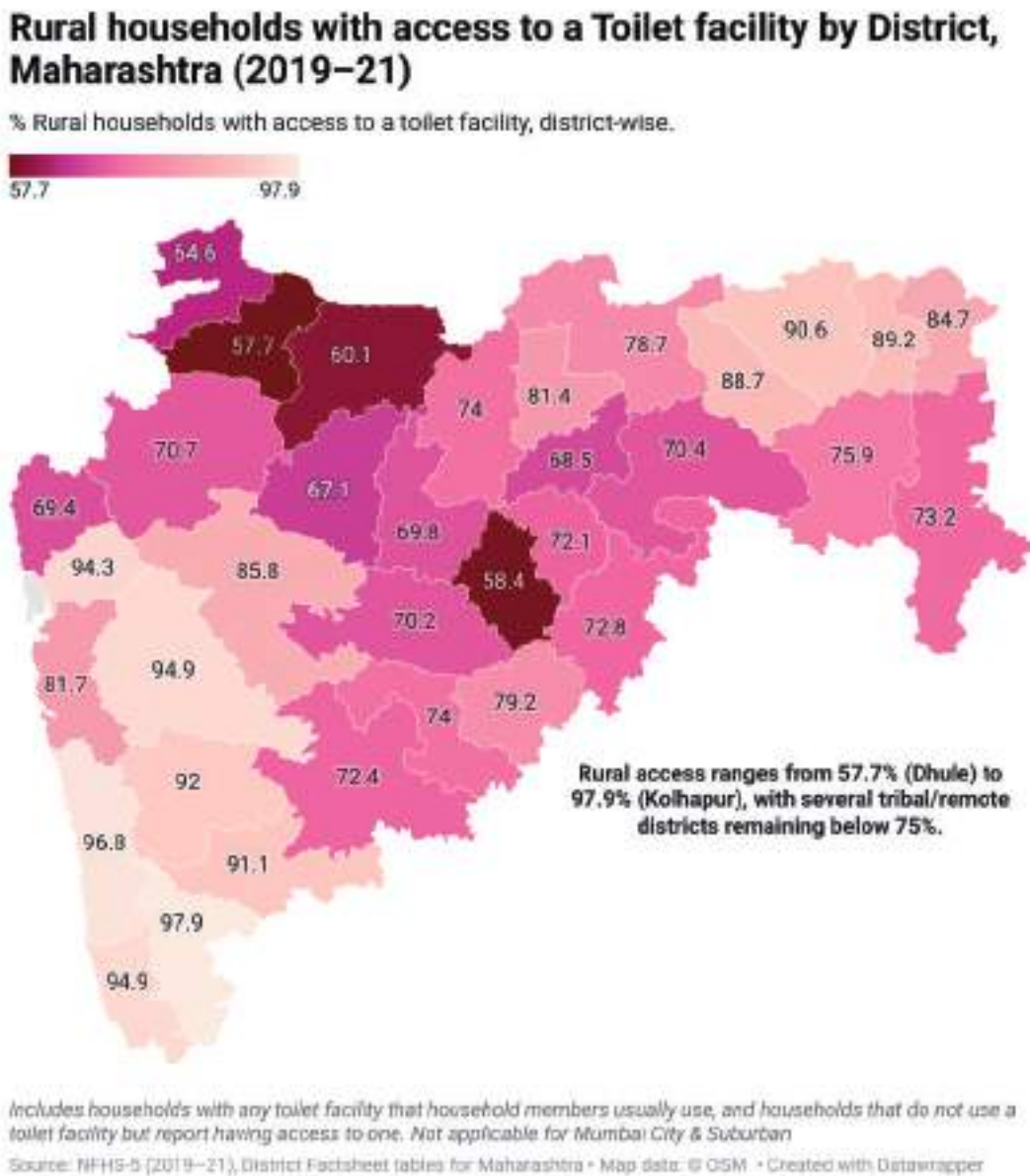
The district map of rural toilet access in Maharashtra—Figure 2.7b. (NFHS-5, 2019–21) shows that, even after considering the caste and residence pattern highlighted in the preceding Figure 2.7a, substantial geographic inequities persist within rural areas. Rural household access ranges widely from 57.7% (Dhule) to 97.9% (Kolhapur), indicating that sanitation coverage is near-universal in some districts while remaining markedly lower in others. The spatial distribution suggests that several interior and relatively remote districts continue to record rural access below 75%, which is consistent with broader infrastructural disadvantages often observed in tribal and hard-to-reach geographies. Overall, the map reinforces that improvements in sanitation access are uneven and that district-specific targeting remains essential for closing rural sanitation gaps. (Mumbai City & Suburban are not applicable in this rural district map.)

One key explanatory factor could be water availability. In hilly and forested tribal regions,

seasonal water scarcity further constrains toilet use, as households prioritise limited water for drinking, cooking, and livestock. State and district reviews under the Swachh Bharat Mission Phase II indicate that a significant proportion of toilets in remote and tribal gram panchayats are either poorly maintained or require retrofitting due to unsuitable terrain, soil conditions, or a lack of pit-emptying services.^{[32], [33]} In addition, gaps in reliable electricity and lighting affect night-time use,

particularly for women, contributing to continued preference for early-morning open defecation.^[34] Together, these data suggest that sanitation outcomes in tribal areas are shaped less by cultural resistance alone and more by the absence of enabling conditions such as assured water supply, appropriate toilet design, and maintenance systems. As a result, sanitation infrastructure is often present but underused, limiting its intended public health impact despite high reported coverage.^[35]

Figure 2.7(b) Access to Toilet Facilities in Rural Maharashtra, NFHS-5, 2019-21



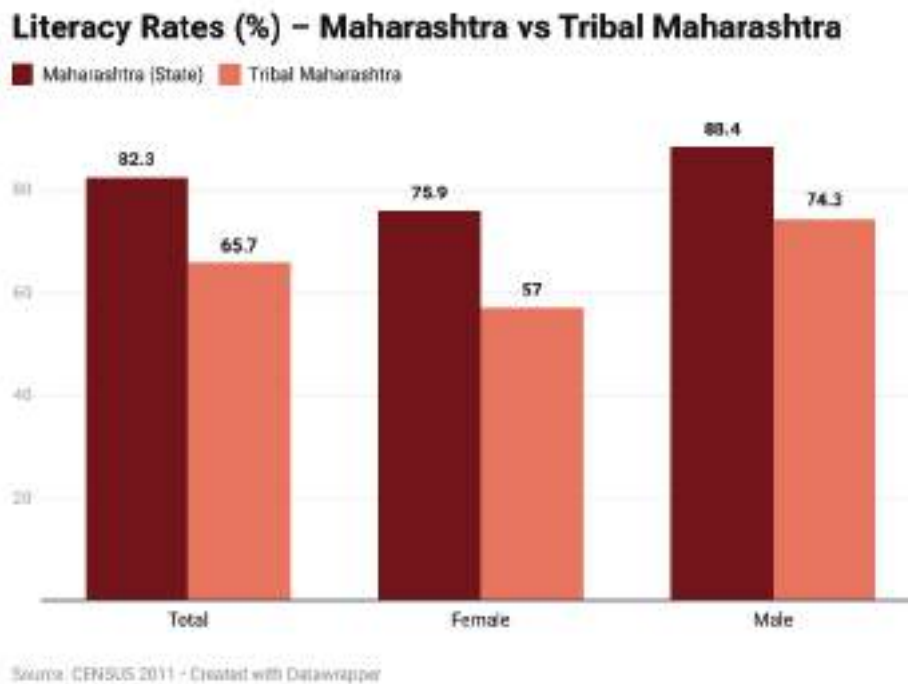
2.4 Education, Literacy, and Awareness

Literacy gap and implications

Education is a foundational determinant of health, and a stark gap exists in this area. Tribal communities have historically lagged in literacy and educational attainment. As of the 2011 Census, the overall literacy rate in Maharashtra was 82.3% (male: 88.4%, female: 75.9%), but among the Scheduled Tribes, it was significantly lower- roughly 73-74%.^[4] In other words, tribal

literacy lags the state average by ~8-10 percentage points. The literacy gap is even wider for women. Only about 49% of ST females were literate in 2011,^[36] compared to 74% of all women in Maharashtra.^[4] The persistent issue of limited access to schooling in remote tribal areas has resulted in low educational levels across generations, which, in turn, hampers health awareness, nutrition, and the utilisation of healthcare services.

Figure 2.8 Literacy Rates of the Scheduled Tribe Population in Maharashtra vs. the State Rates



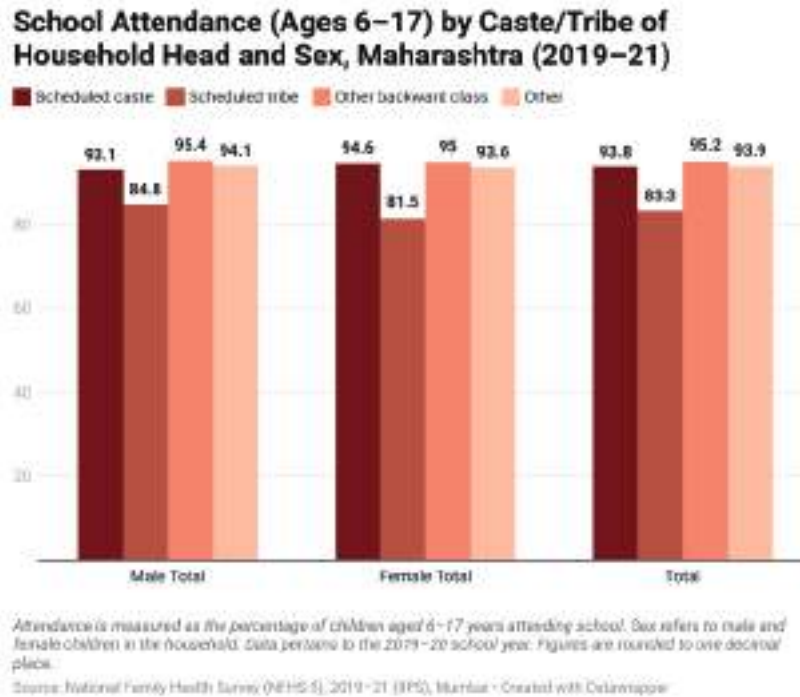
School enrollment and dropout patterns

School enrolment among Scheduled Tribe children has improved substantially in recent decades, with near-universal enrolment at the primary level in Maharashtra.^[6] However, retention beyond primary schooling remains a major challenge. National data show that while approximately 98 percent of Scheduled Tribe children aged 6-10 years attend school, attendance declines sharply during adolescence, with only about 77 percent of Scheduled Tribe children remaining in school at

ages 14-15 and fewer than half at ages 16-17.^[37] Maharashtra mirrors this national pattern, with a pronounced increase in dropout rates during Classes 8-10, resulting in significantly fewer tribal students completing secondary and higher secondary education.^[38]

Figure 2.9, shows that school attendance among children aged 6-17 years in Maharashtra is high across all caste and tribe groups, but Scheduled Tribe (ST) children consistently exhibit the lowest attendance levels. While attendance exceeds 93% for Scheduled Caste

Figure 2.9 School Attendance by Caste/Tribe of Household Head and Sex, Maharashtra, 2019-21



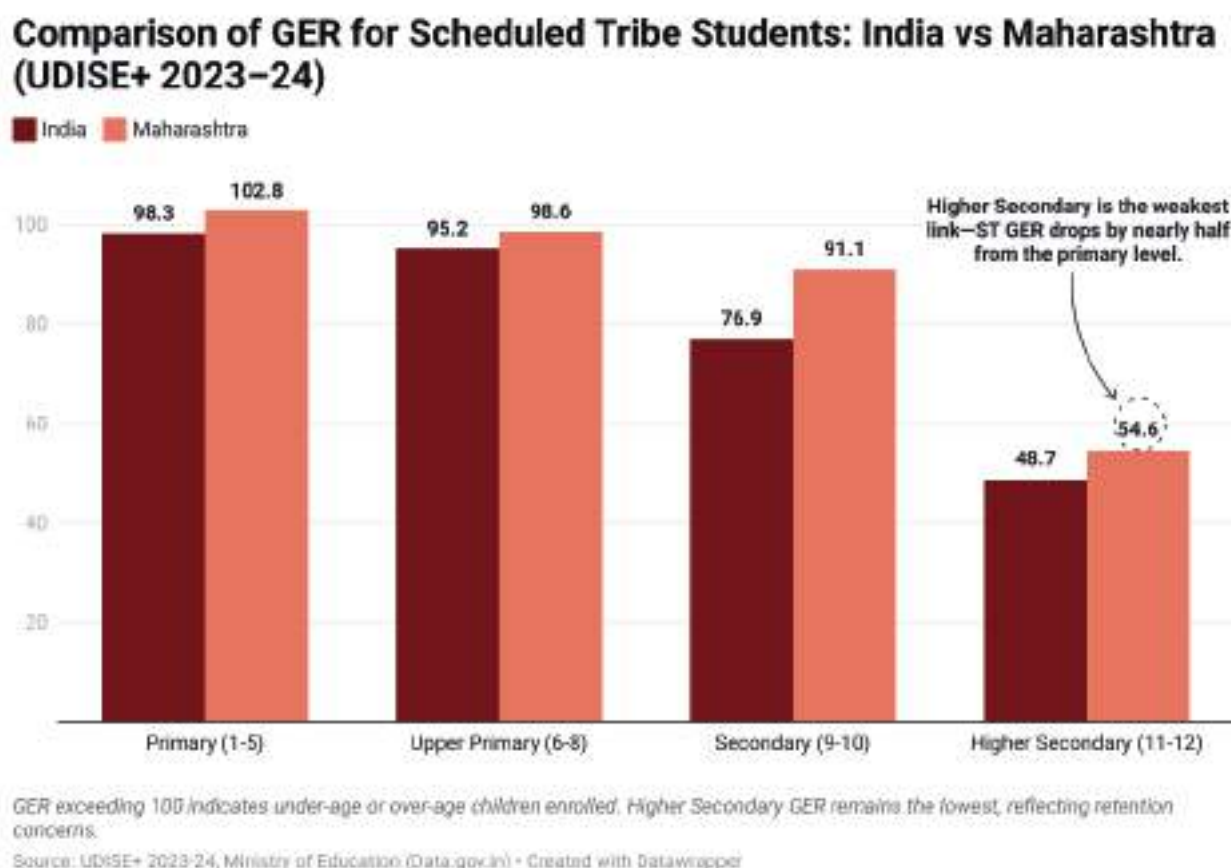
(SC), Other Backward Class (OBC), and Other category households, it drops to around 85% for ST boys and 81-83% for ST girls, revealing a clear tribal disadvantage in regular schooling participation. The gender gap within ST households is also more pronounced compared to other caste groups, where male-female attendance differences remain minimal. This suggests that ST children, particularly girls, face additional barriers related to distance, economic pressures, household responsibilities, and socio-cultural constraints that affect their regular attendance in school.

Importantly, while attendance rates remain relatively high overall, they mask deeper structural challenges that become visible when examining Gross Enrolment Ratio (GER) across school levels. The GER data (discussed in the next section) shows sharp declines for ST students at secondary and especially higher secondary levels, indicating that although many ST children may be attending school in the age group 6-17, far fewer are able to successfully transition through the schooling system and remain enrolled beyond Grade 10. Thus, attendance provides an optimistic picture of

day-to-day participation, but GER reveals critical gaps in educational progression and retention for tribal communities, which require targeted policy interventions.

Figure 2.10 compares the UDISE+ Gross Enrolment Ratio (GER) of Scheduled Tribe (ST) students across school levels in Maharashtra with the national average for 2023-24. Maharashtra performs better than India at every stage, particularly at the secondary level, where ST enrolment is substantially higher (91.1% vs 76.9%). However, a sharp decline is observed at the higher secondary stage for both Maharashtra and India, with GER dropping to nearly half of the primary level. This indicates that while early-grade enrolment among ST students is strong, the transition from secondary to higher secondary remains a critical point of attrition. Strengthening retention and supporting ST adolescents through this transition is therefore essential.

The educational gap becomes particularly evident at the higher secondary level, where the gross enrolment ratio of Scheduled Tribe students is around 55 percent, compared to

Figure 2.10 Gross Enrollment Ratio for ST students India vs. Maharashtra

higher levels among non-tribal students, especially in urban areas. Multiple factors contribute to this attrition, including poverty, long distances to secondary schools in hilly and forested regions, language barriers where the medium of instruction differs from children's mother tongues, and the need for adolescents to contribute to household livelihoods.^[39] Seasonal migration further disrupts schooling in several tribal districts. By adolescence, economic pressures often lead boys to enter agricultural or migrant labour, while girls are more likely to withdraw from schooling due to domestic responsibilities or early marriage. A recent national analysis has identified limited access to schools, poverty, language barriers, and social discrimination as key structural factors shaping educational participation and retention among tribal children.^[40]

Link between education and health

Educational attainment among Scheduled Tribe communities remains substantially lower than among non-tribal populations, with only a minority progressing to higher levels of schooling. National data show that only about 41 percent of Scheduled Tribe women and 50 percent of Scheduled Tribe men have completed ten or more years of schooling, compared to 59 percent and 72 percent, respectively, among the non-tribal population.^[41] This educational disadvantage affects health outcomes not because literacy alone determines a community's capacity for self-care, but because modern health systems are organised around written communication, formal procedures, and bureaucratic processes that assume a baseline level of schooling. While many tribal households possess rich indigenous knowledge related to food, healing, and disease prevention, limited formal education can constrain their ability to navigate the health



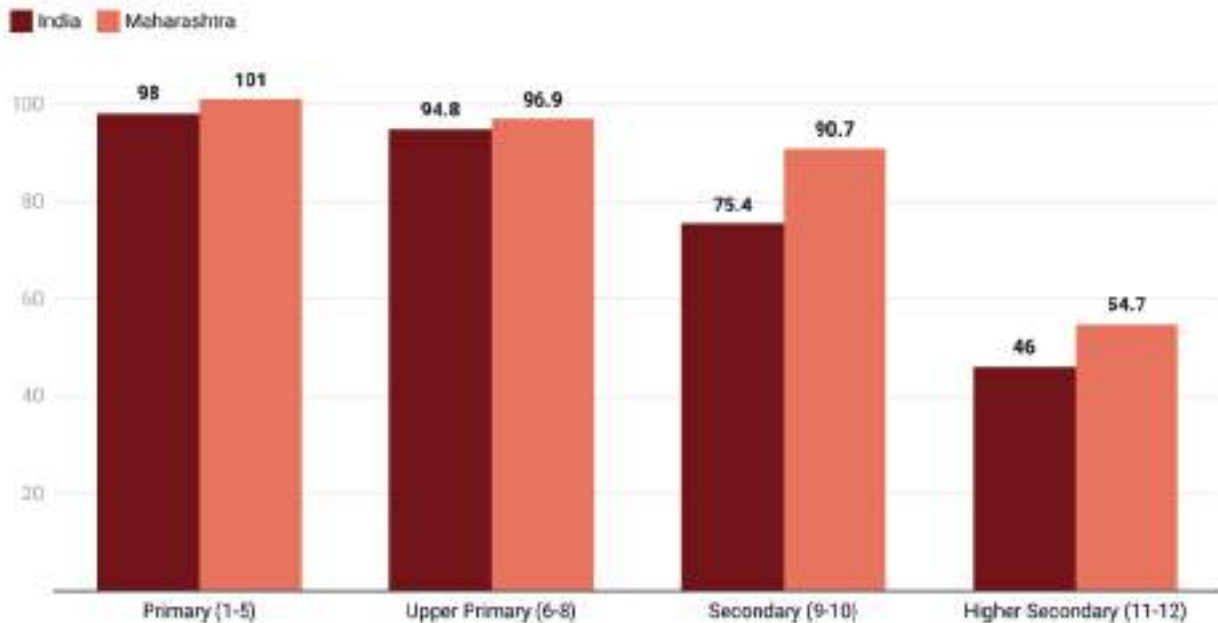
system, including understanding prescriptions, eligibility norms, and referral pathways.

Figures 2.11 and 2.12 together show that Scheduled Tribe students in Maharashtra, both boys and girls, record higher UDISE+ Gross Enrolment Ratios than the national average at every school stage in 2023-24. This pattern indicates relatively better inclusion and retention of ST children in the state’s schooling system when compared to the all India benchmark. At the primary and upper primary stages, enrolment remains high for both genders, and for ST girls the GER exceeds 100, reflecting the inclusion of under age and over age learners. Maharashtra’s strongest relative advantage appears at the secondary stage, where ST enrolment is substantially higher than the national level. However, the higher secondary stage remains the most critical point of attrition for the Scheduled Tribe category, with GER falling sharply to the mid 50s for both boys and girls, despite Maharashtra continuing to outperform India.

This stage wise drop is important to interpret in the context of the Scheduled Tribe category, which is concentrated in hilly, forested, and hard to reach regions and is more likely to face structural constraints such as longer travel distances to higher secondary schools, limited transport options, and weaker availability of residential facilities. These constraints often interact with poverty and seasonal migration, which disrupt schooling continuity, especially in tribal districts.^[39] Gendered pressures further shape outcomes within the ST category, as adolescent boys often exit schooling for agricultural or migrant labour, while girls face additional risks related to safety, mobility, and household responsibilities, and in some contexts early marriage.^[39] A recent national analysis identifies limited access to schools, poverty, language barriers, and social discrimination as key structural factors shaping educational participation and retention among tribal children, helping explain why the transition into higher secondary remains a

Figure 2.11 Gross Enrollment Ratio for ST Boys across school levels; India vs. Maharashtra

GER of Scheduled Tribe Boys Across School Levels: India vs Maharashtra (UDISE+ 2023-24)



GER values above 100 indicate under-age or over-age enrolment. Maharashtra shows stronger retention of ST boys especially at the secondary level. Transition into higher secondary remains the most critical dropout point.

Source: UDISE+ 2023-24, Ministry of Education (Data.gov.in) - Created with DataCamp



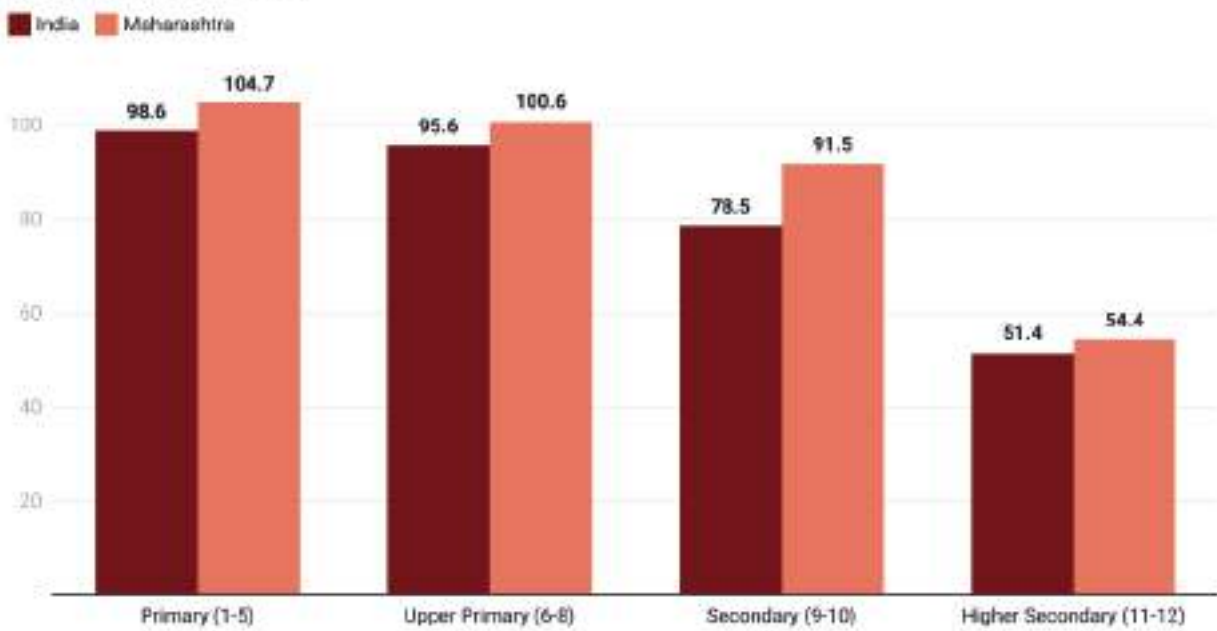
persistent bottleneck even when earlier stage enrolment is strong.^[40]

Gaps in schooling also restrict exposure to information on newer public health priorities such as immunisation schedules, contraception, HIV/AIDS, and emerging infectious diseases, which are typically communicated through text-heavy or institution-based channels. Although government interventions such as Ashram Schools and scholarship schemes have expanded access to education, significant

disparities persist. Early marriage, domestic responsibilities, migration, and concerns around safety and mobility are major contributors to this attrition.^[43] Overall, improving education, both formal and community-based, is less about equating literacy with health and more about enabling tribal communities to engage effectively with an increasingly formal and demand-driven health system while retaining the strengths of their own knowledge traditions.

Figure 2.12 Gross Enrollment Ratio for ST Boys across school levels; India vs. Maharashtra

GER of Scheduled Tribe Girls Across School Levels: India vs Maharashtra (UDISE+ 2023-24)



GER exceeding 100 indicates inclusion of under-age or over-age students. Maharashtra shows stronger retention of ST girls compared to national averages at every level. Higher secondary remains the lowest enrolment stage for ST girls.
 Source: UDISE+ 2023-24, Ministry of Education (Data.gov.in) · Created with Datawrapper



2.5 Livelihoods, Poverty, and Economic Status

Poverty and Asset Deprivation

Poverty is a fundamental structural determinant underlying health inequities among Adivasi communities. Scheduled Tribe populations are disproportionately represented among the poor, both nationally and in Maharashtra, across rural and urban settings. Historically, poverty rates among Scheduled Tribes have been 15-20 percentage points higher than those of the general population. In the early 1990s, approximately 64 percent of India's Scheduled Tribe population lived below the poverty line, compared to about 46 percent of the total population.^[43] Despite overall declines in poverty over subsequent decades, disparities persist: in 2011-12, an estimated 43 percent of Scheduled Tribes nationally remained below the poverty line, compared to around 22 percent among non-tribal populations.^[44]

The estimates of multidimensional poverty among the social groups of India are displayed in Table 2.3 below. The headcount ratios reveal that nearly one-fourth (24.8%) of the Indians are multidimensionally poor; and among the social groups the headcount ratio estimated for the STs (44.4%) is strikingly higher compared to the SCs (29.2%), OBCs (24.5%) and Others (14.9%).

Multidimensional Poverty Index (MPI) analyses prepared by NITI Aayog, based on National Family Health Survey (NFHS) data, consistently establish that Scheduled Tribes (STs) constitute the most multidimensionally poor social group in India.^[45] Across successive MPI assessments, ST households record higher poverty headcount ratios as well as greater intensity of deprivation, reflecting simultaneous disadvantages across health (nutrition and child mortality), education (years of schooling and

Table 2.3 Multidimensional Poverty Estimates by Social Groups in India

(Headcount ratio (H), the average deprivation score of the multidimensional poor or intensity (A), the adjusted headcount ratio or the MPI (Mo), weighted population share across the social groups in India)

Multidimensional Poverty Estimates by Social Group in India

H = headcount ratio; A = average deprivation score (intensity); Mo = adjusted headcount ratio (MPI). Population share is weighted.

Indicator	SC	ST	OBC	Others	Total (India)
H	0.292	0.444	0.245	0.149	0.248
A	0.473	0.486	0.465	0.463	0.471
Mo	0.138	0.216	0.114	0.069	0.117
Population Share (Weighted)	20.70%	9.40%	43.00%	26.90%	

Note: "Lakh" = 1,00,000. Percentages are as presented in the source table.

Source: National MPI estimates • Created with Datawrapper



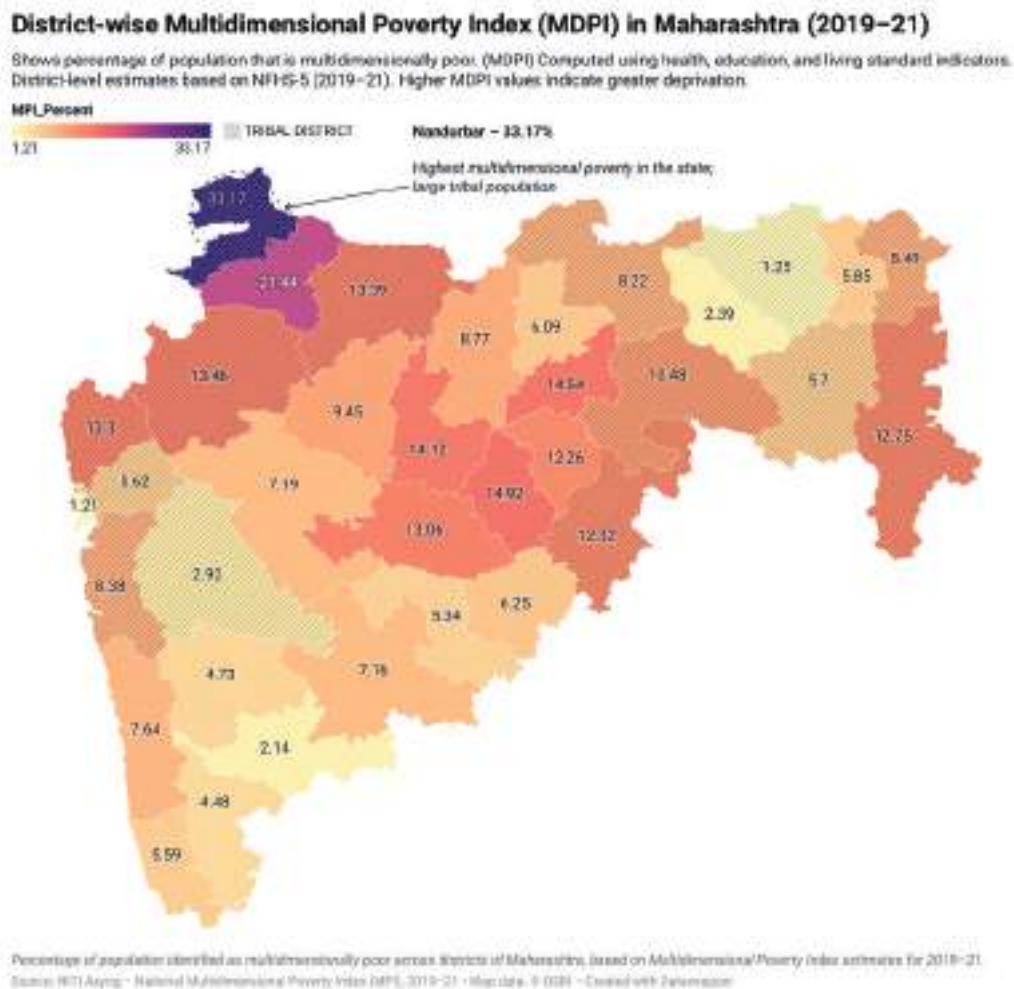
school attendance), and living standards (housing conditions, sanitation, drinking water, cooking fuel, electricity, and asset ownership), when compared with Scheduled Castes (SCs), Other Backward Classes (OBCs), and other social groups.^{[45], [46]}

While Maharashtra performs relatively better than the national average on aggregate MPI indicators,^[46] district-level MPI patterns reveal pronounced intra-state disparities, particularly in districts with high tribal concentration such as Nandurbar, Palghar, Gadchiroli, and parts of Nashik and Amravati,^{[41], [46]} as shown in Figure 2.13. Although caste-disaggregated MPI estimates are not routinely available at the district level, the spatial overlap between high-MPI districts and tribal-dominated geographies, combined with corroborative evidence from NFHS, Census, and administrative health and education data, indicates that tribal populations

in Maharashtra bear a disproportionate burden of multidimensional poverty.^{[1], [41]}

The relevance of MPI for tribal contexts is further strengthened by the close alignment between MPI dimensions and the structural vulnerabilities experienced by tribal communities, including remote and dispersed settlements, limited physical connectivity, lower educational attainment, inadequate housing and sanitation infrastructure, reliance on biomass fuels, and constrained access to essential health and social services.^{[1], [41]} Consequently, aggregate state-level improvements obscure persistent and structural tribal deprivation, underscoring the need for tribal-specific, area-based, and population-focused policy responses, along with finer social-group disaggregation of poverty and development indicators.^{[45], [46]}

Figure 2.13 District-wise Multidimensional Poverty Index in Maharashtra





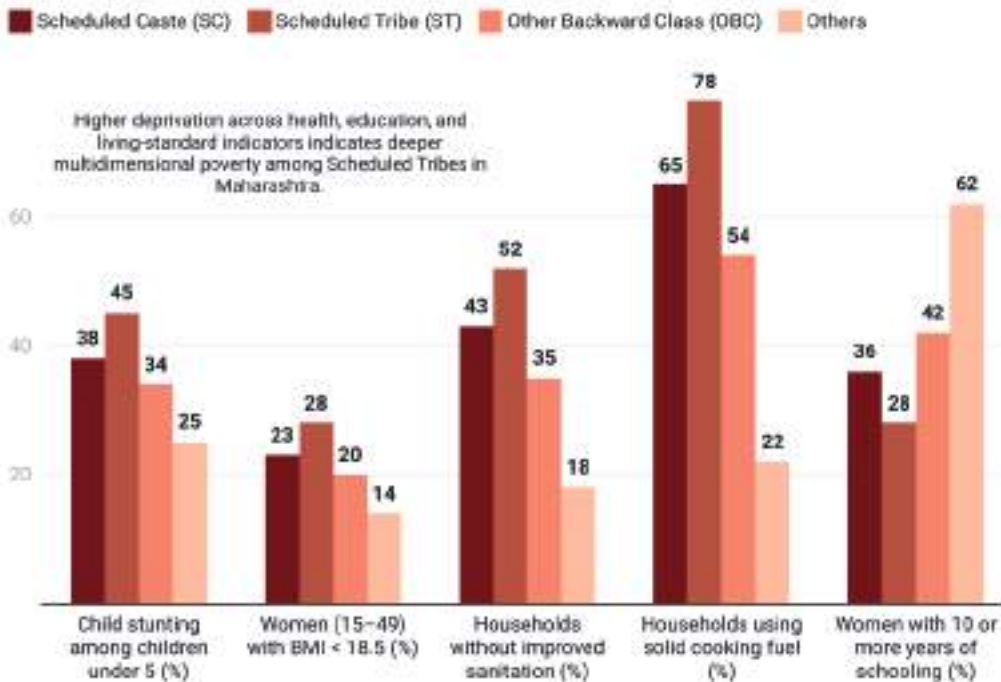
In Maharashtra, while overall economic growth has improved aggregate indicators, tribal-dominated districts continue to lag. Several districts with high concentrations of Scheduled Tribe populations, including Nandurbar, Gadchiroli, and parts of eastern Vidarbha such as Yavatmal, consistently rank among the state’s least developed and most impoverished regions. In rural areas, Adivasi households typically depend on marginal and rain-fed landholdings or seasonal agricultural labour, resulting in insecure incomes and high vulnerability to climatic and market shocks. In urban areas, Scheduled Tribes constitute a small but highly vulnerable minority, often residing in informal settlements and working in low-paid, insecure employment in the informal sector.

education, and living-standards dimensions of the Multidimensional Poverty Index (MPI). Across all indicators, Scheduled Tribes consistently exhibit higher levels of deprivation, particularly in child undernutrition, use of solid cooking fuel, access to improved sanitation, and educational attainment of women, compared to Scheduled Castes, OBCs, and other social groups. These patterns indicate that deprivation among tribal households is not limited to a single sector but is simultaneous and multidimensional, affecting health outcomes, human capital formation, and living conditions together. The evidence reinforces that aggregate improvements at the state level mask persistent tribal disadvantages and highlights the need for tribal-specific, area-based interventions that address multiple deprivation dimensions in an integrated manner.

Figure 2.14 presents caste-wise disparities across selected indicators from NFHS-5 for Maharashtra that are aligned with the health,

Figure 2.14 Key MDPI indicators across caste categories in Maharashtra

Scheduled Tribes experience higher deprivation across key multidimensional poverty indicators in Maharashtra



Indicators shown are aligned with MPI dimensions but do not represent the official MPI score. Caste-wise MPI estimates are not published at the state level; therefore, these indicators are used as analytically valid proxies to assess multidimensional deprivation among social groups in Maharashtra.

Source: National Family Health Survey (NFHS-5), 2019-21, Maharashtra + Created with Datawrapper



Asset deprivation further compounds this economic vulnerability. Census 2011 data indicate that approximately 43 percent of Scheduled Tribe households in Maharashtra possessed none of the basic household assets enumerated, such as a phone, vehicle, or television, compared to about 19 percent of households in the general population.^{[44], [47]} Such persistent income and asset poverty constrain access to nutrition, healthcare, education, and stable living conditions, reinforcing inter-generational cycles of disadvantage and poor health outcomes among tribal communities.

2.5.2 Land Ownership and Inequality

Agriculture Census data for Maharashtra reveal a structurally vulnerable position of Scheduled Tribe (ST) cultivators, shaped by a combination of historical disadvantage, land fragmentation, and the spatial concentration of tribal populations in ecologically and economically

marginal regions. While Maharashtra's agrarian economy as a whole is dominated by smallholders, tribal cultivators face a distinct pattern of vulnerability that differs in important ways from that of other social groups.

In Maharashtra, the majority of ST operational holdings fall within the marginal and small size classes. Between 2010-11 and 2015-16, around 71% of ST holdings were below 2 hectares, indicating a heavy concentration in low-scale farming. Although this share is marginally lower than the state average- reflecting the extreme fragmentation affecting agriculture across Maharashtra- it nonetheless places most tribal cultivators in a position of limited surplus generation, low mechanisation, and high exposure to climatic and market shocks. Importantly, this pattern has shown little improvement over time, suggesting that structural constraints continue to persist.

A closer examination of the operating area further reinforces this vulnerability. As shown in

Figure 2.15 Distribution of Operated Agricultural Area by Farm Size: Scheduled Tribes vs All Social Groups in Maharashtra, 2015-16

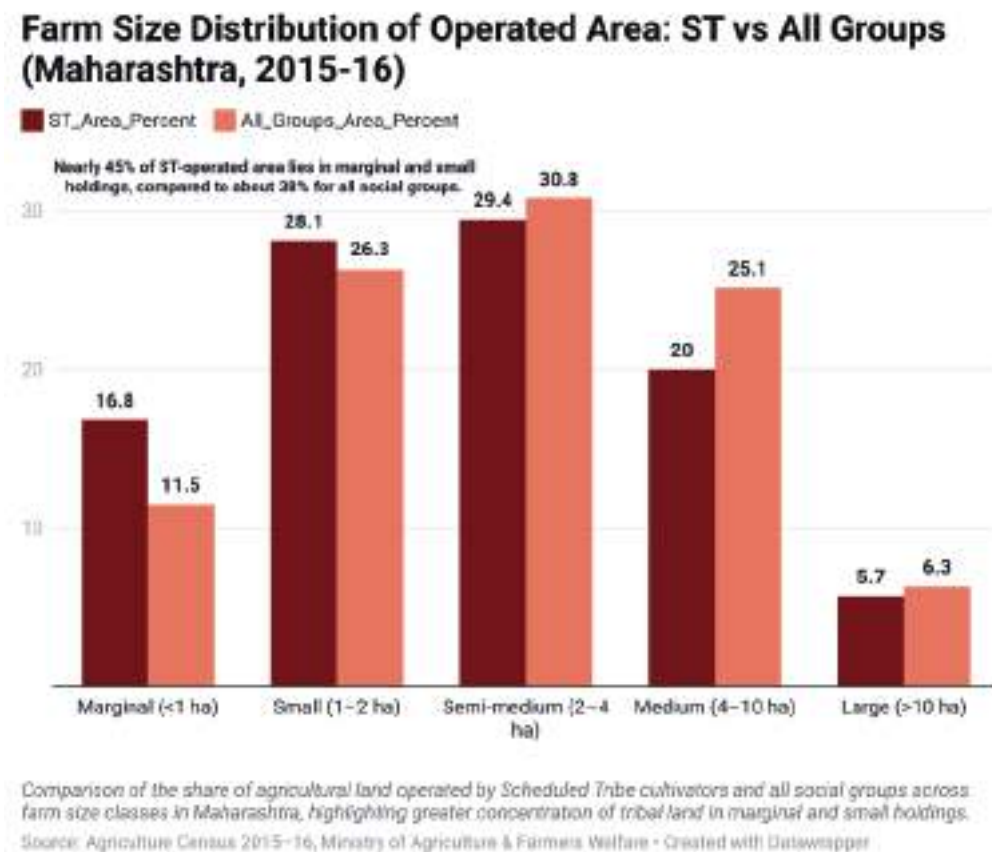




Figure 2.15, in 2015-16, nearly 45% of the total area operated by ST farmers in Maharashtra was concentrated in marginal and small holdings, compared to about 38% for all social groups combined. Conversely, ST farmers controlled a smaller share of land in medium and large holdings than the state average. This skew towards smaller farm sizes in terms of area implies that even where tribal households possess land, it is disproportionately locked into low-productivity cultivation systems, limiting income stability and resilience.

At the same time, average holding size among ST cultivators in Maharashtra appears larger than the state average: 1.76 hectares for STs compared to 1.34 hectares overall in 2015-16. This apparent advantage, however, is misleading. It reflects the geographic concentration of tribal agriculture in hilly, forested, and remote regions—such as Nandurbar, Palghar, Gadchiroli, Chandrapur, and parts of Nashik and Amravati where land parcels tend to be larger but are often rain-fed, poorly irrigated, and distant from markets. As a result, larger plot sizes do not translate into proportionately higher productivity or livelihood security for tribal farmers.

Taken together, these patterns suggest that Scheduled Tribes in Maharashtra face a dual disadvantage: they are under-represented among medium and large landholders while being over-represented among small and marginal cultivators, and the land they do operate is frequently of lower agricultural potential. Historical processes of land alienation, weak tenure security, and incomplete recognition of land rights in Scheduled Areas have compounded these challenges. Consequently, land ownership among STs, while sometimes larger in nominal size, does not confer the same economic or social advantages as it does for non-tribal cultivators in more productive regions of the state.

These agrarian vulnerabilities form an important backdrop for understanding broader tribal disadvantage in Maharashtra, including

food security, nutritional outcomes, indebtedness, and distress-driven migration. They also help explain why improvements in agricultural productivity and rural livelihoods among tribal communities require not only land ownership, but targeted interventions addressing land quality, irrigation, tenure security, and market access in tribal regions.

While tribal households as a group remain disadvantaged in terms of overall land ownership and formal land rights, intra-household patterns of asset ownership reveal a more nuanced picture. Within tribal communities, women demonstrate relatively higher ownership of both house and land compared to women from other caste groups. As shown in Figure 2.16, Scheduled Tribe women report the highest levels of house ownership (26.3%) and land ownership (18.8%) among all women categories in Maharashtra. Although a substantial gender gap persists within tribal households, with men continuing to own nearly twice the share of assets as women, the male-female ownership differential among Scheduled Tribes is relatively narrower than that observed in other social groups. This suggests that despite structural exclusion from land markets and historical dispossession, tribal social norms and inheritance practices may allow comparatively greater recognition of women's ownership within the limited assets that tribal households possess. However, the persistence of a large absolute gender gap underscores that these relative gains for tribal women coexist with, rather than offset, deep-rooted gender inequities in asset control.

By contrast, most non-tribal farming households in Maharashtra are in the fertile western and central plains with smaller but irrigated holdings. It is also notable that Scheduled Caste (SC) and ST households in the state have smaller average holdings (1.27 ha, 1.80 ha) according to the most recent Agricultural Census 2015-16 report, indicating that both SCs and STs have land disadvantages. [48] In terms of landlessness, precise recent statewide figures for all communities aren't readily available in the same sources; however,

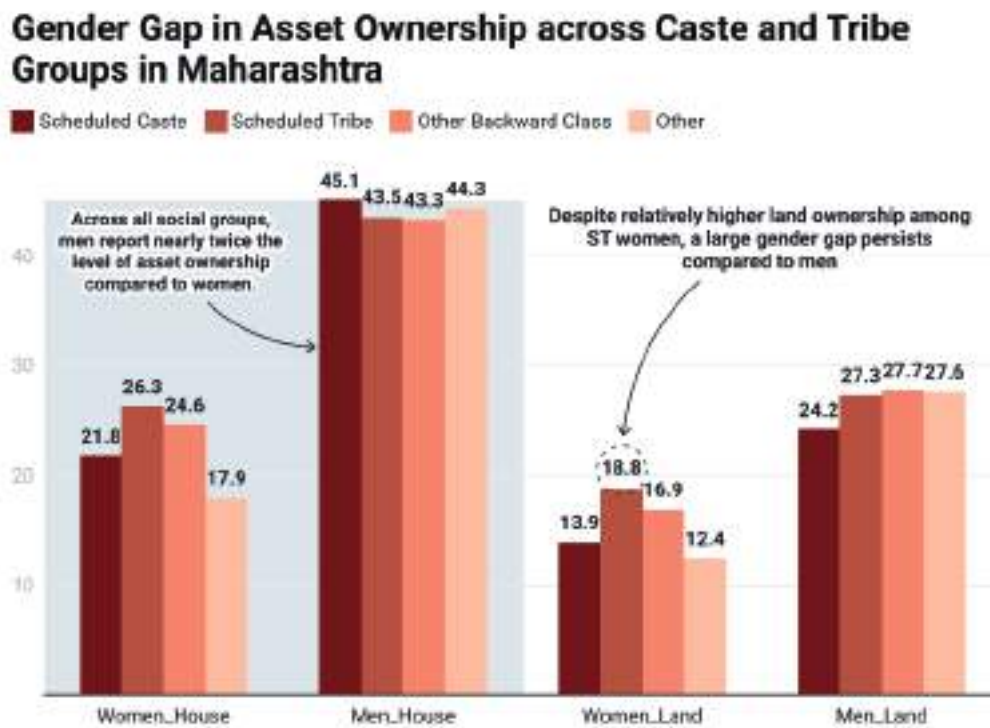


nationwide surveys reported that around 8.2% of rural households are completely landless (owning less than 0.002 ha).^[49] A study of tribal landlessness in Maharashtra found a 40% rate of landlessness among tribal households, highlighting a significant gap in land access between STs and the general rural populace.^[50] This disparity is rooted in historical land alienation, poverty, and legal barriers that have disproportionately affected Adivasi communities.^[51]

Another lens through which social and economic inequality can be examined is primary occupation. Census 2011 data show that in Maharashtra, only about one-quarter of Scheduled Tribe households are cultivators, defined as self-employed in farming, while more than two-thirds depend primarily on labour, largely as agricultural or casual workers.^[1] In contrast, a higher proportion of

households in the overall rural population are cultivator-farmers. This occupational profile indicates that Scheduled Tribes are underrepresented among land-owning cultivators and disproportionately concentrated in landless and insecure forms of labour compared to non-tribal groups. Such dependence on casual and seasonal work underscores the structural livelihood insecurity faced by tribal households. Recent government surveys and NFHS-5 data further highlight related dimensions of economic vulnerability, including low levels of asset ownership and limited control over productive resources.^[31] In Maharashtra, declines in women's ownership of land or housing have been observed in recent years, with Scheduled Tribe families remaining among the most economically disadvantaged groups in terms of asset ownership and livelihood security.^[44]

Figure 2.16 Gender Differences in House and Land Ownership across Caste and Tribe Groups in Maharashtra



Comparison of house and land ownership among men and women aged 15–49 years across major caste/tribe groups in Maharashtra, highlighting persistent gender disparities in asset ownership.

Source: NFHS-5 (2019–21), International Institute for Population Sciences (IIPS) – Created with Datawrapper



Regional Variations in Landholding

Tribal landholding patterns in Maharashtra vary sharply across regions and communities, reflecting long-standing histories of land alienation, differential legal protection, and uneven policy implementation. Historical census data and evaluation studies consistently show high levels of landlessness among Scheduled Tribe households, particularly in parts of North Maharashtra and the western tribal belt, where many Adivasi communities became landless or marginal cultivators due to colonial-era dispossession, indebtedness, and weak enforcement of protective laws.^[52] In contrast, several tribal-dominated districts in eastern Maharashtra, especially Gadchiroli and adjoining parts of Vidarbha, exhibit relatively lower landlessness, as many Gond and Madia communities continue to cultivate ancestral or forest-adjacent land, albeit often on marginal holdings. Even within these regions, vulnerability is tribe-specific, with groups such as the Kolam and Katkari experiencing persistently high landlessness and reliance on insecure forms of labour.

More recently, the implementation of the Forest Rights Act, 2006, has partially stabilised land access for tribal households. As of 2024, Maharashtra has recognised individual and community forest rights over approximately 15.7 lakh hectares of forest land, largely in Vidarbha and tribal pockets of the Western Ghats, providing formal tenure to families already cultivating this land.^[53] However, it is important to note that there is no comprehensive, regularly updated, tribe-disaggregated dataset on landholding and landlessness in Maharashtra after the Census 2011.^[5] Current understanding, therefore, relies on a combination of older census data, historical evaluation reports, and administrative programme records, which limits precise estimation of present-day land access but points to persistent and uneven land insecurity as a core structural vulnerability among tribal communities.^[29]

Livelihoods and Migration

The scarcity of land and productive assets compounds poverty among tribal households and significantly undermines economic resilience. Households without land or livestock cannot rely on subsistence production or asset sales during periods of crisis and have little collateral or savings to absorb financial shocks. This asset poverty has direct health consequences, including delayed care seeking due to out-of-pocket costs, reduced ability to afford nutritious diets, and heightened vulnerability to illness, thereby reinforcing a cycle of poor health and poverty.

Historically, tribal economies were grounded in diversified and ecologically balanced livelihoods, including shifting cultivation, forest-based food collection, fishing, and artisanal activities.^[43] Over the past century, these systems have been progressively disrupted by land alienation, restrictions on forest access, and displacement linked to development projects, leading to long-term economic marginalisation. In Maharashtra, several communities, including Particularly Vulnerable Tribal Groups such as the Katkari, were pushed into bonded labour or seasonal migrant work following the erosion of forest-based livelihoods.

A critical structural constraint lies in the differential treatment of revenue land and forest land within state systems. Revenue land has been systematically surveyed, digitised, and integrated into state land records and national platforms, enabling access to agricultural schemes, credit, and emerging digital initiatives such as AgriStack.^[54] In contrast, forest land governed under the Forest Rights Act, 2006, follows a separate administrative lineage.^[53] Individual Forest Rights titles have historically lacked integration with revenue records or standalone digital registries, leaving many forest-rights holders effectively invisible within digital governance systems. As agricultural and welfare programmes increasingly rely on digitised land records for verification and service delivery, this structural gap



disproportionately excludes forest-rights holders, reinforcing economic vulnerability and limiting access to credit, insurance, and extension services.

As a result, a large share of tribal households in Maharashtra depend on wage labour or marginal farming. Census data indicate that Scheduled Tribe workers are predominantly engaged as agricultural labourers or small cultivators, with relatively few in salaried employment or enterprise-based livelihoods. Subsistence cultivation on small, rain-fed plots remains common, but productivity is constrained by hilly terrain, limited irrigation, and low investment. Seasonal migration has therefore become a widespread coping strategy, with families migrating after the monsoon for work in sugarcane harvesting, brick kilns, construction, and other forms of informal labour.^[55] While migration provides short-term income, it disrupts continuity of healthcare, nutrition, and schooling. Children are frequently withdrawn from school during migration cycles or left behind with relatives, increasing the risk of learning loss and neglect, while migrant work sites typically lack adequate housing, sanitation, and health services.^[56]

Health and Economic Linkages

Low and unstable incomes directly affect health by constraining household expenditure on food, healthcare, water, and sanitation.^[45] In several tribal pockets of Maharashtra, chronic food insecurity persists, shaped by poverty, rain-fed agriculture, and repeated livelihood shocks. Areas such as Melghat in Amravati district have historically reported severe undernutrition and child mortality, linked to persistent poverty, crop failure, and limited access to services. While Maharashtra's overall nutrition indicators have improved over time, Scheduled Tribe populations continue to experience higher rates of childhood undernutrition and anaemia compared to non-tribal groups.^[57] Financial vulnerability also increases reliance on out-of-pocket health expenditure, often leading households to borrow at high interest or sell productive assets

such as livestock or small landholdings, thereby reinforcing cycles of indebtedness and poverty.^[43] The Expert Committee on Tribal Health identified adverse socio-economic conditions, particularly related to housing, education, sanitation, and political marginalisation, as central contributors to poor health outcomes among tribal communities.^[6] Overall, poverty functions as a foundational determinant that amplifies other health risks and limits the effectiveness of health and nutrition interventions.^[58]

Policy and Institutional Responses

Maharashtra's development framework includes several mechanisms to address structural livelihood disadvantages in tribal areas. The Tribal Sub-Plan (TSP) earmarks a proportion of state expenditure for Scheduled Tribe-focused development, and the state has implemented targeted livelihood interventions promoting millets, bamboo-based livelihoods, horticulture, and other locally appropriate income-generating activities in tribal regions. Employment programmes such as the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) have also provided an important source of wage employment and income smoothing for tribal households, particularly during agricultural lean seasons.^[59] In addition, implementation of the Forest Rights Act, 2006 has strengthened tenure security for many tribal families.^[60] As of the mid-2020s, Maharashtra has recognised a substantial number of individual and community forest rights, formalising access to land and forest resources that were traditionally cultivated or used by tribal households.^[53]

However, the operationalisation of Community Forest Resource (CFR) rights has progressed more slowly than individual titles. While CFR provisions are intended to empower Gram Sabhas to manage forest resources and derive sustainable livelihoods from minor forest produce, institutional capacity, administrative processes, and integration with market and digital systems remain uneven.^[61] Strengthening CFR implementation and linking forest-based



livelihoods with emerging economic and digital platforms is therefore critical to reducing long-standing livelihood insecurity and translating legal recognition of rights into sustained economic and health gains in tribal regions.

However, the operationalisation of Community Forest Resource (CFR) rights has progressed more slowly than individual titles, reflecting persistent institutional and administrative constraints. While CFR provisions are intended to empower Gram Sabhas to manage forest resources and derive sustainable livelihoods from minor forest produce, their effective implementation depends on coordinated action across forest, revenue, tribal development, and rural livelihoods departments. In practice, gaps in institutional capacity, procedural delays,

limited technical support, and uneven integration with market and digital systems have constrained the realisation of these objectives.^[61]

Strengthening CFR governance frameworks, streamlining administrative processes, and building local institutional capabilities are therefore essential policy priorities. Greater convergence with livelihood missions, cooperatives, and digital platforms can enable forest-based economies to scale sustainably. Such institutional strengthening is critical not only for improving incomes, but also for translating legal recognition of rights into durable economic security and improved health outcomes in tribal regions.

2.6 Infrastructure, Basic Amenities, and Living Conditions

As discussed earlier, gaps in water and sanitation constitute an important part of the health risk environment in tribal areas.^[41] Beyond these, the broader physical living environment of Maharashtra's tribal population remains a significant determinant of health. Most tribal hamlets, often located in remote forested or hilly terrain, continue to face infrastructural constraints despite gradual improvements. Road connectivity has expanded, yet many interior habitations remain dependent on *kuccha* roads that become inaccessible during the monsoon, increasing the effective distance from health facilities, schools, and markets. While rural electrification has reached most tribal villages, including those in districts such as Gadchiroli and Nandurbar, supply remains unreliable, and scattered dwellings are often left unelectrified, limiting the functionality of services after dark. Housing quality further compounds vulnerability. Many tribal households live in mud, bamboo, or semi-permanent structures with thatched or tin roofs, offering limited protection from extreme weather, vectors, and wildlife. Overcrowding

within single-room dwellings is common, creating conditions conducive to the spread of infectious diseases. Energy use represents another major exposure pathway. A substantial proportion of tribal households continue to rely on solid fuels for cooking due to affordability constraints, forest access, and cooking practices. Despite expanded LPG coverage, regular use remains limited, resulting in prolonged exposure of women and children to household air pollution and associated respiratory and eye conditions.

Access to healthcare infrastructure also shapes health behaviour and outcomes. Although tribal habitations are formally mapped to sub-centres and primary health centres under the National Health Mission, remote areas experience persistent shortages of medical personnel, medicine stock-outs, and weak referral linkages.^[6] Adaptive measures such as recruiting local tribal women as ASHAs have improved outreach, but service delivery gaps remain pronounced in hard-to-reach areas, reinforcing delays in care seeking and reliance on home-based or informal care.^[16] Finally,



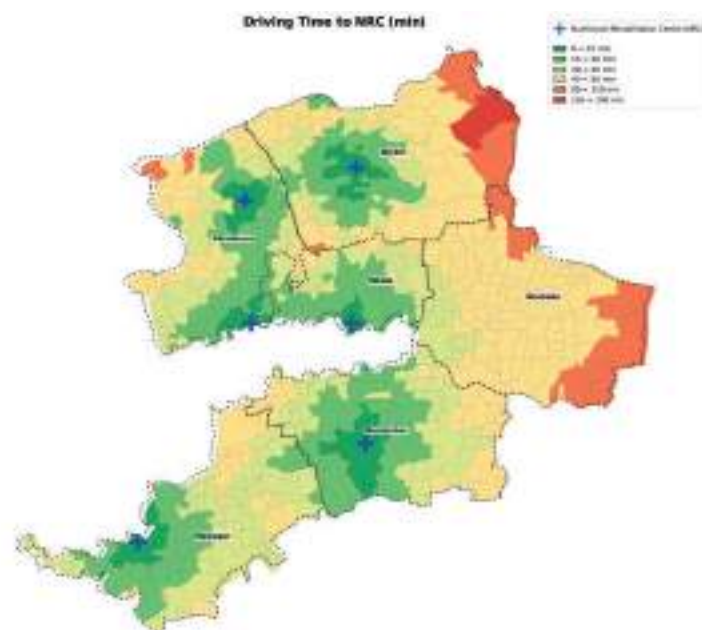
political and social marginalisation cuts across these physical determinants. Despite constitutional protections and the PESA framework in Scheduled Areas, tribal participation in planning and decision-making remains limited.^[6] Weak community voice in programme design contributes to misalignment between services and lived needs, reducing trust and uptake. National expert reviews have repeatedly identified the lack of meaningful tribal participation in health planning and implementation as a central constraint.^[6]

Figure 2.17 presents a QGIS-based travel-time accessibility analysis for Nandurbar district, estimating the driving time from each village to the nearest Nutritional Rehabilitation Centre (NRC). Using geocoded NRC locations (six NRC points) and village settlement/boundary data overlaid on a road network, QGIS can compute the shortest travel-time route from every village to its nearest NRC and classify results into time-bands (green to dark red). This helps identify clusters of villages facing high travel-time barriers and supports targeted actions—such as strengthening referral transport, planning pickup points, and prioritising outreach or decentralised stabilisation support in the most remote pockets—so that NRC coverage translates into timely access for SAM

children. such analysis can be easily be done using existing publicly available datasets.

These findings indicate that improving health outcomes in tribal areas requires programme design that goes beyond expanding infrastructure coverage to addressing reliability, accessibility, and institutional alignment with local contexts. Health and nutrition interventions must explicitly account for remoteness, seasonal road access, unreliable electricity, housing density, and continued reliance on solid fuels, all of which shape exposure and care-seeking behaviour.^[27] Service delivery models need flexibility to reach scattered hamlets, including mobile outreach, decentralised drug availability, and strengthened referral transport adapted to terrain and seasonality. Equally important is embedding tribal participation into programme planning and monitoring, particularly in Scheduled Areas, so that service design reflects local priorities and constraints. Strengthening community governance structures, integrating frontline workers from within tribal communities, and aligning health programmes with water, energy, housing, and rural development initiatives are critical to translating coverage into effective access and sustained health gains.

Figure 2.17 Village-wise Travel Time Accessibility to NRCs in Nandurbar





2.7 Conclusion

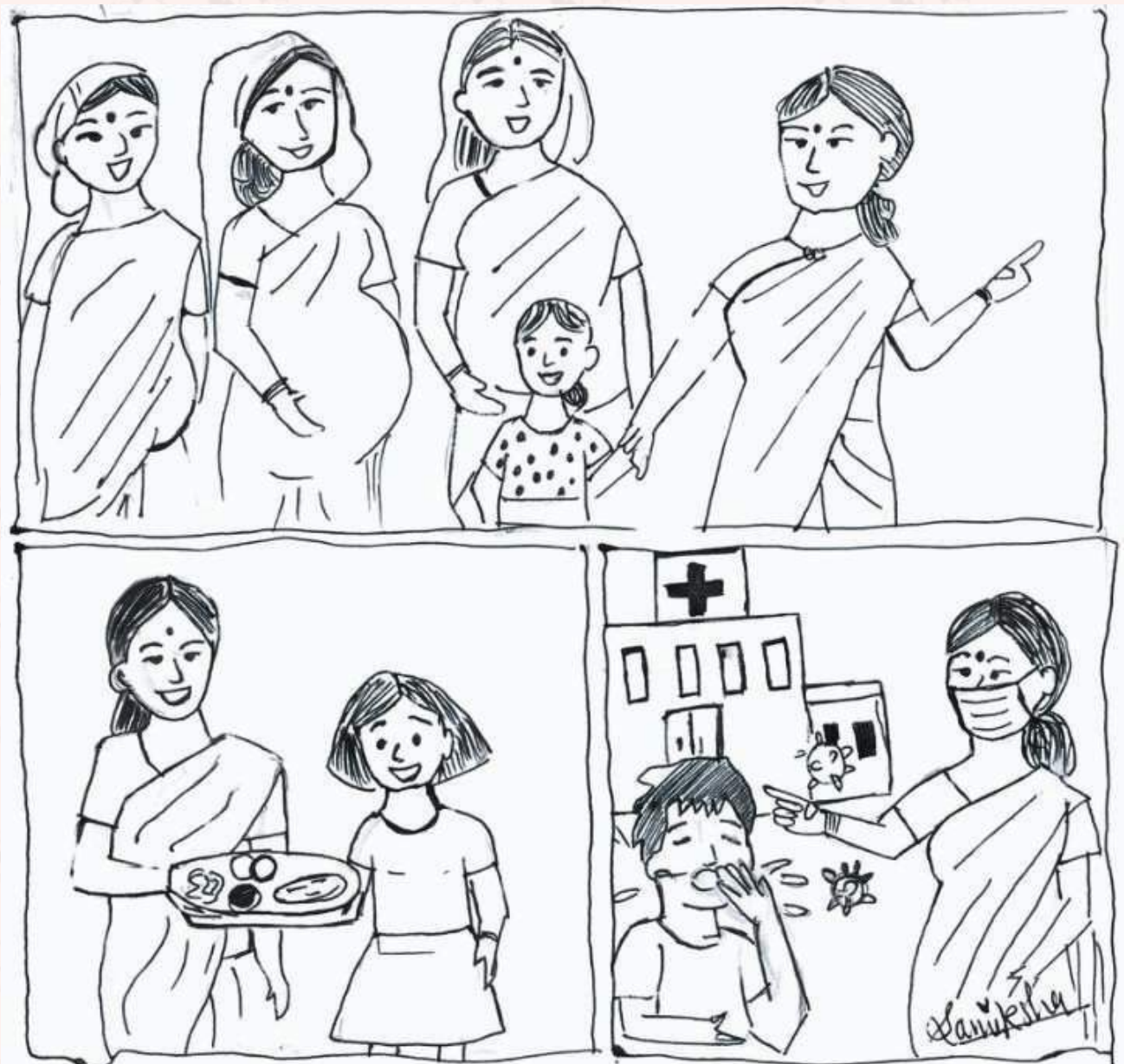
In summary, the tribal communities of Maharashtra face complex socio-economic challenges that profoundly shape their health outcomes. Geographic isolation, cultural distance from formal systems, lower levels of education, persistent poverty, and uneven access to basic services interact to produce deep and enduring health inequities. The central message of this chapter is that health disparities are not accidental or isolated but are rooted in the social conditions in which Adivasis are born, grow, live, learn, and work. These conditions differ markedly from those of the wider population and have both constrained opportunity and heightened exposure to health risks.

This analysis provides the foundation for the next chapter, which examines health status and disease burden among tribal populations. Many of the outcomes discussed there, including high

maternal and child mortality, malnutrition, and the persistence of endemic diseases, are direct consequences of the determinants outlined here, ranging from poverty-driven undernutrition to vector-borne diseases linked to housing and the environment. Improving tribal health in Maharashtra, therefore, requires a comprehensive, intersectoral approach that extends beyond the health department alone. Investments in roads, education, livelihoods, housing, water, and energy must proceed alongside efforts to make health systems more accessible, responsive, and respectful of local contexts. Only by addressing these underlying socio-economic determinants can the state move meaningfully toward health equity, enabling its tribal communities not merely to survive, but to live with dignity, security, and well-being as equal participants in development.



Health Status and Disease Burden







✦ *Stories from Field*

Breaking Barriers Together

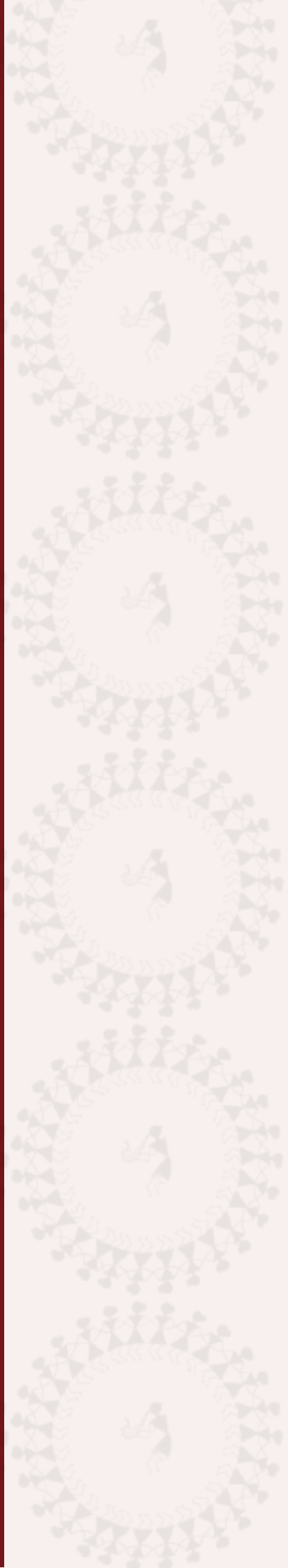
Persistence and coordinated care save a tribal mother and new-born

Belgaon, Chandrapur

Note: For the purpose of confidentiality and privacy, the name of the patient has been changed.

The refusal came first. During a routine antenatal visit in August 2025 in the remote tribal hamlet of Belgaon, Chandrapur district, a 21-year-old pregnant woman was identified as critically high risk. Clinical assessment showed severe anaemia with haemoglobin at 5.6 gm percent and elevated blood pressure, indicating the need for urgent referral and blood transfusion. The family declined hospital care. Citing past experiences and local beliefs, they signed discharge against medical advice and brought the woman back home, despite clear medical risk to both mother and unborn child. Recognising the seriousness of the situation, the Medical Officer escalated the case to the District Health Officer. What followed was not a single intervention but sustained field commitment. Through repeated counselling, reassurance, and personal accountability, a coordinated plan was agreed upon. The family consented to referral on the condition that the same doctor would personally accompany and monitor the patient throughout her treatment. The patient was admitted and received three blood transfusions over the following days, with close monitoring and follow up. Even after discharge, the Medical Officer continued field visits to ensure adherence and stability. By mid-September, her haemoglobin levels had improved sufficiently for the pregnancy to continue under supervision. In October 2025, she delivered a baby girl at a government hospital. Owing to low birth weight, the new-born required NICU care at the District Hospital, followed by admission to a Nutritional Rehabilitation Centre.

With sustained treatment, the infant gained weight and was discharged in stable condition. After returning to the village, regular home-based new-born care visits by the ASHA worker ensured continued monitoring, nutrition counselling, and recovery. This case reflects how frontline commitment, backed by district level coordination, can bridge resistance and distance, ensuring lifesaving care reaches the last mile.



3.1 Overview and Context

Health outcomes for tribal communities in Maharashtra have improved over time, yet they continue to remain poorer than state averages across several indicators. Tribal populations experience a complex pattern of disease burden characterised by the coexistence of persistent undernutrition and communicable diseases with a rising prevalence of non-communicable diseases and mental health conditions. While key maternal and child health indicators have shown steady progress, undernutrition and infectious diseases remain widespread, and recent evidence points to the growing presence of lifestyle related risks such as hypertension even in remote tribal settings.^[1]

Geographic marginalisation, poverty, and socio-cultural factors continue to shape this persistent health gap. Systematic monitoring of tribal health disparities remains constrained by limitations in major national data systems and surveys. Sources such as the Sample Registration System, National Family Health Survey, and routine administrative datasets do not consistently provide Scheduled Tribe

disaggregated estimates for all indicators. Where such disaggregation is available, it is often constrained by sample size and rarely permits reliable analysis at district, block, or sub district levels, particularly for morbidity patterns, non-communicable diseases, mental health conditions, and service quality.^[2] As a result, important tribal health gaps are frequently underrepresented in aggregated state level reporting.

Nevertheless, a longitudinal review of available evidence from NFHS and Government health MIS data provides insight into both improvements and continuing disparities in the health status of Maharashtra's Scheduled Tribe population. This chapter presents key health indicators by examining disease burden patterns and the factors influencing these outcomes, including health system performance, service access, financing constraints, cultural practices, and data limitations. It also draws upon evidence from national studies and expert assessments to contextualise observed trends and patterns.

3.2 Maternal and Child Health: Trends and Current Status

Mortality Indicators

The Sample Registration System is regarded as the principal source for estimating mortality in India. However, as it does not provide consistent social category disaggregation for key mortality indicators, National Family Health Survey estimates are used in this section to enable comparisons across social groups and to track trends over time in a consistent manner.

In interpreting NFHS based mortality trends, it is important to recognise that death registration remains relatively lower among tribal communities. This affects the

completeness of routine mortality measurement in these areas. As shown in Figure 3.1, the proportion of deaths registered among Scheduled Tribes in Maharashtra is 83.3 percent, compared to approximately 90 percent among other social groups. This gap reflects persistent inequities in civil registration coverage in tribal geographies and underscores continuing challenges in last mile death reporting and registration. It also reinforces the relevance of household survey based estimates for comparative analysis in the absence of consistently disaggregated

routine data.

Mortality among Scheduled Tribes in Maharashtra has declined substantially over the past two decades but remains consistently higher than the state average. This indicates persistent inequities in child survival outcomes. This subsection presents NFHS based trends for two key child mortality indicators, namely the Under Five Mortality Rate and the Infant Mortality Rate, and summarises recent trends in the Maternal Mortality Ratio.

As shown in Figure 3.2a, the Under Five Mortality Rate among Scheduled Tribe children declined from 92.3 deaths per 1,000 live births in NFHS two to 37.3 in NFHS five.^[3] Over the same period, Maharashtra’s overall Under Five Mortality Rate declined to 28.0 per 1,000 live births in NFHS 5. These trends indicate substantial mortality reduction across social groups, while also demonstrating the continued survival disadvantage faced by tribal children.^[3]

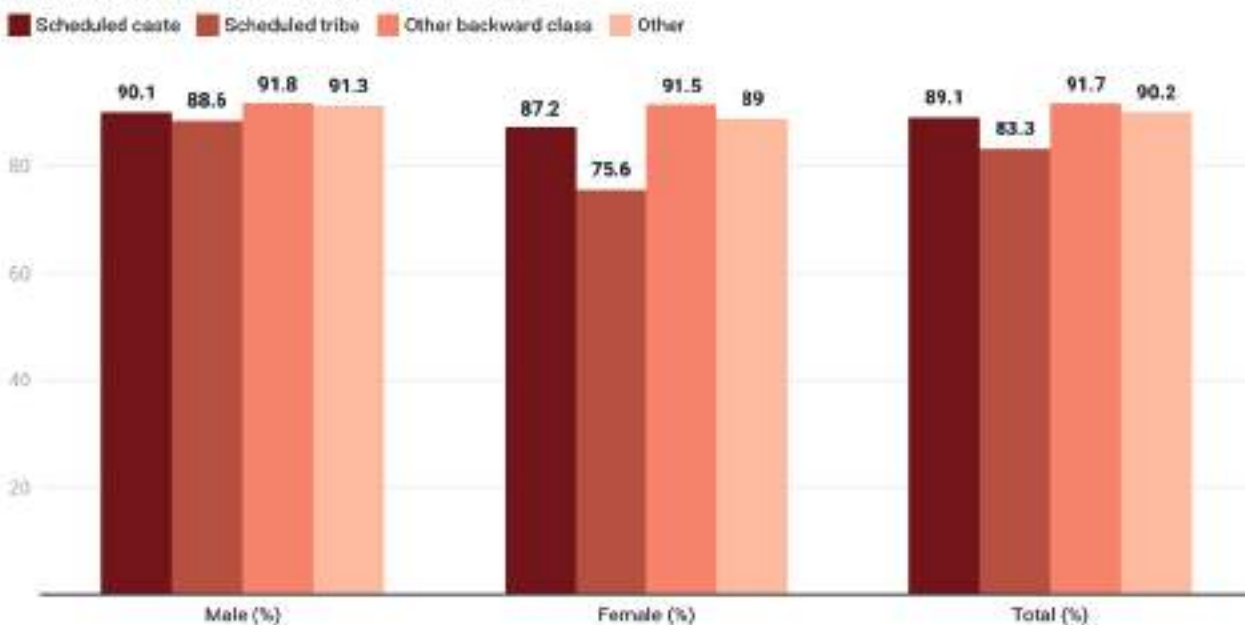
A similar pattern is observed for infant mortality. Figure 3.2b shows that the Infant Mortality Rate among Scheduled Tribes declined from 73.6 per 1,000 live births in NFHS 2 to 31.1 in NFHS 5.^[3] In NFHS 5, the overall Infant Mortality Rate for Maharashtra stands at 23.2 per 1,000 live births. Despite significant improvements, this gap reflects the persistence of differential survival risks in early childhood.^[3]

Together, Figures 3.2a and 3.2b illustrate sustained progress in reducing child mortality alongside enduring disparities between tribal and state average outcomes. These trends highlight the continued vulnerability of children in tribal areas during the antenatal, perinatal, and early postnatal periods.^[4]

Maternal mortality has also declined substantially at the state level, as seen in Figure 3.3. For the period 2021-23, Maharashtra’s Maternal Mortality Ratio declined to 36 per 100,000 live births, considerably below the

Figure 3.1 Death Registration by Caste/Tribe - Maharashtra, NFHS 5, 2019-20

Death registration (%) by caste/tribe of household head and Gender - Total, Maharashtra (NFHS-5, 2019-21)



This chart shows the percentage of deaths registered with a civil authority in Maharashtra, disaggregated by caste/tribe of household head and Gender, for deaths among usual residents during the three years preceding NFHS-5 (2019-21). It highlights gender gaps in death registration, most pronounced among Scheduled Tribes.

Source: NFHS 5 State Report for Maharashtra (2019-21) - Created with Datawrapper

national estimate of 88 per 100,000 live births, but twice as that of Kerala. However, routine Maternal Mortality Ratio reporting is not consistently available with social category

disaggregation. This limits the ability to quantify maternal mortality differentials between tribal and non tribal populations using standard surveillance systems.^[6]

Figure 3.2(a) Reduction in Under-five Mortality in Maharashtra Across Social Groups, 1998-99 to 2019-20

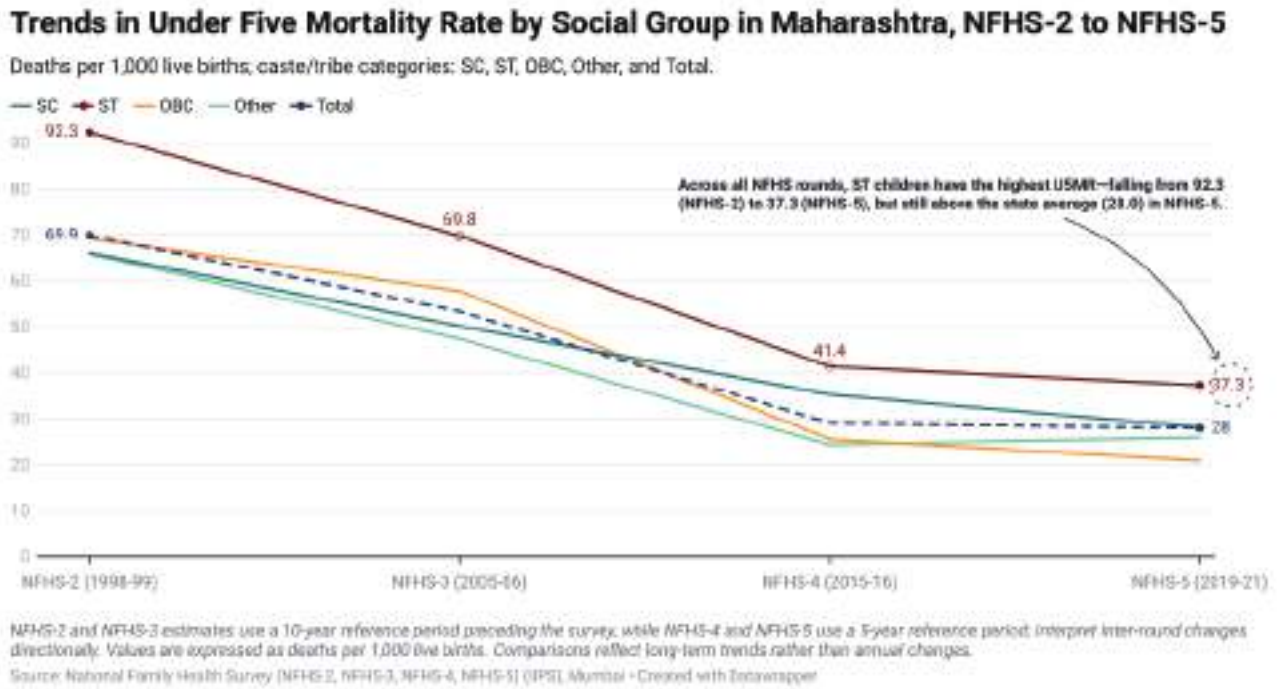


Figure 3.2(b) Reduction in Infant Mortality in Maharashtra Across Social Groups, 1998-99 to 2019-2020

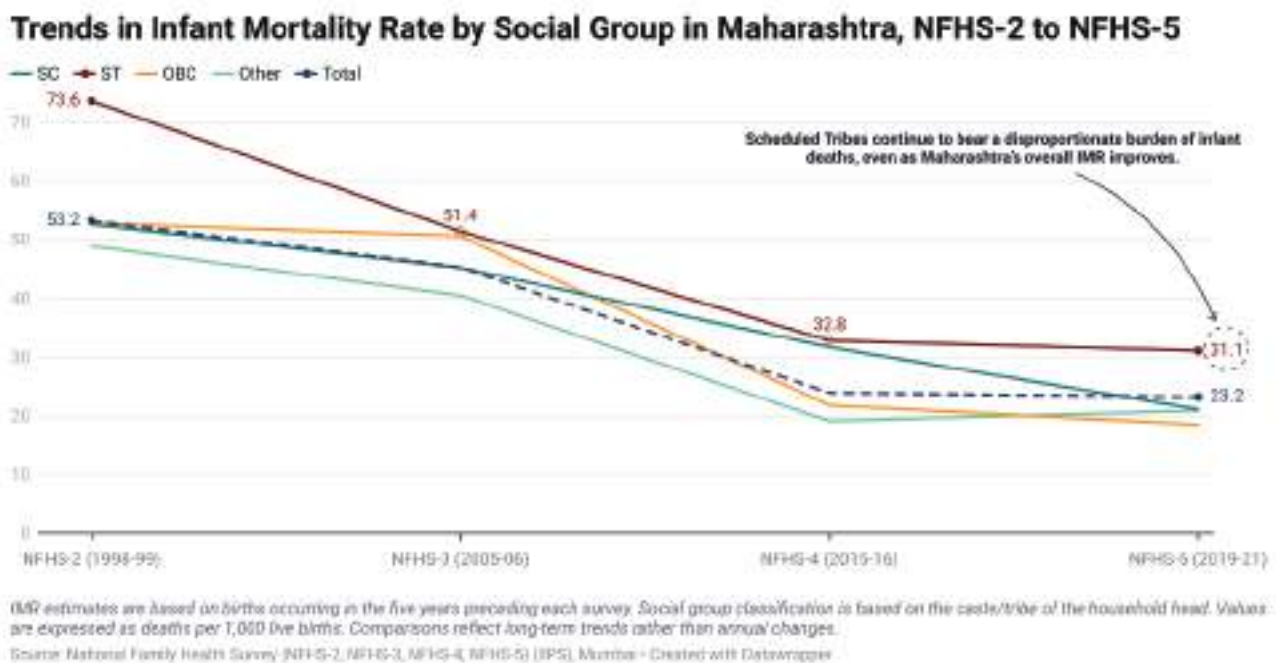
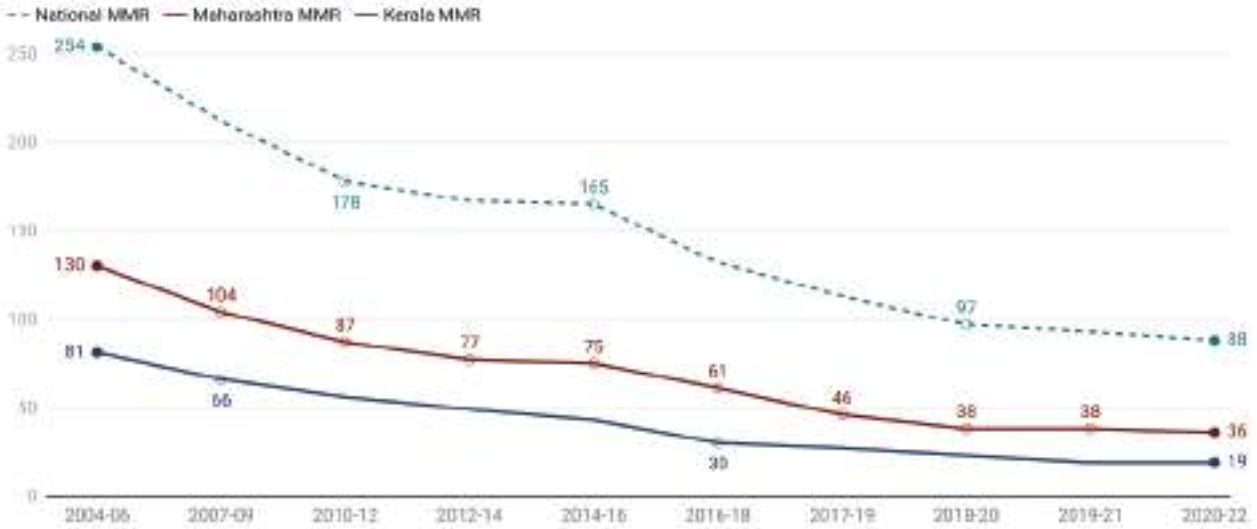


Figure 3.3 Maternal Mortality Ratio (MMR): India, Maharashtra & Kerala, SRS 2004 to 2020

Maternal Mortality Ratio (MMR) trend: India, Maharashtra and Kerala

MMR (deaths per 100,000 live births) across SRS bulletin reference periods



Source: Source: Sample Registration System (SRS) Special Bulletin on Maternal Mortality (Registrar General of India, bulletin years as shown). • Created with Datawrapper

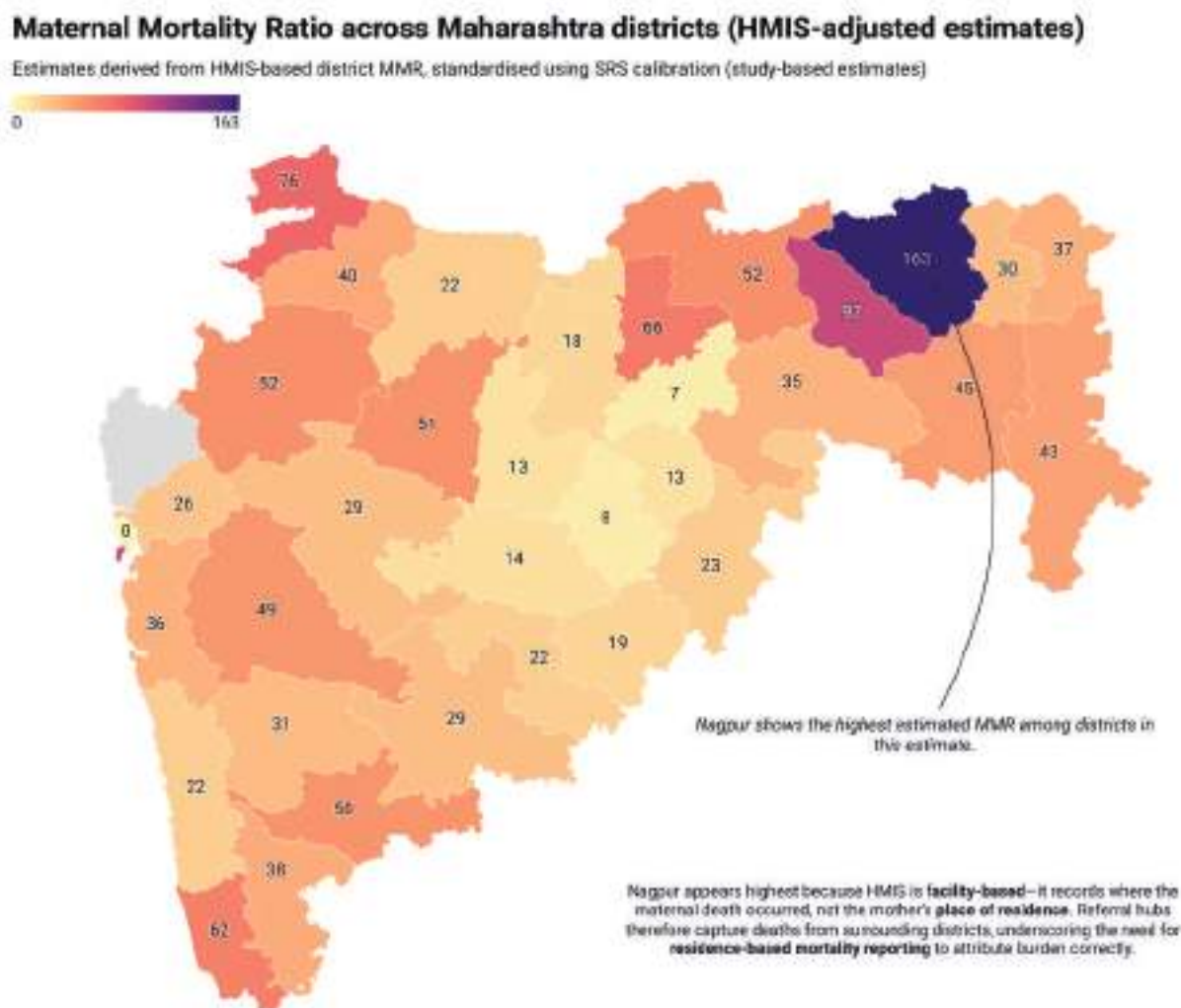
Recent research indicates that district level estimation of Maternal Mortality Ratio is feasible through the integration of administrative data sources with Sample Registration System calibration. A national study combining Health Management Information System (HMIS) maternal death data with Census and Sample Registration System (SRS) estimates demonstrates substantial spatial variation in maternal mortality across districts, including within relatively well performing states.^[7] For the western region, Maharashtra is estimated at approximately 40 maternal deaths per 100,000 live births, placing it among the best performing states nationally. The study further reports that a majority of districts in Maharashtra fall below the Sustainable Development Goal threshold of 70.^[7]

These findings indicate that state level averages can mask substantial intra state variation, particularly in geographically remote and socially marginalised areas. Within tribal dominated blocks, differential access to emergency obstetric care, referral transport,

and skilled intrapartum services may contribute to higher maternal risk even in the context of low overall state mortality levels.

The same study also identifies structural and service-related correlates of maternal mortality that are relevant to tribal contexts. Districts with higher proportions of Scheduled Caste and Scheduled Tribe populations demonstrate a positive association with maternal mortality in multivariable analyses.^[7] Health infrastructure availability and postnatal care coverage are consistently associated with lower mortality risk. These findings reinforce the importance of analysing maternal health outcomes in relation to social composition and service delivery environments in tribal geographies.

In summary, while tribal child and maternal mortality indicators are improving and may be approaching state targets, they likely remain elevated relative to non-tribal populations- underscoring an unfinished agenda to 'bridge the gap' as envisioned by the Xaxa Committee (2014).^[3]

Figure 3.4 Maternal Mortality Ratio (MMR) Across Maharashtra Districts, HMIS, 2017-19

Dist: Maternal deaths per 100,000 live births. **Nature of estimate:** HMIS-based district estimates standardised/calibrated using SRS at state level (study method). **Interpretation caveat:** Facility-based reporting can inflate MMR in referral hubs; residence-based attribution is needed for accurate burden mapping. **Coverage:** Maharashtra districts as per the study table; Palghar not shown separately in the source table (clubbed with Thane in the dataset). **Estimate Note:** District estimates are derived from routine HMIS data and adjusted using state-level calibration; they should be interpreted as indicators of relative burden and used alongside facility audits and civil registration reports.

Source: Gulkh et al. (2022), PLOS Global Public Health - district-level MMR estimates derived from HMIS (2017-2019) and calibrated using SRS. • Map data: © OSM • Created with DataCamp.

Institutional Deliveries and Skilled Birth Attendance

Institutional delivery has increased substantially among Scheduled Tribes in Maharashtra, reflecting improved access to maternity services over time. As shown in Figure 3.5, the proportion of births occurring in health facilities among Scheduled Tribe women increased from relatively low levels in NFHS 3 to 84.8 percent in NFHS 5.^[3] This shift from home to facility based delivery has contributed to improvements in maternal and newborn survival indicators documented in the preceding subsection.^[3]

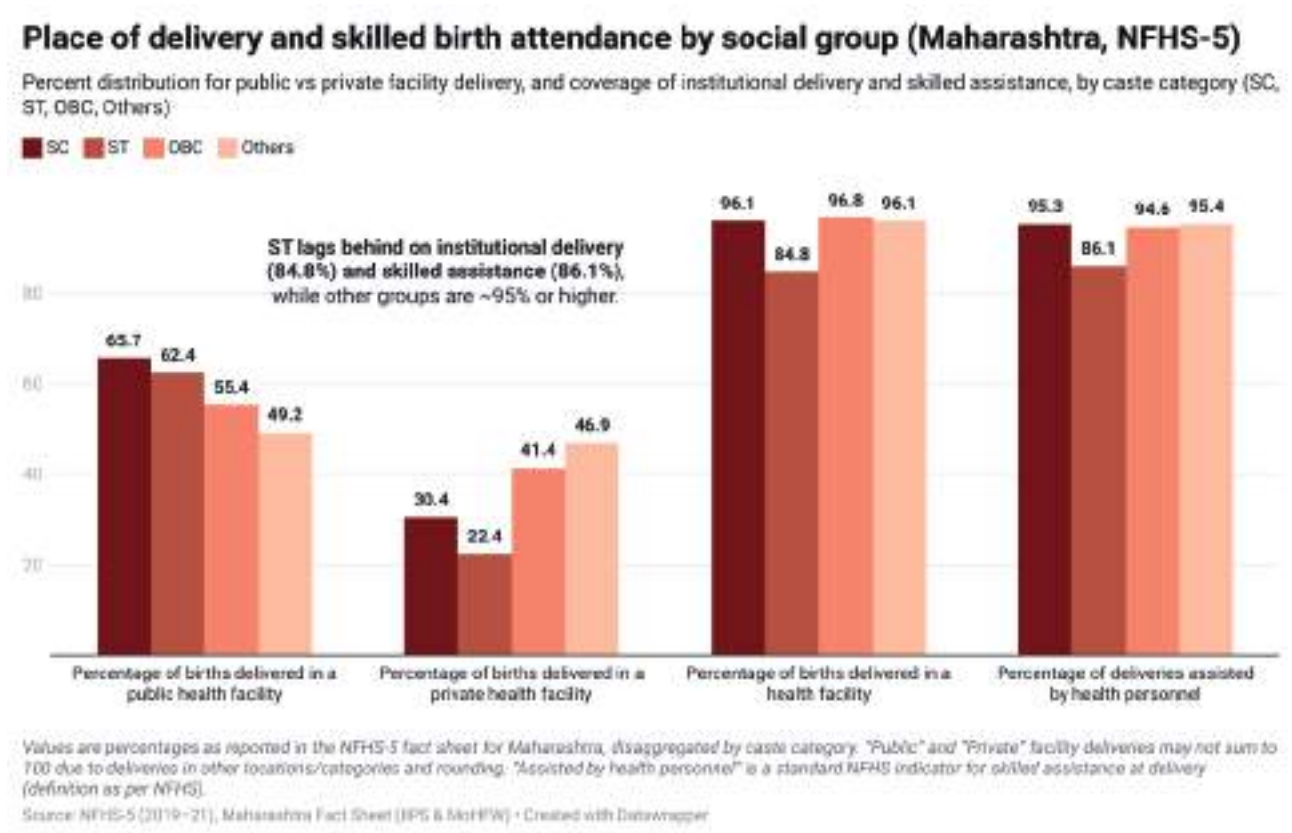
Despite these gains, differences remain in the

type of provider and location of delivery. NFHS 5 data indicate that Scheduled Tribe women are less likely to have a doctor present at delivery and are more likely to be assisted by nurses or midwives than women from other social groups.^[3] This reflects differential access to specialist led intrapartum care.

Private sector utilisation for childbirth remains comparatively low in tribal communities. Approximately one in eight deliveries among Scheduled Tribe women occur in private facilities, indicating greater dependence on public sector services.^[3] These patterns underscore the central role of public health facilities in providing maternity care in tribal areas and the importance of maintaining

adequate staffing, referral capacity, and emergency obstetric services.

Figure 3.5 Place of Delivery and Skilled Birth Attendance by Social groups, Maharashtra, NFHS-5



Antenatal and Postnatal Care

Coverage of preventive maternal health services among Scheduled Tribes in Maharashtra has improved steadily, although gaps persist in the completeness and continuity of care. This subsection summarises key antenatal and postnatal indicators using NFHS data presented in Figures 3.6 and 3.7.^[3]

As shown in Figure 3.6, coverage of four or more antenatal visits and skilled antenatal care has increased and is approaching overall state averages. In NFHS 5, 81.8 percent of Scheduled Tribe women reported receiving antenatal care from a doctor or nurse, reflecting improvement since NFHS 4.^[3] However, access to selected diagnostic services remains uneven. Only about two thirds of Scheduled Tribe women reported undergoing antenatal ultrasound examination, suggesting constraints in diagnostic availability and referral access in tribal areas.^[3]

Postnatal care remains comparatively weaker. Figure 3.7 indicates that early postnatal check-ups, including those within 48 hours of delivery, are not universal among Scheduled Tribe mothers, particularly following home births.^[3] Gaps in early postnatal contact limit opportunities for timely detection and management of maternal and neonatal complications.

Immunization and Child Health Services

Immunisation coverage among Scheduled Tribe children aged 12 to 23 months in Maharashtra is relatively high for initial vaccine doses but demonstrates notable drop offs across multi dose schedules. According to the NFHS 5 Maharashtra report, BCG coverage among Scheduled Tribe children is 95.8 percent, while first dose coverage for DPT or pentavalent vaccine and polio is 95.3 percent.^[8]

Figure 3.6 Antenatal Care Indicators by Social Groups, Maharashtra, NFHS-5

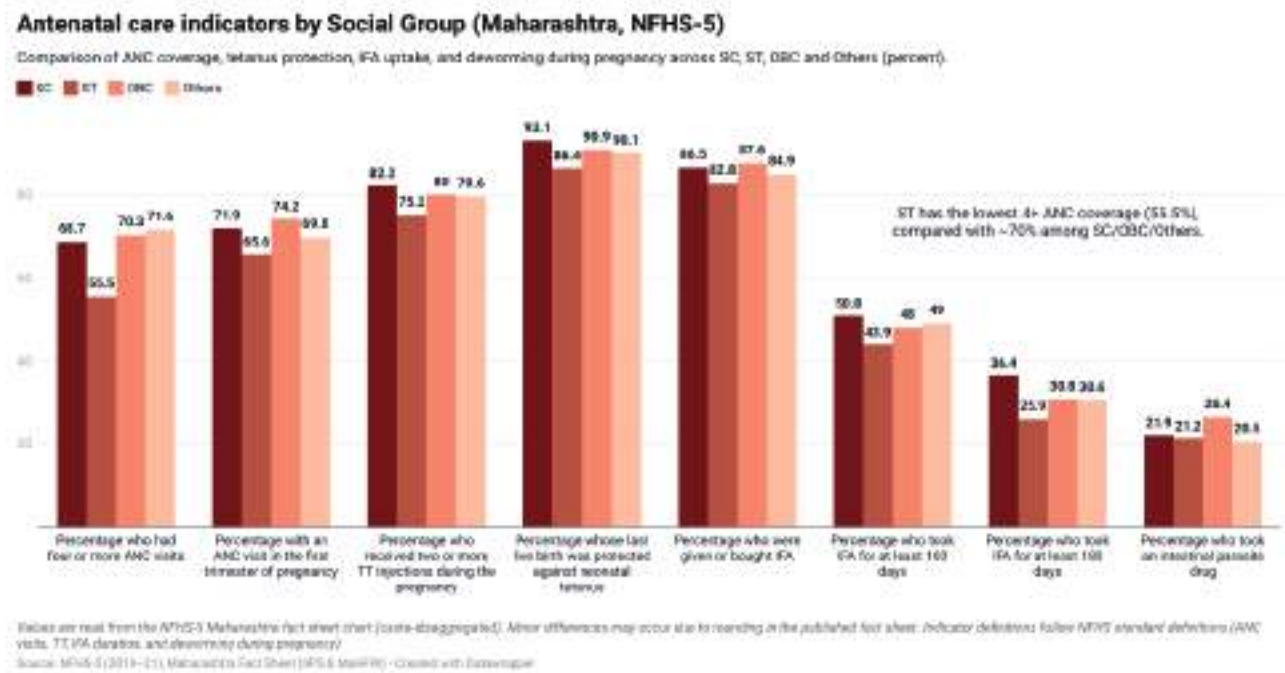
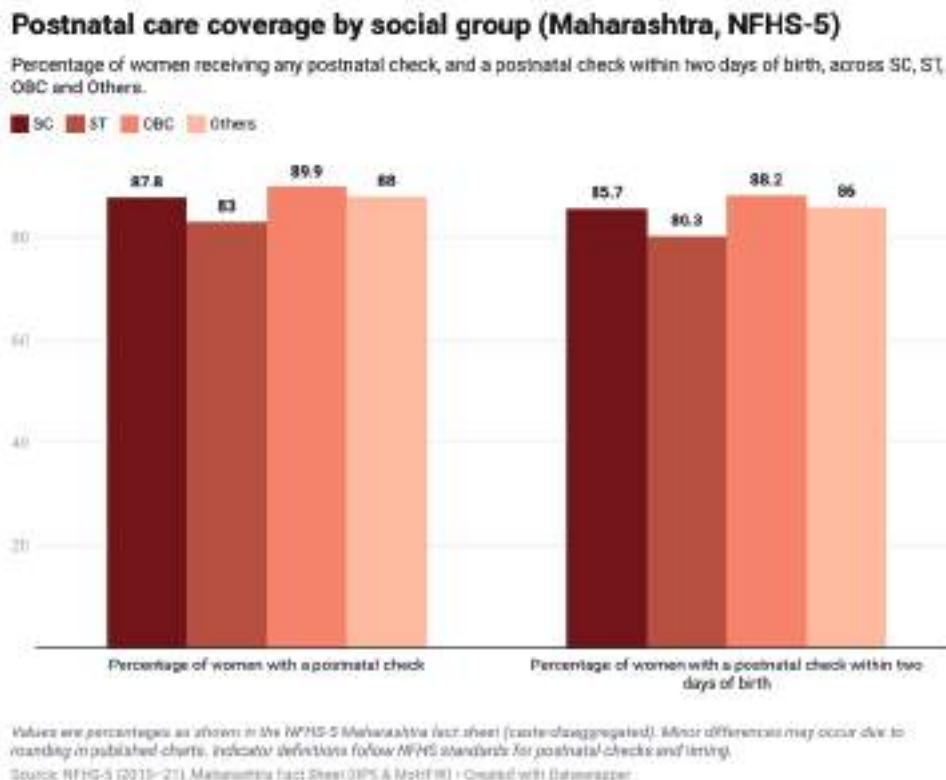


Figure 3.7 Postnatal Care Indicators by Social Groups, Maharashtra, NFHS-5



Coverage declines across subsequent doses. DPT or pentavalent coverage decreases from 95.3 percent for first dose to 87.9 percent for second dose and 83.2 percent for third dose. Polio coverage declines from 95.3 percent for

the first dose to 86.3 percent for the second dose and 79.3 percent for the third dose. Measles coverage stands at 84.2 percent.^[8] When summarised using composite indicators,

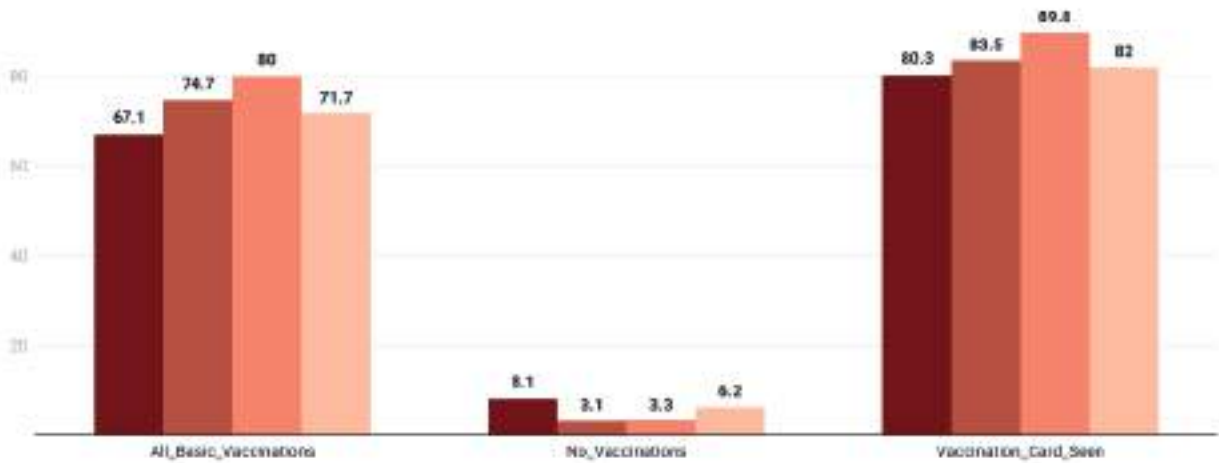


Figure 3.8 Postnatal Care Indicators by Social Groups, Maharashtra, NFHS-5

Vaccination Coverage (12–23 months) by Caste/Tribe, Maharashtra, NFHS-5, 2019-20

Percent of children with all basic vaccinations, no vaccinations, and vaccination card seen.

■ Scheduled caste ■ Scheduled tribe ■ Other backward class ■ Other



This chart compares vaccination coverage across caste/tribe groups in Maharashtra. "Card seen" indicates documentary verification by the interviewer; differences may reflect both service uptake and record retention. **Population:** children aged 12–23 months. Vaccination counted if recorded on vaccination card or reported by the mother. All basic vaccinations includes BCG, measles/MMR/MR, 3 doses each of DTP/Penta and polio (excluding polio at birth), and 4 doses of HepB-Pentac (as per NFHS definition). No vaccinations means none of the listed vaccines received.

Source: NFHS-5 (2019–20), Maharashtra Fact Sheet. Created with Datawrapper

74.7 percent of Scheduled Tribe children received all basic vaccinations, while 42.0 percent received all age-appropriate vaccinations. Approximately 3.1 percent reported receiving no vaccinations.^[8]

These patterns indicate strong initial outreach and service contact in tribal communities,

alongside challenges in ensuring timely completion of full immunisation schedules. Drop offs across multi dose vaccines suggest constraints related to follow up, tracking, and service continuity in dispersed and remote settings.

3.3 Nutritional Status and Disease Burden in Children

Child Undernutrition

To frame the discussion on child nutrition in tribal areas, this report adopts the UNICEF Conceptual Framework on the Determinants of Maternal and Child Nutrition (2020), presented in Figure 3.9. The framework conceptualises malnutrition outcomes as the result of a chain of determinants operating at three levels: immediate determinants related to diets and care, underlying determinants related to food security, feeding and hygiene practices, and access to essential services, and enabling determinants related to resources, social

norms, and governance structures.

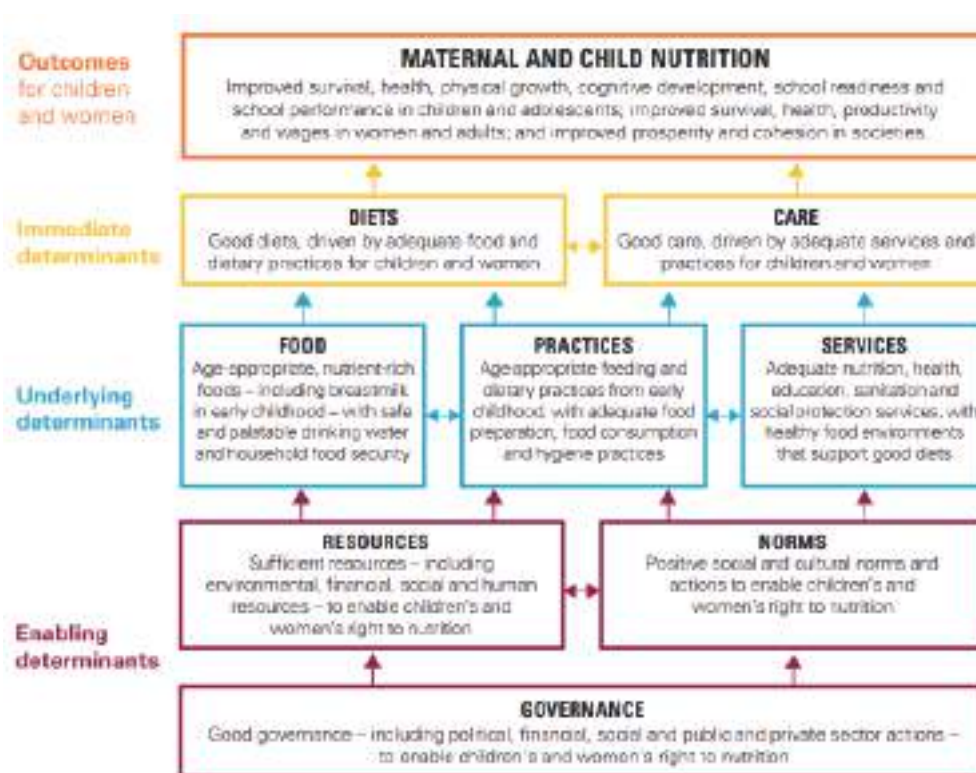
In tribal contexts, these determinants interact closely. Geographic remoteness and livelihood patterns influence food availability and dietary diversity. Physical and administrative access barriers affect the regularity and quality of service delivery. Social and cultural norms shape care seeking behaviour and infant and young child feeding practices. As a result, child undernutrition in tribal areas reflects the combined effects of multiple systems influencing food, care, and services rather than the performance of any single programme.



Figure 3.9 further illustrates the importance of convergence across sectors. The dietary pathway is shaped not only by household food availability but also by access to supplementary nutrition programmes and dietary diversification. The care pathway depends on maternal knowledge, counselling, and timely health seeking during pregnancy and early childhood. Underlying determinants reflect the

combined role of food systems, household practices related to feeding and hygiene, and access to health, sanitation, education, and social protection services. Enabling determinants related to resources, norms, and governance influence whether services can be delivered consistently in remote tribal settlements and whether communities are able to access and utilise available entitlements.

Figure 3.9 Postnatal Care Indicators by Social Groups, Maharashtra, NFHS-5



UNICEF Conceptual Framework on the Determinants of Maternal and Child Nutrition, 2005.
A framework for the prevention of malnutrition in all its forms.

Convergence Map: Tribal Child Nutrition Linked to the UNICEF Framework

To operationalise this framework for Maharashtra's tribal areas, the key determinant blocks can be mapped to departmental roles as follows.

Immediate determinants

- Diets, including child and maternal diet quality and adequacy
- Women and Child Development through ICDS, Anganwadi services, supplementary nutrition, and growth monitoring linkages
- Tribal Development through nutrition

support in ashram schools where relevant

- Food and Civil Supplies through Public Distribution System entitlements
- Care, including care practices, counselling, and timely health seeking
- Public Health through antenatal and postnatal care, immunisation, IMNCI, and counselling by ANMs and ASHAs
- Women and Child Development through counselling by Anganwadi workers, Poshan Tracker based monitoring, and home visit support
- Education and Tribal Development through health and nutrition awareness in schools and ashram schools



Underlying determinants

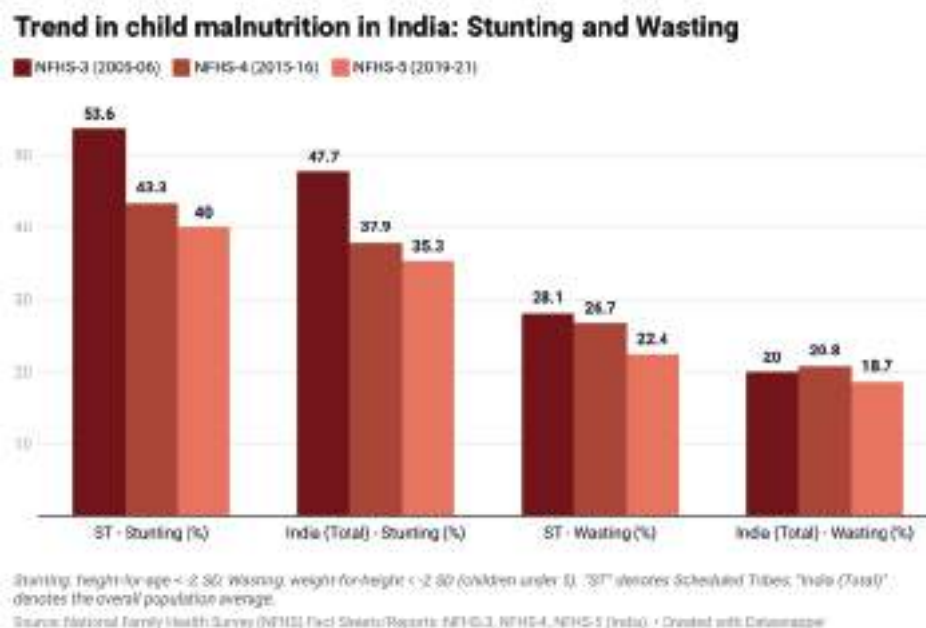
- Food security, including household availability, affordability, and diversity
- Food and Civil Supplies through PDS
- Rural Development through livelihoods and self-help groups
- Agriculture and Horticulture through nutrition sensitive agriculture
- Tribal Development through livelihood support where applicable
- Practices, including infant and young child feeding, food preparation, and WASH behaviours
- Public Health and Women and Child Development through joint counselling
- Rural Water Supply and Sanitation and Gram Development through sanitation and behaviour change interventions
- Panchayati Raj institutions through community mobilisation and Village Health and Nutrition Day support
- Services, including health, sanitation, and social protection
- Public Health through service readiness, outreach, and referral systems
- Women and Child Development through the ICDS package

- Rural Water Supply and Sanitation through safe water and sanitation infrastructure
- Social Justice and Social Welfare departments where relevant
- Tribal Development through infrastructure and access support in Scheduled Areas

Enabling determinants

- Resources, including human resources, financing, infrastructure, and logistics
- Public Health, Women and Child Development, Tribal Development, Finance and Planning departments, and district administration
- Norms, including social and cultural practices influencing feeding and care seeking
- Public Health, Women and Child Development, Tribal Development, and local self-governance institutions in collaboration with tribal leadership and community structures
- Governance, including convergence, accountability, and monitoring mechanisms
- District Collectorate and Zilla Parishad leadership, line departments, Gram Sabha institutions in Scheduled Areas, and convergence platforms such as VHNSC and block and district review mechanisms

Figure 3.10 Trends of Child Malnutrition in India: Stunting, Wasting among Children under 5 yrs (NFHS-3,4,5)



Relevance for the Committee’s Analytical Framework

The UNICEF framework highlights that malnutrition outcomes are shaped by multiple interacting determinants across sectors. In tribal settings, constraints often arise not only from gaps in nutritional supplementation but

also from service reliability, counselling quality, referral access, food security, WASH conditions, and governance capacity in remote settlements. This framework therefore provides a basis for analysing observed nutrition outcomes in relation to the functioning of interconnected systems influencing food, care, and services.

Figure 3.11(a) Severe Undernutrition in children of Maharashtra, NFHS-5

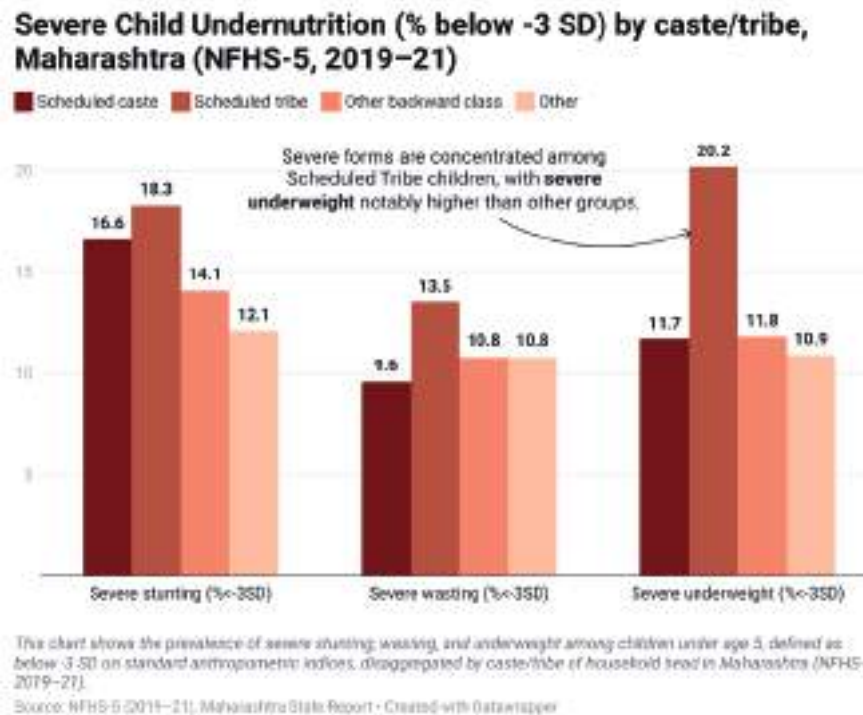
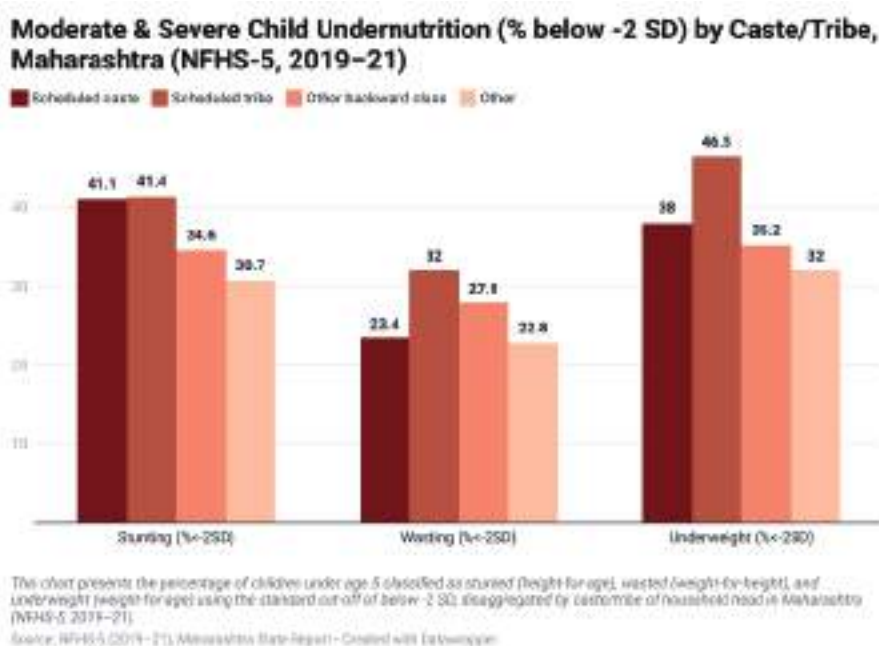


Figure 3.11(b) Undernutrition in children of Maharashtra, NFHS-5





Child Undernutrition

Malnutrition among tribal children has declined over time but continues to represent a major public health challenge. Stunting, reflecting chronic undernutrition, remains highly prevalent among under five Scheduled Tribe children in Maharashtra. NFHS estimates indicate that stunting declined from approximately 50 to 55 percent in NFHS three to 43.8 percent in NFHS four and further to 40.9 percent in NFHS five.^[2] Although this downward trend is encouraging, the current level remains high. For comparison, the overall stunting rate for Maharashtra is approximately 35 percent.^[6] In practical terms, around two out of five tribal children remain short for their age due to sustained nutritional deprivation.

Beyond stunting, tribal children continue to experience a high burden of severe and overall undernutrition, as reflected in Figures 3.9 and 3.10 based on NFHS five data. These patterns indicate that improvements in aggregate indicators have not translated into convergence for tribal communities. Persistent undernutrition reflects a combination of food insecurity, poverty, recurrent illness, and broader social determinants.

Tribal dominated regions such as parts of Melghat and interior blocks of Nandurbar have historically carried a high malnutrition burden. Periodic nutritional crises have underscored the fragility of gains in areas affected by seasonal migration and constrained service access. Although ICDS coverage has expanded in many tribal areas, available evidence indicates that both coverage and service quality remain uneven, limiting the effectiveness of growth monitoring, counselling, and supplementary nutrition in achieving sustained improvements.^{[18], [19]}

Micronutrient Deficiencies - Anemia

Anaemia remains highly prevalent among tribal populations and has worsened in recent years. NFHS data indicate that anaemia among Scheduled Tribe women aged 15 to 49 years in

Maharashtra increased from approximately 60 percent in 2015-16 to 64.6 percent in 2019-20.^[2] This represents a serious public health concern given established links with maternal morbidity, low birth weight, and reduced work capacity.

Anaemia in tribal settings reflects overlapping risk factors, including inadequate dietary intake of iron and folate, recurrent infections, and conditions such as sickle cell disease in some communities.^[2] Among children, Figure 3.11 based on NFHS 5 data demonstrates a high prevalence of , indicating that micronutrient deficiencies remain a major contributor to vulnerability in early childhood.^[20]

These patterns reflect continuing challenges related to the availability of supplements, service outreach, counselling effectiveness, follow up mechanisms, and continuity of care in remote areas.

Disease Burden in Children

High levels of malnutrition contribute to increased susceptibility to common childhood illnesses in tribal areas. Recurrent diarrhoeal disease and acute respiratory infections remain major causes of morbidity and have historically contributed to under five mortality.^[20] Environmental conditions, particularly access to sanitation and safe drinking water, continue to influence diarrhoeal risk in many tribal settlements, despite improvements through sanitation programmes.

Tribal children also remain vulnerable to area specific infectious diseases. Malaria continues to pose a risk in selected geographies, including parts of Gadchiroli, where transmission persists despite broader state level declines. At the same time, improved immunisation coverage has reduced the burden of vaccine preventable diseases, shifting programmatic emphasis towards sustained service completion and continuity.



Implications

Child nutrition outcomes are central to long term health, cognitive development, and productive capacity. Chronic undernutrition affects physical growth, learning potential, and future economic participation.^[21] The gradual improvements observed in recent surveys are important but remain insufficient to close long standing gaps between tribal and non tribal populations.

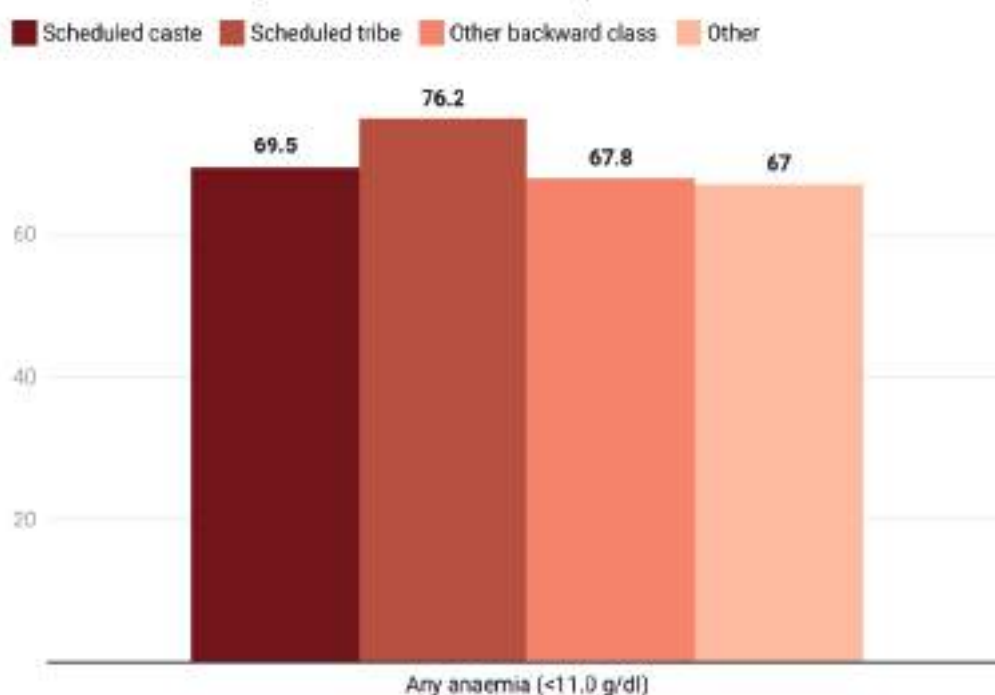
In tribal areas, nutrition outcomes continue to be shaped by household food security, the quality and consistency of ICDS services, the effectiveness of counselling and follow up, and

the functioning of community level platforms that influence feeding and care practices. Experience from civil society initiatives, including community based nutrition rehabilitation and structured maternal support models, indicates potential for contextual adaptation in tribal Maharashtra.^[22]

The persistence of nutritional inequities despite stated convergence objectives highlights the importance of sustained attention to coordination, monitoring, and accountability across systems relevant to food, care, and services.^[3]

Figure 3.12 Anemia in children of Maharashtra, NFHS-5

Anaemia among children (6–59 months) by caste/tribe, Maharashtra (NFHS-5, 2019–21)



This chart shows the prevalence of anaemia among children aged 6-59 months in Maharashtra, disaggregated by caste/tribe of household head, based on NFHS-5 (2019-21). "Any anaemia" includes mild, moderate, and severe anaemia (Hb <11.0 g/dl)

Source: NFHS-5 (2019-21), Maharashtra State Report, Table 73 - Created with Datawrapper



3.4 Communicable diseases and local health challenges

Communicable diseases continue to exact a heavy toll in tribal areas, even as overall incidence falls in the state. Maharashtra's tribal communities historically bore a disproportionate share of malaria, tuberculosis, leprosy, and other infections. Concerted efforts have led to progress as demonstrated by the elimination of leprosy as a public health problem, and declining TB prevalence with DOTS expansion, but the challenges are often exacerbated by difficult terrain and weaker health infrastructure.

1. Malaria

In adherence to the historical national trends, the burden of malaria in Maharashtra is now overwhelmingly concentrated in a few tribal-dominated districts. This pattern follows of disproportionately higher burden of malaria in tribal areas.^[23] Known as a malaria hotspot, in 2021, Gadchiroli alone accounted for over 68% of Maharashtra's total malaria cases (over 12,000 cases).^[24] Other pockets with significant tribal populations, such as parts of Gondia and Chandrapur in eastern Maharashtra, and the forested Dangs border areas of Dhule and Nandurbar in the west, also report ongoing malaria transmission.^[24] The disparity is stark: in some recent years, Mumbai city and Gadchiroli (one an urban metropolis, the other a remote tribal district) together contributed around 80% of the state's malaria cases.^[25] The factors driving high malaria in tribal areas include environmental and socioeconomic conditions including hilly, dense forested terrain with abundant mosquito breeding sites, houses that offer less protection from mosquitoes (e.g. gaps in walls), and delays in accessing treatment due to distance.^{[23], [26]} The state has mounted focused malaria control efforts in these areas- for example, distributing long-lasting insecticidal nets extensively in Gadchiroli's villages and training tribal community volunteers to do fever surveillance

and rapid testing in their hamlets.^[27] These measures have yielded some success: malaria cases in Gadchiroli have roughly halved over the past decade. Nevertheless, Gadchiroli and a few other tribal pockets remain among the 'worst-performing' areas in Maharashtra's quest to eliminate malaria. The continued concentration of malaria in tribal belts highlights the need for sustained, area-specific strategies that combine vector control with improved access to diagnosis and treatment and address socio-environmental determinants (such as housing and water management) in these communities.

Figure 8, shown below, is a map of the cumulative incidence of malaria in the state of Maharashtra from 2003 to 2024. As observed, a significant concentration of Malaria, as denoted by the red color, can be seen in Gadchiroli and Mumbai.

2. Tuberculosis (TB)

The burden of tuberculosis among tribal populations remains substantially higher than among non-tribal communities. An expert committee on tribal health estimated the prevalence of pulmonary tuberculosis among Scheduled Tribes at around 703 per 100,000 population, compared to approximately 256 per 100,000 in the general population.^[28] Beyond higher prevalence, programmatic indicators also point to structural gaps. Evidence from tribal dominated districts shows that case detection rates under the Revised National Tuberculosis Control Programme were consistently lower than national targets, with several districts reporting new smear positive case detection well below desired levels.^[29] Cure rates in many tribal districts also lagged behind programme benchmarks, indicating challenges not only in identifying cases early but also in sustaining treatment completion. These gaps are shaped by a convergence of



factors including undernutrition, overcrowded and poorly ventilated housing, delayed health seeking, seasonal migration, and reliance on traditional healers. Under the RNTCP and subsequently the National Tuberculosis Elimination Programme, Maharashtra has implemented focused strategies in tribal areas, including establishment of additional tuberculosis units and microscopy centres in remote blocks, transport reimbursements for patients, enhanced incentives for health staff, expanded access to molecular diagnostics such as GeneXpert, and nutritional support through the Nikshay Poshan Yojana. Active case finding campaigns have also been undertaken, with door-to-door screening in mapped vulnerable tribal districts in 2017 reportedly covering over 72,000 individuals and detecting previously missed cases. While these measures are improving detection and access, maintaining treatment adherence remains a key challenge in tribal settings. Strengthening community-based support through tribal ASHAs, local volunteers, and cured patient champions is therefore critical for improving treatment completion and long-term outcomes.

Other Infectious Diseases

a. Leprosy

It remains a public health challenge in parts of Maharashtra, with tribal populations disproportionately affected compared to their demographic share. Although Scheduled Tribes make up under 10 percent of the state's population, they accounted for approximately 33.7 percent of all new leprosy cases in the state in recent years, illustrating a much higher burden relative to their share of the population.^[30] This reflects persistent inequities in access to early diagnosis, care pathways, and ongoing transmission in marginalized and hard to reach communities, even as multidrug therapy (MDT) is freely available through the national programme.

b. HIV

India's overall HIV epidemic is concentrated among key populations and has declined in

much of the general population over recent years, with adult prevalence estimated at around 0.2 percent nationally.^[31] While Maharashtra has one of the highest absolute numbers of people living with HIV due to its large population and urban centres,^[32] there are no robust, nationally representative figures publicly available that show HIV prevalence specifically for Scheduled Tribe communities compared with non-tribal groups. Small studies highlight that socio-economic vulnerability, stigma, mobility, and gaps in awareness and testing can elevate risk in marginalized sub-populations.^[33] but the evidence base does not currently support a clear conclusion that tribal populations have lower or higher HIV prevalence than others.

c. Scabies

Though often overlooked in tribal health discourse, scabies represents a meaningful and under-recognised component of the communicable disease burden in vulnerable communities. The World Health Organization estimates that scabies affects more than 200 million people globally at any given time and recognises it as a neglected tropical disease.^[34] Evidence from India indicates that scabies prevalence in rural and tribal settings can be substantial, with studies reporting levels ranging from around 7 percent to over 20 percent in different tribal and underserved populations, reflecting marked clustering of risk. Data from Maharashtra are consistent with this pattern. In a camp based cross sectional assessment conducted in a tribal area of the state, scabies emerged as one of the most common dermatological conditions diagnosed among attendees, underscoring its public health relevance in tribal contexts.^[35] Structural factors such as overcrowded living conditions, limited access to water and hygiene infrastructure, seasonal mobility, and delayed care seeking contribute to sustained transmission in remote and tribal settlements. These patterns highlight the relevance of scabies within the broader neglected tropical diseases framework for surveillance and monitoring in tribal areas.



d. Neglected Tropical Diseases and Injuries

Notably, some less-publicized health threats are particularly prevalent in tribal regions of Maharashtra:

Snakebites

Snakebite envenomation constitutes a significant but often under recognised public health threat in tribal and rural regions of Maharashtra, with consequences extending beyond mortality to long term disability and socio economic distress for affected households. Maharashtra is among the states reporting a high burden of snakebite deaths nationally. Evidence from a hospital based study conducted in the predominantly tribal Dahanu block of Palghar district estimated an annual incidence of approximately 36 snakebite cases per 100,000 population, with a case fatality rate of about 4.5 percent.^[36] Most bites occurred during the monsoon agricultural season and primarily affected young adults engaged in farm or forest based livelihoods. Despite the availability of anti snake venom at rural hospitals, delayed access to appropriate medical care remains a major challenge, with many patients reaching health facilities several hours after the bite, a factor strongly associated with complications and mortality. Qualitative studies from tribal areas of Maharashtra document continued reliance on traditional healers and local remedies as the first point of care, contributing to critical delays.^[37] In response, Maharashtra has been aligning with national priorities under the National Action Plan for Prevention and Control of Snakebite Envenoming, including targeted capacity building of medical officers and frontline staff in tribal districts such as Nashik and Nandurbar on standardised snakebite management protocols.^[38] The Union Ministry of Health and Family Welfare has also urged states to strengthen surveillance by declaring snakebite cases and deaths as notifiable under existing public health legislation.^[39] However, persistent delays in care seeking, uneven emergency referral capacity, and limited routine data from remote tribal areas indicate

that further gains will depend on sustained system strengthening and more consistent last mile reach rather than one-time interventions.

Animal Attacks

Human-wildlife conflict is a notable concern in tribal and forest-fringe regions of Maharashtra where settlements and livelihoods lie close to wildlife habitats. In recent years, documented incidents of human deaths and injuries from interactions with tigers, leopards, elephants, wild boar, and other wildlife have underscored the scale of the problem in the state's rural belt, particularly in districts such as Chandrapur, Gadchiroli, Nashik, and Palghar.^[40] Analysis by independent researchers indicates that Maharashtra ranks among the Indian states with a high frequency of human-animal conflict incidents, reflecting the complex overlap of human habitation, agriculture, and forest ecosystems.^[41] The Maharashtra Forest Department has paid significant compensation for deaths, injuries, crop damage, and livestock loss related to these conflicts, pointing to the socioeconomic impact on affected households.^[42] Occupational and environmental injury risks beyond animal encounters remain salient, including falls during forest produce collection and accidents in monsoon terrain. Taken together, these patterns highlight injuries and fatalities linked to human-wildlife interactions as a substantial component of the health burden in tribal areas of Maharashtra, where limitations in timely emergency care and surveillance capacities persist alongside ecological and livelihood pressures.

Accidents and Injuries

In Maharashtra's tribal and forest fringe geographies, accidental injuries form a substantial but often under-measured part of the health burden because risk is driven by terrain, seasonality, and livelihoods, while routine injury reporting rarely disaggregates by Scheduled Tribe status.^[20] Community based mortality studies from rural tribal districts such as Gadchiroli have documented a meaningful share of deaths attributable to injuries and other external causes, reflecting exposures that



sit outside routine disease program narratives.^[43] In parallel, state level burden estimates show injuries contribute a sizable proportion of overall health loss in Maharashtra, and road traffic trauma remains a major driver of injury mortality at the state level.^[44] In tribal belts, the same injury categories seen statewide, including road crashes, drowning, falls, and lightning, tend to carry higher fatality risk because of delayed discovery, long travel times, and limited pre-hospital care, especially during the monsoon when river crossings and flood related hazards peak.^[45] The evidence therefore supports a simple conclusion: injuries in tribal Maharashtra are not rare events but a predictable, seasonal, and context specific burden, even though the public datasets that quantify them are usually reported only at state or district level rather than by tribal status.

e. Non communicable diseases

These are no longer peripheral in Maharashtra's tribal health landscape. While communicable diseases and undernutrition remain important, field evidence from tribal districts shows a clear presence of hypertension, diabetes, and cardiovascular events even in populations that are often assumed to be protected by traditionally active lifestyles.^[46] In the Katkari Scheduled Tribe of coastal Maharashtra, a community-based survey documented hypertension in about 16.8 percent and diabetes in about 7.3 percent of adults, alongside other cardiovascular risk markers, indicating that these conditions are already established rather than hypothetical.^[47] In Gadchiroli, a predominantly rural and substantially tribal district, stroke has been documented as a leading cause of death in community mortality studies, with stroke alone accounting for roughly one in seven deaths in one large rural cohort, signaling the downstream impact of undiagnosed or poorly controlled risk factors such as high blood pressure.^[48] These local findings align with the broader picture from the Maharashtra NFHS 5 state report, which records substantial levels of measured hypertension and elevated blood sugar in the adult population, underscoring

that cardiometabolic risk is widespread in the state and not confined to urban settings.^[49] The emerging pattern in tribal areas is plausibly linked to a transition in diets and livelihoods, with greater dependence on polished cereals and market oils, rising access to packaged and ultra processed foods, continuing tobacco and alcohol exposure in some communities, and uneven access to early detection and long term treatment, all of which can push risk upward even when baseline physical activity remains high.

f. Mental Health Concerns

Mental health challenges among tribal communities in Maharashtra remain under recognised but are increasingly evident through emerging research and district level evidence.^[50] Anxiety and depression appear to be the most common conditions, particularly among tribal women, and are closely linked to chronic physical health problems, nutritional stress, and reproductive health burdens.^[51] Studies show that worsening physical morbidity is associated with higher levels of anxiety, depression, and stress, alongside reduced resilience and psychological well-being, suggesting a reinforcing cycle of physical and mental vulnerability. Community evidence from tribal dominant districts such as Gadchiroli indicates that nearly one third of tribal adults screen positive for anxiety or depressive symptoms, challenging assumptions that tribal populations are relatively protected from common mental disorders.^[52] Substance use further compounds mental health risk. NFHS five data show significantly higher tobacco use among Scheduled Tribe men and women in Maharashtra compared to the general population, with alcohol and tobacco use acting both as coping mechanisms for psychological distress and as contributors to depression, anxiety, injury, and long-term mental health impairment.^[6] Together, these patterns point to a substantial but largely unmet mental health burden in tribal Maharashtra that warrants explicit programmatic attention beyond traditional maternal child health or communicable disease



frameworks.

In summary, tribal regions of Maharashtra continue to face a dual health burden, with persistent infectious diseases linked to poverty and living conditions alongside a growing prevalence of non-communicable diseases and injury related morbidity. While targeted efforts in tribal blocks have led to progress in tuberculosis, malaria, and other communicable diseases, these gains risk being undermined if primary healthcare systems are not simultaneously strengthened to address chronic conditions, trauma, and long-term care

needs. National and state level assessments, including successive Common Review Mission reports, consistently underline that health interventions in tribal areas must be adapted to local epidemiological patterns, cultural practices, and access constraints rather than relying on uniform national program designs. Sustained community engagement, trust building, and culturally sensitive service delivery emerge as critical determinants of effectiveness, particularly in reducing overall disease burden and improving health outcomes among tribal populations in Maharashtra.

3.5 Health System Utilization and Out of Pocket Expenditure (OoPE) in Tribal Areas

Healthcare seeking behaviour in tribal Maharashtra sits inside a landscape of structural distance and social distance. The first is physical. Many Adivasi habitations are not simply 'rural'; they are geographically cut off by terrain, forest corridors, seasonal rivers, and weak transport. When a 'free' service requires a half day walk, a paid vehicle, and the loss of daily wages, the system is effectively rationing care through geography. This is not an abstract constraint. A national audit of the Tribal Sub Plan documented persistent gaps in health infrastructure and delivery systems in tribal areas, including shortfalls in facilities and functional service access that translate into delayed care and avoidable referrals.^[53] Maharashtra's tribal belt shows the everyday reality of what this means. In Gadchiroli, for instance, basic public transport connectivity to clusters of remote tribal villages has historically been absent, and even a single state-run bus route arriving in an interior pocket was treated as a civic milestone because it changes the feasibility of reaching health services at all.^[54] The second is social. Recent Maharashtra evidence from Palghar shows that even when services exist, the interpersonal experience at public facilities can shape utilisation. A 2025 cross sectional study of tribal households in Palghar found substantial private sector use

alongside public use and reported that provider behaviour and perceived discrimination at public health centres reduced willingness to seek care there.^[55] This is where an indigenous weaving lens matters. Health seeking is not a binary between 'modern medicine' and 'belief.' It is a rational navigation of a plural world, balancing distance, dignity, time, trust, and the likelihood of being heard.

Out of pocket expenditure and private sector use in tribal Maharashtra follow the same logic. Families do not choose private providers only because they prefer them. They choose them because the public system, when under supported, offloads costs onto households through stock outs, unavailable diagnostics, repeated referrals, and transport. The National Sample Survey Office health round shows that out-of-pocket spending persists across groups and rises sharply with private care, with medicines and diagnostics typically forming a major part of household spending even when 'free care' is the policy promise.^[56] Maharashtra's insurance architecture has improved protection against catastrophic hospital bills through the Mukhyamantri Arogya Yojana and the Pradhan Mantri Jan Arogya Yojana, but the design focus is still largely on hospitalisation rather than the daily economics



of primary care, chronic illness management, and repeated travel costs from interior villages.^[57] This is where private care is not necessarily 'bad.' In many tribal blocks, the private system includes mission hospitals, charitable facilities, and small clinics that are locally trusted and often more responsive. The problem is misalignment. When public primary care is thin and the insurance and subsidy architecture mainly pays for tertiary care, families get pushed into a costly middle path: they pay out of pocket for consultations, injections, diagnostics, and medicines locally, and then still face referral costs for complications. A 2023 mixed methods study in Palghar on screening for non-communicable diseases and common

cancers among tribal women explicitly flags out-of-pocket expenditure, paucity of facilities, and the pull of traditional and local pathways as barriers to uptake, which is exactly the pattern seen when systems ask people to prioritise health without making health logistically possible.^[58] If Maharashtra wants private and public to coexist productively in tribal areas, the direction is straightforward. Strengthen primary care availability and supply in tribal blocks, and then align financing so that medicines, diagnostics, and transport are covered as reliably as hospital beds. Otherwise, the state unintentionally subsidises late-stage illness while households fund the earlier stages.

3.6 Interface with Traditional/Indigenous Healers

The interface with traditional healers is the most misunderstood part of this story, and it needs to be approached with intellectual honesty rather than paternalism. Traditional healers are not just 'belief holders.' They are social institutions of care embedded in language, meaning, and community authority. They provide interpretive frameworks for illness, continuous availability, home based support, and often a form of culturally safe care that formal systems struggle to offer. In a pluralistic indigenous setting, healers are frequently the first node of triage, particularly for fever, pain, jaundice, injuries, and psychosocial distress. The risk is not their existence. The risk is the delay of referral in time sensitive emergencies and the economic drain of repeated, ineffective cycles of care. National tribal health policy thinking has increasingly recognised that durable gains require community rooted approaches rather than one size models imposed from outside, with an emphasis on culturally appropriate engagement and local participation.^[28] That logic extends to healers. The most pragmatic goal is not to replace them, but to reshape the pathway so that healers become early

identifiers and referral allies for danger signs while continuing safe practices that communities value. This is not hypothetical. India has piloted voluntary certification and training models for Traditional Community Healthcare Providers through the Quality Council of India and the Foundation for Revitalisation of Local Health Traditions, with the stated aim of recognising prior learning, setting competency standards, and improving safe practice and referral linkages.^{[59], [60]} More recent project documentation shows the model being operationalised through assessment and certification efforts with tribal healers, which is useful because it moves the idea from 'policy talk' into implementable systems design.^[61] For tribal Maharashtra, this offers a usable frame: build cultural safety into public services, stop treating indigenous care as an enemy, and instead build a referral ecology in which local trust accelerates timely biomedical care for emergencies while protecting communities from harmful practices and financial exploitation. When the system respects people's worlds, people show up to the system.



3.7 Urban-Migrant Tribal Health

It is important to acknowledge that Maharashtra's Scheduled Tribe population is not confined to rural Scheduled Areas. A significant number of Adivasi households live in urban and peri urban spaces, often through seasonal or semi-permanent migration, settling in informal settlements in cities such as Mumbai, Thane, Pune, and Nashik. Their health risks and service access pathways differ from both rural tribal communities and the general urban poor, and they often fall through administrative cracks because tribal welfare systems are frequently designed around place-based entitlements while urban health systems are designed around settled populations with stable addresses and documentation.^[3]

Seasonal and circular migration is a defining feature of livelihoods for many tribal families in Maharashtra, with movement linked to construction, brick kilns, sugarcane cutting, small industry, and agricultural labour. The public health consequence is not only exposure to harsher living and working conditions at destination sites, but disruption of continuity of care. Children may miss scheduled immunisation sessions, growth monitoring, and supplementary nutrition; pregnant women may drop out of antenatal care and timely institutional delivery planning; and treatment adherence for chronic conditions becomes fragile when the family shifts work sites and districts. Entitlements that should travel with the person often do not travel in practice. Breaks in Public Distribution System access, Integrated Child Development Services contact, and scheme utilisation occur because of proof of residence barriers, weak portability, and incomplete digital linkage, especially for families moving between rural tribal blocks and urban informal settlements.^{[62], [63]}

Maharashtra's Migration Tracking System is a significant attempt to respond to this reality by digitally tracking migrating women and children so services can be continued at the destination and re linked on return. The system is anchored

in the Department of Women and Child Development and is currently implemented largely through the Integrated Child Development Services ecosystem, focusing on migrant children, pregnant women, and lactating mothers.^{[64], [65]} The limitation is that migration related health risk does not sit neatly inside one department's mandate. If the Migration Tracking System remains siloed, health continuity remains partial. Integrating the Migration Tracking System with the Public Health Department's routine systems, or enabling a shared interface and referral workflow, would allow immunisation sessions, antenatal and postnatal follow up, and treatment tracking to be coordinated across districts and cities. Implementation evidence and program documentation around the Maharashtra Migration Tracking System also underline that the highest seasonal migration loads are in a few occupational clusters, suggesting that inter departmental workflows could be designed around predictable migration seasons and routes rather than treated as ad hoc exceptions.^[64]

In urban contexts, tribal migrants face a layered risk environment. Occupational exposure to dust, chemicals, heavy loads, heat, and unsafe worksites combines with environmental exposures from overcrowded settlements, air pollution, poor water and sanitation, and high injury risk. These conditions increase acute infections and exacerbate non communicable disease risks, while also creating a sustained mental health load linked to dislocation, discrimination, and economic insecurity. Children in informal settlements show vulnerability patterns that resemble rural deprivation while facing additional barriers in accessing city-based health services. Evidence on Mumbai's slum health utilisation demonstrates the high need environment and complex utilisation pathways typical of dense informal settlements, which is directly relevant for understanding the lived health system



interface of tribal migrants living in similar settings.^[66] Maharashtra state health planning documents also explicitly recognise unplanned housing and slums as major determinants of health risk and service demand in highly urbanised districts, reinforcing the need to treat migrant tribal health as a cross cutting system problem rather than a niche welfare issue.^[67]

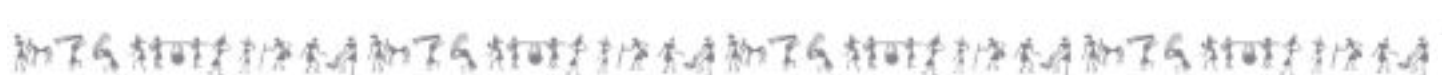
The urban and migratory tribal population thus forms a distinct vulnerable subgroup that requires coordinated attention across rural and

urban systems. The policy direction is clear. Portability of entitlements must become real at the point of service, not merely a feature on paper. Migration tracking should be treated as core public health infrastructure, with data sharing protocols that protect privacy while enabling continuity of care. Finally, urban health programs should explicitly identify and include tribal migrants as a priority population, not assume that the category tribal is only rural.

Conclusion

In conclusion, Maharashtra's tribal health status has improved, but the equity gap remains substantial, and many of the aspirational goals outlined in the Xaxa Committee report have not been fully realised in practice.^[3] The state now has an opportunity to use the momentum of broader health system improvement to directly lift its tribal communities, including those who are mobile and urban. Bridging the last mile will require investment and system design choices that treat dignity, language, and continuity as core components of care. It will also require listening to tribal voices and designing with communities rather than for them. The

evidence across India consistently shows that progress accelerates when communities are empowered and local realities shape program architecture, whether through community mediated outreach, culturally safe frontline services, or respectful interfaces with indigenous care systems.^[68] Maharashtra can move closer to health equity for its indigenous population by institutionalising portability, strengthening accountable primary care in tribal and migrant destinations, and ensuring that mobility does not translate into invisibility.



From Evidence to Action: Framing the Recommendations

The preceding chapters of this report examined the context in which tribal health policy in Maharashtra must operate. They laid out the demographic profile of tribal populations, described patterns of disease and vulnerability, and analysed the structural and social determinants shaping health outcomes. Together, these chapters established a grounded understanding of what the challenges are and, up to a certain extent, why they persist.

This chapter marks a transition in emphasis rather than a complete shift in approach.

While diagnosis and problem identification continue, the focus now expands to include system responses. The analysis moves closer to the interface between communities and the health system, examining not only outcomes and gaps but also the design, functioning and limitations of existing service delivery arrangements. The intent is to diagnose how the system behaves in practice and, alongside that diagnosis, propose concrete, implementable recommendations.

To organise this dual task of continued analysis and action-oriented reform, the Committee has structured the recommendations using the World Health Organization's health system framework.^[1] This framework conceptualizes health systems through six interlinked pillars, including service delivery, health workforce, health information systems, access to medicines, financing, leadership, and governance. Adopting this structure allows the recommendations to remain analytically rigorous while avoiding fragmented or program-specific solutions.



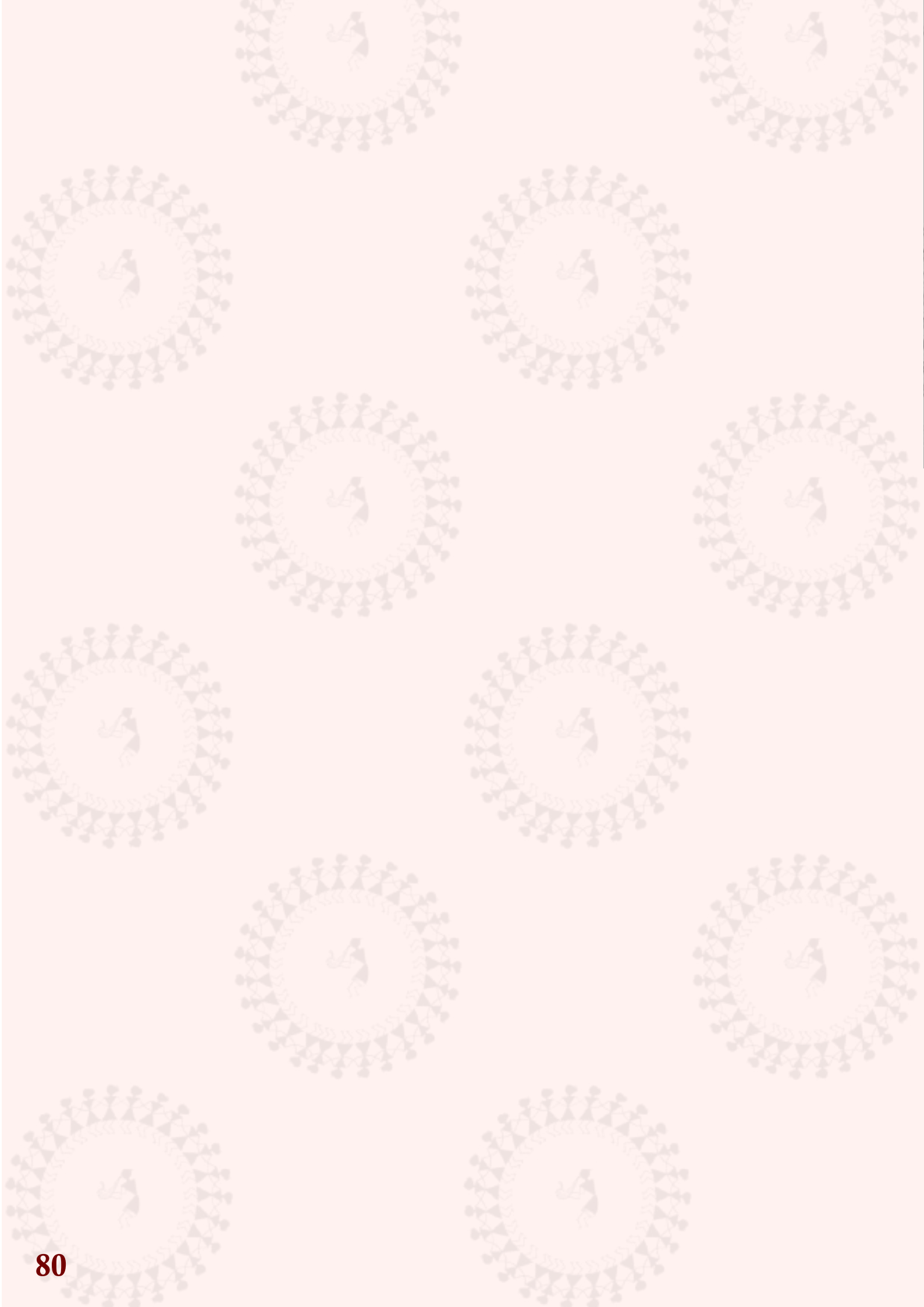
Service delivery is taken up first, not because other pillars are less important, but because it is the point of systemic weakness most acutely experienced by tribal communities. In contexts marked by difficult geography, seasonal migration, language barriers, and low public-healthcare-seeking behaviour, even well-designed programs can fail if delivery mechanisms are not adapted to local realities. Examining service delivery, therefore, provides a lens through which workforce deployment, health information systems, financing arrangements, and governance challenges can also be diagnosed.

The chapters that follow thus combine continued diagnosis with system redesign. Each theme draws on field observations, administrative data, existing evidence and operational experience from tribal areas. This section marks the point in the report where understanding is deliberately paired with action, and where evidence is used not only to explain tribal health inequities, but to reshape the health system response to them.

4

Health Service Delivery





गर्भवतीचा भर पावसात बैलबंडीतून प्रवास; अखेर रुग्णवाहिकेतच प्रसूती

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दनांनी अत्यवस्थ
ला बैलबंडीतून भर
अंधारात राह
पार करावे लागले.
मदतीला धावले.



सखरूप प्रसूती झाल्यानंतर कलावती बायणपल्ली या महिलादेख



गर्भवती महिलेला परासले बैलगाडीतून १० किलोमीटर

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✦ Stories from Field

Timely Action That Saved Two Lives

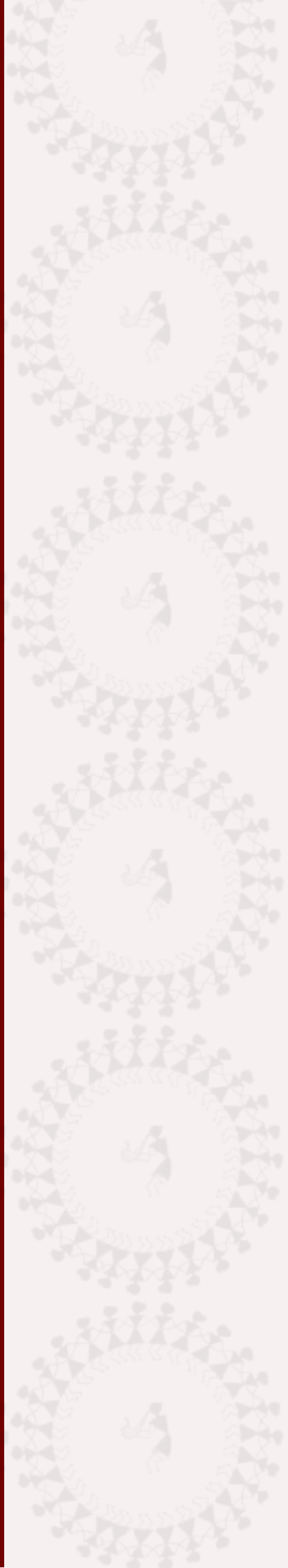
Safe Delivery During Floods

Sironcha, Gadchiroli

Note: For the purpose of confidentiality and privacy, the name of the patient has been changed.

In July 2024, an incident from Tekaditala Primary Health Centre (PHC), Sironcha block, Gadchiroli district, demonstrated the commitment and preparedness of frontline health staff working in geographically challenging tribal regions. On the night of 22 July 2024, a pregnant woman, Mrs. Kalavati Rajkumar Bamanpalli, residing in Chikyala village, developed premature labour pains, nearly a month before her expected delivery date. The village had been severely affected by continuous rainfall. Flooding had submerged multiple connecting roads and bridges, electricity supply had been disrupted, and routine communication channels were non-functional. Although the nearest health facility was only 10 km away, the flooding made direct access impossible. The case was reported to Dr. Sachin Madavi, Medical Officer, PHC Tekaditala. Assessing the high-risk nature of the case, he immediately activated an emergency response with the PHC team. Due to submerged roads, the usual 10 km route required a 70 km detour via safer paths. The team travelled late at night, starting around 11:00 PM, carrying essential obstetric supplies, emergency medicines, and life jackets. Upon reaching Parasewada, the team encountered another obstacle: rising water levels prevented any motor vehicle from proceeding further. The team adapted by using a bullock cart to cross the flooded stretch safely. Despite difficult terrain and poor visibility, they reached the patient's home, provided preliminary assessment, and began transport toward the health facility. While travelling back toward PHC Tekaditala, the woman experienced rapid progression of labour near Nemada village, making further transportation unsafe. In these circumstances, Dr. Madavi performed the delivery inside the ambulance, ensuring adherence to sterile procedures

despite space and weather constraints. A healthy 2.5-kg newborn was delivered safely during the ongoing rainfall. Both the mother and newborn were subsequently stabilised at PHC Tekaditala. Follow-up examinations confirmed that they were healthy and recovered well. The prompt decision-making, coordination, and risk-responsive action taken by the PHC team prevented what could have been a maternal and neonatal emergency.



This chapter examines how healthcare services are delivered in Maharashtra's tribal regions, aligning with the WHO's first health system pillar: Service Delivery. The Committee presents its assessment of the existing network of facilities (Anganwadis, sub-centers, PHCs, CHCs, mobile units etc) in tribal blocks: their availability, accessibility, and functionality, to identify gaps and suggest possible redesign. Each section offers evidence-based analysis followed by actionable recommendations, ensuring the discussion remains grounded in on-the-field realities.

Historically, multiple frameworks have attempted to improve rural and tribal healthcare service delivery. The Minimum Needs Programme (MNP) of the 1970s expanded the rural health infrastructure by setting norms for facilities in underserved areas (e.g. one sub-health centre per 3,000 population in tribal/hilly regions, versus 5,000 in plains).^[2] Subsequent initiatives under RCH/NHM introduced a hub-and-spoke referral

model: strengthening primary units for basic services (such as 24x7 PHCs for Basic Emergency Obstetric and Newborn Care) and designating higher centers like CHCs as First Referral Units (FRUs) to manage complicated cases (Comprehensive Emergency Obstetric and Newborn Care).^[2] More recently, the 'time to care' principle under the Health and Wellness Centre program mandates that every community should be within a half-hour travel of essential primary care.^[3] These efforts reflect continuity in aiming for accessible care, but gaps remain in tribal areas. Geography, sparse populations, and systemic inefficiencies have meant that past strategies did not fully reach remote tribal hamlets. The current Committee's recommendations build on these lessons. It reinforces earlier concepts like local outreach and referral linkages, while introducing innovations (health posts, mobile ambulances, inter-departmental convergence) to bridge last-mile gaps and ensure no tribal community is left behind in receiving timely, quality care.

Theme 4.1 Geographic and Infrastructure Barriers to Access

Tribal communities in Maharashtra often remotely inhabit rugged terrain: from the Sahyadri hills to dense Vidarbha forests, where conventional healthcare models struggle to reach. Many villages are hours away from the nearest health facility, with access further hampered by poor roads, lack of bridges, and seasonal isolation (e.g., monsoon floods cutting off hamlets). In Melghat and Gadchiroli, health teams reported trekking for miles to conduct immunization sessions. Such geographical isolation means that a pregnant woman in a tribal hamlet may not get to a hospital in time, or a child with fever may see a clinician with a lot of mental and physical effort. Moreover, several tribal pockets have no mobile network or internet, undermining telemedicine and emergency communication. The Committee underscores that basic infrastructure is a public

health concern: without roads and telecom towers, even the best health schemes cannot penetrate.

Therefore, the health sector must work with public works, transport, and telecom departments to ensure physical and digital access as a precursor to service delivery. Public health's mandate in tribal areas should explicitly include advocating for 'health enabling infrastructure': all-weather roads, footbridges over rivers, and mobile network expansion, so that no village is unreachable. The responsibility for delivering healthcare does not end at the clinic's door; it extends to bringing the clinic within reachable distance of tribal communities.



Recommendation 4.1

Adopt a 'Last-Mile Access and Service Delivery' policy for tribal health.

The state should map all tribal habitations beyond a reasonable distance (for example, 3–5 km or more than one hour of travel time) from the nearest health facility and classify these as Priority Access Zones. The Tribal Health Cell, as discussed subsequently, may be utilised for this purpose. In addition, to social sector war room at the Chief Minister's Office and planning departments should systematically measure and monitor travel time to health facilities and other essential infrastructure to enable evidence based planning and prioritisation.

For such zones, a convergent plan with the Departments of Rural Development, Roads and Bridges, and Telecommunications must ensure the construction of access roads and footpaths, installation of cell towers or signal boosters, and provision of appropriate transportation, including ambulance boats and off road vehicles, as required. Health officials should formally report infrastructure barriers impeding service delivery, triggering time bound inter departmental action. Embedding access indicators within routine planning and performance review systems will ensure that connectivity gaps are identified early, addressed systematically, and monitored as part of the state's health system strengthening efforts.

Theme 4.2 Decentralized Service Delivery Models for Remote Areas

Tribal Maharashtra presents a geography problem more than a population problem. Even where national norms are relaxed for tribal and hilly areas, a facility that is in place on paper can remain effectively out of reach when settlements are dispersed across padas, forest corridors, steep gradients, or river edges. A single sub centre may technically cover an appropriate population, yet still sit one to three hours away for many households because the catchment is spread across dozens of hamlets. The predictable consequence is delayed care seeking, missed preventive services, and a drift toward informal care that feels closer and faster.

The Committee therefore treats decentralisation as a structural design choice, not an add on. The objective is permanent presence for routine and first contact care at a granularity that reflects travel time rather than headcount. This can be achieved by creating Health Posts below the sub centre tier in the most remote pockets. These could be simple one room structures positioned at hamlet or cluster level where the nearest formal facility is

beyond a practical walking threshold. Each Health Post would typically serve a cluster of padas or a population band of roughly five hundred to one thousand, but the operative criterion should be time and terrain rather than a rigid number.

Health Posts should be framed clearly as routine access points and not as emergency facilities. Staffed by a resident Auxiliary Nurse Midwife or Community Health Officer from the local area, they would deliver minor ailment care, antenatal and postnatal follow up, immunisation sessions, nutrition counselling, and continuity for chronic conditions. Limited overnight observation for low-risk cases can be considered, but the purpose is safe watchful care and timely referral rather than independent inpatient management.

To make decentralisation real, staffing must be reinforced by community linkage. National guidelines already permit flexibility in deploying community health workers in tribal and difficult areas, including allowing one worker per habitation rather than per population norm.^[4]



Maharashtra has a historical precedent in pada-based volunteer approaches, and the Committee proposes a structured revival through Pada Sevaks. One female and one male volunteer per hamlet can be identified locally and trained by the Primary Health Centre team to support home visits, risk identification, health promotion, and referral activation. This approach aligns with the recommendations of the Expert Committee on Tribal Health, which explicitly emphasised redesigning health services to reach each hamlet rather than relying on population averages.^[5]

Recommendation 4.2

Pilot Health Post plus Pada Sevak models in

the most remote sub centre catchments

In districts such as Gadchiroli and Nandurbar, identify ten to fifteen remote hamlets or hamlet clusters where travel time to the nearest sub centre routinely exceeds one hour.

Establish one room Health Posts with resident General/Auxiliary Nurse Midwives, supported by trained Pada Sevaks from the same hamlets. Equip each Health Post with a basic medicine kit, solar lighting, and a functioning communication device. Track coverage indicators that reflect routine reach, including antenatal registration, immunisation completion, and follow up continuity. Compare outcomes against similar control clusters before scale up using Tribal Sub Plan resources.

Theme 4.3 Mobile Outreach and Emergency Care in Tribal Areas

Decentralised Health Posts address routine access gaps, but emergencies obey a different logic. When time is the currency, distance becomes lethal, and the system must be designed around the first critical hour. Tribal districts have relied on a mix of fixed facilities and mobile models, including Mobile Medical Units, motorcycle ambulances, and boat ambulances, to address terrain and isolation. Evidence from low- and middle-income settings shows that transport alone cannot reliably reduce mortality in time critical conditions without early first response and stabilisation capacity.^[6]

Mobile Medical Units can be valuable for scheduled primary care services such as screening and follow up in areas with reliable road connectivity. National and state level programme reviews indicate that MMUs improve reach when vehicles are terrain appropriate, adequately equipped, and deployed on predictable routes.^{[7], [8]} However, in interior tribal hamlets where roads are absent, seasonal, or legally restricted, MMUs

are functionally redundant regardless of their clinical capacity. In such geographies, proximity of care becomes more important than movement.

Motorcycle ambulances were introduced as a low-cost response to difficult terrain. Field feedback from districts such as Nandurbar and Gadchiroli indicates that many of these units are now non-functional in practice due to safety concerns related to balance and patient handling on uneven trails. Similar patterns of low utilisation and poor cost effectiveness have been documented in evaluations of prehospital transport innovations where design does not align with terrain and perceived risk.^[6]

Boat ambulances, by contrast, are indispensable in riverine and flood prone tribal regions and must be treated as essential transport infrastructure. In villages along river systems such as the Narmada, boat ambulances often provide the only physical connectivity to health facilities for long periods. Evidence from national mortality analyses



shows that delays in initiating care account for a substantial proportion of preventable deaths in rural and tribal areas, particularly for snakebite and obstetric emergencies.^[9] The experience of Manibeli (Nandurbar) illustrates this gap, where physical access existed but lifesaving treatment could not begin in time. The failure in such cases is not of transport relevance but of system design that postpones care until evacuation is possible.

These realities point to the limitations of transport only models and the need for a layered emergency response. Strengthening transport without strengthening proximity of care leaves a persistent vulnerability for time critical conditions. At the same time, legal and professional frameworks do not permit independent inpatient facilities to be managed by non-physician staff. Any alternative must therefore operate within authorised scopes of practice and under clear clinical governance.

Within this framework, decentralised stabilisation and short stay observation points emerge as a pragmatic complement to mobile and transport-based models. Indian Public Health Standards permit limited observation and first aid functions at peripheral facilities supported by referral linkages rather than onsite doctors, allowing early care while remaining legally sound.^[8]

Recommendation 4.3(a)

Establish decentralised stabilisation and short stay observation points in the most remote clusters

Identify clusters in districts such as Nandurbar and Gadchiroli where emergency response depends on a single transport asset or where travel time routinely exceeds one to two hours.

In locations that overlap with areas identified under Recommendation 4.2, the proposed Health Posts may be upgraded to include a designated stabilisation and observation function.

Establish a single room stabilisation and observation space within an existing sub centre

or suitable government building. Staff it with an Auxiliary Nurse Midwife or Community Health Officer working strictly under approved protocols and documented clinical governance of the Primary Health Centre medical officer. Monitor time to first intervention, referral timeliness, and outcomes for time critical events such as snakebite, obstetric emergencies, and trauma to guide phased expansion and integration with district emergency response systems.

Recommendation 4.3(b)

Use Mobile Medical Units only where predictable access exists

Classify villages into road connected, river connected, and access constrained categories using geospatial mapping and local knowledge. Deploy Mobile Medical Units primarily in areas where predictable access exists, aligning schedules with local market days. In access constrained hamlets, prioritise resident service delivery through Health Posts and stabilisation points rather than expanding mobile outreach.

Recommendation 4.3(c)

Strengthen operations and maintenance for emergency transport

Boat ambulances should be treated as essential infrastructure in riverine tribal belts and integrated into routine emergency response planning. Formal vendor tie ups, time bound repair approvals, and streamlined payment systems should be established to prevent extended downtime and service disruption. Satellite based geospatial tracking systems should be introduced to enable real time monitoring of movement, response time, and coverage gaps. Standard operating procedures must be developed for deployment, maintenance, and seasonal operations, including pre monsoon preparedness, safety protocols, and contingency planning.

In high risk or inaccessible zones, integration with district level helicopter services should be explored for critical referrals where surface or



river transport is not feasible. Parallel efforts must focus on upgrading and maintaining key two lane arterial roads and feeder routes to improve year round connectivity. Systematic tracking of utilisation, downtime, response time, referral completion, and patient

outcomes should be institutionalised and reviewed periodically at district and state levels to guide decisions on fleet expansion, placement, and multi modal emergency transport planning.

Theme 4.4 Infrastructure Standards and Quality of Care

Figure 4.1(a) Field observation of the remoteness of the tribal settlements across difficult terrain

Figure 4.1(b) Transport of patient through a bamboo-lance (Bamboo ambulance)

Figure 4.1(c) The difficult terrain to be navigated with a bamboo-lance

Figure 4.1(d) Team ensuring immunization of children in remote settlements after extensive travel

Figure 4.1(e) Extensive, multi modal travel the frontline workers are expected to cover to ensure health service delivery





Infrastructure Quality Gaps

A recurring theme in the Committee's field visits was the suboptimal infrastructure and quality readiness of health facilities serving tribal areas. Many sub centres, primary health centres, and even some rural hospitals in tribal regions continue to fall short of Indian Public Health Standards norms for basic infrastructure and amenities. Common deficiencies observed included facilities operating from dilapidated buildings or rented panchayat premises, lack of assured potable water and functional toilets, absence of staff quarters resulting in no overnight presence of frontline health workers, and unreliable or entirely absent electricity supply. These are not marginal gaps but foundational shortcomings that directly affect service availability and safety.

National Rural Health Statistics indicate that infrastructure gaps such as lack of regular electricity and water supply remain widespread across rural health facilities, underscoring that these deficits are systemic rather than isolated occurrences.^[4] Given the remoteness, terrain constraints, and historical underinvestment in Scheduled Areas, tribal regions are likely to account for a disproportionate share of such under serviced facilities. Evidence from India shows that unreliable electricity at primary health facilities is associated with reduced service utilisation and poorer maternal health outcomes, particularly because both health workers and pregnant women are reluctant to conduct or attempt deliveries at night in the absence of assured power.^[1] During field visits, the Committee observed multiple instances where lack of electricity or water rendered otherwise staffed facilities functionally ineffective for extended periods.

These foundational infrastructure gaps are also reflected in the limited reach of quality assurance mechanisms in tribal areas. The National Quality Assurance Standards framework establishes benchmarks for patient safety, infection control, record keeping, and facility management for public health facilities.

^[2] However, achieving NQAS certification

presupposes the availability of basic enabling conditions such as water, sanitation, electricity, and adequate space. Public information on NQAS implementation suggests that certification remains concentrated in better resourced and urban districts, with relatively limited representation from remote and tribal areas.^[3] Existing reporting systems do not routinely disaggregate certified facilities by tribal or Scheduled Area location, limiting visibility into quality gaps specific to tribal health services.

Field observations by the Committee confirmed the presence of basic infrastructure and maintenance gaps in several facilities, including non functional toilets, inadequately maintained labour rooms, and inconsistent infection control practices. These challenges are frequently linked to constraints in water availability and shortages of sanitation support staff. In such contexts, achieving higher order quality benchmarks under the National Quality Assurance Standards requires prior strengthening of foundational public health infrastructure. Without systematically addressing these prerequisites under the Indian Public Health Standards, quality improvement initiatives risk becoming uneven in their reach. This creates a sequencing challenge, where facilities most in need of support may be least able to participate effectively in formal accreditation processes.

To address this structural challenge, the Committee proposes adoption of an Assured Minimum Facilities approach for health infrastructure in tribal areas. The intent is to clearly define and guarantee a non-negotiable floor of infrastructure and service readiness for every health facility, from the sub centre level upwards, within a fixed time frame. This approach is conceptually analogous to the Election Commission's practice of ensuring assured minimum facilities at polling stations, where certain basic inputs are treated as mandatory rather than aspirational. For health facilities, this minimum set should include assured electricity through grid or solar power, functional toilets with water, a potable water



source, essential equipment as prescribed under Indian Public Health Standards, and either staff housing or reliable transport arrangements to enable round the clock presence.

Crucially, these minimum facilities should be treated as conditions of functionality rather than targets to be gradually worked towards. Continued absence of basic amenities such as power or water at health facilities in tribal areas reflects a system design failure rather than a resource constraint. The Committee therefore recommends a time bound approach to ensure that all health facilities serving Scheduled Areas meet these minimum standards before further quality improvement initiatives are pursued.

Recommendation 4.4

Launch a Tribal Health Infrastructure Mission

Under this mission, conduct a rapid audit of all

health facilities in Scheduled Areas against a defined minimum facilities checklist covering electricity, water, sanitation, essential equipment, and staff accommodation. Commit dedicated and ring-fenced funding to bring all facilities up to these minimum standards within a specified time period. Provide interim solutions such as solar power units, water storage tanks, or temporary sanitation facilities where permanent works require longer timelines. In parallel, develop facility specific improvement plans to progressively achieve full Indian Public Health Standards compliance. Progress should be publicly reported at district and state levels to ensure transparency and sustained administrative attention. Ensuring that a primary health centre in a tribal taluka is as functional and dignified as one in a more developed area is ultimately a matter of equity and constitutional responsibility.

Theme 4.5 Third-Party Verification and Accountability in Infrastructure

Drawing lessons from accountability mechanisms used in other public sector programs, the Committee notes that health infrastructure development would benefit from stronger independent verification and community oversight. Infrastructure gaps in health facilities often persist not only due to funding constraints, but also due to weak monitoring of construction quality, delayed rectification of defects, and overreliance on paper compliance. These risks are amplified in remote and hard-to-reach areas, where physical verification by supervisory staff is infrequent and discrepancies between reported and actual facility readiness can go undetected for long periods.

Large national programs such as the Jal Jeevan Mission have addressed similar challenges by institutionalising Third Party Inspection Agencies to verify infrastructure quality before

payments are released. Under this approach, empanelled independent agencies inspect works such as water supply installations and certify whether they meet technical specifications and functional requirements, thereby strengthening accountability and reducing incentives for substandard execution.^[10] Evidence from social audit processes under major rural development programs further demonstrates that independent and community-linked verification can surface gaps that routine administrative reporting often misses.^[11]

The Committee recommends adapting this approach to health infrastructure development. For new health facility construction or major upgrades, an empanelled third-party agency such as an accredited engineering firm, technical institution, or experienced civil society organisation should be



tasked with verifying whether the facility meets approved design and functionality standards. This should include checks on structural quality, availability of water and electricity connections, sanitation facilities, and usability of clinical spaces before final payments are released. Such third-party inspections would complement, rather than replace, existing departmental supervision and would introduce an additional layer of objectivity into infrastructure governance.

In addition to technical inspection, the Committee emphasises the value of community verification. Social audits, defined as participatory processes through which citizens assess the planning, implementation, and outcomes of public programs, have been formally institutionalised in sectors such as social welfare and employment guarantee schemes.^[12] Applying similar principles to health facilities would allow local stakeholders to confirm whether a newly constructed or upgraded facility is actually functional and accessible in daily use. Structures such as Rogi Kalyan Samitis or Village Health and Sanitation Committees can play a role in certifying basic functionality, for example confirming that water, electricity, and services are operational as reported.

Field visits by the Committee identified instances where newly constructed health facilities had deteriorated rapidly due to substandard construction quality and inadequate supervision. In some cases, buildings that were less than three years old were already in poor condition and difficult to repair, reflecting weaknesses in technical oversight and completion certification processes. Handover had been accepted despite evident deficiencies.

These observations indicate the need for stronger mechanisms for independent verification and post construction quality review. Introducing mandatory third party inspections and periodic social audits for health infrastructure projects can help ensure that facilities are structurally sound, functional, and maintainable over their intended lifespan, particularly in remote and tribal areas where replacement and major repairs are costly and disruptive.

Recommendation 4.5

Integrate Third Party Inspection and Social Audit mechanisms into health infrastructure development and operations

All new health facility construction and major infrastructure upgrades should include provision for independent third-party inspection, with a small proportion of project costs earmarked for this purpose. State and district health societies may empanel technical institutions, engineering colleges, or accredited agencies to conduct inspections and certify compliance with approved standards prior to release of final payments. Inspection reports should be submitted to the health society and placed in the public domain. In parallel, periodic social audits of health facilities should be introduced as a tool for community-led verification of functionality and service readiness, drawing on established social audit frameworks used in other sectors.^[10] Together, these measures would strengthen transparency, improve construction quality, and ensure that health infrastructure investments translate into functional services rather than nominal assets.



4.6 Solar Electrification: Powering Health Services Off-Grid

One immediate and practical response to the persistent electricity deficit in health facilities serving tribal and other underserved areas is decentralised solar power. Many sub centres and primary health centres in remote geographies experience frequent power cuts or lack grid connectivity altogether, severely constraining cold chain maintenance, night time service delivery, and basic infection control. Although generators have been supplied to some facilities, field experience repeatedly shows that erratic fuel supply, breakdowns, and weak maintenance arrangements often render them ineffective, leaving facilities functionally non-operational after sunset.

Evidence from India clearly demonstrates that electricity access is not merely an infrastructure input but a determinant of service utilisation and quality. Field observations from a study in Maharashtra noted that unreliable electricity supply in rural health facilities was associated with reduced institutional deliveries, lowering the utilization of maternal health services making both healthcare providers and patients hesitant to conduct or seek care during night hours due to unsafe working and access conditions.^[13] The same study highlights how consistent power supply enables cold chain equipment, lighting, fans, and essential devices to function reliably, directly influencing both clinical outcomes and patient confidence.

Practical, on the ground documentation further illustrates the transformative potential of reliable power. A field video documenting the impact of consistent electricity supply in rural health centres shows how reliable lighting and power for equipment can dramatically improve service delivery, staff willingness to stay overnight, and the facility's capacity to handle emergencies, even in locations where grid supply is highly unreliable.^[14] Reporting from Meghalaya similarly shows how solar panels installed in rural health facilities enabled

continuous vaccine refrigeration, improved lighting for night time services, and greater staff presence at all hours, even during prolonged grid failures.^[15] These experiences underscore that decentralised solar solutions can be particularly effective in remote and forested regions where structural grid weaknesses persist.

The Committee notes that Maharashtra has already experimented with solar installations in select health facilities, including in tribal regions such as Melghat, often through corporate social responsibility initiatives. However, these efforts have frequently faced sustainability challenges due to inadequate maintenance and absence of systematic monitoring. National operational guidance on solar photovoltaic systems for healthcare facilities explicitly cautions against treating solar installations as one-time interventions and emphasises the importance of structured operations and maintenance protocols, including periodic performance checks and timely replacement of components such as batteries.^[16]

To address these gaps, the Committee proposes a centrally coordinated approach to solarisation. Under such a model, solar photovoltaic systems with battery backup would be installed at sub centres and primary health centres based on facility load requirements, accompanied by remote monitoring systems that transmit basic performance data such as power generation and battery health to a district level dashboard. This would enable early identification of system failure and timely deployment of maintenance support, reducing prolonged downtime.

The benefits of systematic solar electrification are multiple. Reliable electricity strengthens cold chain integrity and reduces the risk of vaccine spoilage, improves readiness for night time deliveries and emergencies, enhances staff safety and retention by making residential



quarters more liveable, and reduces long term dependence on diesel generators. Studies and programme experience indicate that when electricity reliability improves, utilisation of existing health infrastructure also improves, yielding better returns on prior investments in buildings and human resources.^[13]

Recommendation 4.6

Implement Solar for Health across underserved public health facilities

Within a defined time-frame, equip all sub centres and primary health centres that lack reliable round the clock grid power with solar

photovoltaic systems and adequate battery backup. Ensure that each installation incorporates structured operations and maintenance arrangements and remote performance monitoring linked to a district level dashboard. Provision annual maintenance costs upfront and train local technicians for basic troubleshooting to build regional capacity. Prioritise delivery points and facilities providing emergency services in the initial phase. By ensuring reliable electricity, the state can eliminate a critical bottleneck in service delivery and affirm that no public health facility operates in darkness.^[17]

4.7 Aligning Administrative Boundaries for Better Service Delivery

An often overlooked but structurally significant barrier to effective service delivery in tribal areas is the misalignment of administrative boundaries across departments responsible for health, nutrition, education, and social welfare. Over time, Public Health, Women and Child Development through ICDS, School Education, and other departments have independently delineated their service jurisdictions. The result is a fragmented administrative geography in which a single tribal village or hamlet may fall under different Primary Health Centres, ICDS projects, and school clusters. While such arrangements may appear administratively neutral, they undermine convergence, dilute accountability, and weaken service delivery in precisely those contexts where coordinated action is most critical.

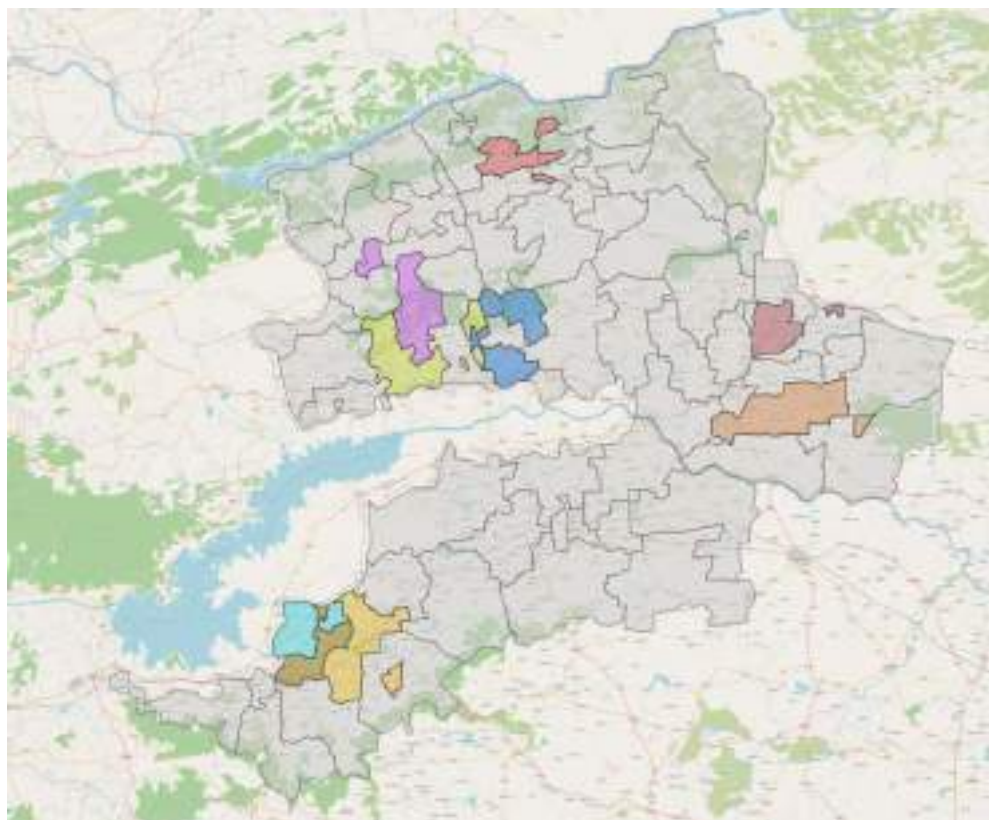
During field visits, the Committee encountered several instances where non-contiguous or poorly aligned boundaries translated into real service gaps. In Shahada block of Nandurbar district, certain villages mapped to Sulwad Primary Health Centre were geographically closer to another PHC but remained attached to Sulwad due to historical administrative decisions. In practice, this resulted in irregular

supervision and outreach. Health staff from the nearer PHC did not consider these villages within their mandate, while Sulwad PHC staff faced genuine difficulty in reaching them regularly. Such boundary misalignments increase the likelihood of missed immunisation sessions, delayed referrals, and weak follow up, not because of frontline neglect but because responsibility is spatially disconnected from accessibility.

Figure 4.2 highlights a set of geographically discontinuous PHC catchments in Nandurbar, where pockets of villages fall under a PHC whose service area is not spatially contiguous. The discontinuities observed across PHC Sulwade, PHC Son Bk, PHC Umran, PHC Vavadi, PHC Somawal, PHC Kahatul, PHC Dab, PHC Chinchpada, and PHC British Ankushvhir indicate that administrative jurisdiction in these areas does not consistently follow physical accessibility. Such 'islands' of coverage typically emerge from historical boundary decisions, revenue village mapping legacies, or incremental reassignments over time, and they create predictable operational friction: especially for routine outreach, supervision cycles, and emergency referrals.



Figure 4.2 Geographically Discontinuous PHC Catchment Areas in Nandurbar District



From a service delivery perspective, discontinuous boundaries produce accountability gaps: the nearer PHC team often does not treat these settlements as part of its mandate, while the assigned PHC faces genuine constraints in reaching them regularly. This increases the risk of missed sessions (immunisation/VHNDs), delayed follow-up of high-risk pregnancies and sick newborns, weaker continuity for TB/leprosy/NCD adherence, and slower referral response, even when frontline intent is strong. The Committee recommends that such discontinuities be treated as a priority for boundary rationalisation (PHC/Sub-centre mapping aligned to travel time and natural service corridors). Until formal realignment is notified, an interim arrangement should be issued at block level to enable shared micro-plans, joint outreach calendars, and clearly assigned supervisory responsibility for these 'island' villages to ensure no habitation remains operationally unowned.

A similar pattern was observed in the interface between health and ICDS systems. In Dhadgaon

block, the Committee noted that Roshmal Primary Health Centre served a dispersed tribal population across numerous small hamlets, yet Anganwadi Centre coverage did not correspond to the PHC catchment. Several hamlets under the PHC had no Anganwadi Centre because they fell under a different ICDS project or weren't covered. As a result, some children in these hamlets were technically counted within coverage statistics but had no functional access to supplementary nutrition, growth monitoring, or early childhood services. When undernutrition was identified, follow up was inconsistent because health and ICDS staff were accountable for different geographies.

These structural gaps intersect most sharply with age specific vulnerabilities, particularly among children between six months and three years. This is the period when complementary feeding begins and when nutritional inadequacies can rapidly lead to growth faltering, recurrent infections, and long-term developmental loss. In tribal hamlets without Anganwadi Centres, crèches, or regular outreach, this age group often slips through the



cracks. Infants may receive some attention during early immunisation visits, but once exclusive breastfeeding ends, there is frequently no consistent platform for caregiver counselling, supervised feeding, or early childhood care. Where mothers engage in agricultural or daily wage labour, the absence of crèche or day care support further compounds risk, as young children are either left unattended or taken to worksites with poor feeding and hygiene conditions.

Incomplete habitation-level coverage reinforces these vulnerabilities. Many tribal padas fall below population norms used for sanctioning Anganwadi Centres or deploying ASHAs. Although policy allows flexibility in tribal and difficult areas, implementation has been uneven. The Committee found stable hamlets with dozens of households that had neither a resident ASHA nor a local Anganwadi Centre and were reached only intermittently through outreach. These gaps are often obscured in routine reporting, which assesses coverage at the level of revenue villages or projects rather than individual habitations. A village may be reported as having an Anganwadi Centre even if several hamlets lie far beyond its effective reach.

Addressing these challenges requires a deliberate shift from administratively convenient boundaries to service geographies that reflect settlement patterns, access routes, and community life. Aligning jurisdictions and ensuring complete habitation-level visibility are not merely technical exercises but foundational steps toward equity and convergence in tribal health and nutrition.

Recommendation 4.7.a

Rationalize service boundaries to align health, ICDS, and education jurisdictions in tribal blocks

The Committee recommends a one-time boundary rationalisation exercise in tribal blocks to align the jurisdictions of Primary Health Centres, sub centres, ICDS projects and supervisory beats, and education clusters with

natural community groupings.

Sub centre catchments should, as far as feasible, align with Gram Panchayat boundaries, or at most two adjacent small Panchayats. This enables effective coordination with elected local bodies, village committees, and rural development institutions, and reduces fragmentation of responsibility at the frontline level.

ICDS supervisory beats should be fully contained within a single Primary Health Centre jurisdiction. A beat should not be split across multiple PHCs. Depending on geography and population density, one PHC may contain one or more ICDS beats, but each beat must remain an intact subset of a PHC area. This ensures that the PHC Medical Officer and the ICDS Supervisor or Child Development Project Officer are accountable for the same set of villages and hamlets, enabling joint planning, data sharing, and coordinated action for maternal and child health and nutrition.

School clusters should also be considered during this realignment, particularly to support adolescent health interventions, school health programmes, and nutrition related activities. Wherever possible, villages should not be split across multiple administrative units without compelling geographic or population-based justification.

This exercise should be undertaken by a district level task group comprising representatives from Public Health, Women and Child Development, Education, Tribal Development, and the district administration, using GIS mapping, service utilisation patterns, and community inputs. All boundary changes should be formally notified to ensure clarity of responsibility across the system.

Recommendation 4.7.b

Achieve complete habitation-level coverage with priority focus on children aged six months to three years

The Committee recommends that Maharashtra adopt habitation-level coverage as a core



planning principle in tribal areas, moving beyond village-level averages to ensure that every hamlet is either directly served or covered through a clearly defined outreach mechanism.

A comprehensive GIS-based mapping of all tribal habitations should be undertaken, overlaying the presence of Anganwadi Centres, ASHAs, sub centres, schools, and outreach routes. This exercise should explicitly identify hamlets without ICDS or health frontline presence, making invisible populations visible for planning and monitoring.

For ICDS, flexibility should be actively exercised to sanction mini Anganwadi Centres or community crèches in remote hamlets with small populations, particularly where children are beyond reasonable walking distance from the nearest centre. Children between six months and three years should be prioritised, recognising this age group as the most critical window for preventing undernutrition and long-term developmental loss. Where women engage in daily wage or agricultural labour, crèche or supervised day care arrangements become essential, not optional.

4.8 Bridging Gaps in Health Insurance Access for Tribal Populations

Financial barriers remain a significant constraint for tribal households in Maharashtra when health needs escalate beyond primary care. As discussed earlier in this chapter, tribal patients already face long travel distances, weak referral continuity, and unfamiliar institutional environments when accessing secondary and tertiary care. These barriers are compounded by persistent difficulty in arranging money to access care, a pattern documented across tribal communities in India where financial constraints frequently prevent or delay treatment seeking, especially for serious illnesses.^[18] When financial protection mechanisms fail to function smoothly at this stage, these structural disadvantages translate

Where permanent centres are not immediately feasible, predictable outreach models should be institutionalised. This may include fixed day visits by ICDS and health staff, mobile Anganwadi or crèche days, or shared community spaces used on scheduled days. Community-selected volunteers such as Pada Sevaks can support these arrangements by maintaining beneficiary lists, mobilising families, assisting during outreach days, and ensuring continuity between visits. These volunteers should complement existing ASHAs rather than duplicate their roles.

For health services, every habitation should have either a resident ASHA or a clearly designated outreach worker responsible for it, even if this requires relaxing population norms. No hamlet should remain unassigned on the grounds of being too small or too remote.

Progress should be monitored using habitation-level indicators rather than aggregate facility coverage, with particular attention to immunisation, growth monitoring, and service uptake among children under three years of age.

into delayed treatment, distress borrowing, or complete abandonment of needed care.

During the Committee's functioning, such challenges were directly observed. In one instance, two individuals approached the Chairperson's office seeking urgent assistance for their mother's surgery. Although their ration card had recently been digitised, they were informed that generation of the Ayushman Bharat card would take additional time. After intervention by the Chairperson, the district coordinator clarified that urgent cases could be processed within forty five minutes. However, the family had already spent three days moving between multiple offices without receiving clear guidance. This



experience illustrates how procedural complexity and information gaps can translate into significant delays for vulnerable households. Further, the family had sought treatment at a hospital in Gujarat due to limited local options. However, the hospital expressed reluctance, citing frequent delays and uncertainties in claim settlements from Maharashtra, reflecting persistent inter state coordination challenges that restrict portability of insurance benefits and undermine patient choice, particularly for border district populations.

Maharashtra's health insurance framework, anchored in the Mahatma Jyotiba Phule Jan Arogya Yojana and integrated with the national Ayushman Bharat Pradhan Mantri Jan Arogya Yojana, is explicitly intended to mitigate this risk. Official scheme documentation and public communication emphasise cashless hospital care for eligible families, with substantial coverage limits and automatic inclusion of public hospitals.^{[19], [20]} The intended scale of coverage is large, with over two crore families in the state reported to be eligible under the combined framework.^[21] In principle, Scheduled Tribe households should therefore be among the primary beneficiaries, reducing the need for large out of pocket expenditures when serious care is required.

In practice, however, utilisation of these schemes among tribal populations remains uneven, and eligible patients frequently report continued out of pocket spending or disengagement from care. The Committee's field observations suggest that these failures arise not from scheme design but from predictable service delivery gaps along the care pathway.

The first set of barriers relates to enrolment, documentation, and awareness. Eligibility under Pradhan Mantri Jan Arogya Yojana and the state scheme is determined through a combination of deprivation criteria and administrative databases such as ration card records. In tribal areas, documentation inconsistencies are common, including

variations in name spellings, incomplete household entries, or recent family changes not reflected in official records. Even where households are eligible, awareness of insurance status and possession of an Ayushman card is uneven. Enrolment facilities are sparse in remote areas, and tribal migrants often lack clarity on portability of benefits across districts or states. These forms of exclusion are consistent with systematic analyses that highlight how financial protection schemes frequently fail to reach vulnerable populations due to identification and awareness gaps than lack of entitlement.^[22]

A second set of barriers emerges at the hospital interface. In tribal dominated districts, empanelled private hospitals are limited and often distant, resulting in most referrals flowing to public district hospitals or urban tertiary centres. While public hospitals are covered under the schemes by default, effective cashless care depends on hospital side readiness. The Committee encountered situations where claim initiation was delayed or incomplete due to lack of trained staff, software access issues, or weak internal coordination. In such cases, patients were asked to purchase medicines or diagnostics or were referred onward without assurance of cashless treatment. Language barriers and unfamiliarity with hospital processes further disadvantage tribal patients, particularly in large urban hospitals, where navigating insurance workflows becomes an additional burden layered onto illness.

A third challenge concerns administrative and digital complexity. Although Maharashtra has taken steps to align state and national insurance systems, field level experience suggests that hospitals and frontline staff still struggle with procedural ambiguity, multiple logins, and unclear package applicability. Where insurance facilitation is treated as an ancillary task rather than a core hospital function, eligible tribal patients are at high risk of exclusion at precisely the moment they are most vulnerable. National policy discussions caution that insurance coverage on paper does



not translate into real financial protection unless delivery systems are designed to reliably convert eligibility into cashless care at the point of service.^[22]

Encouragingly, examples within Maharashtra demonstrate that these barriers are surmountable through institutional effort. At AIIMS Nagpur, the hospital has adopted an organisational approach that treats insurance conversion as a shared clinical and administrative responsibility rather than a patient obligation. This includes orienting clinicians to covered packages, establishing internal documentation workflows, and deploying dedicated helpdesk personnel to coordinate claims. While AIIMS Nagpur is a tertiary institution, the underlying principle is directly applicable to district hospitals serving tribal populations: when hospitals invest in staff capacity and internal systems, patients are far more likely to receive cashless care without navigating complex procedures themselves.

There is also scope to simplify beneficiary identification upstream. The Pradhan Mantri Jan Arogya Yojana platform already allows eligibility checks using ration card details, reflecting linkage with food security databases.^[20] Given that a large proportion of tribal households in Maharashtra are covered under the National Food Security Act, deeper integration between ration card databases and insurance platforms could enable proactive identification of eligible tribal households. Pre-validation and advance issuance of Ayushman cards would significantly reduce the risk that eligibility becomes a point of failure during medical emergencies.

Finally, patient navigation support remains a critical but under-strengthened lever in tribal contexts. Ayushman Mitra helpdesks are a mandated feature of the insurance framework, yet their effectiveness depends on staffing, authority, and cultural and linguistic accessibility. Strengthening these desks in facilities that routinely receive tribal referrals, including Rural Hospitals, Sub District Hospitals, and major tertiary centres, can substantially

improve patient experience and scheme utilisation.

Recommendation 4.8

Strengthen financial protection for tribal populations by treating insurance delivery as a frontline health service

First, Undertake focused enrolment and rectification drives in Scheduled Areas and high migration pockets to verify insurance coverage of tribal households, address documentation gaps, and complete card issuance through accessible local camps supported by ASHAs, Gram Sevaks, and other frontline workers. This should be complemented by deeper linkage with ration card and food security databases, and by enabling authorized, read-only eligibility verification at the point of care by designated hospital insurance staff. The objective should be to eliminate procedural barriers and the practice of sending patients to multiple offices for proof, while ensuring that identity correction or retrieval can be facilitated voluntarily at hospitals without making Aadhaar a precondition for treatment.

Second, Strengthen hospital-side capacity for insurance implementation by designating trained insurance nodal officers in district hospitals and major referral facilities, and by reinforcing Ayushman Mitra and patient facilitation mechanisms in hospitals receiving tribal referrals. Hospital-based insurance facilitation and documentation support units should function from existing PMJAY rooms or helpdesks, with staff trained in local languages and common claim processing requirements. Routine monitoring of indicators such as cashless treatment rates, claim rejection reasons, documentation delays, and payment follow-up for Scheduled Tribe patients should be institutionalised as part of hospital performance review.

Third, Ensure that insurance benefit packages adequately cover the full continuum of inpatient care, including pre-admission diagnostics, essential medicines, and necessary stabilisation or preparatory management, to



prevent avoidable out-of-pocket expenditure prior to admission. All public health facilities providing inpatient services, including secondary and sub-district hospitals, should be systematically empanelled under state and national insurance schemes, with insurance functioning as the default pathway for inpatient care. Enrolment and entitlement verification

processes should be designed to be simple and hospital-led, rather than imposed on patients and families. Regular monitoring of insurance utilisation in public facilities should be encouraged, both to improve patient protection and to enable facilities to build flexible resources for medicines, diagnostics, equipment, and maintenance.

4.9 Establishing Minimum Standards for Service Delivery

While infrastructure upgrades are essential, the Committee recognises that improvements in health outcomes in tribal areas depend equally on the reliability of service delivery processes. Field observations repeatedly showed that even where buildings, equipment, or staff were present, services faltered due to weak day-to-day functioning, excessive administrative burden, inconsistent outreach, and lack of clarity on non-negotiable expectations.

To complement the Assured Minimum Infrastructure framework proposed earlier, the Committee recommends instituting Assured Minimum Service Delivery Standards for all tribal health facilities. These standards define what it means for a facility to be functionally operational, not merely physically present, and create a shared baseline of accountability across the system.

Based on field visits and programmatic review, the Committee proposes the following minimum service delivery standards:

1. Health information, registers, and documentation discipline must be rationalised and purposeful. The Committee observed an excessive proliferation of registers at facility level, including instances where a single LHV maintained dozens of parallel registers. This administrative overload consumes staff time without commensurate gains in accountability. Facilities should maintain only those paper registers that are legally

required or not yet reliably captured through digital systems. Where digital reporting platforms already exist and are functional, duplicate paper records should be eliminated. Register consolidation is not merely an efficiency measure but a service delivery imperative, allowing frontline staff to prioritise patient care over clerical work.

2. Staff availability and attendance must be ensured as per mandated service hours. Sub centres should function for the prescribed daily duration and Primary Health Centres should provide round the clock delivery services where notified. Chronic absenteeism should be treated as a service failure, and prolonged vacancies or sanctioned leave must be addressed through timely deputation or alternate arrangements so that no facility becomes non-functional.
3. Essential medicines, vaccines, and consumables must be continuously available. Facilities should maintain buffer stocks of all critical items as per programme norms, supported by predictable replenishment systems. No patient should be required to purchase first line medicines for common conditions at the point of care.
4. All essential equipment appropriate to the level of the facility must be present and functional. Preventive maintenance systems should be in place, with defined timelines for repair or replacement to avoid



prolonged service disruption.

5. Service coverage and outreach must be reliable and planned. Mandated services such as immunisation sessions, Village Health and Nutrition Days, antenatal clinics, and chronic disease follow up should be conducted strictly as per pre declared schedules. In sparsely populated tribal areas, outreach to remote hamlets should be treated as a core responsibility rather than an exception. Monitoring of VHSNDs should move beyond reporting numbers to verifying regularity, completeness of services delivered, and attendance of key frontline workers.
6. Emergency referral and transport readiness must be ensured at every facility. Referral protocols, contact directories, and transport arrangements should be clearly defined and known to all staff. Where formal ambulance response times are long, locally appropriate standby arrangements should be formalised so that no critical patient is left without a pathway to higher care.
7. Standard treatment guidelines and infection prevention practices must be followed consistently. Cleanliness of clinical areas, biomedical waste segregation, hand hygiene facilities, and aseptic procedural practices are non-negotiable components of safe service delivery. The Committee would like to acknowledge that the biomedical waste collection was working sub-standard in some districts.
8. Community engagement and feedback mechanisms must be institutionalised. Facilities should conduct regular interactions with Village Health Committees or Jan Arogya Samitis, provide visible grievance mechanisms, and adapt service delivery practices to local realities such as agricultural seasons or migration patterns.
9. Facilities should actively track a small set of priority coverage indicators relevant to their catchment, including immunisation coverage, antenatal registration, institutional deliveries, malaria detection, or tuberculosis treatment outcomes. Lagging indicators should be treated as triggers for corrective action rather than routine reporting requirements.
10. Transparency and accountability measures must be visible at the facility level. Citizen charters, staff contact details, service schedules, and referral information should be publicly displayed. Serious service failures should trigger defined review and corrective processes.
11. Recognition of good performance should be built into the system. Facilities operating in difficult tribal contexts that consistently meet service delivery standards should be publicly recognised and supported as learning sites, reinforcing morale and professional pride.
12. Continuous improvement must be embedded into supervision. Facilities should undergo periodic review against these standards, ideally aligned with existing quality assurance processes, leading to time bound improvement plans rather than punitive inspections.

Recommendation 4.9

Institutionalise Assured Minimum Service Delivery Standards in Tribal Areas

The Committee recommends that the state formally adopt the above service delivery standards for all tribal health facilities and integrate them into routine supervision and monitoring mechanisms. A simple scorecard based on these standards should be used uniformly from sub centre to district level, creating a shared definition of non-negotiables across the system.

To reduce inspection fatigue and variability, the Committee further recommends development of a monthly monitoring template capturing a small set of absolute essentials such as register discipline, staff presence, medicine availability,



VHSND conduct, emergency readiness, and outreach coverage. The same template should be used upward and downward in the system, enabling clarity, consistency, and accountability. By the end of 2026, the state should aim for a substantial majority of tribal health facilities to meet all assured service delivery standards. This initiative complements infrastructure

investments by ensuring that facilities are not only equipped, but dependable. In effect, it operationalises the right to quality care, so that a tribal citizen entering even the most remote sub centre encounters a predictable and accountable standard of service.

4.10 Addressing Seasonal Migration through a Supply-Led Continuity of Care Framework

Seasonal and circular migration is a structural feature of tribal livelihoods in Maharashtra and must be treated as such in health system design. Each year, large numbers of households from tribal districts such as Nandurbar, the Melghat belt of Amravati, Gadchiroli and Palghar migrate for sugarcane cutting, brick kilns, construction and agricultural labour, typically for four to six months at a stretch.^[22] Migration disrupts the territorially anchored model on which health, nutrition and welfare services are organised, leading to predictable breaks in immunisation, antenatal care, nutrition supplementation and long-term treatment adherence.

The health impacts of this disruption are well established. Children miss scheduled vaccinations, pregnant women lose continuity of antenatal care and supplementation, tuberculosis and other chronic disease treatments are interrupted, and malnutrition worsens, particularly among children between six months and three years of age, when gaps in complementary feeding initiate a downward spiral.^{[23], [24]} At destination sites, migrant families often remain invisible to local health and ICDS systems due to lack of documentation, language barriers and the absence of proactive outreach, effectively placing them outside the formal service net for the duration of migration.

Maharashtra has taken an important state-level step to address this challenge through the Migration Tracking System, developed by the

Women and Child Development Department. The system enables identification of migration-prone households, records destination details and allows tracking of women and children across districts and states for service continuity.^[25] Conceptually, the Migration Tracking System reframes migration as a predictable lifecycle event rather than an administrative exception, creating the possibility of advance planning rather than reactive response.

Nandurbar district demonstrates how this state platform can be translated into operational gains through district ownership. Under the Umbrella Migration Project, a district-level convergence initiative, Nandurbar has used the Migration Tracking System as a coordinating backbone rather than as a standalone database.^[26] Migration-prone villages are identified prior to departure, destination patterns are mapped, and departments are instructed to plan services accordingly. This has enabled practical interventions such as pre-migration service bundling, helpline support during migration, and structured relinking with ICDS and health services upon return. The Committee notes that the Umbrella Migration Project is not a substitute for the state Migration Tracking System; rather, it illustrates how district-level convergence can unlock the system's potential. The Nandurbar concept note is annexed (Annexure 5) as a replicable operational model.

The Committee emphasises that the true value of migration tracking lies in enabling a supply-led model of care. When migration-prone households are identified in advance, the health system can proactively bundle services before departure. Immunisations falling within the migration window can be administered early where clinically appropriate, antenatal check-ups and supplementation ensured, tuberculosis and chronic disease treatment plans stabilised, and essential medicines provided for the migration period.^[23] This shifts the system from managing defaults after migration has occurred to preventing service disruption in the first place.

At destination sites, migration data should trigger outreach rather than relying on migrant families to seek care. Migrant settlements that persist for more than one month should be treated as extended habitations for service delivery purposes, with scheduled visits by ANMs, ICDS staff or Mobile Medical Units. Temporary crèches or nutrition care points at worksites are particularly critical for children under three years of age, who otherwise fall completely outside the ICDS net during migration.^{[24], [25]}

To maximise effectiveness, migration tracking must be embedded within existing service platforms rather than operating as a parallel system. Integration with HMIS, Poshan Tracker and Public Distribution System databases would allow frontline workers at destination sites to identify migrant families automatically and extend services without repeated verification.^[25] Continuity of care must follow the individual rather than remain tied to the village of origin.

Finally, migration data should not be viewed only through a health lens. Mapping recurrent migration corridors allows districts to identify patterns of distress migration and feed this evidence into convergence platforms and

District Planning Committees. This enables complementary interventions such as advance scheduling of MGNREGS work, local livelihood creation and food security measures, ensuring that the health system contributes not only to managing the consequences of migration but also to reducing its most harmful forms.^[27]

Recommendation 4.10

Institutionalise Migration Health Continuity Systems

The state should institutionalise migration responsive health planning by establishing Migration Health Units in districts with high tribal out migration or in migration, such as Nandurbar, the Melghat belt, Gadchiroli, and

Palghar. Given the strongly inter departmental nature of migration related vulnerabilities, the state may consider anchoring this mechanism within the Planning Department, with operational linkages to the District Health Society and formal coordination arrangements with the Women and Child Development, Rural Development, and Tribal Development departments.

Migration Health Units should operationalise the state Migration Tracking System, hosted at DWCD, as a planning and action tool by mapping migration prone villages and recurrent migration corridors, triggering pre departure service bundling, and coordinating proactive outreach at destination sites. Integration with national digital health platforms, including ABHA IDs, interoperable electronic health records, and digitally generated alert lists, should be prioritised to enable continuity of care and timely information sharing across district and state boundaries.

Migration data should also be used to inform district convergence planning, including targeted livelihood and food security interventions where distress migration is recurrent.



4.11 Strengthening Tribal Interface in Secondary and Tertiary Hospitals through Counselors and Help Desks

Strengthening tribal health outcomes requires recognising a fundamental reality of tribal contexts: health systems cannot rely primarily on demand. In many tribal areas, distance, seasonal migration, daily-wage livelihoods, linguistic barriers and historical mistrust suppress routine healthcare-seeking behaviour, particularly for preventive, follow-up and continuity-dependent services. In such settings, even well-equipped facilities may underperform unless complemented by mechanisms that actively identify and reach those most at risk.

National expert thinking on tribal health has long emphasised the centrality of primary care. The Expert Committee on Tribal Health chaired by Dr Abhay Bang articulated a framework of sixteen essential services that every Primary Health Centre in a tribal area should reliably deliver. The underlying principle was that a substantial majority of health needs in tribal communities can and should be addressed at the primary level, close to people's homes, with referrals reserved for a smaller proportion of complicated cases. This framework defines what must be delivered.

However, field observations suggest that service availability alone does not guarantee service reach. Where health-seeking behaviour is structurally low, a purely facility-based approach leaves predictable gaps. Pregnant women miss antenatal follow-up, children fall out of immunisation schedules, malnourished children are not tracked longitudinally, and households that migrate seasonally disappear from routine systems. These gaps directly connect with issues discussed earlier in this chapter, particularly seasonal migration and continuity of care (Theme 4.11) and the need for enforceable service delivery standards (Theme 4.9).

To address this, the Committee proposes the establishment of District Health Action Centres (HACs) as proactive population health units that sit above facilities and support frontline systems. HACs are not new clinical institutions. They are coordination, tracking and outreach hubs designed to ensure that priority populations actually access the services that facilities are mandated to provide.

HACs may initially focus on maternal and child health by consolidating district wide information on high risk pregnancies, children with incomplete immunisation, severely and moderately malnourished children, early discharges from Special Newborn Care Units, and households affected by seasonal migration. Drawing on migration tracking data discussed in Theme 4.11, HACs can ensure that mobility does not translate into invisibility. In the early phase, rather than attempting to collate and monitor exhaustive lists from multiple reporting systems, a more practical starting approach may be to rely on short, prioritised inputs from ANMs identifying the three most vulnerable cases in each sub centre area, helping ensure that critical cases are not lost within large datasets. Using such prioritised inputs, combined with available digital records and field intelligence, HACs can begin working with 'smart data' rather than fragmented conventional reporting, enabling timely reminders, counselling, and follow up without adding to administrative burden.

The design philosophy is explicitly supply led. When a woman misses an antenatal visit, the system responds. When a child defaults on immunisation due to migration, outreach is triggered. HACs therefore act as force multipliers for ANMs, ASHAs, and PHC teams, improving follow up without adding to their administrative burden. Rather than functioning

only as outbound call centres, they can also serve as responsive AAA helpline points when frontline workers encounter operational or clinical issues in the field, enabling timely guidance, escalation, and problem resolution.

These centres should draw inspiration from proven, low-cost communication models such as Kilkari and Swasth Kadam, which demonstrated that voice-based, language-appropriate outreach can improve health behaviours at scale. For tribal populations, where literacy barriers are common but oral communication is strong, IVR and call-based systems in local languages are particularly effective. Over time, HACs can evolve into broader citizen interfaces, functioning as AAA-type health helplines that assist families with navigation, referrals and entitlements.

Importantly, this model is not theoretical. A Health Action Centre-type system is already functioning in Nandurbar district, where proactive calling, tracking of high-risk beneficiaries and coordination with frontline workers has been piloted in practice. A detailed concept note documenting this experience is annexed to this report, providing an operational blueprint should the state wish to replicate or scale the model at the district or state level.

Funding for HACs can be anchored within the monitoring and evaluation component of District Planning Committee allocations, positioning them as system-strengthening instruments rather than parallel schemes. Their performance should be assessed through outcomes such as improved antenatal coverage, reduced immunisation drop-outs, improved follow-up of malnourished children and better continuity of care for migrant households.

The sixteen essential services framework remains the clinical backbone of primary care delivery. PHCs must continue to be assessed on their capacity to deliver these services consistently, as outlined in Theme 4.9. HACs provide the connective tissue that ensures these services are not only available but actually utilised. Together, they operationalise a proactive assurance model in which coverage is actively produced, not passively awaited.

Recommendation 4.11

Institutionalise Tribal Helpdesks at Secondary and Tertiary Facilities

The state should ensure that all district hospitals, sub-district hospitals and major referral facilities with significant tribal patient load establish dedicated tribal helpdesks staffed by trained counsellors. At least one counsellor should be designated as the single point of contact for tribal patients at each such facility. Existing counsellors within the system should be preferentially redeployed to high-interface hospitals before new recruitment is considered. Facilities should explore tie-ups with tribal hostels or welfare institutions to provide short-stay accommodation for patient attendants, using nucleus or discretionary funds where appropriate. Counsellors should be trained in behaviour change communication, scheme facilitation and culturally competent care, and their performance linked to indicators such as referral completion, treatment adherence and patient satisfaction. By strengthening the human interface at hospitals, Maharashtra can ensure that referral pathways are not merely clinically sound, but socially navigable for tribal patients.



4.12 District Health Action Centers (HAC) and Strengthening Primary Care through Proactive Outreach

Strengthening tribal health outcomes requires recognising a fundamental reality of tribal contexts: health systems cannot rely primarily on demand. In many tribal areas, distance, seasonal migration, daily-wage livelihoods, linguistic barriers and historical mistrust suppress routine healthcare-seeking behaviour, particularly for preventive, follow-up and continuity-dependent services. In such settings, even well-equipped facilities may underperform unless complemented by mechanisms that actively identify and reach those most at risk.

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To address this, the Committee proposes the establishment of District Health Action Centres (HACs) as proactive population health units that sit above facilities and support frontline systems. HACs are not new clinical institutions. They are coordination, tracking and outreach hubs designed to ensure that priority populations actually access the services that facilities are mandated to provide.

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Recommendation 4.12

Establish District Health Action Centres for Proactive Primary Care Assurance

Establish District Health Action Centres in tribal-majority districts as population health units focused initially on maternal and child health. HACs should integrate migration tracking and facility data to proactively reach high-risk and under-served populations through call-based and IVR systems in local languages, supporting frontline follow-up and reducing service drop-outs. Funding should be drawn from district planning and monitoring allocations. The existing Nandurbar model should be formally documented and annexed as a replicable concept note, with a roadmap for district-level expansion and potential state-level scaling.



Conclusion

This chapter has argued that improving tribal health outcomes in Maharashtra requires a decisive shift from a facility-centric and demand-responsive system to one that is explicitly supply-led, anticipatory and equity-driven. Infrastructure upgrades and expanded service delivery standards are necessary foundations, but they are insufficient on their own in contexts where geography, migration, livelihood pressures and historical exclusion suppress healthcare-seeking behaviour. The central challenge is not only whether services exist, but whether the system is designed to ensure that those services reliably reach the people who need them most.

The Committee's recommendations therefore converge on a single operational logic. At the frontline, clearly defined minimum infrastructure and service delivery standards establish what every tribal health facility must provide. At the system level, migration tracking mechanisms ensure that continuity of care follows people rather than villages, recognising seasonal migration as a predictable and manageable feature of tribal life. At referral points, especially secondary and district hospitals, tribal helpdesks and counselors act as single points of contact to reduce linguistic, procedural and social barriers that currently discourage utilisation of higher-level care. At the district level, Health Action Centres institutionalise proactive outreach, converting administrative data into action by identifying high-risk individuals and ensuring follow-up through calls, reminders and counselling in local languages.

Together, these measures operationalise the long-standing expert consensus that a large

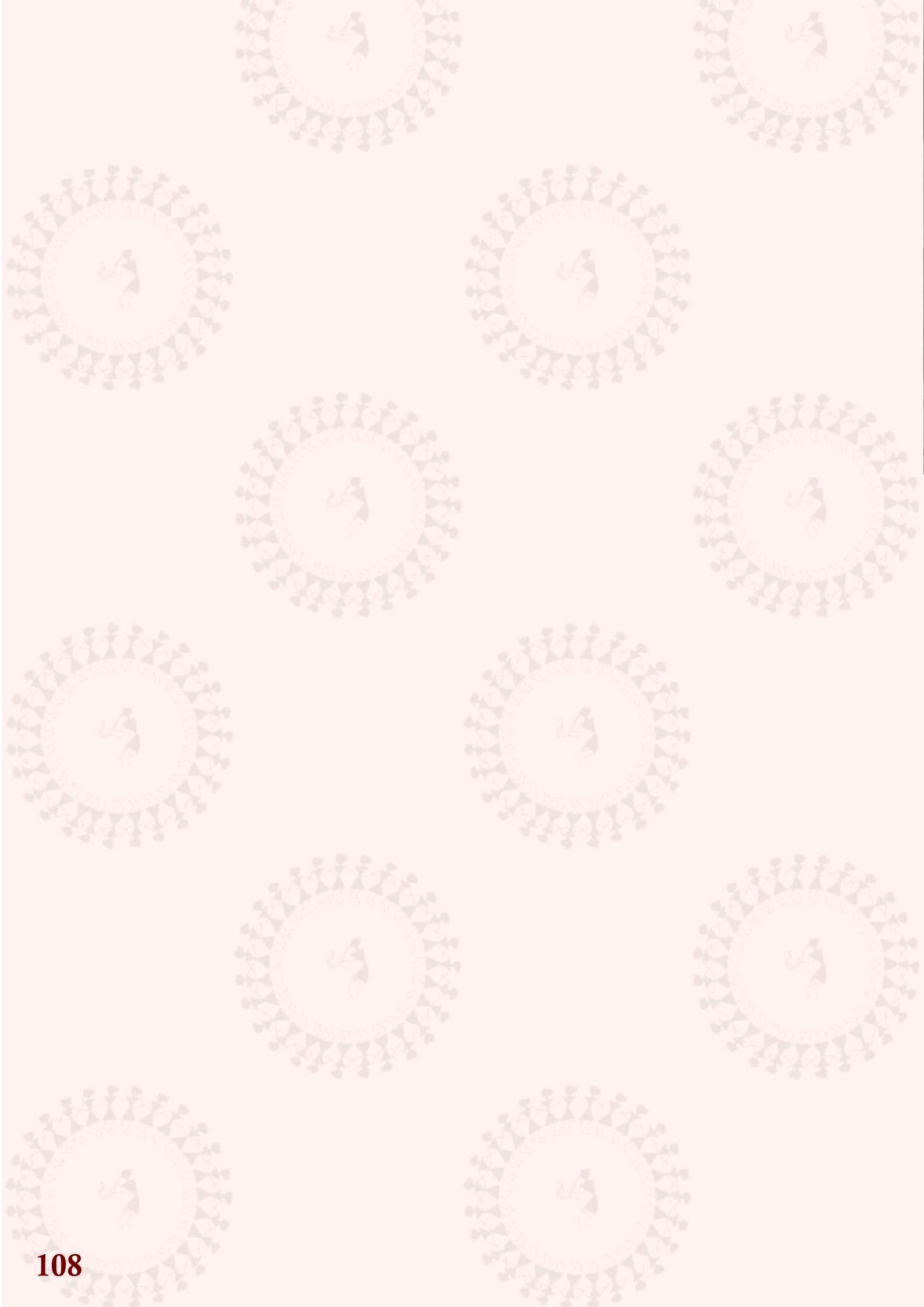
majority of health needs in tribal areas can and should be met at the primary care level. The framework of sixteen essential services defines the clinical and public health responsibilities of PHCs, but it is the surrounding system architecture that determines whether those services achieve universal coverage. By combining strengthened PHCs with migration continuity systems, proactive district-level outreach and culturally competent interfaces at referral hospitals, the health system moves from passively offering services to actively guaranteeing access.

The experience emerging from districts such as Nandurbar demonstrates that this approach is both feasible and scalable. Concept notes and pilots developed at the district level provide practical templates that the state can adapt, refine and expand across tribal belts with varying epidemiological and social profiles. Importantly, many of the proposed interventions rely less on large capital investments and more on better use of data, human interfaces and existing institutional mechanisms.

In sum, this chapter sets out a service delivery blueprint that is grounded in the lived realities of tribal communities. It recognises that equity in health cannot be achieved by uniform design alone, but by deliberately reshaping systems to compensate for disadvantage. By embedding proactive outreach, continuity of care and cultural competence into the core architecture of service delivery, Maharashtra can ensure that tribal citizens receive predictable, dignified and effective healthcare, not as an exception, but as a matter of right.

Health Information Systems







✧ *Stories from Field*

From SAM to Strong

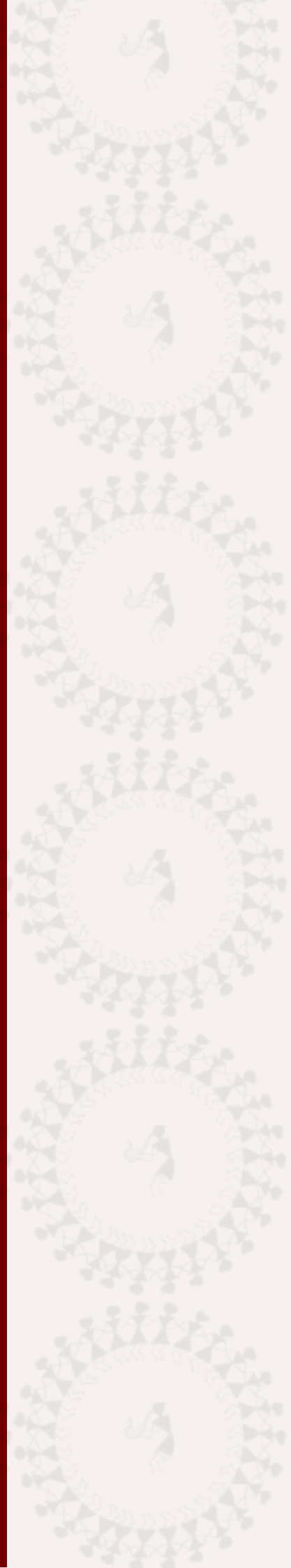
Counselling and home-based care restore a child's nutritional health

Ajneri, Nashik

Note: For the purpose of confidentiality and privacy, the name of the patient has been changed.

Under the Zilla Parishad's nutrition focused initiative, Poshan Doot, frontline workers are supporting families through counselling, local food guidance, and sustained follow up rather than financial incentives. The impact of this approach became visible in the case of a young child identified with severe acute malnutrition. A one-year-old child from the block was identified as SAM in July 2024, with a height of 79 centimetres and a weight of 6.4 kilograms. Despite counselling, the family was initially hesitant to admit the child to a Child Treatment Centre. Given the constraints, the team opted for intensive home-based care through the VCDC approach. What followed was steady, patient work. Regular home visits were conducted. Parents were counselled repeatedly on feeding practices, locally available nutritious foods such as drumstick leaves, and simple meal preparation using what was already accessible in the household. No external supplements were pushed beyond protocol. The focus remained on guidance, reassurance, and consistency. Through July and August, the child remained in the SAM category. Efforts continued jointly by the Medical Officer, MPW, ASHA, Anganwadi worker, and facility staff. In September, although referral to the CTC was again advised, the family chose to continue home based care. By this time, the child had improved to the MAM category, with weight increasing to 7.4 kilograms. Follow up remained uninterrupted. In October, the child was reviewed by a paediatrician during an ASHA facilitated visit and continued to show gradual improvement. By early November, the child's weight reached 7.8 kilograms and nutritional status normalised. In December, the weight further increased to 8 kilograms, firmly within the normal range. This outcome was not the

result of a single intervention, but of repeated counselling, local solutions, and coordinated effort at the field level. The experience strengthened confidence among caregivers that recovery is possible with the right guidance and follow up. For the frontline worker, this was not just one child moving out of SAM. It was proof that consistent counselling and trust-based care can change outcomes, even without additional resources



In a remote tribal hamlet of northern Maharashtra, a young man from the Mavchi speaking community shared with the Committee that he had never seen a single film in his own language. His everyday exposure was limited to Marathi and Hindi media, languages he understood only partially. His experience reflects an information environment in which dominant languages shape public messaging while tribal languages remain absent. This absence creates an information shadow, where communication systems formally exist but remain functionally inaccessible to the very communities they are meant to serve.

This lived experience points to a broader structural issue within the public health system. Health information, advisories, and data collection processes are largely designed and disseminated in languages and formats that do not align with tribal linguistic and cultural contexts. As a result, essential health messages are often not fully comprehended, not trusted, or not acted upon. The gap that emerges is not merely linguistic. It extends to knowledge, awareness, service uptake, and ultimately health outcomes among tribal populations.

This chapter examines how this gap can be addressed through a systematic overhaul of the health information architecture in tribal areas.

Theme 5.1 A Dedicated Tribal Health Cell for Data-Driven Planning

One of the fundamental constraints in improving tribal health outcomes is the limited availability of timely, granular, and decision-ready data on Scheduled Tribe populations. While multiple health information systems operate across programmes, they are not consistently structured to surface tribal specific patterns at a level that meaningfully informs planning, prioritisation, and accountability. As a result, health conditions in tribal blocks and hamlets often remain indistinct in aggregated datasets, limiting administrators' ability to identify localised vulnerabilities and respond

Similarly, robust health information systems are essential for informed policy making and effective service delivery. However, existing systems suffer from critical data gaps that obscure the lived health realities of tribal communities. Tribal languages and dialects frequently remain unrecorded or aggregated in ways that render them invisible within official datasets. Health communication thus continues to speak in unfamiliar terms, reinforcing exclusion rather than inclusion.

The sections that follow outline a cohesive strategy grounded in both field level experience and empirical evidence. The chapter begins by establishing the need for reliable and disaggregated tribal health data. It then examines the integration of fragmented data systems, mechanisms for interdepartmental coordination, strengthening of mortality surveillance, approaches to tracking migrating tribal families, and the redesign of health communication to reflect tribal languages and cultural practices. Together, these elements aim to create a proactive and inclusive health information system that ensures every tribal individual is visible within the data framework and every community is meaningfully engaged in the flow of health information.

with precision.

Strong health information systems are widely recognised as the backbone of effective and equitable health systems, enabling evidence-based planning, performance monitoring, and course correction.^[1] In the absence of reliable disaggregated data, however, health systems risk responding to averages rather than to need. For tribal populations, this gap translates into weakened visibility of outcomes, delayed recognition of emerging risks, and limited feedback loops between data generation and policy action.



This challenge is not solely technical. At present, tribal health data does not have a clear institutional home within the health administration. Responsibility for generating, analysing, and interpreting tribal specific health information is diffused across programmes, leading to fragmentation and underuse. Without a dedicated institutional mechanism, tribal disaggregation remains episodic and dependent on individual initiatives rather than embedded within routine governance processes.

Recommendation 5.1

Establish a State Tribal Health Cell

It is recommended that Maharashtra establish a dedicated State Tribal Health Cell within the Health Department with an exclusive mandate to oversee Scheduled Tribe health data and analytics. The Cell should function as the state's central institutional mechanism for ensuring sustained visibility of tribal populations within health information systems and policy processes.

The Tribal Health Cell should be responsible for consolidating Scheduled Tribe disaggregated data from routine health information systems, programme databases, surveys, and special initiatives into a unified analytical framework. Its role should extend beyond compilation to include trend analysis, interpretation, and translation of data into actionable insights for programme managers and policymakers.

A core output of the Cell should be periodic Tribal Health Dashboards that present key indicators relevant to tribal areas in a clear, decision-oriented format. These dashboards should support routine review at block, district, and state levels and ensure that disparities are not obscured within aggregated reporting.

The Cell should also serve as the nodal unit for institutionalising the use of Scheduled Tribe identifiers across health information systems to enable consistent disaggregation. In addition, it should coordinate vulnerability mapping exercises to identify high risk tribal hamlets and

service deficit pockets using administrative and spatial data, thereby supporting targeted interventions and resource allocation.

Within the first year of establishment, the Cell should publish a State Baseline Tribal Health Report to anchor monitoring and evaluation efforts. Dedicated analytical and technical staff should be assigned to the Cell to ensure data quality, interoperability with evolving digital health systems, and secure data governance.

National and State-level developments underscore the value of such institutional arrangements. India's move toward establishing a National Tribal Health Observatory reflects growing recognition that tribal health requires dedicated data governance structures rather than peripheral treatment within general systems.^[2]

A State Tribal Health Cell would enable Maharashtra to align with this direction while tailoring analysis and action to its specific administrative and demographic context.

Operationalisation Pathway

The proposed State Tribal Health Cell need not function as a standalone directorate or require the creation of a new administrative hierarchy. It can be institutionalised as a specialised wing within the Health Department's existing digital and health information ecosystem, including integration with the State Health Data and Technology Mission or equivalent platforms. Administratively, the Cell may be anchored under the nodal Joint Secretary, with clear reporting lines and functional autonomy for analytical work.

In practical terms, the Cell can be operationalised through the appointment of a dedicated Programme Manager, supported by a small multidisciplinary team of three to four data, policy, and public health analysts. This core team, drawing on existing programme and IT resources, would be sufficient to initiate dashboard development, vulnerability mapping, and baseline reporting. Over time, functions can be expanded based on demonstrated utility and demand, rather than

through upfront institutional expansion.

This lean structure emphasises focus, accountability, and usability over scale. With modest staffing and clear leadership, the Tribal

Health Cell can function as a high-impact analytical unit, strengthening decision-making without adding to administrative complexity.

Theme 5.2 Integrating Health Data Silos Toward a Unified Tribal Health Portal

While a dedicated Tribal Health Cell provides governance and analytical oversight, its effectiveness ultimately depends on the quality and usability of data generated at the frontline. At present, health and nutrition data in tribal areas is fragmented across multiple programme specific registers and digital portals. Maternal and child health services, immunisation, nutrition under ICDS, disease surveillance, and facility-based care operate through parallel systems with limited interoperability.

This fragmentation prevents the creation of a unified view of individuals and families. Frontline workers often record the same household across multiple platforms, while migrant families risk falling out of several systems simultaneously. Data entry is frequently experienced as a reporting obligation rather than a tool for local action, reducing its value for follow up, continuity of care, and micro planning.

Strengthening health information systems requires integration that prioritises use as much as reporting. Global experience emphasises that digital health platforms are most effective when they support continuity of records, clear denominators, and real time use at the point of care, particularly in underserved and hard to reach populations.^[1]

Maharashtra's experience with e-SUCHI illustrates the practical benefits of such an approach. By creating a digital health register at the village level, e SUCHI enabled demographic information to be entered once and updated through life events such as eligibility, pregnancy, and birth. The presence of a clear household-based denominator allowed

frontline workers to identify who remained unreached, rather than focusing solely on absolute service numbers. Importantly, programme components such as sickle cell screening and follow up could be integrated into the platform without the creation of separate management information systems. This architecture allows additional programmes, including RBSK or migration tracking systems, to be layered onto the same register as needed.

At the same time, the coexistence of state level digital registers and centrally mandated reporting portals has meant that frontline workers are often required to enter similar information across multiple platforms. National systems are designed to ensure uniformity and comparability across states and therefore prioritise programme specific reporting and aggregate outputs. While this serves essential national monitoring objectives, it limits the availability of household-based denominators and local level views that are critical for micro planning and follow up in tribal contexts. In practice, this results in parallel data entry rather than seamless integration.

Recommendation 5.2

Develop a Digital Household and Demographic Register for Tribal Areas

It is recommended that Maharashtra develop a digital household and demographic register for tribal areas to serve as the foundational denominator for health and nutrition services. This register should be household-centric, continuously updated, and linked through secure interfaces to relevant state and national



systems. Its primary purpose should be to make population-level coverage, exclusions, and service continuity visible in a simple, actionable way.

The digital register should function as a single point of data entry for frontline workers, ensuring that information entered once flows automatically into required reporting platforms. A unified household database should replace multiple parallel registers and serve as the reference frame for maternal and child health, immunisation, nutrition, disease surveillance, and programme-specific initiatives such as sickle cell disease. This would enable accurate tracking across time and location and reduce duplication of effort.

Operationalisation Pathway

Full-scale integration with national digital platforms may require phased technical alignment and coordination. As an initial and feasible step, the state can begin by digitising the annual household and family survey that ASHAs already undertake using paper registers. Converting this existing practice into a digital format would generate immediately usable population data while eliminating redundant manual registers. This approach allows the system to mature organically, building on familiar workflows rather than introducing entirely new reporting burdens.

Over time, this digital register can be progressively linked to national systems through interoperable interfaces, ensuring compliance while preserving state-level analytical flexibility. Even in its initial form, a digitised household register would substantially improve data reliability, timeliness, and usability for programme planning.

The platform should integrate multiple health domains without requiring separate management information systems. Its modular architecture should allow future onboarding of additional programmes, including RBSK and migration tracking, within the same framework. Frontline interfaces should prioritise usability, offline functionality, local language support, and built-in decision support features that translate data into field action. Dashboards should emphasise coverage gaps, risk trends, and service continuity rather than raw counts, enabling supervisors and administrators to intervene proactively.

Interoperability with the national digital health architecture should remain a guiding design principle. At the same time, the system should retain a strong focus on local denominators and field usability. Such a platform would shift tribal health data systems from fragmented reporting toward population-based service management, particularly in contexts where linguistic, cultural, and geographic barriers suppress demand.

Theme 5.3 Sharing Data Across Sectors for Collaborative Action

Health outcomes in tribal areas are shaped by a range of determinants that extend well beyond the Health Department. Nutrition, drinking water and sanitation, education, livelihoods, and tribal welfare interventions all play a critical role in influencing morbidity, mortality, and service utilisation. However, the data systems supporting these domains largely operate in isolation. As a result, information essential for identifying and supporting vulnerable tribal households is often dispersed across departments, delaying coordinated and timely action.

This fragmentation weakens service delivery at the household level. Nutrition systems may identify a severely undernourished child without triggering timely medical follow up. Health facilities may repeatedly treat preventable illnesses without visibility into underlying nutrition or water access gaps. Information held by tribal welfare or education departments on migration, school dropout, or household vulnerability may not reach health teams, even when such factors directly affect disease risk and continuity of care.

Field observations by the Committee highlighted how this lack of structured data sharing translates into avoidable inefficiencies. In one primary health centre area visited, despite the availability of the POSHAN Tracker, supervisors were observed printing lists of malnourished children and manually sharing these with the Lady Health Visitor (LHV) and the RBSK team. These teams then recreated separate registers from the same data to plan follow up visits. This resulted in multiple parallel records derived from a single source, consuming substantial staff time in transcription, reconciliation, and verification. Time that could have been spent on counselling families or conducting follow up visits was instead diverted to preparing and maintaining duplicate lists. Such practices do

not reflect resistance to digital systems, but rather the absence of structured access and integration across departments. Providing appropriate role-based access or enabling system level integration would allow the same information to be viewed and acted upon directly, reducing duplication and redirecting frontline effort toward caregiving rather than paperwork.

In many districts, similar workarounds exist in the form of informal data sharing through personal networks, ad hoc meetings, or manual exchanges. While these efforts demonstrate field level commitment, they remain non standardised, difficult to sustain, and heavily dependent on individual initiative. Without formal mechanisms, cross sector collaboration remains uneven and fragile.

Addressing complex tribal health challenges requires a shift from parallel departmental functioning to coordinated, case-based responses. This is particularly critical in situations where multiple vulnerabilities coexist within the same household, such as severe child malnutrition combined with maternal illness, tuberculosis, or seasonal migration. In such contexts, isolated interventions by individual departments are insufficient.

Recommendation 5.3

Establish a Tribal Convergence Dashboard and Formal Data Sharing Protocols

It is recommended that Maharashtra establish a Tribal Convergence Dashboard to enable structured data sharing and coordinated action across key departments including Health, ICDS, Tribal Development, Education, and Rural Development.

The dashboard should provide a consolidated village and household level view of priority vulnerability indicators drawn from participating departments. This may include lists of malnourished children, high risk



pregnancies, tuberculosis patients, anaemia prevalence, school dropouts, and key environmental or infrastructure gaps. The objective is not to merge all departmental databases, but to allow authorised officials to view aligned information that supports joint planning and action.

To support this, formal data sharing protocols should be notified between departments, specifying which datasets will be shared, at what frequency, and for what operational purpose. Such protocols would institutionalise routine exchange of select high value information, for example, sharing lists of pregnant women and infants from health systems with ICDS, and lists of severely undernourished children or anaemic adolescents from ICDS with health teams.

Role-based access controls and data privacy safeguards should be built into the system to ensure that sensitive personal information is protected while enabling necessary information flow for service delivery. The emphasis should be on enabling frontline and supervisory staff to act on shared data rather than on unrestricted access.

At the operational level, the convergence platform should support joint review of high-risk cases during routine block-level meetings, enabling departments to agree on coordinated action plans for vulnerable households. This formalises collaboration that already occurs informally in many areas and anchors it in shared evidence rather than parallel reporting. In parallel, linkage with a Tele Health Action Centre can enable escalation calls, real time follow up, and monitoring of quality related concerns raised by beneficiaries and frontline workers, strengthening responsiveness and accountability across the system.

By enabling departments to work off common vulnerability lists, the government effectively functions as a single, coordinated team around the tribal household. For communities, this translates into more coherent engagement with the state, reduced duplication, and a support system that responds holistically to their situation. For frontline workers, it reduces time spent on duplicative data preparation and redirects effort toward caregiving, follow-up, and community engagement.

Theme 5.4 Learning from Every Death: Strengthening Mortality Surveillance

Understanding why people die is fundamental to public health planning. Yet in tribal areas of Maharashtra, a substantial proportion of deaths occur outside health facilities and therefore lack medical certification of cause. Home deaths, deaths during transit, and deaths in remote habitations remain common, limiting the ability of routine systems to generate epidemiologically meaningful cause of death information. As a result, health planning is often forced to rely on assumptions rather than evidence regarding mortality patterns and their determinants.

Verbal autopsy is a well-established public health method for ascertaining probable causes of death through structured interviews

with caregivers or family members when medical certification is unavailable. It has been extensively used in India and other low- and middle-income settings to strengthen mortality surveillance where civil registration systems are incomplete.^[3] The Million Death Study, embedded within India's Sample Registration System, demonstrated that verbal autopsy can generate robust cause of death distributions at the population level and inform national and sub-national health policy.^[4]

Recent epidemiological evidence from rural and tribal India indicates that mortality patterns are undergoing significant transition. In a prospective population-based study in rural Gadchiroli district, stroke emerged as the single

leading cause of death, accounting for approximately fourteen percent of all deaths, with most deaths occurring at home without medical attention or certification.^[5] Broader verbal autopsy-based analyses across predominantly tribal and rural districts have shown that non-communicable diseases now account for nearly two-thirds of adult deaths, with cardiovascular diseases contributing the largest share.^[6] These findings demonstrate that tribal mortality is no longer dominated solely by infectious causes and that surveillance systems must be capable of detecting emerging non-communicable disease trends.

Despite the availability of verbal autopsy tools, current practice in many areas limits detailed enquiry to selected categories such as maternal, neonatal, or infant deaths. Even where verbal autopsies are conducted, they are often treated as administrative requirements rather than as instruments for learning and prevention. Conducting full physician-reviewed verbal autopsies for every community death is resource-intensive and not feasible at scale. However, the absence of structured enquiry for most deaths results in persistent blind spots regarding why people are dying and how causes are changing over time.

The core gap, therefore, is not merely death registration but the lack of proportionate mortality surveillance that converts deaths into actionable epidemiological insight. As noted during consultations, without systematic cause of death analysis the health system has limited ability to anticipate or respond to rising burdens such as stroke and other cardiovascular conditions in tribal communities. Alongside efforts to improve financial protection and scheme utilisation, there are also serious concerns about the quality and analytical depth of maternal death audits, which limit their usefulness for systemic improvement. A review of individual case records shows that many Facility-Based Maternal Death Review (FBMDR) forms are incompletely filled, with critical fields on referral pathways, delays, treatment provided, and contributory factors left blank or reduced

to cursory remarks such as 'brought dead'. In the cited case, key sections on transport history, clinical management, underlying cause of death, and modifiable factors were largely uninformative, and the final summary did not provide a meaningful reconstruction of events. Such documentation practices prevent identification of avoidable delays, facility-level gaps, and systemic failures. This underlines the need for stronger district- and state-level analytical mechanisms, including routine case synthesis, thematic reviews across deaths, independent validation of findings, and structured feedback to facilities. Without rigorous, aggregated analysis beyond individual forms, death surveillance risks becoming a compliance exercise rather than a tool for improving quality of care and preventing future deaths.

Recommendation 5.4

Initiate a Universal Death Registration with Tiered Mortality Enquiry and Analytical Support

It is recommended that Maharashtra adopt a pragmatic, tiered approach to mortality surveillance in tribal areas, anchored in universal death registration and proportionate cause of death enquiry.

The first step is to ensure that all deaths in notified tribal areas are registered, irrespective of place of death. Registration should capture basic demographic details, place of death, and whether medical certification of cause is available. Universal registration establishes reliable denominators and allows tracking of mortality trends over time.

Building on universal registration, a two-tier mortality enquiry system should be instituted. At the first tier, all non-facility deaths should trigger a simplified mortality enquiry conducted by trained frontline workers using a concise digital format. This enquiry should capture key symptom patterns preceding death, broad suspected cause categories, basic care seeking behaviour, and contextual factors such as distance to health facilities or use of traditional



remedies. The objective at this level is to generate population level cause patterns rather than individual clinical diagnoses.

At the second tier, full verbal autopsy and social autopsy should be conducted for priority categories, including maternal, neonatal, child, adolescent, and young adult deaths, suspected clusters or unusual increases in deaths, deaths due to injuries or suicide, and deaths suggestive of emerging non-communicable disease patterns such as stroke or cardiovascular disease. Standardised verbal autopsy instruments developed by the World Health Organization should be adapted to local language and context for this purpose.^[3]

To support scalable and consistent interpretation of verbal autopsy data, the state may explore the use of computer-coded or algorithmic decision support systems for cause of death assignment. Automated verbal autopsy models, including machine learning based approaches, have been shown to perform comparably to physician-coded verbal autopsy for population level surveillance while offering greater consistency and scalability.^[7] Such systems are intended to support epidemiological analysis and trend detection rather than replace clinical judgment, and should be used exclusively for public health planning and monitoring, with appropriate human oversight.

All mortality enquiry data from both tiers should be consolidated into a digital mortality surveillance system, either as a module within the integrated health information platform or under the analytical stewardship of the Tribal

Health Cell. Each death should be assigned a unique identifier and classified into broad cause categories to enable temporal, spatial, and demographic analysis.

Periodic analytical reviews should be conducted at block, district, and state levels, focusing on shifts in dominant causes of death, emerging non communicable disease burdens, seasonal patterns, and geographic clustering. Findings should be systematically linked to programme and service delivery responses, such as targeted hypertension and diabetes screening, stroke awareness initiatives, strengthening of emergency referral systems, or pre-positioning of diagnostics and medicines. These reviews should be based on complete, standardised, and independently validated death and morbidity audits, with routine synthesis of individual case records to identify recurrent documentation gaps, referral failures, and preventable system weaknesses, rather than relying on isolated or poorly analysed reports, such as Figure 5.1.

The mortality surveillance process must be explicitly framed as non punitive and learning oriented. Clear guidance should emphasise that the objective is system improvement rather than attribution of blame. By institutionalising universal death registration combined with proportionate mortality enquiry and supported by analytical tools, Maharashtra can transform mortality data from static records into actionable intelligence and respond proactively to evolving health challenges in tribal communities.

Figure 5.1 A Snapshot of a Poorly Performed Death Audit.

70 | Guidelines for Review of Death (Investigation & Reporting)

18. CASE SUMMARY (please supply a short summary of the events surrounding hospital stay and the death of the patient)

k/c/o Sticks cell records.
Brought dead to casualty in
part. a civil hospital, Manikpur

Form filled by the MD on date: _____
 Name & Signature: _____
 Designation: _____
 Stamp & Date: _____

Medical Officer of the Hospital:
 Name & Signature: _____
 Address of the Institution: _____

Theme 5.5 Counting Everyone: Shifting to Residence Based Reporting

A critical but often under recognised distortion in health statistics arises from reporting outcomes based on the location of service delivery rather than the place of usual residence of the individual. In tribal areas, this distortion is particularly acute. Patients frequently travel outside their home villages or blocks to seek care for complicated pregnancies, serious illnesses, or emergencies, often because local facilities are limited or lack community trust. When births, deaths, or disease events are recorded only at the facility where care is provided, the resulting statistics misrepresent the true health status of tribal communities.

This practice creates a systematic blind spot. Adverse outcomes experienced by tribal residents are effectively transferred into the statistics of urban or better equipped districts, while the originating tribal blocks appear healthier than they actually are. A tribal block may show low maternal mortality or disease burden on paper, not because risk is lower, but because high risk cases are treated or recorded elsewhere. This weakens accountability and obscures where health system strengthening is most urgently needed.

Field experience illustrates this clearly. High risk pregnancies from remote tribal villages are often referred to tertiary hospitals in cities. Complications or deaths that occur there are attributed to the city's data, while the home block records no adverse outcome. Similarly, tribal patients with tuberculosis or other chronic illnesses who temporarily migrate for work or treatment may die outside their home area, leaving local health teams unaware of the true disease burden among their residents.

From an epidemiological standpoint, this misattribution undermines planning, monitoring, and evaluation. Mortality and morbidity data that are not linked to place of usual residence limit the ability of health systems to identify high risk populations, geographic inequities, and emerging health threats. Evidence from Indian mortality research underscores that accurate assessment of health outcomes requires linkage to usual residence, particularly in settings with high mobility and incomplete medical certification of deaths.^[8]

Figure 5.1 presents a block-wise comparison of residence-based infant mortality (RCH) versus facility-based infant mortality (HMIS) for Gondia district, along with cumulative child



deaths for FY 2023–24 and FY 2024–25 (up to March 2025). By displaying infant deaths and live births from both systems side-by-side, it highlights how the same district can show different mortality patterns depending on whether outcomes are attributed to the place of usual residence (RCH) or the place where services/outcomes were recorded (HMIS).

Two insights are especially important for planning: first, block-level differences between RCH_IMR and HMIS_IMR indicate that facility-recorded statistics may not reliably represent

the risk profile of the resident population, particularly where referrals to higher facilities are common. Second, the table shows why Gondia’s move toward maintaining residence-based mortality estimates strengthens accountability, ensuring that deaths among residents are counted back to their home blocks, enabling more accurate identification of high-burden geographies, better targeting of corrective actions, and fairer resource allocation across rural and urban areas.

Figure 5.2 Blockwise child deaths and infant mortality (Residence based vs HMIS), Gondia

Blockwise child deaths and infant mortality (Residence-based vs HMIS), Gondia district, up to March 2025

Comparative statement of child deaths residence based v/s HMIS for 2023–24 & 2024–25 and infant mortality rates calculated based on RCH and HMIS data for each block of Gondia district. Reporting month: March 2025.

Block	RCH_IMR	HMIS_IMR	Child_Deaths (2023_24)	Child_Deaths (2024_25)	Change (+/-)	RCH (Infant_Deaths)	RCH (Live_Births)	HMIS (Infant_Deaths)	HMIS (Live_Births)
Gondia	15	23	54	60	6	53	3,545	8	346
Deori	11	2	35	23	-16	17	1,551	2	987
Gonegan	12	8	26	25	-1	17	1,380	2	237
Sadek Arjunt	7	16	37	10	-27	8	1,258	4	244
Salekasa	19	10	27	20	-4	21	1,188	5	304
Tiroda	11	18	29	21	-8	17	1,580	3	164
Arjunt Mongan	8	12	26	17	-8	12	1,434	5	418
Amgan	19	23	40	32	-8	25	1,523	8	342
Rural Total	11	12	278	211	-67	170	13,907	37	3,042
Urban	3	10	6	5	-1	5	1,630	112	11,114
District Total	13	11	284	216	-68	175	15,027	149	14,156

Note: Child deaths are cumulative for the financial years 2023–24 and 2024–25 up to March 2025. IMR is calculated as infant deaths per 1,000 live births for the same period with RCH data as the source of live births data. (34) Gondia - Source: Source: RCH Portal and HMIS Portal, Gondia District, reporting month: March 2025. - Created with Datawrapper

Recommendation 5.5

Adopt of Residence Based Reporting for Key Health Indicators

It is recommended that Maharashtra adopt residence-based reporting for key health outcomes, particularly births, deaths, and notifiable diseases, in all tribal areas. Health events should be attributed to the individual’s village and block of usual residence in aggregated statistics, regardless of where care was received.

This requires that all routine health data systems consistently capture the patient’s place of residence using standardised village and block codes, and that this information be used for analysis and reporting. Where electronic systems are in use, residence fields should be mandatory and routinely audited for completeness. The use of unique health identifiers under the national digital health architecture can further enable automatic linkage of services received anywhere to an individual’s home location.

The Tribal Health Cell should lead implementation by setting standards for residence attribution, monitoring data quality, and coordinating with referral facilities to ensure outcomes for tribal residents are mapped back to their source blocks. Where full digital integration is not immediately feasible, interim mechanisms such as periodic sharing of patient outcome lists from referral hospitals can be used to correct local statistics.

Residence based reporting strengthens health system performance in multiple ways. It restores accountability by ensuring that local health systems remain responsible for outcomes among their residents, irrespective of referral patterns. It improves resource allocation by aligning planning and funding

with the true burden of disease rather than distorted facility-based figures. It enables more precise targeting of interventions by revealing geographic clusters of adverse outcomes that may otherwise remain hidden. Finally, it improves the validity of programme evaluation by allowing year to year assessment of whether health outcomes for tribal populations are genuinely improving.

By ensuring that tribal residents are counted where they live rather than where they receive care, residence-based reporting corrects a fundamental statistical distortion. It allows health systems to see the real geography of risk, respond to it honestly, and invest in local capacity so that over time fewer people are forced to seek care far from home.

Theme 5.6 Tracking Migrant Families in Health Systems

Seasonal and circular migration is a structural feature of life for many tribal communities in Maharashtra. Large numbers of tribal households migrate annually for sugarcane cutting, brick kiln work, agricultural labour, and other forms of informal employment, often accompanied by pregnant women, infants, and young children. While migration is critical for livelihoods, it poses a persistent challenge for health information systems that are designed around stable, village-based populations.

From a health information perspective, migration creates a continuity gap rather than merely a service delivery gap. Individuals and families are recorded in registers and digital systems at their place of origin, but their health needs and service utilisation during migration are frequently not captured in destination areas, particularly when migration is informal or across district or state boundaries. When families return, they often reappear in home systems as defaulters, with missed antenatal care, delayed immunisation, or worsening nutritional status, while the underlying cause of these gaps remains invisible in routine data.

Evidence from Indian studies shows that migration significantly disrupts continuity of maternal and child health services. Research on seasonal migrant populations highlights missed immunisation doses, interruptions in antenatal care, and weak follow up of nutrition and supplementation services among children who migrate with their families, largely because health records do not travel with them and destination systems lack visibility of their prior entitlements.^{[9], [10]} Qualitative studies from tribal and rural settings further demonstrate that migrant households face additional barriers at destination sites, including lack of awareness of local services, language barriers, precarious living conditions, and power asymmetries at worksites, all of which reduce proactive care seeking.^[10]

These disruptions are fundamentally information failures. Health systems lose sight of people when they move, not because services do not exist, but because health information architectures are unable to track mobility. The World Health Organization has explicitly noted that continuity of care for



migrants requires health information systems that can capture movement across locations and link services received before, during, and after migration.^[11] Without such systems, migrant health needs remain underestimated and poorly planned for.

In Maharashtra, the Migration Tracking System is an important step toward addressing this invisibility. Developed by the Women and Child Development Department, MTS digitally records the movement of pregnant women and young children during seasonal migration, capturing departure, destination, and return. Early operational experience shows that MTS has made migrant households visible at scale and enabled better planning of nutrition and related services during migration periods.^[12] It fills a long-standing blind spot that village-based registers and static digital systems could not address.

From a health systems perspective, the critical opportunity lies in treating migration data as a shared information layer rather than a department specific tool. At present, MTS is primarily used to maintain continuity of ICDS services. Its potential value for health programmes remains largely untapped. If migration data is integrated into health information systems through shared identifiers and synchronised due lists, the health system can shift from a passive model that waits for migrant families to present themselves, to an anticipatory model that plans services around known patterns of movement.

This shift is particularly important in tribal contexts. Migrant families rarely assert health entitlements in unfamiliar settings due to fear of wage loss, lack of documentation, or social marginalisation. When health teams have advance information on who is migrating, where they are going, and when they are likely to return, they can complete time sensitive interventions before departure, flag high risk pregnancies for follow up, and organise outreach services at destination clusters. Migration data thus becomes the backbone for continuity of care across geography and time,

rather than merely a record of movement.

Recommendation 5.6

Integrate Migration Data into Health Information Systems for Continuity of Care

It is recommended that Maharashtra formally integrate migration tracking data into routine health information systems to ensure continuity of care for migrant tribal families. This recommendation may be read along with Recommendation 4.10.

Migration data from the Migration Tracking System should be made accessible to health programmes through shared identifiers and interoperable data flows, allowing migrant households to be flagged within health due lists, risk registers, and monitoring frameworks. Health teams at the place of origin should use migration data for pre migration planning, ensuring completion of antenatal check-ups, immunisation doses, and nutrition counselling for families likely to move.

During migration periods, destination area health teams should be supported with advance information on expected migrant populations to plan outreach sessions, disease surveillance, and follow-up care. At the state level, migration data should be analysed alongside routine health indicators to understand how mobility shapes service coverage gaps, disease risk, and outcomes in tribal areas. This will prevent migrant related discontinuities from being misclassified as programme failure or non-compliance and allow more accurate interpretation of health indicators. Where timely information is available, linkage with Health Action Centres can enable structured outbound calls for follow-up, counselling, and referral support. An integrated approach to migration data and follow-up systems will ensure that tribal families remain connected to health services even when livelihoods require mobility.

Theme 5.7 Communicating Health in Tribal Languages and Cultural Contexts

Health information systems ultimately succeed or fail not at the level of dashboards, but at the level of comprehension, trust, and use within communities. In tribal areas of Maharashtra, a persistent barrier to effective service uptake is that health communication often fails to connect with the people it is meant to reach. The reasons are twofold: language barriers and cultural disconnect.

Many tribal communities in the state speak distinct languages and dialects such as Bhili and its sub dialects, Gondi, Korku, Warli, Katkari, Pawra, and Mavchi, yet most health education and communication materials continue to be produced in Marathi, Hindi, or English. Even where translation exists, the format often remains text heavy, technical, and one directional, reflecting assumptions about literacy and modes of communication that do not hold in predominantly oral and tradition-oriented contexts. The result is predictable: information is received as external instruction rather than usable knowledge, and service uptake weakens even when services are available.

A practical lesson from popular culture is that form matters as much as content. Padman movie made menstrual hygiene discussable by turning it into a story that people wanted to watch. Films associated with Ayushmann Khurrana have done something similar for topics that are otherwise socially shut down, by using humour, warmth, and relatable characters to bring sensitive health issues into everyday conversation. The policy point is not cinema, but communication design: when content is engaging, native in tone, and socially safe to discuss, it travels faster and sticks longer than any lecture or pamphlet.

Maharashtra already has usable building blocks for this shift. The Health Spoken Tutorial initiative anchored at IIT Bombay has created

short, technique focused audio-visual content for key topics in maternal and child health, and it has also produced versions in local tribal languages through specific playlists, demonstrating that high quality health education can be delivered in a format that is accessible even for low literacy audiences when language and delivery are adapted appropriately.^[13] These kinds of resources function as reusable public goods that frontline workers, schools, and community platforms can use repeatedly without reinventing materials.

Evidence also supports the value of digitally delivered, culturally adapted communication for tribal populations. A quasi-controlled intervention in tribal settings in India found that a mobile health application improved maternal health awareness and recognition of danger signs, indicating that well designed digital communication can shift knowledge even where literacy is limited, as long as it is accessible and locally intelligible.^[14] During the COVID 19 pandemic, local language communication in Maharashtra's Melghat region, including advocacy in the Korku language through trusted channels, was documented as an important factor in addressing vaccine hesitancy, illustrating how language-aligned, community-rooted messaging can overcome mistrust faster than formal advisories.^[15]

The next leap is scale, and here language technology can be a force multiplier if used carefully. India's Bhashini platform is designed to enable multilingual digital access and translation across Indian languages and provides a pathway for building translation, speech, and language models that can support service delivery in local languages.^[16] Nandurbar district has taken a concrete step in this direction by issuing a formal request for proposals to develop tribal language AI to deliver services in local languages, explicitly in

Figure 5.3(a) District Administration & Bhashini: A Tribal Language SLM Collaboration**Figure 5.3(b)** State Administration & IIT Bombay: A Tribal Language Breastfeeding Tutorial Collaboration

collaboration with Bhashini, signalling a practical state district pathway toward building small language models and usable translation tools for local governance contexts.^[17] These tools should not be treated as automatic substitutes for human translation. Their value is speed and scale for first draft translation and speech interfaces, while community validation remains essential for cultural accuracy, idiom, and trust.

However, translation alone will not solve the problem if the underlying communication style remains didactic. A tribal health communication strategy must be designed around consumption patterns and social reality. Adolescents and families increasingly consume content through short videos, music, humour, and narrative storytelling alongside traditional gatherings. Sensitive topics such as menstruation, contraception, mental health, substance use, and sexual health often shut down when delivered in a moralising tone. Communication formats that allow people to listen without shame and discuss without fear are not cosmetic choices; they determine whether health information becomes socially usable.

Field discussions across districts repeatedly revealed a pattern in how low uptake is

explained, often through statements such as people are uneducated, superstitious, or unwilling to listen. These explanations say more about the limits of institutional imagination than about communities themselves. All societies interpret health through belief, experience, and trust. The system's responsibility is to adapt communication to those realities rather than treating them as barriers. Respectful engagement, credible messengers, and content that feels native rather than imported tend to produce behavioural change more reliably than repeated instruction.

The Tribal Development Department's residential ashram schools provide an unusually powerful platform for sustained health communication. These children live with the state for years during formative stages, which allows consistent reinforcement of health literacy, not as a one-time awareness exercise but as a developmental process. With basic audio-visual infrastructure and age-appropriate content in local languages, ashram schools can run regular viewing and discussion sessions that normalise healthy behaviours, address taboos safely, and build confidence in navigating health systems.

Recommendation 5.7

Establish a Tribal Health Communication Architecture

It is recommended that Maharashtra establish a structured Tribal Health Communication Architecture as an integral component of its health information systems.

The state should develop and maintain a curated repository of audiovisual health communication materials in major tribal languages, covering priority areas such as maternal and newborn care, nutrition, immunisation, adolescent health, sanitation, disease prevention, and emerging health risks. Content should be created or adapted using culturally appropriate narratives, visuals, and formats, with community validation built into the approval process to ensure linguistic accuracy and cultural fit. At present, there is limited systematic availability of scientifically accurate maternal and child health information in indigenous languages, creating a significant information vacuum for women and caregivers in tribal areas.

To address this gap, the state may develop structured local language learning series, such as month-wise pregnancy and early childhood playlists, with short audio-visual modules corresponding to each stage from conception to infancy. These can provide guidance on nutrition, warning signs, self-care, newborn care, and service utilisation in an accessible and familiar format. Such resources can complement frontline counselling, reduce overdependence on individual workers, and enable women to access reliable information independently within their own social and cultural contexts.

The state should institutionalise partnerships that can produce and refresh this content at scale, including academic content creators such as IIT Bombay's Health Spoken Tutorial initiative and trusted community channels such as community radio and local creators. Translation technologies and small language models under platforms such as Bhashini may be used to accelerate production and enable speech interfaces, but outputs should be treated as first drafts and must be refined by native speakers to prevent mistranslation and loss of nuance. Nandurbar's formal collaboration pathway can be used as a model for developing district-relevant tribal language tools that directly support service delivery.

Ashram schools should be systematically integrated into this communication strategy through regular, age-appropriate audiovisual sessions and guided discussions in local languages, creating long-term health literacy rather than episodic awareness. Frontline workers should be equipped with local language audio and visual tools for interpersonal counselling, so that communication is embedded in routine service delivery rather than limited to campaigns.

Treating communication as a core system function rather than a peripheral activity will ensure that health information is not only collected and analysed, but understood and acted upon by the communities it serves. In tribal health, culturally aligned communication is central to whether data translates into trust, services translate into uptake, and programmes translate into improved outcomes.



Towards a Proactive and Inclusive Health Information Architecture

The reforms proposed in this chapter point toward a health information architecture for tribal areas that is data rich, technology-enabled, culturally intelligent, and fundamentally action-oriented. Taken together, they move the system away from passive reporting and toward active care.

At the village level, this shift would be immediately visible. An ASHA would begin her day with a simple offline dashboard on her tablet that consolidates information across programmes. Instead of maintaining multiple registers, she would see a clear list of priorities: a child due for immunisation, women nearing delivery, adolescents flagged for anaemia, and families recently returned from migration. The system would already have organised the information, allowing her to spend time on care rather than paperwork. At the Anganwadi, locally produced audio or video content from the state IEC repository would be played in the community's own language, enabling discussion and clarification in a familiar cultural frame.

At the Primary Health Centre, the medical officer would use a block level Tribal Health Dashboard to monitor trends and act early. A rise in childhood diarrhoea cases from specific villages, seen alongside data on water sources, could trigger coordination with the water supply department, rapid testing, and preventive action. Such patterns would become visible not through delayed reports, but through timely and integrated data flows that support immediate decision making.

At the state level, the Tribal Health Cell would synthesise information across districts, producing regular bulletins that track progress and highlight emerging risks. Declines in malaria following net distribution, persistent malnutrition in specific pockets, or clusters of snakebite deaths would prompt targeted

responses. Periodic Tribal Health Conclaves would serve as structured feedback loops, where frontline workers and district officials interpret data alongside lived experience. When patterns demand action, policy adjustments would follow, whether through stocking essential supplies, modifying outreach strategies, or addressing environmental risk factors.

In this system, information would flow in all directions: upward for policy and resource allocation, downward for community awareness, and laterally across departments for coordinated action. The system would no longer wait for tribal families to repeatedly seek services. It would actively identify who is at risk of being missed. Migration data would alert health teams when families are likely to move, enabling completion of time sensitive interventions before departure and continuity of care at destination sites. Education, nutrition, and health data would converge to trigger outreach for adolescents who drop out of school and show signs of anaemia or other vulnerabilities.

Advanced tools would be used in a restrained and purposeful manner. A small innovation and data science unit within the Tribal Health Cell could pilot transparent and advisory analytics to support human decision making, such as identifying villages at risk of malaria surges based on rainfall and historical patterns, or flagging facilities with unusually high referral rates for pregnancy complications. These tools would prompt review and action, not replace professional judgement. Building on platforms such as e-SUCHI, every ASHA or ANM in tribal areas would eventually have a device that functions as both a mobile health record and a point of care tool, with household data already available offline.

Equally important, data governance and community trust would be built into the



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system. Tribal representatives and community leaders would be included in oversight mechanisms to ensure transparency in how data is collected and used. Simple village level summaries presented in Gram Sabhas could help communities understand health trends over time, reinforcing the value of accurate data and strengthening accountability. Regular review by senior state leadership, through biannual forums or equivalent mechanisms, would keep tribal health firmly on the governance agenda and allow continuous course correction.

Taken together, the recommendations in this chapter creating a Tribal Health Cell, integrating platforms such as e-SUCHI, enabling cross departmental data convergence, strengthening mortality surveillance, tracking migrant families, and aligning communication with language and culture form a coherent health

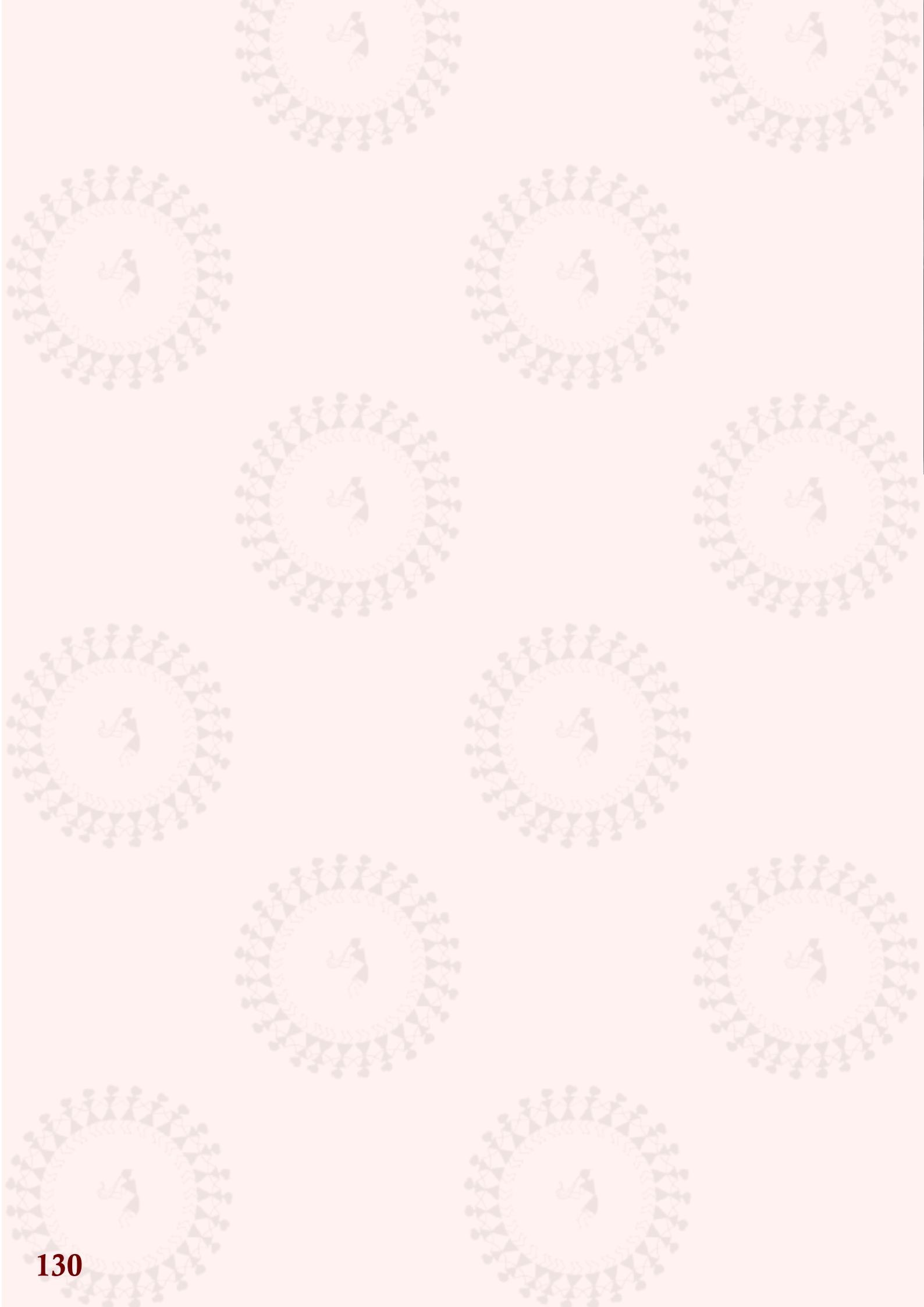
information architecture centred on tribal realities. This is not merely a technological reform. It is a shift in how the system sees, understands, and responds to tribal communities.

Such an architecture would be evidence-driven, proactive, and inclusive. Signals on a dashboard would prompt timely action rather than post hoc explanation. Outreach would follow real time intelligence rather than routine schedules. Modern tools would be paired with local knowledge, and policy would evolve through continuous learning rather than episodic correction. With sustained implementation, Maharashtra can ensure that tribal communities are not at the margins of the state's health progress, and that data becomes a means of empowerment and prevention, not just administration.

Strengthening the Tribal Health Workforce



Vijay Kadam, 1st Yr, MBBS, GMC, Nandurbar





* *Stories from Field*

Designed for Dignity

A simple field innovation improves child weighing across the district

Tokartalav, Nandurbar

In a small anganwadi in Nandurbar district, a routine task revealed a quiet but persistent problem. While weighing young children, the anganwadi worker noticed that the standard jholi being used was ill fitting. It cut short at the hips, caused discomfort, and made children restless and anxious during measurement. Accurate weighing became difficult, and the process itself felt hurried and unpleasant for both children and caregivers. Rather than adjusting to the problem, she chose to address it. Drawing on local resources, the anganwadi worker approached a tailor in the village and explained the issue. Together, they redesigned the jholi. The new version was wider at the hips, better balanced, and more comfortable for children to sit in securely. When used during weighing, children appeared calmer, measurements were easier to take, and the process became smoother and more reliable. What began as a small, practical adjustment soon drew attention. The district administration took cognisance of the improved design and its impact on routine nutrition monitoring. Recognising its potential, the innovation was adopted for scale. With support through CSR convergence, the redesigned jholi was produced and distributed across the district. Today, approximately 2500 anganwadis in Nandurbar use the improved jholi, ensuring that children are weighed comfortably and accurately during growth monitoring. This story reflects how meaningful improvements do not always require complex solutions. Sometimes, they emerge from careful observation, local collaboration, and the confidence of frontline workers to act. In this case, a small design change, rooted in the everyday experience of an anganwadi worker, reshaped practice across an entire district.



In many tribal regions of Maharashtra, the effectiveness of the health system is determined less by infrastructure and more by the people who operate it. A Primary Health Centre (PHC) may have a functional building, essential medicines, and reporting systems in place, yet still fail to deliver timely and trusted care if key posts remain vacant, staff turnover is high, or health providers are unfamiliar with the social and cultural context of the communities they serve. In remote and difficult geographies, the presence, continuity, and preparedness of health workers often make the decisive difference between service availability and real health outcomes.

During field visits, the Committee repeatedly encountered a common pattern. Health facilities in tribal blocks frequently depend on short-term contractual staff, rotating medical officers, or newly posted personnel with limited exposure to tribal settings. While technically qualified, many arrive without adequate orientation to local languages, cultural practices, or the practical realities of working in scattered hamlets with limited connectivity and transport. This often results in discomfort, reduced engagement, and rapid turnover. For communities, this translates into disrupted continuity of care and weakened trust. For the system, it leads to repeated cycles of recruitment without retention and training without sustained impact.

At the same time, the responsibilities placed on frontline workers such as ASHAs, ANMs, and Anganwadi workers have expanded significantly. They are expected to deliver an increasing range of programmes, manage digital reporting, track migrants, conduct outreach across difficult terrain, and respond to emerging health needs. In tribal areas, where disease burdens are complex and social determinants strongly influence health outcomes, this workload is particularly demanding. While many frontline workers demonstrate exceptional dedication, their effectiveness is constrained by limited opportunities for skill development, inadequate mentoring, and working and living conditions

that make sustained performance challenging.

These realities point to a deeper structural issue. Tribal health outcomes cannot be improved without a workforce strategy that recognises the distinct demands of tribal geographies. Treating postings in tribal areas as temporary hardship assignments rather than specialised roles has weakened continuity, morale, and accountability. What is required instead is a deliberate approach that prepares health workers for tribal contexts, supports them throughout their tenure, and recognises such service as a valued professional pathway rather than a punitive obligation.

It is equally important to acknowledge that these systemic challenges coexist with remarkable individual commitment. Across districts, the Committee met doctors, nurses, ASHAs, Anganwadi workers, and programme staff who continue to serve in difficult conditions with integrity, creativity, and deep personal investment in the communities they work with. Many have built trust over years, adapted services to local realities, and gone well beyond formal job descriptions to ensure care reaches the most remote hamlets. The intent of this chapter is not to critique their efforts, but to recognise that such dedication should not be required to compensate for systemic gaps. By placing the stories of these field functionaries on the cover pages of each chapter, this report is consciously dedicated to them.

Strengthening the tribal health workforce therefore requires a comprehensive and sustained approach. This includes better preparation and orientation of incoming staff, continuous skill upgrading and mentoring for frontline workers, improved working and living conditions, and incentive structures that reward commitment and continuity. Most importantly, it requires a shift in institutional mindset, from viewing tribal postings as temporary assignments to recognising them as specialised roles central to the state's equity and public health goals.



This chapter examines how Maharashtra can build and sustain a health workforce that is skilled, context aware, and supported to serve tribal communities effectively. The recommendations that follow focus on

recruitment, training, deployment, support, and retention, with the objective of creating a workforce that is capable of translating policy intent into meaningful and lasting improvements in tribal health outcomes.

Theme 6.1 Preparing Health Workers for Tribal Contexts

The effectiveness of health services in tribal areas depends not only on clinical competence but on whether health personnel are prepared for the social, cultural, and operational contexts in which care is delivered. Maharashtra has established structured induction programmes for Medical Officers through the State Public Health Institute and YASHADA Pune, yet these programmes remain largely generic and provide limited exposure to tribal health realities.^[1] As a result, doctors and programme staff posted from outside the district often arrive unfamiliar with local disease profiles, cultural health practices, and the practical constraints of service delivery in remote and dispersed settlements.

In many PESA notified areas, local recruitment norms already apply at the frontline level, particularly for ASHAs and Anganwadi workers, and this has strengthened cultural alignment and continuity of care. However, this strength is uneven across cadres and does not extend consistently to Medical Officers, specialists, and programme staff posted from outside the district, nor to in district staff transitioning into roles with greater responsibility. Over time, the long term effectiveness of tribal health systems depends on progressively building the workforce from within local communities, with external postings playing a supportive rather than foundational role. Field observations indicate that lack of contextual preparedness contributes to miscommunication, discomfort, and early disengagement. Global health workforce frameworks emphasise that preparedness, including cultural competence, is central to trust and service uptake, especially

among marginalised populations.^[2]

These challenges reflect a system design gap rather than individual shortcomings. Expecting health workers to acquire contextual understanding informally places an uneven burden on individuals and leads to inconsistent outcomes. Preparing personnel for tribal contexts must therefore be treated as an institutional responsibility embedded within workforce deployment systems.

Recommendation 6.1

Institutionalise a Structured Induction and Cultural Orientation for Tribal Postings

The orientation should be co-conducted by experienced practitioners from tribal districts, local non-profit organisations, and respected tribal community members, including elders and traditional leaders. It should be delivered as a focused one to two-week immersive programme conducted before or immediately following posting. For locally recruited or in-district staff assuming new roles or leadership responsibilities, a shorter, role-specific version of the orientation should be provided. To support this process, the Committee has developed a sample, design-friendly and practice-oriented booklet for Primary Health Centre Medical Officers, annexed to this report, which provides concise information on local geography, population profiles, health indicators, cultural norms, and operational considerations relevant to tribal postings. Rather than being data-heavy, the booklet is intended as a practical field companion. Strengthening such contextual preparedness

can reduce early attrition, build trust, and enable health workers to function as credible

and integrated providers within tribal communities.

Theme 6.2 Continuous Capacity Building for Frontline Effectiveness

Health workers in tribal areas frequently operate with limited supervision, delayed referrals, and high clinical decision responsibility. In such environments, decay of infrequently used but critical skills pose a serious risk. Yet capacity building for frontline and supervisory cadres continues to be largely episodic, driven by scheme rollouts or one-time trainings rather than by systematic assessment of role-specific competencies.

The WHO Global Strategy on Human Resources for Health explicitly identifies continuous, competency-based learning aligned to service contexts as essential for maintaining quality of care, particularly in remote and resource-constrained settings.^[2] Skills such as managing obstetric emergencies or recognising neonatal distress require deliberate and repeated practice to remain effective. Without structured reinforcement, the system implicitly assumes stable conditions and immediate support, assumptions that do not hold in tribal geographies.

While Maharashtra has an established policy framework for training and capacity building across health cadres,^[3] the absence of role-specific learning pathways and predictable reinforcement cycles weakens accountability. When training remains ad hoc, neither institutions nor individuals can be held responsible for maintaining competence over time. As a result, training effort does not reliably translate into frontline readiness.

Recommendation 6.2

Institutionalise a Role-Based Continuous Capacity Building Framework

It is recommended that Maharashtra institutionalise a Role-Based Continuous

Capacity Building Framework for tribal health cadres, anchored in a clearly defined Continuous Capacity Building Calendar. Each cadre and functional role, including ASHAs, ANMs, staff nurses, Medical Officers, and block-level supervisory staff, should have a defined annual and multi-year learning pathway aligned to actual responsibilities in tribal settings.

The calendar should specify competencies requiring periodic refreshers, those needing annual reinforcement, and those triggered by epidemiological trends, programmatic changes, or new technologies. Practical reinforcement should be delivered through decentralised Skill Labs established at district hospitals or designated training centres in tribal districts. Simulation-based education has been shown to improve clinical confidence and performance, particularly where real-time supervision is limited. At present, many training activities are oriented toward portal-based reporting and procedural compliance. Greater emphasis is required on strengthening core clinical and field capabilities, including practical skills such as management of the first golden minute after delivery, basic newborn resuscitation, and emergency response, particularly for ASHAs and ANMs. Reorienting training toward hands-on competence will ensure that capacity building translates into improved quality of care at the point of service.^[4]

To support progression and targeted support, individual Skill Passports may be introduced as structured records documenting competencies acquired and identifying gaps. By embedding continuous learning into routine system functioning, the state can ensure that health workers in tribal areas remain consistently capable rather than periodically trained.



Theme 6.3 Strengthening Leadership and Systems Capability in Tribal Health Administration

Frontline effectiveness in tribal health systems is shaped not only by individual competence but by the quality of leadership and management at block and district levels. Health administrators in tribal districts routinely navigate workforce shortages, supply chain disruptions, difficult terrain, and high disease burden. Despite this, many assume these roles without formal preparation in public health management, systems thinking, or adaptive leadership.

Global frameworks on health systems governance identify leadership capability as a central determinant of system performance, particularly in complex and uncertain environments. Without deliberate investment in management and strategic capacity, even well-designed programmes struggle to translate into outcomes. The absence of recognised pathways for developing such capability also weakens institutional memory and continuity during transfers.

Recommendation 6.3

Develop Strategic Leadership Capacity Through a Tribal Public Health Management Fellowship

It is recommended that Maharashtra adopt a

two-tier approach to leadership capacity building in tribal health systems. As a baseline, health administrators posted to tribal districts should have access to focused leadership and management modules covering data-driven planning, programme prioritisation in low-resource settings, public health law, interdepartmental coordination, and community engagement. These modules should be delivered through state institutions such as YASHADA Pune and SIHFW Nagpur, with support from specialised academic and public health partners.

In addition, the state should institute a Tribal Public Health Management Fellowship as a selective, certified, mid-service professional credential for motivated officers seeking advanced expertise in health strategy and systems reform. The fellowship should combine classroom learning with field-based application and be positioned as a marker of leadership readiness rather than as a mandatory requirement. Officers completing the fellowship should be recognised as a strategic talent pool within the health system, with preferential consideration for complex postings, reform initiatives, and leadership roles in tribal health programmes.

Theme 6.4 Creating an Institutional Anchor for Tribal Health Workforce Development

Sustaining workforce capacity reforms requires a strong institutional anchor capable of integrating training, learning, and systems improvement. Maharashtra's State Institute of Health and Family Welfare in Nagpur, upgraded in 2016, oversees a network of regional and district training centres and is well positioned to play this role.[3] However, its current mandate and infrastructure limit its ability to

function as a proactive driver of tribal health capacity and innovation.

Without a dedicated institutional home, training initiatives risk fragmentation, uneven quality, and weak feedback loops from field realities. A focused centre is needed to consolidate learning, curate best practices, and respond dynamically to emerging needs in tribal health systems.

Recommendation 6.4

Establishing a Centre of Excellence for Tribal Health Training and Systems Learning

It is recommended that SIHFW Nagpur be strengthened and repositioned as a Centre of Excellence for Tribal Health Training and Systems Learning. A dedicated Tribal Health Systems Strengthening unit should be established within SIHFW with responsibility for curriculum development, faculty capacity, simulation-based training, and applied learning for tribal health contexts.

Faculty capacity should be expanded to include expertise in tribal public health, epidemiology,

social sciences, health systems management, and community-based service delivery. Training infrastructure should be upgraded to include advanced simulation facilities, digital classrooms for remote access, and modular e learning content for geographically isolated staff. Regular training needs assessments from tribal districts should directly inform programme design, enabling rapid response to identified gaps.

By functioning as a knowledge and learning hub rather than only a training provider, SIHFW Nagpur can support continuous improvement, peer learning, and innovation across tribal health systems.

Before presenting the welfare and retention recommendations, it is important to clarify intent. These measures are not compensatory benefits for difficult postings but structural enablers of performance, continuity, and dignity in tribal health systems. Training and incentives prepare health workers for their roles, but living conditions, safety, predictable remuneration, mobility, and carefully governed task extension determine whether they remain in service and perform effectively in remote tribal geographies.

Theme 6.5 Welfare, Safety, and Dignity as Preconditions for Retention

Retention challenges in tribal health systems are often attributed to remoteness or lack of incentives. Field evidence indicates that living conditions, safety, and dignity at the workplace play a decisive role. Health workers posted to tribal facilities frequently lack habitable accommodation, secure rest spaces, or reliable sanitation. For women health workers in particular, concerns around personal safety, isolation, and harassment compound professional stress and accelerate attrition.

Psychological distress among healthcare workers working in high-stress and resource-constrained settings is well documented. Studies have shown high prevalence of anxiety, depression, and burnout, with a significant proportion of workers reporting intentions to leave their jobs when workplace conditions feel unsafe or unsupported.^{[1],[2]} Judicial observations and public discourse in India have

further underscored that the safety of healthcare workers is not a discretionary welfare measure but a core duty of the employer.^[7]

These issues reflect a structural gap in welfare provisioning. Workforce policy has historically prioritised deployment and incentives while underinvesting in the everyday conditions that make sustained service possible. Without addressing housing, safety, and psychosocial support, capacity building and financial incentives alone are unlikely to stabilise the workforce.

Recommendation 6.5

Improve Workforce Welfare Through Housing, Safety, and Support Infrastructure

It is recommended that Maharashtra undertake a dedicated and time-bound programme to



upgrade welfare and safety infrastructure for health workers in tribal areas. All Primary Health Centres and sub-centres in tribal blocks should have functional and habitable residential quarters for essential staff, with renovation and new construction addressed as a priority. Inclusion of staff accommodation should be treated as a mandatory component in sanctioning new health facilities. To accelerate delivery in difficult terrain, durable prefabricated, modular, and emerging construction technologies, including factory-built and 3D printed solutions, may be explored alongside conventional construction methods. At higher-level facilities, secure and dignified rest spaces should be provided for female

frontline workers, particularly ASHAs, Anganwadi workers, and ANMs accompanying patients during long referrals. Adequate lighting, basic security arrangements, and coordination with local authorities should be institutionalised. These facilities may be standardised and designated under a common identity, such as 'Arogya Nivas (Staff)', to ensure easy recognition and consistent quality across districts. Alongside physical safety, access to psychosocial support mechanisms such as confidential counselling and peer support platforms should be enabled through existing health mission structures to address stress and burnout and reinforce workforce resilience.

Theme 6.6 Financial Incentives and the Changing Geography of Hardship

Hardship allowances have historically helped attract health workers to difficult tribal postings. However, the geography of hardship is dynamic. Improvements in road connectivity, telecommunications, and local infrastructure have altered living and working conditions in some areas, while other pockets remain acutely isolated and underserved.

When hardship classifications are not periodically reviewed, incentive structures risk becoming misaligned with ground realities. This can weaken motivation, generate perceptions of inequity, and dilute the impact of limited fiscal resources. A static hardship framework is therefore poorly suited to a changing development context.

Recommendation 6.6

Reassess and Rationalise Hardship Allowance Criteria for Tribal Postings

It is recommended that the Public Health

Department, in coordination with the Tribal Development Department, undertake a periodic and evidence-based review of hardship area classifications. Objective criteria such as physical accessibility, distance from all-weather roads, availability of housing and schooling for families, connectivity, and security conditions should be used to categorise facilities or sub districts by level of difficulty.

A transparent and tiered hardship allowance framework should be institutionalised, with reassessment every three to five years. Areas that no longer meet hardship thresholds should be adjusted accordingly, while genuinely remote and underserved locations should continue to receive enhanced incentives proportionate to difficulty. This will ensure fairness, credibility, and effective targeting of financial incentives.

Theme 6.7 Predictable Remuneration as a Foundation of Morale

Timely receipt of salaries and performance linked incentives is a basic expectation of any workforce. In tribal areas, frontline health workers including ASHAs, Anganwadi workers, and contractual staff frequently experience prolonged delays in payment. Such delays impose financial hardship, erode morale, and weaken trust in the health system.

Payment delays are not merely administrative lapses. They directly affect retention and performance. When remuneration becomes unpredictable, workers are more likely to disengage, reduce effort, or seek alternative livelihoods, undermining service continuity in already fragile settings. For incentive-based cadres in particular, uncertainty around payments weakens the behavioural logic of performance linked programmes.

Recommendation 6.7

Implement Digitised and Transparent Payment Systems

It is recommended that Maharashtra implement a fully digitised and transparent payment system for all health workforce remuneration, including salaries and performance-based incentives. Building on

proven models already operational in several states,^[5] the system should enable real time tracking of entitlements, automated disbursement upon verification of completed activities, and clear communication to workers through SMS or mobile interfaces.

The platform should replace manual and paper-based processes with a unified digital workflow that integrates activity reporting, verification, and direct benefit transfer into workers' bank accounts. It should be interoperable with existing state financial management systems and include built in escalation mechanisms when payments exceed defined delay thresholds. Making payment timelines visible to both workers and administrators will improve accountability and reduce discretionary bottlenecks.

Ensuring predictable and timely remuneration is among the most cost-effective strategies to improve morale, strengthen trust, and reduce attrition among frontline health workers in tribal areas. In settings where service delivery already demands exceptional effort, institutional reliability in payment is not a benefit but a baseline obligation.

Theme 6.8 Mobility and Connectivity as Enablers of Service Delivery

Physical isolation constrains both community access to healthcare and the ability of health workers to perform their roles effectively. Long travel distances, lack of transport, and poor network connectivity increase fatigue, limit outreach, and delay emergency response. These constraints disproportionately affect frontline workers responsible for last mile service delivery.

Without institutional support for mobility and

communication, the burden of geographic isolation is borne entirely by individual workers, reducing service coverage and increasing burnout.

Recommendation 6.8

Strengthen Mobility and Connectivity Support for Health Workers

It is recommended that all ASHAs and ANMs in remote tribal areas be equipped with



functional mobile phones and assured network connectivity. Solar charging solutions should be provided in locations without reliable electricity.

For ANMs, Community Health Officers, and supervisory staff covering large and difficult terrains, structured mobility support through two-wheelers or electric scooters should be

institutionalised either through direct provisioning or allowance-based models.^[6] Scheme design must include maintenance and lifecycle support to ensure sustainability.

Evidence from Indian states and policy analyses indicates that improved mobility significantly enhances outreach, supervision, and worker morale.^[7]

Theme 6.9 Extending Care to the Last Hamlet Through Structured Task Shifting

In the most remote tribal hamlets, facility-based care alone cannot ensure timely access to essential health services. Distance, terrain, and limited transport often delay referrals, particularly for maternal and newborn care. Evidence from India and other low-resource settings demonstrates that structured community-based interventions can substantially improve outcomes when they are formally integrated with public health systems rather than operating in isolation.

Home based new-born care models in India have demonstrated significant reductions in neonatal mortality when community health workers are appropriately trained, supervised, and linked to referral facilities.^[8] Global health workforce guidance recognises task shifting as a necessary strategy in underserved areas when governed by clear protocols, defined scopes of practice, and accountability mechanisms.^[9]

Recommendation 6.9

Pilot a Protocol-Driven Aarogya Sakhi Model in the Most Remote Hamlets

It is recommended that Maharashtra pilot a structured task shifting model by selectively upskilling ASHAs from the most remote tribal hamlets as Aarogya Sakhis. This should be a voluntary and merit-based enhancement of role, limited to locations with severe access constraints where routine facility-based outreach is not feasible. The design of this pilot

may draw on lessons from existing implementations, including the Arogya Sakhi model supported by ARMMAN in parts of Maharashtra, which has demonstrated the feasibility of protocol-driven home-based monitoring and referral support in underserved settings.

Aarogya Sakhis should receive additional protocol-driven training aligned with the national ASHA curriculum, with focused emphasis on home-based maternal and newborn care, early identification of danger signs, basic nutrition counselling, and first response for common illnesses. All expanded tasks must operate strictly within defined clinical protocols and under the formal supervision of the nearest sub-centre or Primary Health Centre, with clear referral thresholds and escalation pathways.

This enhanced role should be positioned as a pathway for skill recognition and professional growth rather than as an additional workload expectation. Participation should be time-limited, reviewed periodically, and supported through appropriate incentives or honoraria linked to the additional responsibilities undertaken.

Over the longer term, experience gained through the Aarogya Sakhi role can inform the design of structured progression pathways into formal health cadres, including bridge programmes aligned with existing ANM or mid-level provider training frameworks, where

feasible and subject to regulatory requirements. While this report does not propose immediate cadre conversion, recognising community-based service as a foundation for future professional entry can strengthen motivation, retention, and local workforce development in tribal areas.

Each Aarogya Sakhi should be equipped with calibrated diagnostic tools and approved supplies appropriate to her defined scope of practice, alongside structured reporting

mechanisms integrated into existing health information systems. The initiative should be piloted in selected high remoteness blocks and evaluated on outcomes such as referral timeliness, maternal and neonatal indicators, continuity of care, and community trust before any consideration of scale-up. Anchoring task shifting within formal supervision and evaluation frameworks will extend service reach while preserving clinical safety, regulatory integrity, and system accountability.

Conclusion

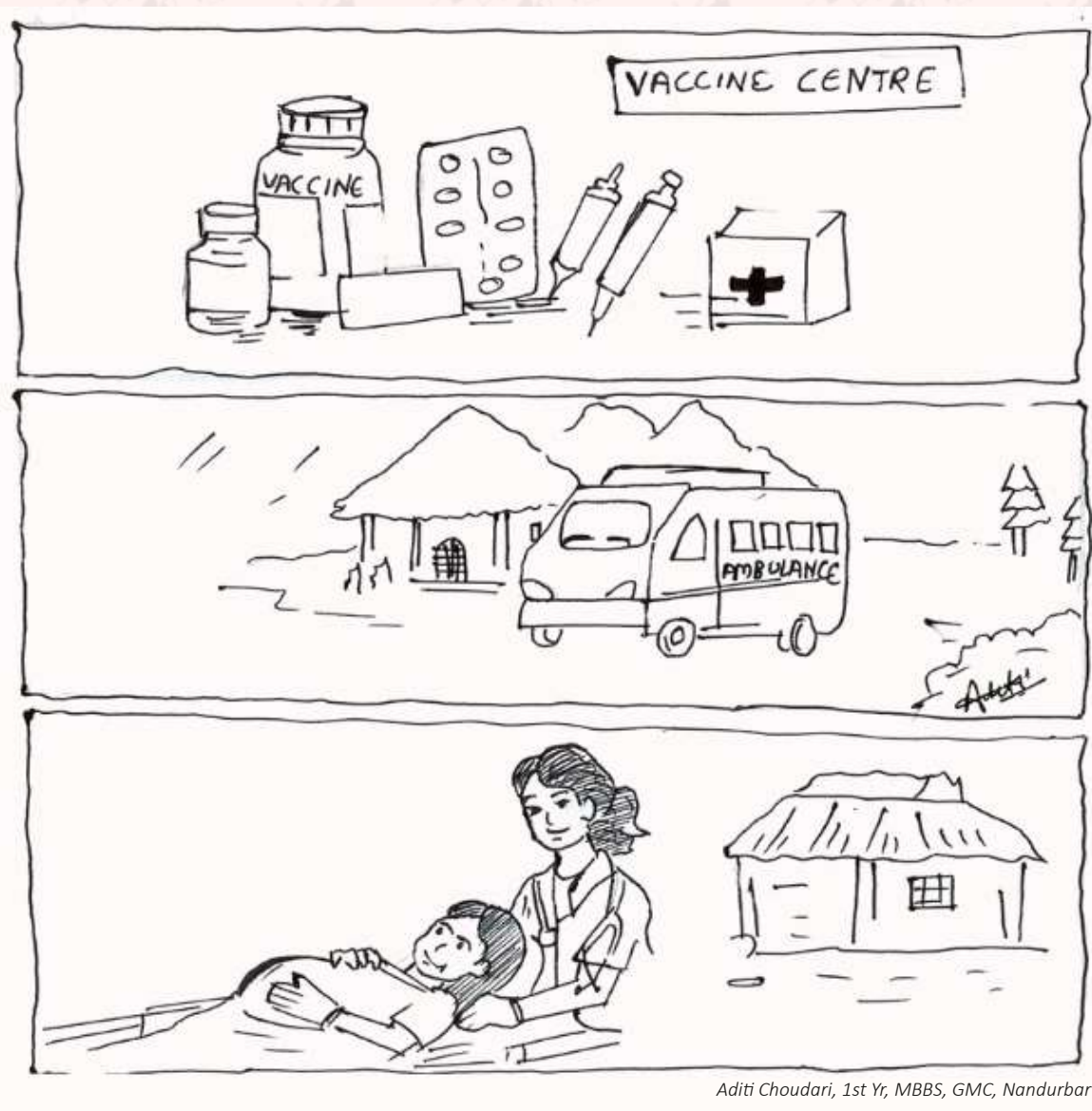
Improving tribal health outcomes in Maharashtra ultimately depends on the strength, stability, and preparedness of the health workforce serving these regions. Infrastructure, technology, and programme design matter, but they deliver results only when the people responsible for implementation are equipped, supported, and able to remain engaged over time. The realities of tribal geographies demand a workforce strategy that recognises complexity rather than treating such postings as peripheral or temporary assignments.

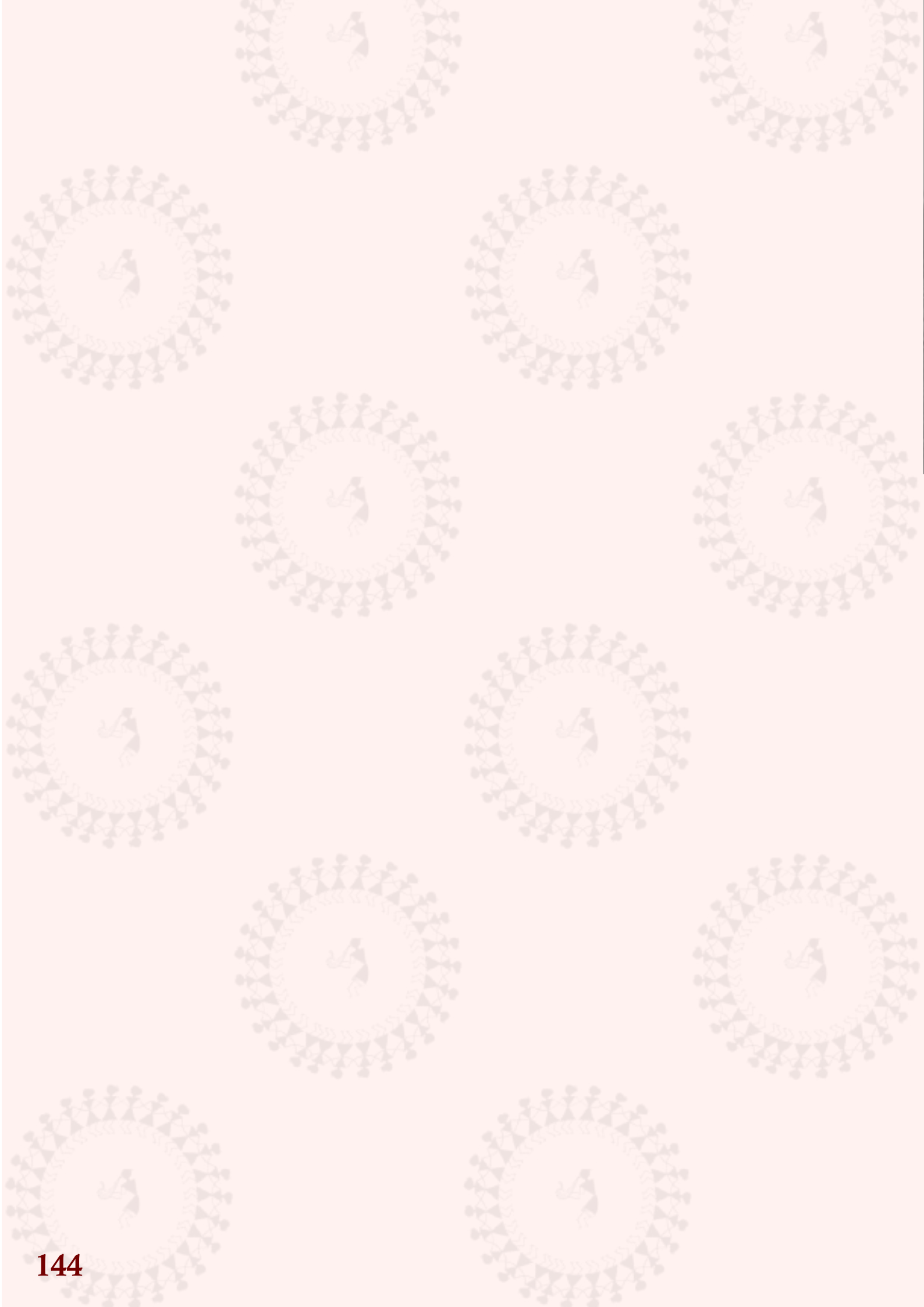
This chapter has argued for a shift from episodic interventions to a systems-based approach to workforce strengthening. Preparation for tribal contexts, continuous role-based capacity building, and stronger leadership and management capabilities form the foundation of effective service delivery. Without these, even well-resourced programmes struggle to translate intent into outcomes. At the same time, workforce performance cannot be sustained in the absence of basic welfare, safety, mobility, and predictable remuneration. Retention in tribal areas is not a question of motivation alone but of dignity, security, and institutional reliability.

The recommendations set out in this chapter are designed to work together as a coherent framework rather than as isolated measures. Structured induction creates readiness. Continuous learning maintains competence. Leadership development enables adaptation. Institutional strengthening anchors these efforts. Welfare, incentives, mobility, and timely payments address the everyday conditions that determine whether health workers stay or leave. Finally, carefully governed task shifting extends care to the most remote hamlets while preserving clinical safety and accountability, and opens pathways for local workforce development over the longer term.

Taken together, these measures reposition tribal health service as a specialised and valued domain within the public health system, rather than as a residual or punitive assignment. They recognise that equity in health outcomes requires equity in workforce design. By investing deliberately in the people who serve tribal communities, Maharashtra can build a health system that is not only present in these regions, but trusted, resilient, and capable of delivering sustained improvements in health outcomes over time.

Medical Products, Vaccines, and Technologies







✦ *Stories from Field*

Holding Them Together

Care beyond delivery restores life and bonding

Bhiwade Khurd, Pune

Bhiwade Khurd is a remote tribal village under PHC Ingloon in Junnar block of Pune district. With a small population and limited access to higher level facilities, continuity of care often depends on the vigilance and trust built by frontline workers. A young woman from the village, pregnant for the first time, was identified early as having a high-risk twin pregnancy. The prospect of childbirth left her anxious and fearful, and close monitoring was planned from the outset. ASHA worker Mrs. Yamuna Shrawan Shelakande remained in regular contact with the family and ensured preparedness for institutional delivery. On 3 September 2025, when labour began, the woman immediately contacted the ASHA worker. Mrs. Yamuna reached the house promptly and arranged referral through the 102-ambulance service to PHC Ingloon. Following examination, referral to a higher facility was advised. When admission at the rural hospital was not possible due to medical constraints, Mrs. Yamuna coordinated swiftly with the family to arrange transfer to an appropriate private facility. An emergency Caesarean section was performed the same day, resulting in the birth of twin boys. While one newborn was stable, the second, weighing 1.6 kilograms, developed severe respiratory distress and required urgent referral for specialised neonatal care. He remained admitted for over two weeks, while the mother and the healthier twin were discharged earlier. After returning home, the mother struggled emotionally. Having been separated from one baby during recovery, she found it difficult to accept the second new-born when he was brought back. She hesitated to hold him and resisted breastfeeding, overwhelmed by fear and confusion. Recognising the emotional vulnerability behind this response, Mrs. Yamuna intervened with patience and care. She listened without judgement, reassured the mother repeatedly, and stayed present through the difficult days

that followed. She introduced Kangaroo Mother Care to promote warmth, attachment, and bonding, and visited the household frequently to support breastfeeding and nutrition for both babies. Gradually, the mother began to respond. Acceptance replaced hesitation, and bonding followed. With continued follow up and encouragement, both infants gained strength and the family regained confidence. Today, the mother and her twin sons are healthy. Saving lives was only the first step. What followed was the courageous work of restoring trust, confidence, and connection.



In July 2025, a measles outbreak in a tribal residential school, or ashramshala, in Jalgaon district exposed a recurring weakness in vaccine delivery systems.^[1] Sixty-nine of the four hundred and fifty students fell ill, many of them children who had returned from remote villages in Dhule and Nandurbar districts. Subsequent field assessments indicated that several of these children had likely missed routine measles immunisation due to seasonal migration and gaps in follow-up, a common challenge among tribal families who move periodically for livelihood. The outbreak underscored a critical issue of timing and continuity. If routine immunisation schedules had been adhered to, the episode would have been largely preventable.

Around the same period, a separate incident drew public attention through a short social media video showing a young tribal child living with a congenital physical disability that was medically correctable.^[2] Follow-up by health officials revealed that the child had, in fact, been identified under the Rashtriya Bal Swasthya Karyakram approximately a year earlier. However, the family had migrated seasonally for work and did not return for the advised intervention. Medical teams subsequently noted that had the condition been detected and treated before the age of two years, a simpler corrective procedure could have been undertaken, potentially avoiding the need for a more complex limb-level correction

later. While the child eventually received free surgical care after the case came to public attention, the episode highlighted systemic gaps in continuity of care for migrant families, early screening coverage, and mechanisms to track and support follow-up once a diagnosis has been made. It also pointed to a broader design limitation in programme delivery. Current systems are largely structured around responding to expressed demand rather than ensuring saturation and completion of care, a mismatch that disproportionately affects migrant and mobile tribal populations and leads to preventable delays in intervention.

Together, these incidents reflect broader challenges in ensuring last-mile access to medical products, vaccines, diagnostics, and health technologies in tribal areas. Despite significant progress in digitisation, procurement systems, and programme expansion in Maharashtra, tribal communities continue to experience stockouts of essential medicines, delayed or missed preventive services, and limited functional support at the point of care. Grounded in the fourth pillar of the World Health Organization health system framework on medical products, vaccines, and technologies, this chapter examines why delivery failures persist at the last mile and outlines measures to strengthen the assurance, timeliness, and usability of health interventions in tribal settings.

Theme 7.1 Assured Availability of Medicines and Vaccines as a Foundation of Clinical Care

The availability of essential medicines and vaccines at the point of care is a fundamental expectation of public health systems, but remains inconsistent in tribal and remote areas of Maharashtra. Evaluations of public health facilities in India have repeatedly found that stockouts of essential medicines and supplies are common, undermining the ability of clinicians to provide timely treatment and

forcing patients to seek alternative care or remain untreated.^[3] In tribal facilities, last-mile delivery is further challenged by difficult terrain, sparse transport connectivity, and cold chain vulnerabilities that make both regular drug supply and vaccine storage unpredictable.

Beyond documented stockouts, a recurrent challenge at peripheral facilities is the absence of clinically indicated medicines either because



they fall outside the notified essential drug list or because central supplies have not reached the facility. Under current policy frameworks, such as the Free Drugs and Service Initiative, states are expected to ensure frontline availability of listed medicines and consumables, but implementation gaps leave clinicians with few institutional pathways to respond when an indicated medicine is unavailable locally.^[4] In the absence of clear decentralised protocols, the default response is to rely on informal workarounds or referrals to higher centres, even for conditions that could be managed locally with appropriate medicines.

The impact of these gaps extends beyond individual encounters. When health workers are repeatedly unable to provide appropriate treatment due to supply constraints, confidence in public facilities weakens, and care becomes contingent on patients' ability to navigate alternative options. This pattern is evident in audit findings that link irregular medicine availability to disrupted service delivery and diminished patient trust, particularly in rural and underserved populations.^[3] At the same time, strict adherence to centrally defined procedures without adaptive local feedback limits the system's responsiveness to context-specific clinical needs in tribal settings.

System design factors such as medicine quarantine protocols and quality assurance practices also influence availability. Guidelines for norms and standards in pharmaceutical distribution emphasise the need for quarantine and quality assessment, but if planning does not account for staggered supply and simultaneous availability of test and use stocks, facilities can find themselves unable to dispense medicines even when overall stock exists.^[5] These planning and operational factors compound last-mile shortages and reduce the reliability of care.

Recommendation 7.1

Strengthen Assured and Responsive Supply of Medicines and Vaccines

It is recommended that Maharashtra adopt an assured supply framework for medicines and vaccines in tribal and remote areas that combines effective central procurement with structured decentralised flexibility. The state could draw on models such as the Tamil Nadu Medical Services Corporation, which is recognised for its pooled, multi-vendor procurement and transparent logistics tracking that have contributed to higher availability rates of essential drugs.^[6] Lessons from such models include diversified supplier contracts, quality assurance across batches, and visibility of medicines across the supply chain.

End-to-end availability should be ensured through real-time inventory monitoring down to the facility level, clearly defined buffer norms tailored to tribal contexts, and delivery scheduling that accounts for geographic and seasonal constraints. Medicine supply planning should explicitly incorporate requirements for quarantine and quality testing, with appropriate staging so that one batch is in use while another is undergoing mandated checks, reducing inadvertent gaps at the point of care.

At the same time, facilities serving tribal populations should be provided access to limited decentralised funds to procure clinically necessary medicines that are unavailable through standard state supply channels. Clear state guidance should specify permissible categories, financial ceilings, and simple reporting requirements so that lack of supply is not a barrier to initiating appropriate treatment. This controlled flexibility will enable timely care while remaining auditable.

Medicines that are frequently locally procured for common clinical conditions should be periodically reviewed and considered for inclusion in an expanded essential drug list for tribal and remote areas. By combining predictable procurement, disciplined quality

assurance, and defined decentralised response mechanisms, the state can ensure that clinical care in tribal settings is guided by patient need

rather than constrained by rigid supply boundaries.

Theme 7.2 Early Childhood Screening and Completion of Care under Rashtriya Bal Swasthya Karyakram

Early identification and timely intervention for health conditions in children is a core objective of the Rashtriya Bal Swasthya Karyakram, which aims to screen children from birth to eighteen years for defects at birth, diseases, deficiencies, and developmental delays, and to link identified cases with free treatment and follow-up care. The programme is implemented through a combination of newborn screening, anganwadi-based outreach, and school-level health screening, with referrals to District Early Intervention Centres and higher facilities as required.^{[7], [8]}

Despite its comprehensive design, gaps persist between the identification of health conditions and completion of the care pathway, particularly in tribal areas. Field experience and programme evaluations indicate that while screening activities are often conducted as scheduled, follow-up and referral completion remain inconsistent. Children diagnosed with conditions requiring medical or surgical intervention are sometimes lost to follow-up due to weak tracking mechanisms, poor coordination between screening teams and referral facilities, and limited support for families navigating the referral process.^[9] As a result, diagnosis does not always translate into timely treatment.

These gaps are especially consequential for congenital and developmental conditions, where early intervention can significantly reduce the complexity, cost, and long-term impact of treatment. Delays in care increase the likelihood of more invasive procedures and prolonged disability, even for conditions that

are medically manageable if addressed early. In tribal contexts, where access to specialised services is already constrained, such delays compound existing inequities in child health outcomes.

The persistence of these gaps reflects a broader design limitation in programme implementation. RBSK is largely structured around periodic screening and demand-driven follow-up, implicitly assuming that families will return for advised care once informed. This approach does not sufficiently account for population mobility, socioeconomic constraints, or the need for active case tracking and completion support. Consequently, programme performance continues to be assessed primarily through screening coverage rather than through successful resolution of identified conditions.

Programme reviews and audits have further noted that referral completion under child health programmes remains uneven, with a substantial proportion of identified cases not reaching District Early Intervention Centres or higher facilities within recommended timeframes. Constraints related to travel, coordination across levels of care, and the absence of systematic mechanisms to track open cases have been identified as contributory factors. These findings reinforce the need to treat follow-up and completion of care as integral components of programme design rather than residual responsibilities placed on families.^[3]



Recommendation 7.2

Redesign RBSK as a Completion-Oriented Screening and Care Pathway

It is recommended that the implementation of the Rashtriya Bal Swasthya Karyakram in tribal areas be strengthened by shifting the programme's focus from screening coverage to completion of care. Every diagnosis made under RBSK should be recorded and tracked as an open case until the advised intervention is completed or formally closed, with clear responsibility for follow-up assigned at the block or facility level.

Digital child and student health platforms should be leveraged to systematically record screening outcomes, flag pending referrals, and generate alerts for follow-up visits. Annual coverage of all ashramshala students should be ensured, with defined protocols to identify and

revisit children who are missed during routine screening rounds. Coordination between screening teams, referral facilities, and district programme units should be strengthened to ensure that treatment pathways are predictable, navigable, and time-bound.

Community-level communication and engagement should support institutional follow-up mechanisms but should not substitute for them. The objective should be to ensure that early detection consistently leads to timely intervention by design, rather than depending on chance discovery or external attention. Reorienting RBSK towards saturation and completion of care will enable the programme to more effectively prevent avoidable disability and long-term morbidity among tribal children.

Theme 7.3 Functional Integration of Telemedicine Services in Tribal Health Facilities

Telemedicine has the potential to substantially improve access to specialist care in remote tribal areas by reducing unnecessary referrals and travel burdens. Maharashtra has adopted national platforms for this purpose, including eSanjeevani, and these services are reported to be functioning in several locations. During the Committee's field visits, attempts were made to use the telemedicine platform in a tribal area to facilitate a real-time clinical consultation. However, despite repeated efforts, it was not possible to complete a consultation due to the absence of active service windows, limited provider availability, and connectivity constraints. This experience indicates that while telemedicine systems may be operational in better-connected settings, they require additional support, customised workflows, and focused implementation strategies to function reliably in remote tribal contexts.

Evidence from some districts illustrates this gap

between availability and use. In Nandurbar district, which includes several geographically isolated Adivasi habitations, only a minority of government doctors were found to be regularly logging in to the E-Sanjeevani platform, despite the service being formally available. Providers cited network instability, overloaded schedules, and difficulty in aligning with hub-level specialists as key reasons for irregular use. From the patient perspective, limited awareness of telemedicine services and uncertainty regarding availability further reduce utilisation, leading many to continue travelling long distances for conditions that could potentially be managed through virtual consultation.^[11]

These patterns point to a broader design limitation in telemedicine implementation. Current approaches emphasise platform rollout and technical availability, but insufficient attention is given to operational planning, staffing models, and workflow integration at

the facility level. Without predictable schedules, assured connectivity, and accountability on both the spoke and hub sides, telemedicine remains dependent on individual initiative. In tribal settings, where human resources are already constrained, such design gaps significantly limit the impact of digital health investments.

Recommendation 7.3

Institutionalise Telemedicine as a Scheduled and Supported Service

It is recommended that E-Sanjeevani telemedicine services in tribal areas be institutionalised as scheduled and supported components of routine care rather than as optional or ad hoc services. Each district should develop a telemedicine implementation plan that clearly designates fixed days and time slots for teleconsultations at every Health and Wellness Centre and primary health centre, with responsibility assigned to a specific medical officer or community health officer to manage the virtual clinic.

District hospitals should ensure the availability of hub-level doctors during these designated slots through formal rosters, with workload adjustments or incentives to sustain specialist participation. Teleconsultation schedules should be clearly displayed at facilities and communicated at the community level so that patients can plan visits accordingly.

Targeted investment is required to strengthen enabling infrastructure at peripheral facilities, including reliable internet connectivity through broadband or alternative technologies and power backup for telemedicine equipment. These measures are essential to reduce service disruptions and build confidence among both providers and patients.

By shifting telemedicine from an ad hoc option to a well-supported, predictable service, the state can integrate virtual consultations into routine clinical workflows. This will enable timely specialist input for patients in remote tribal habitations, reduce avoidable referrals, and improve the efficiency of care delivery without overburdening frontline providers.

7.4 Adapting Tele-MANAS for Tribal Communities

Mental health services are often scarce in tribal areas, with limited specialist access and persistent stigma around care seeking. The National Tele Mental Health Programme, known as Tele-MANAS (Tele Mental Health Assistance and Networking Across States), was launched as a toll-free, 24×7 helpline that provides free counselling, referral support, and connections to specialist care across India.^[12] The service is available in multiple Indian languages, making it a significant step towards accessible mental health support.^[13]

Despite its broad reach, uptake among tribal populations appears limited. Language and cultural barriers play a role. While Tele-MANAS counsellors cover many major languages, tribal community members may not feel fully comfortable expressing distress in non-native tongues or interacting with counsellors

unfamiliar with tribal cultural contexts. Awareness of the helpline in remote villages remains low, and prevailing stigma around mental health further reduces help-seeking behaviour. Evidence from media and service reports suggests that, while large volumes of calls are handled nationally, callers are predominantly urban or semi-urban and not representative of remote tribal districts.^[11]

These patterns point to a broader design limitation in the implementation of tele-mental health. The current model emphasises broad availability but lacks targeted adaptation for tribal contexts, including language suitability, outreach strategies, and linkage with on-ground support teams. When service delivery assumes universal reach without context-specific adaptation, vulnerable populations risk being underserved despite the presence of a



national platform.

Recommendation 7.4

Customise Tele-MANAS and Link to District Mental Health Teams

It is recommended that Tele-MANAS services be adapted explicitly for tribal areas by addressing linguistic, cultural, and outreach barriers. Counsellors should be trained or recruited in tribal dialects and sensitised to local cultural contexts so that callers from tribal habitations feel understood and supported. Multilingual support should be expanded to include regional tribal languages where feasible.

Targeted awareness campaigns should be launched in tribal districts using locally appropriate channels, including community leaders, local radio, and vernacular materials, to increase awareness of the toll-free helpline

and reduce stigma around mental health support.

Tele-MANAS should also be functionally integrated with the District Mental Health Programme, and tertiary specialists such as psychiatrists, neurologists, and clinical psychologists at district headquarters should conduct regular outreach visits to blocks. For example, specialists could schedule weekly or fortnightly visits to designated block centres to see cases identified through Tele-MANAS or primary screening, thus providing in-person follow-up and continuity of care for serious or complex conditions.

By combining linguistic adaptation, proactive outreach, and linkage with district-level teams, tele-mental health platforms can evolve into meaningful extensions of care for tribal communities rather than remaining underutilised national services.

Theme 7.5 Strengthening Emergency Transport in Remote Tribal Areas

Timely emergency transport is a critical determinant of survival in acute medical situations, particularly in remote tribal areas where distances to higher-level facilities are long and physical access is constrained. Maharashtra’s 108 Emergency Medical Service forms the backbone of pre-hospital emergency care in the state and has supported a large volume of obstetric, neonatal, trauma, and medical emergencies over the past decade. State-level data indicate that the service has assisted over one crore patients, including a substantial number of pregnancy and childbirth-related cases, demonstrating both its scale and centrality to rural health systems.^{[14], [15]}

Despite this reach, emergency transport performance in tribal and remote districts continues to face structural challenges. Response times are adversely affected by sparse road networks, difficult terrain, seasonal

inaccessibility, and low ambulance density in large geographic areas. Studies of emergency medical services in India, including analyses relevant to Maharashtra, show that travel time from the scene to the facility increases significantly in districts with lower road density and higher area per ambulance, conditions common in tribal regions.^[16] In such contexts, delays during the critical window for intervention can substantially worsen outcomes.

The functional capability of ambulances is another concern. While the state operates both basic and advanced life support ambulances, specialised capacity for neonatal and high-risk obstetric emergencies remains unevenly distributed. In tribal districts with higher maternal and infant vulnerability, the absence of ambulances equipped with neonatal stabilisation and obstetric emergency support limits the effectiveness of emergency

response even when transport is available. Border habitations face additional complexity, as a lack of formal coordination protocols between neighbouring states can delay the dispatch of the nearest available ambulance.

These constraints point to the need for emergency transport planning that is sensitive to geography, risk profiles, and patterns of habitation rather than relying on uniform deployment norms. Without such adaptation, improvements in overall fleet size or technology may not translate into timely access for the most remote and vulnerable populations.

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Recommendation 7.5

Deploy a Tribal Emergency Transport Strategy with Strategic Coverage and Capability

It is recommended that Maharashtra develop a dedicated emergency transport strategy for tribal districts to reduce response times and strengthen clinical capabilities in the most underserved areas. A geospatial mapping of all tribal habitations should be undertaken to identify areas beyond the defined response time thresholds from existing ambulance bases.

These areas should be prioritised for targeted deployment of additional ambulances or first responder vehicles capable of operating in difficult terrain. In particularly remote and hard-to-reach tribal areas, existing norms that restrict ambulance stationing to Primary Health Centres may be relaxed, and strategic placement at selected sub-centres or other suitable locations may be permitted to reduce response times and improve emergency coverage.

Ambulance augmentation in tribal belts should explicitly account for clinical risk profiles. Districts with higher maternal and infant vulnerability should be prioritised for deployment of ambulances equipped with neonatal stabilisation and obstetric emergency support. Existing ambulances serving remote areas should be assessed for terrain suitability and upgraded where necessary to ensure reliability during monsoon and other adverse conditions.

Formal protocols should be established to enable seamless coordination with neighbouring states for emergency response in border areas, ensuring that the nearest available ambulance is dispatched irrespective of administrative boundaries. Strategic pre-positioning of ambulances during seasonal peaks and predictable access constraints should be incorporated into district-level emergency preparedness plans.

By aligning emergency transport planning with geography, risk, and functional capability, the state can strengthen the effectiveness of its emergency medical services and improve survival and patient outcomes in remote tribal areas.

Theme 7.6 Improving Blood Storage and Transfusion Access in Tribal Areas

Preventable deaths due to haemorrhage remain a serious risk in tribal and remote regions, particularly among women with obstetric complications, accident victims, and patients with severe anaemia. Timely access to safe blood transfusion is therefore a critical component of emergency care. However, in many tribal districts, blood is not available at the point of need, resulting in avoidable delays and referrals to distant facilities.

Blood Storage Centres were conceived as a decentralised solution to improve access to blood in rural and remote hospitals by allowing screened blood units to be stored and issued locally, linked to a parent blood bank. National guidelines explicitly recognise their importance for managing obstetric emergencies, trauma, and other life-threatening conditions at secondary level facilities, particularly in underserved areas.^[17] Despite this, coverage of blood storage centres remains limited in tribal regions, and many sub-district and rural hospitals that provide emergency services lack operational storage units.

Where blood storage centres do exist, the availability of blood units is frequently constrained by weak voluntary blood donation into the public system. Government blood banks in tribal districts often report low donor turnout, resulting in inadequate stocks to supply peripheral storage centres. At the same time, private blood banks can attract donors more effectively, sometimes through inducements or gifts, despite national standards that clearly prohibit incentives for blood donation.^{[18], [19]} This distorts the donor pool, drawing donors away from government facilities that primarily serve poor and tribal populations.

Regulatory oversight of private blood banks and transfusion services is therefore critical. National standards mandate voluntary, non-

remunerated donations, transparent practices, and the ethical operation of blood banks, yet uneven enforcement allows practices that undermine equity and public-sector availability.^{[18], [19]} In emergency situations, the presence of blood in the private sector does not necessarily translate into access for tribal patients due to cost barriers and variable pricing practices.

Another significant constraint is the process for establishing blood storage centres itself. The current procedure for licensing and approval is administratively intensive, involving multiple compliance and inspections. While these safeguards are important for safety, the lack of streamlined and time-bound processes has slowed expansion, particularly in districts with limited technical and administrative capacity. This has constrained the availability of decentralised blood in precisely those settings where it is most needed.

Audit findings under the National Rural Health Mission have repeatedly highlighted gaps in access to blood and blood components as contributors to preventable maternal and neonatal deaths, underscoring the need to strengthen both availability and system readiness in rural and tribal areas.^[20]

Recommendation 7.6

Expand Blood Storage Capacity and Strengthen Regulation for Equitable Access

It is recommended that Maharashtra prioritise establishing blood storage centres at all secondary-level health facilities in tribal districts, including sub-district and rural hospitals that provide emergency obstetric and trauma care. Decentralised blood availability at this level is essential to reduce referral delays and prevent avoidable deaths due to haemorrhage.

The procedures for approving and licensing



blood storage centres should be reviewed to simplify them without compromising safety standards. Standardised documentation, defined timelines for inspections and approvals, and proactive technical support from state and regional authorities can significantly accelerate establishment in tribal areas.

To ensure adequate supply, the state should strengthen voluntary blood donation into government blood banks through regular donation camps in tribal blocks, in partnership with local institutions, youth groups, and civil society organisations. Simultaneously, regulatory enforcement must be strengthened

to prevent inducements for blood donation and to ensure ethical practices and transparent pricing by private blood banks, in line with national standards.

Clear operational protocols should ensure that blood stored at licensed storage centres can be issued immediately in emergencies, with replenishment planned through scheduled supply from parent blood banks and organised donation drives. By expanding decentralised storage, strengthening voluntary donation in the public system, and enforcing regulation of private-sector practices, the state can ensure that no tribal patient is denied lifesaving blood due to distance, delay, or cost.

Theme 7.7 Early and Complete Maternal Risk Detection in Tribal Pregnancies

Timely identification of pregnancy-related risk is a decisive determinant of maternal and neonatal outcomes. In tribal areas of Maharashtra, this process is frequently disrupted not by the complete absence of contact with the health system, but by delayed entry into antenatal care and incomplete completion of essential diagnostic steps. Many women are identified late in pregnancy, receive fragmented services, or miss critical screening windows that allow early detection of risk and timely referral.

District-level NFHS-5 data show that tribal-dominant districts in Maharashtra consistently report poorer perinatal outcomes, including higher stillbirth and neonatal mortality, alongside lower early antenatal registration, fewer completed ANC visits, and persistently high maternal anemia prevalence.^[21] National NFHS-5 indicators further demonstrate that while overall antenatal coverage has improved, quality and timing of care remain uneven, particularly for socially and geographically vulnerable populations.^[22] These gaps directly affect the timely detection of high-risk pregnancies.

As a result, conditions such as abnormal placentation, multiple gestations, fetal growth restriction, and congenital anomalies often remain undetected until late pregnancy or labour, increasing the likelihood of emergency referrals and adverse outcomes. These risks are compounded by anemia. NFHS-5 data show that more than half of pregnant women in India are anemic, with evidence of higher prevalence and severity among Scheduled Tribe women.^{[22], [23]} Late detection limits the effectiveness of oral iron therapy and increases the risk of postpartum hemorrhage, transfusion, and maternal morbidity.

Another under-recognised contributor to adverse pregnancy outcomes is urinary tract infection. Untreated UTIs during pregnancy are associated with preterm birth and low birth weight, yet routine screening is frequently missing from Village Health and Nutrition Day platforms in tribal areas due to lack of simple diagnostic tools.^{[24], [25]}

These gaps reflect failures of sequencing, access, and service completion rather than the absence of schemes or clinical knowledge.

Recommendation 7.7

Institutionalize early pregnancy detection and comprehensive maternal risk screening in tribal areas

Early pregnancy detection should be institutionalized through the wide availability of UPT kits via ASHAs, ANMs, and outreach platforms such as VHNDs, triggering timely antenatal registration and scheduling of services.

A three-scan standard should be operationalized for all tribal pregnancies, with particular emphasis on timely mid-trimester anomaly screening. Access to ultrasonography should be ensured at Rural Hospitals and Sub-District Hospitals serving tribal blocks, supported by scheduled outreach services and

tele-sonography models where on-site radiologists are unavailable.

Routine screening for common pregnancy complications should be strengthened at community platforms. VHNDs should include basic screening for urinary tract infections using dipstick or equivalent point-of-care tests, with clear referral and treatment pathways to reduce the risk of preterm delivery.^{[25], [26]}

Anemia screening and correction must shift from a reactive approach to proactive management. Given limited repeat contact in tribal settings, facilities should be enabled to use parenteral iron formulations, such as Ferric Carboxy-Maltose (FCM), for women with moderate to severe anemia, allowing meaningful correction in 1 or 2 visits where follow-up cannot be assumed.

Theme 7.8 Breaking the Intergenerational Cycle of Anemia and Maternal Risk

Poor maternal outcomes in tribal areas are closely linked to vulnerabilities that begin well before pregnancy. NFHS-5 data show anemia prevalence exceeding 59 percent among adolescent girls nationally, with disadvantaged and tribal populations bearing a disproportionate burden.^{[22], [27]} This early biological risk is often carried forward into pregnancy, contributing to high-risk deliveries and adverse birth outcomes.

Ashramshalas represent a critical but under-utilized platform for intervention. With ANMs now posted in many tribal residential schools, there is an opportunity to systematically detect and manage anemia among adolescent girls. However, the absence of routine hemoglobin testing, structured follow-up, and outcome monitoring limits the effectiveness of existing programs.

Addressing adolescent anemia is, therefore, not only a nutritional intervention but a foundational maternal health strategy. Failure to intervene at this stage perpetuates an intergenerational cycle of anemia, obstetric

risk, and preventable maternal and neonatal complications.

Recommendation 7.8

Institutionalize screening and management of anemia for adolescent girls in Ashramshalas

All Ashramshalas should be equipped with digital hemoglobinometers, and routine hemoglobin screening should be institutionalised during school health days or WIFS rounds.

Screening results should guide stratified management, with oral supplementation for mild anemia and referral-based or parenteral management pathways for moderate to severe cases. ANMs posted in Ashramshalas should be trained to interpret readings, counsel students, and link them to appropriate levels of care.

A simple digital monitoring system should track hemoglobin levels, follow-up actions, and outcomes, enabling supervision and timely escalation.



Theme 7.9 Principles for Deploying Appropriate Medical Technologies in Tribal Health Systems

Medical technologies can significantly reduce health inequities when deployed in alignment with the realities of tribal health systems. Remote geographies, workforce shortages, unreliable power supply, and limited facility density require technologies that compensate for systemic constraints rather than assume ideal conditions.

Experience from tribal districts demonstrates that technologies are most effective when they enable early detection, decentralized diagnosis, and timely referral; are robust and low-maintenance; and can be operated by existing cadres with appropriate training. Relevant examples include point-of-care hemoglobin testing, dried blood spot diagnostics for genetic conditions like sickle cell, rapid molecular tests for infectious diseases, portable imaging with remote interpretation, and digital decision-support tools for frontline workers. (Annexure 8 details some of these relevant technologies that are being used on the ground).

The challenge is therefore not a lack of innovation, but a lack of a coherent framework to guide adoption and ensure that health systems keep pace with emerging low-cost, high-impact technologies.

Conclusion

This chapter has examined how gaps in access to medical products, vaccines, and technologies translate into preventable illness and death among tribal populations. Across maternal health, child health, emergencies, mental health, and disease control, a common pattern emerges: essential tools exist, but their benefits are unevenly realized due to timing issues, last-mile delivery challenges, and incomplete service delivery.

Recommendation 7.9

Adopt a principled and adaptive framework for medical technology deployment in tribal areas

The state should adopt explicit principles to guide the selection and deployment of medical technologies in tribal health systems, prioritizing tools that address last-mile diagnostic gaps, function reliably in low-resource settings, and integrate seamlessly with public health workflows.^{[28], [29]}

Mechanisms should be created to periodically review and adopt newer technologies relevant to tribal contexts, including emerging point-of-care diagnostics and simplified screening tools. Platforms such as innovation challenges or hackathons can be used to identify and pilot low-cost technologies developed by public institutions, startups, and academic partners.

Technology adoption should be accompanied by clear protocols for use, maintenance, data integration, and clinical follow-up, ensuring that innovation strengthens continuity of care rather than fragmenting service delivery.

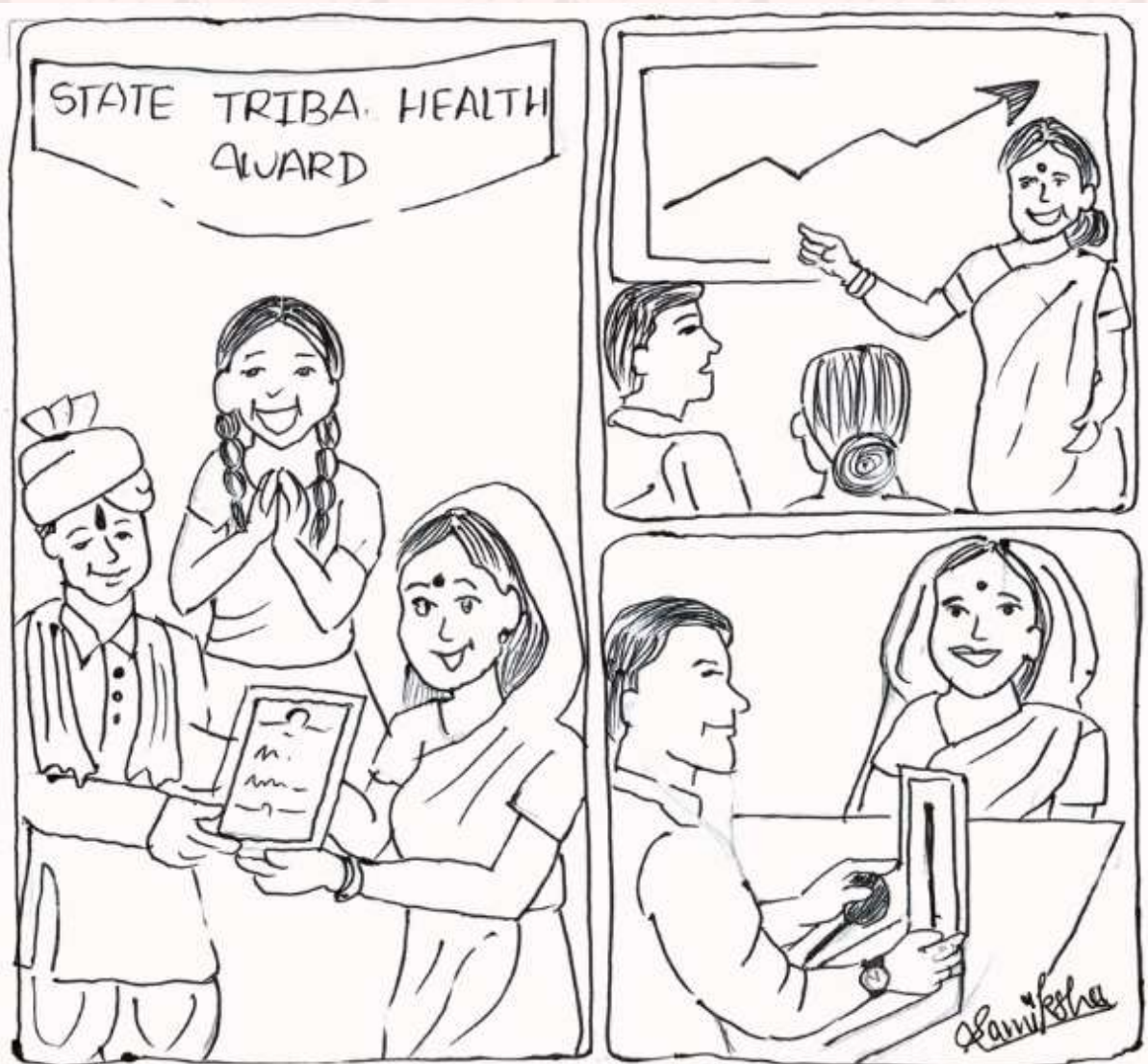
The recommendations in this chapter emphasize not the introduction of new schemes, but the disciplined use of existing and emerging technologies to close these gaps. Ensuring uninterrupted medicine supply, completing child health interventions, institutionalizing digital access to care, strengthening emergency response systems, and improving early risk detection across the life course are all achievable within current

public health frameworks when supported by appropriate tools.

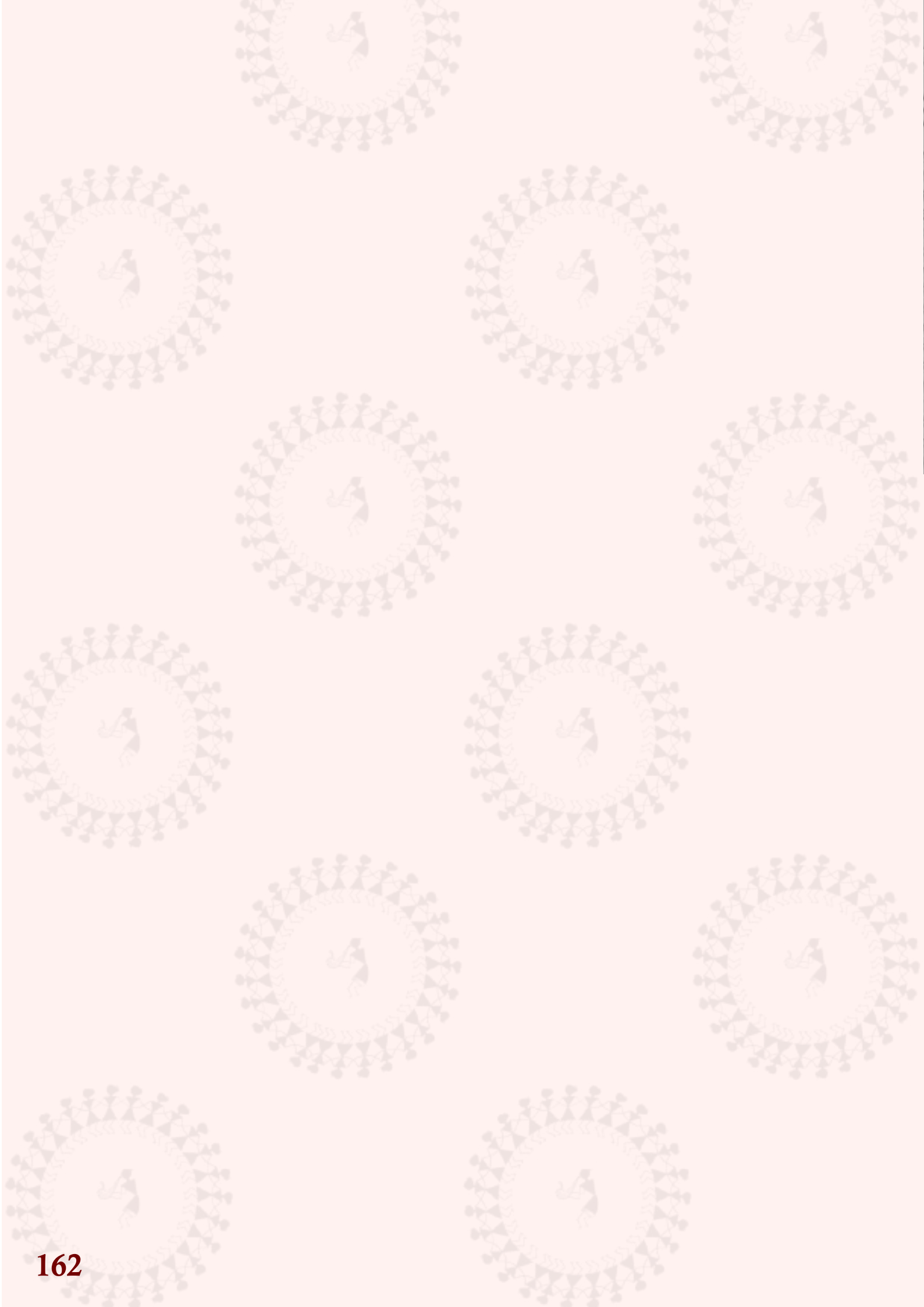
However, technologies alone cannot resolve these challenges. Their impact depends on governance arrangements that ensure accountability, coordination, and responsiveness, as well as financing mechanisms that sustain service delivery in difficult geographies. These enabling conditions are addressed in the chapters that follow.

By aligning medical products and technologies with the lived realities of tribal communities, Maharashtra can move from episodic interventions to reliable systems of care, ensuring that advances in health innovation translate into tangible improvements for those who have historically been left behind.

Leadership and Governance



Samiksha Gawali, 1st Yr, MBBS, GMC, Nandurbar



आशासेविकेच्या सतर्कतेमुळे घरगुती प्रसूती रोखली

आशा : एका आदिवासी महिलेची प्रसूती तय्यारने प्रसूती होत असल्याची माहिती धसाई आरोग्य केंद्रातील नंदा पावार या आशासेविकेच्या मिळाल्या. तिने आपली विलंब न जाणवत असलेल्या मागवली आणि बंद झाल्याचे घर गाठले. तिची अर्धीर नंतर होणारी प्रसूती रोखत तिला अधिक आरोग्य केंद्रात आणले. सतर्कतेमुळे प्रसूती करून महिलेला उपदल दिल्याने या आशासेविकेच्या यत्नांमुळे सर्व काळ ठीक आहे. होमबी डोमे येथील पिता पावार ही विलंब २२ जून रोजी मुंबाडतण्णोल जीवले येथे आणल्या जाहेरी आली ती. २३ जुलैला मासरावी तिथ्या



आशासेविका नंदा पावार यांचा सत्यन कारका साधुका आरोग्य अधिकाारी डॉ.श्रीधर बनसोडे. वैद्यालय अधिकाारी डॉ.नदकिशोर गोळे व इतर सदस्या.

आरोग्य केंद्रात झाली नैसर्गिक प्रसूती

तिची प्रसूती भीर होती. त्यांनी नंतरवर तिला घेण्यात सक्षिउली असता झोपलेला माणूस ज्येष्ठ गाडी. हा सभत आदिवासीमध्ये असल्याने त्यांनी तिला घरापासून रुग्णालयापर्यंत होलीने नेलेल्याई येथील प्राथमिक आरोग्य केंद्रात दाखल केले असता, तेथील डॉक्टर व परिचरिकांनी ताबडिने उपचार करल्याने तिची नैसर्गिक प्रसूती होऊन तिने एका पोडल बाळाला जन्म दिले. जर या महिलेची घरातच प्रसूती होईल या आशेवर तातोपडीक राहिले असते, तर मोठे अनर्थ घडला असता.

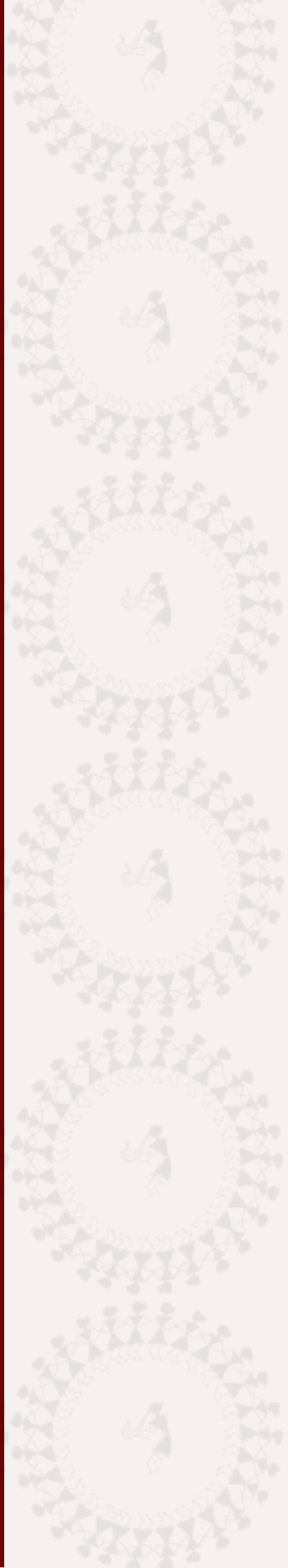
घरागुती प्रसूतीमुळे महिलेचे जीव धोक्यात वेतात. घरी जी प्रसूती झाले परिचरिकांनी जीव नसण्याचा तापतो. आशासेविकांनी सतर्कतेने घरागुती प्रसूती रोखण्याचा यत्न करावा. आशासेविकांनी सतर्कतेने घरागुती प्रसूती रोखण्याचा यत्न करावा. आशासेविकांनी सतर्कतेने घरागुती प्रसूती रोखण्याचा यत्न करावा.

ASHA's Timely Vigilance

An Alert Response Prevents a Risky Home Delivery and Saves Two Lives

Murbad, Thane

In the tribal area of Ojivale under PHC Dhasai in Murbad taluka of Thane district, a woman in advanced labour was preparing for a home delivery. She had travelled from her marital home in Vangani to her maternal village for childbirth, and the family had made arrangements to deliver at home, unaware of the risks involved. When ASHA worker Nanda Pawar received information that labour had begun, she acted immediately. Sensing the urgency, she contacted the Primary Health Centre, arranged for an ambulance, and reached the woman's house without delay. At the house, the family remained reluctant to shift the woman to a health facility. Drawing on her training and experience, Nanda Pawar counselled them patiently, explaining the potential complications of home delivery and the dangers it posed to both mother and new-born. As labour progressed, her insistence and reassurance proved decisive. The family agreed to referral. By the time the ambulance arrived, the situation had become critical. The woman was transported to the Primary Health Centre, where doctors and nursing staff assessed her condition and immediately initiated care. A safe normal delivery was conducted, and a healthy baby was born. Timely medical intervention ensured that a situation with high-risk potential did not turn into an emergency. What could have become life threatening was averted through early reporting, clear counselling, and swift coordination between the ASHA worker, ambulance services, and the health facility. This case highlights how vigilance at the community level, backed by a responsive health system, plays a decisive role in ensuring safe deliveries in rural and tribal areas.



Field assessments by the Committee revealed persistent coordination failures at the village level that directly affect health service delivery in tribal areas. In one tribal village, the Bharari Pathak Medical Officer reported routine shortages of basic VHSND medicines such as calcium and aspirin. When the sarpanch was consulted, he stated that Gram Panchayat funds available under PESA provisions could have been used to address these gaps, but that no such requirement had been communicated to him.

Similar governance disconnects emerged during interactions with families of malnourished children. Several households reported a lack of access to milk, an important protein source for children in predominantly vegetarian communities. The sarpanch again expressed willingness to intervene through local

institutions, including self-help groups, but noted the absence of structured guidance or communication from frontline departments.

These observations indicate a systemic governance gap rather than isolated operational lapses. Frontline workers, village institutions, and sectoral departments often function in silos, with limited and irregular information exchange. As a result, locally solvable problems, ranging from minor medicine shortages to nutrition support, remain unaddressed despite the presence of funds, institutions, and administrative intent. This chapter draws on field insights to examine weaknesses in coordination and convergence and to outline governance reforms required to align decision-making, communication, and accountability across all levels of the tribal health system.

Theme 8.1 Establishing a Dedicated Policy and Institutional Framework for Tribal Health Governance

Maharashtra currently lacks a dedicated Tribal Health Policy that can serve as an overarching framework for planning, prioritisation, and accountability in tribal health. In practice, tribal health is largely addressed through general rural health programmes, despite the distinct geographic, cultural, and epidemiological realities of Adivasi communities. The absence of such a policy has resulted in the lack of clearly articulated, time-bound targets for reducing disparities between tribal and non-tribal health outcomes, and has limited the state's ability to drive sustained convergence across departments. The national Expert Committee on Tribal Health highlighted this policy vacuum and emphasised the need for a focused and outcome-oriented approach to tribal health governance.^[1]

In the absence of a dedicated policy anchor, tribal health interventions remain largely scheme-driven and reactive, with accountability diffused across multiple departments. While several departments influence health outcomes

in tribal areas, no single framework defines shared priorities, assigns ownership of outcomes, or enables systematic monitoring of progress. This has resulted in fragmented implementation, uneven follow-through, and limited institutionalisation of successful initiatives.

A policy framework alone, however, is insufficient without an institutional mechanism to operationalise it. As discussed in Chapter 5, the establishment of a Tribal Health Cell has already been proposed to strengthen data-driven planning, monitoring, and coordination. From a governance perspective, this Cell should function as the institutional anchor for a state Tribal Health Policy. At present, the Public Health Department does not have a permanent unit with a clear mandate to coordinate across departments, track tribal health outcomes on a continuous basis, and translate field-level feedback into timely administrative action. Coordination therefore, remains ad hoc and dependent on individual initiative rather than embedded systems.^[2]



A unified approach that links policy direction with institutional capacity is therefore essential. A dedicated Tribal Health Policy can articulate the state's long-term vision and outcome targets for tribal health, while a permanent Tribal Health Cell can ensure that these objectives are translated into coordinated action and measurable results.

Recommendation 8.1

Adopt a State Tribal Health Policy Anchored by a Permanent Tribal Health Cell

The state should adopt a comprehensive Tribal Health Policy for Maharashtra, approved by the

state cabinet, that defines clear and time-bound targets for reducing disparities in key tribal health indicators. The policy should mandate interdepartmental convergence, align planning and budgets under the Tribal Sub Plan, and require periodic public reporting of progress. The Tribal Health Cell, as outlined in Chapter 5, should be formally designated as the nodal governance mechanism for this policy, with responsibility for coordination, monitoring, and problem resolution across tribal blocks. Anchoring the policy within a permanent institutional structure will ensure that tribal health governance is strategic, accountable, and resilient to administrative churn.

Theme 8.2 Outcome Led Tribal District Governance through Gabha and the Social Sector War Room

Maharashtra already has a strong state-level review mechanism through the Gabha Committee, chaired by the Chief Secretary, which meets quarterly with Secretaries and District Collectors and covers many of the state's tribal-dominated districts. The Committee observed that the gap is not the absence of review forums, but the absence of a stable outcome-oriented review architecture for health and nutrition. Reviews tend to drift toward scheme-wise performance, activity counts, and issue lists that change from meeting to meeting. Health and nutrition outcomes are not reviewed with a predictable template, and district leadership is therefore not consistently pulled into structured problem-solving on outcomes.

This has direct consequences for field-level governance. Field functionaries experience an overwhelming and unpredictable work environment driven by short campaign cycles and ad hoc reporting demands. This reduces time for supervision, follow-up, and system building, and weakens accountability for outcomes such as high-risk pregnancies, maternal and child deaths, and malnutrition. The Committee also noted a persistent disconnect between the administrative and

technical teams. District-level administrative leadership may lack technical clarity on health and nutrition indicators, while technical officers often lack the administrative leverage to address structural bottlenecks. When State-level follow-up remains confined to departmental heads, without systematic engagement with District Collectors and Chief Executive Officers, key indicators risk going unnoticed and unaddressed at the highest district level.

Recommendation 8.2

Outcome Led Review Architecture through Gabha and the Social Sector War Room

Outcome Led Monthly Template Flowing from State to Sub Centre

The state should institutionalise a single outcome-led monthly review template for tribal health and nutrition under the Chief Minister's Office and the Social Sector War Room. This template should be derived from the Tribal Health Policy and limited to a small set of outcome-oriented indicators meaningful for decision-making and supervision. The same template should flow consistently from the state to districts, blocks, primary health centres, and sub-centres so that monitoring becomes

predictable, comparable over time, and useful for problem-solving rather than compliance reporting.

Joint Ownership by District Leadership and Technical Leadership

The Gabha Committee and related state-level forums should review health and nutrition outcomes using this template rather than scheme-wise performance narratives. District Collectors and Chief Executive Officers should be systematically included in these reviews alongside departmental leadership so that technical and administrative responsibilities are jointly owned. This is essential to ensure that outcomes trigger administrative action on staffing, logistics, interdepartmental coordination, and supervisory accountability, instead of remaining confined to technical reviews within departments.

Targeted Village Transformation Linked to Outcomes and Supported by Credible Assessment

Based on outcome data, districts should identify

a defined number of high-burden villages with persistently poor mortality or malnutrition indicators and implement sustained multi-sectoral transformation efforts over a fixed period. Progress should be monitored through the outcome template rather than short campaign-style activity targets. To strengthen credibility and triangulate routine monthly reporting, the Tribal Health Policy should institutionalise periodic independent health system assessments for tribal areas using established approaches such as the National Family Health Survey and National Health Mission Common Review Mission frameworks. Outcome data used in these reviews should be treated as confidential for a defined initial period such as one year and used for diagnosis and system improvement rather than punitive action or ranking, in order to reduce reporting pressure and encourage truthful reporting.^[3]

Theme 8.3 Fixing VHSND and AAA as the Core Routine System for Maternal and Child Health Governance

Village Health Sanitation and Nutrition Days and the AAA review platform are the most powerful routine mechanisms for improving maternal and child health outcomes in tribal areas. When these function well, they create a predictable system for early pregnancy detection, identification of high-risk cases, routine tests, counselling, immunisation, nutrition support, and timely referral, with a review loop that ensures follow-up.^[4] The Committee observed, however, that VHSND and AAA functioning across multiple tribal districts remains weak, and that this weakness is driven by system design and governance gaps rather than lack of intent by frontline staff.

Field observations indicated recurring

operational failures, including vacancies, VHSND plans not aligned with reproductive and child health priorities, routine tests such as urine testing not being conducted consistently, counselling not being delivered with quality, weak U-WIN entry, and the absence of a clear denominator that would allow administrative monitoring of coverage and follow-up. AAA meetings at the primary health centre level, including those that require community participation through sarpanch involvement as per existing government directions, were found to be largely non-functional. Coordination for the management of malnourished children across health services, ICDS, and RBSK was also found to be weak, contributing to low recovery



rates in several tribal districts. The state's recent provision of data entry operators at primary health centres is a significant opportunity, but only if the system builds the capacity to use data for decision-making and follow-up rather than expanding the reporting burden.

Recommendation 8.3

Rebuilding VHSND and AAA as the Backbone of Maternal and Child Health Governance

Standardising VHSND Planning around RCH Priorities with Clear Denominators

The state should standardise VHSND micro planning so that every VHSND is explicitly linked to reproductive and child health priorities, including high-risk pregnancies, anaemia, child growth monitoring, immunisation, and nutrition counselling. Village-level denominators should be defined by comparison with those of RCH registrations and used consistently so that coverage, follow-up, and missed cases can be monitored administratively in a simple and reliable manner.

Functional AAA Reviews at Primary Health Centre Level with Community Participation

AAA meetings at the primary health centre level should be operationalised as a mandatory routine governance mechanism to review high-risk pregnancies, referrals, maternal and child deaths, and malnourished children, with documented follow-up actions. Participation of elected representatives, including sarpanches, should be ensured as per existing directions, and the focus should shift from reporting to problem solving, follow-up completion, and accountability for missed care.

Building Data Sense at PHC Level through Simple & Integrated Dashboards and Supportive Supervision

With data entry operators now available, primary health centres should be equipped with simple dashboards aligned to VHSND and AAA priorities that translate data into actionable lists for follow-up. Medical officers and supervisors should be supported to use these dashboards for supportive supervision and continuous improvement, so that data becomes a tool for management and learning rather than pressure and compliance.

8.4 Institutionalising Knowledge Exchange, Recognition, and Collective Learning in Tribal Health Governance

The Committee observed that limited dissemination of best practices and weak cross-district learning constitute a significant governance gap in tribal health. At present, Maharashtra does not have an institutionalised mechanism for systematic knowledge exchange specific to tribal health. Innovations and successful pilots remain localised, and district officials are often unaware of effective approaches implemented elsewhere. As a result, similar challenges are repeatedly addressed in isolation across blocks and districts, leading to duplication of effort and missed opportunities for scale.

This gap also affects institutional learning and morale. Field officials, district teams, and community-based organisations working in difficult tribal contexts have few platforms for peer learning, reflection, or recognition of problem-solving efforts. Research findings and evaluation insights related to tribal health often remain confined to reports and do not reach practitioners in accessible forms. In the absence of a regular convening mechanism, the state is unable to build a sustained community of practice that brings together policy, implementation, research, and community experience in a structured manner.^{[3], [5]}

Recommendation 8.4

Convening Bi-Annual Tribal Health Conclaves as an Inter-Departmental Learning and Recognition Platform

The state should institutionalise bi-annual Tribal Health Conclaves as a formal governance mechanism for knowledge exchange, collective learning, and recognition in tribal health. These conclaves should be convened under the aegis of a State-level health training or knowledge institution, such as the State Institute of Health and Family Welfare, and should be explicitly interdepartmental. Participation should include middle and senior-level officers from the Health Department, Tribal Development Department, Women and Child Development Department, Rural Development Department, and district administration, alongside selected field practitioners, researchers, and community representatives.

Each conclave should be structured around a small number of priority themes aligned with the Tribal Health Policy. The format should

encourage open and candid sharing of field experiences, including operational challenges and failures, without fear of adverse administrative consequences. To reinforce this culture, the conclaves should institutionalise non-monetary recognition for teams and individuals who demonstrate effective problem solving, innovation, or sustained effort in difficult tribal settings, rather than only headline outcomes.

Proceedings of each conclave should be formally documented, with clear learnings, identified practices for replication, and actionable recommendations assigned to relevant departments. By institutionalising such conclaves, the state can create a safe and credible platform for cross-district and cross-departmental learning, strengthen trust within the system, and accelerate the diffusion of effective practices. Over time, this approach can help build a durable community of practice that supports sustained improvement in tribal health outcomes through collaboration rather than compliance.

8.5 Embedding Community Accountability and Peer Learning for Health Outcomes through Panchayats

The Committee observed that Gram Panchayats in tribal areas remain underutilised as partners in health governance, despite their proximity to communities and their formal role under decentralised and PESA frameworks. Health service delivery continues to be viewed largely as a departmental responsibility, while Panchayats focus on infrastructure and livelihoods. As a result, health outcomes are weakly anchored in local governance processes. [6] Gram Panchayat Development Plans rarely include health or nutrition priorities, Village Health Sanitation and Nutrition Committees often function without actionable data, and many elected representatives are not routinely informed of basic indicators for their own villages.^[4]

This gap is particularly significant in PESA areas,

where Gram Sabhas have enhanced authority and legitimacy. The absence of structured information, peer learning opportunities, and positive incentives limits local institutions' ability to meaningfully engage with health outcomes. Strengthening Panchayat involvement in health governance, therefore, requires a shift from directive approaches toward shared learning, recognition of local leadership, and culturally grounded communication.^[5]

Recommendation 8.5

Strengthening Panchayat Ownership of Health Outcomes through Peer Learning and Recognition

The state should integrate Panchayats into tribal health governance through structured information, peer learning, and positive



reinforcement rather than top-down instruction. A standard health and nutrition section should be incorporated into Gram Panchayat Development Plans in tribal blocks, supported by a simple template specifying priority indicators, data sources, and annual village-level goals. Sub-centre and primary health centre staff should prepare a basic village health report card to inform GPDP planning and Gram Sabha discussions.

Rather than creating a directive 'Healthy Panchayat' programme, the state should promote peer learning among Panchayats by facilitating exposure visits to villages demonstrating sustained improvements in areas such as sanitation, maternal and child health, or service uptake. Modest budgets may be earmarked to support such horizontal learning

exchanges. Sarpanches and Panchayat teams demonstrating effective local leadership should be recognised and invited to share their experiences at the bi-annual Tribal Health Conclaves, reinforcing learning through practice rather than prescription.

Community engagement should be supported through culturally appropriate communication strategies. Tribal language IEC materials, as recommended in Chapter 5, should be leveraged to support Gram Sabha discussions, VHSNDs, and local review forums. By anchoring health outcomes within Panchayat planning, peer learning, and culturally grounded communication, the state can strengthen community ownership and ensure that health governance in tribal areas is participatory, respectful, and sustainable.

8.6 Reducing Procedural Friction to Enable Timely Action in Tribal Health Governance

The Committee observed that delays in routine administrative processes significantly constrain the implementation of tribal health interventions at the district level. Proposals related to technical sanctions, estimates, approvals, and interdepartmental clearances often take prolonged periods to move through the system, even when the need is clear and resources are available. Such delays disproportionately affect tribal areas, where terrain, remoteness, and limited local alternatives make timely administrative action critical.

These procedural bottlenecks undermine many of the governance reforms outlined earlier in this chapter. Outcome reviews, village-level planning, and community engagement lose credibility when districts are unable to act on identified gaps due to slow approvals or unclear authority delegation. District officers also experience frustration and risk aversion, leading to cautious or fragmented proposals rather than decisive problem-solving. The issue is not one of intent, but of process design that has not been

sufficiently adapted to the operational realities of tribal districts.^[7]

Recommendation 8.6

Streamlining and Tracking Administrative Approvals for Tribal Health Interventions

The state should undertake targeted process re-engineering to reduce delays in routine administrative approvals related to tribal health. This may include clearly defined delegation of powers for specified categories of works and procurements in tribal districts, enabling faster decision-making at the appropriate level. Where delegation is not feasible, a time-bound tracking mechanism should be instituted for all proposals submitted by districts, with clear visibility of status and escalation pathways.

Such streamlining should focus on enabling action rather than increasing discretion. Standard timelines for common approvals should be notified, and delays beyond these timelines should be automatically flagged for review. By reducing procedural friction and

improving transparency in approvals, the state can ensure that governance reforms translate

into timely field action, particularly in high-need tribal areas.

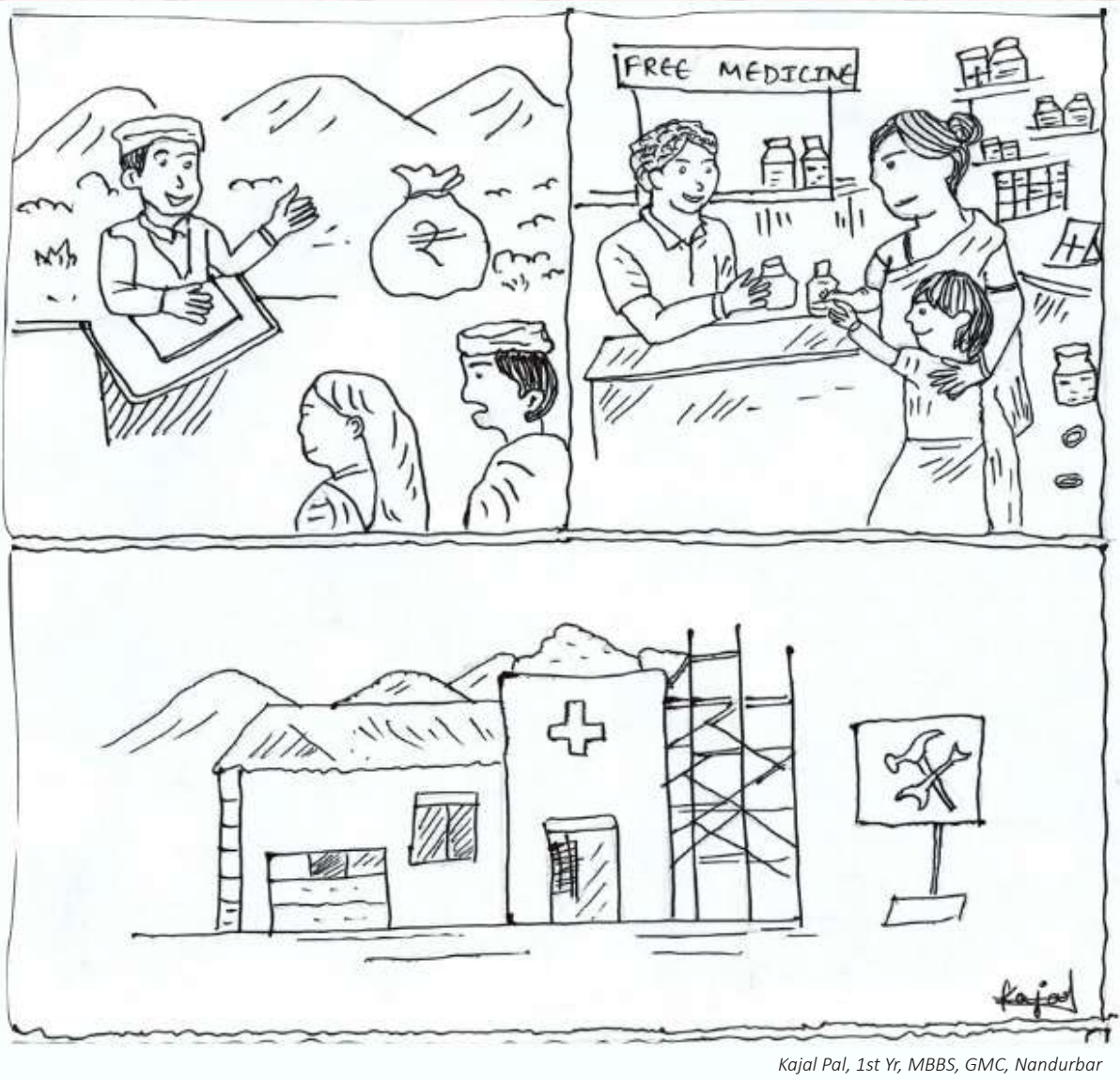
Conclusion

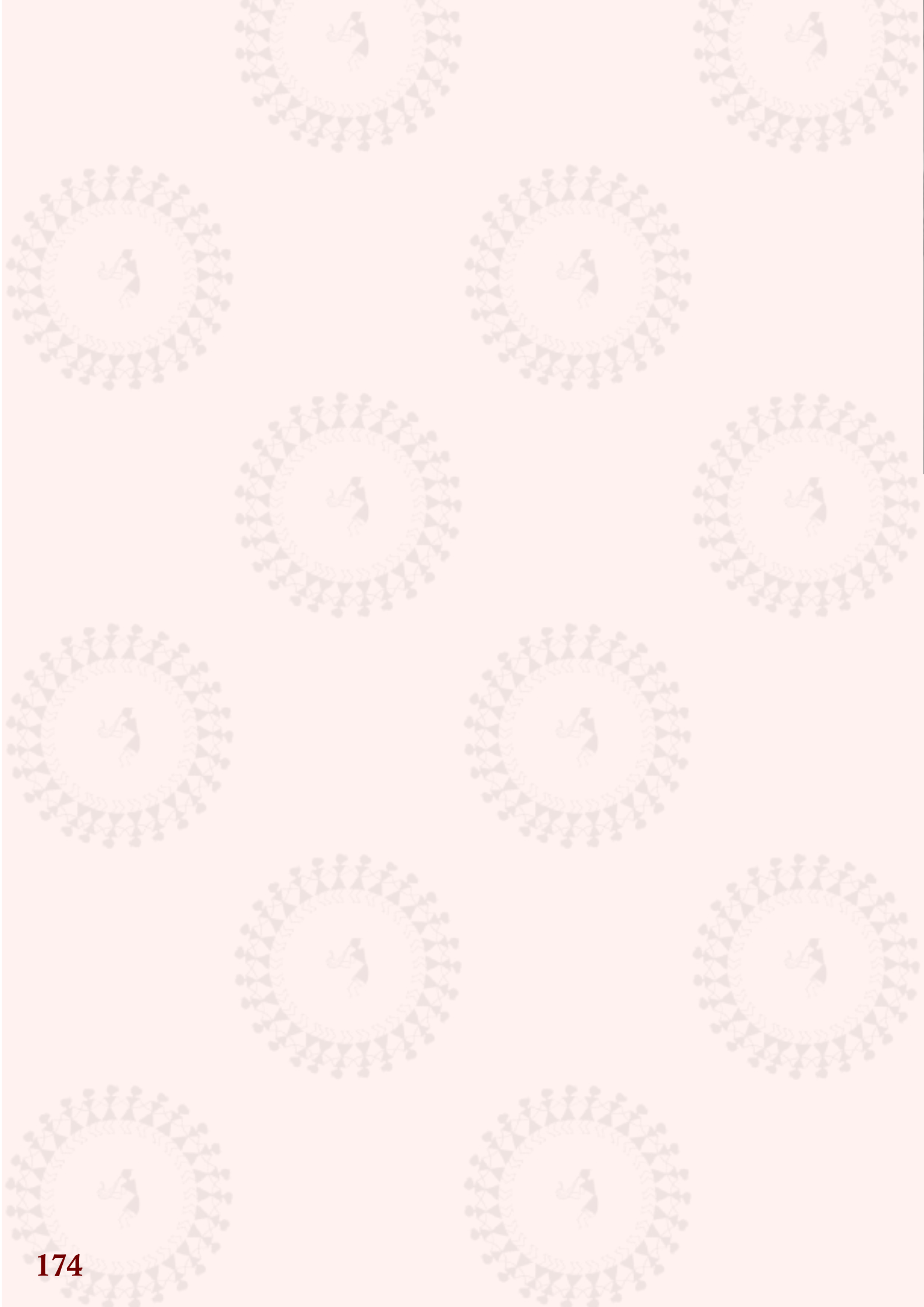
This chapter has emphasised that improvements in tribal health outcomes depend as much on governance design as on programmes or resources. Clear policy direction, outcome-led reviews, credible data systems, functional frontline platforms, community ownership, and timely administrative action together form the governance backbone of effective tribal health systems. Strengthening these elements in a coordinated manner can shift tribal health from fragmented implementation to predictable, accountable, and outcome-oriented

stewardship.

The governance reforms proposed in this chapter focus on alignment rather than expansion, learning rather than compliance, and empowerment rather than control. By embedding these principles across state, district, and village institutions, Maharashtra can create a durable governance architecture that supports sustained improvements in tribal health outcomes and sets a benchmark for other states.

Budget and Financing







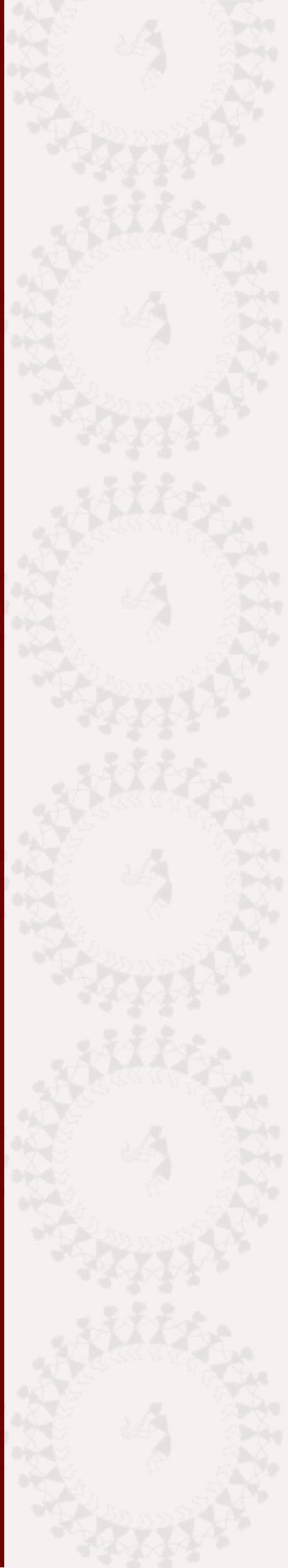
* *Stories from Field*

On the Road, In Time

Quick thinking by an Arogya Sevak saves a life

Vikramgad, Palghar

On the morning of 27 November 2025, an Arogya Sevak from Vikramgad was travelling towards the Rural Hospital for official work related to an infant death review. Accompanied by his wife, he was passing through the Satkor area near Dolhari Budruk when a distressed teenage boy was seen running along the roadside, visibly panicked. Sensing that something was wrong, he stopped a little ahead and found an elderly man lying unconscious on the road beside a fallen two-wheeler. Two young bystanders stood nearby, unsure of what to do and attempting to lift the man. On quick assessment, the Arogya Sevak recognised signs suggestive of a cardiac arrest. He instructed the bystanders to place the man flat on the roadside and immediately began chest compressions. Identifying him through his official ID, the bystanders assisted without hesitation. The man showed no immediate response. His breathing was laboured, his body convulsing, and his eyes had rolled back. Despite not being a specialist, the Arogya Sevak continued CPR for several minutes, refusing to stop until there was a response. Gradually, the man began to regain consciousness. Without delay, the Arogya Sevak contacted a medical officer and explained the situation. On medical advice, arrangements were made to shift the patient to a nearby private hospital. A local schoolteacher offered his vehicle, and the patient was transferred while further instructions were followed over the phone. Only after ensuring that the patient was safely admitted did the Arogya Sevak resume his journey. Later, when passing the hospital again, he stopped to check on the patient and found him conscious and stable, receiving further treatment. This incident highlights the impact of basic emergency response skills and presence of mind in the field. Sometimes, care begins far from any facility. And sometimes, the difference between life and death is the willingness to act without waiting for instructions.



Adequate health financing is the backbone of equitable healthcare, particularly for Maharashtra's tribal communities, where health outcomes continue to lag behind state averages and service delivery remains uneven. Tribal areas are characterised by geographic remoteness, difficult terrain, and dispersed habitations, all of which increase the cost and complexity of delivering health services. Despite policy intent and earmarked allocations under the Tribal Component Programme, public health facilities in many tribal blocks continue to face constraints related to staffing, infrastructure, and service availability.^[1]

Financing constraints translate directly into operational gaps at the last mile. Primary health centres and sub-centres in tribal areas often struggle to maintain adequate human resources, ensure uninterrupted drug and diagnostic supplies, and provide reliable referral and transport services. These challenges are compounded by the fact that tribal households are more dependent on public health systems and have a limited ability to absorb out-of-pocket health expenditure; when public services are weak or unavailable, households are forced into private care and direct payments.^[2]

Figure 9.1(a): Key Health Financing Indicators, 2019-20

Key Health Financing Indicators: Maharashtra vs India (SHA/NHA, 2019-20)

Comparative snapshot of total spending, government share, out-of-pocket spending, social security spending, and private insurance contribution.

Indicator	Maharashtra	India
Total Health Expenditure (THE) as percent of GSDP* / GDP [†]	2.84%	3.27%
Total Health Expenditure (THE) per capita (Rs.)	6,309	4,863
Government Health Expenditure (GHE) percent of THE	26.68%	41.40%
Government Health Expenditure (GHE) percent of GSDP	0.76%	1.35%
Government Health Expenditure per capita (Rs.)	1,684	2,014
Per capita OOPE (Rs.)	2,779	2,289
Out of Pocket Expenditures (OOPE) as percent of THE	44.04%	47.10%
Social Security Expenditure on health as percent of THE	2.78%	9.30%
Private Health Insurance Expenditures as percent of THE	22.64%	7.00%

India's figures marked with * in the source table are reported as a share of GDP (not GSDP). *GSDP: Directorate of Economics & Statistics (State Government), All-India: Central Statistics Office (Base year 2011-12). Population used for per-capita estimates: "Population projections for India and states, 2011-2036" (Technical Group on Population Projections, National Commission on Population, July 2020).

Source: State Health Accounts (SHA) estimates 2019-20 for Maharashtra, National Health Accounts (NHA) estimates 2019-20 for India. • Created with Datawrapper

State Health Accounts provide an important macro lens to understand this structural risk. Figure 1a and Figure 1b show that Maharashtra's overall health spending is relatively lower than the national average. Also, the public share is lower and financial protection through social security mechanisms is limited, increasing the likelihood that households absorb costs directly.

Maharashtra's Total Health Expenditure (THE) is ₹6,309 per capita compared to ₹4,863 for India (Figure 9.1a), yet Government Health Expenditure (GHE) contributes only 26.68% of THE in Maharashtra versus 41.40% nationally, and GHE is just 0.76% of GSDP compared to 1.35% for India (Figure 9.1a). A similar pattern appears for Current Health Expenditure (CHE), where the government share is 22.70% in

Figure 9.1(b): Health Financing Mix in CHE, 2019-20

Health Financing Mix in Current Health Expenditure: Maharashtra vs India (SHA/NHA, 2019-20)

Maharashtra shows a lower government share and social security share, with a higher private insurance contribution in CHE.

Indicator	Maharashtra	India
Current Health Expenditure (CHE) per capita (Rs.)	5,984	4,402
Government Health Expenditure (GHE) percent of CHE	22.70%	35.30%
Out of Pocket Expenditures (OOPE) as percent of CHE	46.43%	52.00%
Social Security Expenditure on health as percent of CHE	2.93%	10.10%
Private Health Insurance Expenditures as percent of CHE	23.67%	7.70%
Household Health Expenditure (incl. insurance contributions) as percent of CHE	66.97%	59.20%
External/Donor Funding for health as percent of CHE	0.12%	0.60%

CHE: Current Health Expenditure; GHE: Government Health Expenditure; OOPE: Out-of-pocket Expenditure. Values shown are (i) CHE per capita in ₹ (Row 1) and (ii) shares as % of CHE (rows 2-7). For interpretability in the report, consider splitting Row 1 (₹) and Rows 2-7 (%) into separate visuals. Population used for per-capita estimates: "Population projections for India and states, 2017-2036" (Technical Group on Population Projections, National Commission on Population, July 2020).

Source: State Health Accounts (SHA) estimates 2019-20 for Maharashtra; National Health Accounts (NHA) estimates 2019-20 for India. • Created with Datawrapper

Maharashtra versus 35.30% in India (Figure 9.1b). While Maharashtra’s out-of-pocket expenditure (OOPE) share is marginally lower than the national average (44.04% of THE and 46.43% of CHE in Maharashtra versus 47.10% and 52.00% in India), the absolute burden remains high because overall spending levels are higher: per-capita OOPE is ₹2,779 in Maharashtra versus ₹2,289 in India (Figure 9.1a). Notably, Maharashtra’s social security expenditure share is very low (around 2.8–2.9% of health expenditure versus ~9–10% in India), while private health insurance forms a much larger share (around 22–24% in Maharashtra versus ~7–8% nationally) (Figure 9.1a and Figure 9.1b). For tribal households, who often have lower and less stable incomes and face access barriers to risk pooling and reimbursement processes, this financing mix heightens vulnerability when public provisioning is inadequate and service availability is inconsistent.^[2]

Public financing for tribal health must therefore

be examined not only in terms of aggregate allocations, but also in terms of adequacy, predictability, and utilisation. The Tribal Component Programme framework reflects an explicit commitment to earmark resources for tribal development across departments, including health. However, the composition of spending, delays in fund flow, limited flexibility at the facility and district levels, and weak convergence with non-health determinants such as water, sanitation, nutrition, and connectivity affect the extent to which allocated resources translate into improved health outcomes on the ground.^{[1], [3]} Health financing is thus not merely a budgetary exercise, but a critical instrument for advancing tribal health equity. It determines whether resources are aligned with need, whether funds reach frontline institutions on time, and whether districts and facilities are empowered to respond to local contexts. Addressing persistent gaps in maternal and child health, nutrition, and communicable disease control in tribal areas requires financing systems that are

responsive, decentralised, and explicitly oriented toward last-mile service delivery.

This chapter examines the key issues in tribal health financing in Maharashtra, including the scale and structure of allocations, fund flow and utilisation patterns, and the role of convergence with the Tribal Component Programme and community-level funding

streams. Drawing on state-level financial data and programme documents, it proposes practical measures to strengthen financing arrangements so that resources reach where they are most needed, when they are needed, and in forms that enable effective service delivery in tribal areas.

Theme 9.1 Ensuring Equitable and Effective Allocation for Tribal Health

Allocations under the Tribal Sub Plan in Maharashtra have broadly aligned with the Scheduled Tribe population share at the aggregate level. Scheduled Tribes constitute approximately 9.35 percent of the state's population, and overall Tribal Sub Plan allocations have generally ranged between nine and nine and a half percent of the total state plan outlay, indicating formal adherence to population proportional norms.^[1] For instance, in 2018 to 19, the total Tribal Sub Plan outlay was approximately Rs 8,969 crore against a total state plan size of about Rs 95,000 crore, amounting to nearly 9.4 percent of planned expenditure.^[1]

Despite this aggregate proportionality, tribal health outcomes continue to lag behind state averages. This reflects limitations not in headline allocations but in the internal composition and prioritisation of spending within the Tribal Sub Plan. One of the most significant gaps is the relatively small share of Tribal Sub Plan resources directed toward health. In 2018 to 19, allocations under the Public Health Department within the Tribal Sub Plan were approximately Rs 255 crore, with only marginal allocations under medical education and drugs. This amounted to less than three percent of total Tribal Sub Plan expenditure.^[1]

Health outcomes in tribal areas are influenced by investments across multiple sectors. Nutrition, drinking water, sanitation, housing, roads, education, and livelihoods, all financed

through various components of the Tribal Sub Plan, are critical social and economic determinants of health. These expenditures are necessary and contribute substantially to improved living conditions and long-term well-being. However, they do not substitute for the core functions of the health system, which include clinical care, disease management, emergency services, referral transport, and protection against catastrophic health expenditure.

Equity in tribal health financing therefore requires a calibrated approach. Population proportionality alone is insufficient because tribal regions face higher disease burden, greater dependence on public health systems, and higher per capita costs of service delivery due to remoteness and dispersed habitations. At the same time, health need not dominate tribal development spending, given the role of other sectors in addressing social determinants. What is required is a deliberate rebalancing that ensures health receives a sufficiently large and predictable share of Tribal Sub Plan resources to perform its non-substitutable functions effectively.

From an analytical perspective, allocating a low teen share of Tribal Sub Plan resources to health represents such a balance. A health allocation in the range of approximately twelve to fifteen percent would recognise the elevated cost and centrality of health service delivery in tribal areas, while preserving substantial investments in other development sectors.



Applied to current Tribal Sub Plan outlays, this would imply annual health sector investments in the range of approximately Rs 1,100 crore to Rs 1,500 crore, compared to current allocations of around Rs 255 crore.^[1] This additional budget allocated may be used for implementation of strategic intervention recommended in this report.

Without such rebalancing, even well-funded investments in nutrition, water supply, sanitation, and connectivity will fail to translate into commensurate health gains, as the health system itself remains unable to absorb demand and deliver timely care. Strengthening the core health system is therefore essential to converting broader social sector spending into measurable improvements in survival, morbidity reduction, and financial protection.

Recommendation 9.1

Rebalance Tribal Sub Plan Spending to Strengthen Core Health Systems

The state should maintain overall population

proportional allocations under the Tribal Sub Plan while explicitly rebalancing expenditure within the plan to strengthen core health system financing. Health should be identified as a priority sector within tribal development, with a clearly defined target share in the low teens range, sufficient to ensure functional primary care, referral services, disease management, and financial protection in tribal areas. Budget formulation and annual review processes should track not only aggregate Tribal Sub Plan allocations but also the internal composition of spending, to ensure that health investments are adequate, predictable, and capable of translating wider social sector investments into tangible health outcomes.^{[1], [3]}

Theme 9.2 Raising Public Health Expenditure and Securing an Adequate Tribal Health Share

Targeted and equity-oriented allocations for tribal health operate within the limits of the overall public health financing envelope. In Maharashtra, total public health expenditure remains low relative to the state's economic capacity and population health needs. Available estimates indicate that public health spending is approximately two percent of Gross State Domestic Product, which constrains the scale and quality of services that can be delivered across the state, including in tribal and remote areas.^[2]

National policy frameworks have repeatedly emphasised the need for higher public investment in health. The National Health Policy 2017 articulated a target of increasing public health expenditure to 2.5 percent of Gross Domestic Product, recognising that

sustained under investment weakens health systems and increases reliance on out-of-pocket spending.^[4] For a relatively high-income state such as Maharashtra, moving beyond this minimum benchmark toward three percent of Gross State Domestic Product is a reasonable medium-term objective if health system gaps, including those affecting tribal populations, are to be addressed meaningfully.

Recent budget trends highlight the urgency of this shift. Per capita public health expenditure in Maharashtra has stagnated and declined in real terms in recent years, while the share of health in the total state budget has remained among the lowest in the country. Secondary analyses and public reporting have pointed out that Maharashtra allocates a smaller proportion of its budget to health compared to

several other states, despite its stronger fiscal position.^[5] Without a decisive expansion of the overall health budget, improvements in access, quality, and financial protection will remain limited, particularly in underserved tribal regions where dependence on public provision is highest.

At the same time, there is limited visibility on how much of the total public health expenditure is directed specifically toward tribal health. Budget documents typically present aggregate health allocations and Tribal Sub Plan outlays separately, without a consolidated view of tribal health spending as a share of total state health expenditure.^{[1], [3]} Independent public expenditure analysis for earlier years indicates that actual health spending under the Tribal Sub Plan accounted for only about 2.9 percent of total state health expenditure in 2017 to 18, far below the Scheduled Tribe population share of approximately 9.35 percent.^[6] This suggests that even within a constrained overall envelope, the tribal health share has historically been small and weakly tracked.

The absence of clear accounting limits the state's ability to assess whether increases in public health spending are translating into equitable gains for tribal populations. It also weakens accountability, as under allocation or underutilisation of tribal health funds may persist without systematic review. While investments in nutrition, water supply, sanitation, housing, roads, and livelihoods under the Tribal Sub Plan contribute to improved health conditions, they cannot substitute for direct health system spending on clinical care, disease management, emergency services, referral transport, and financial protection.

From both fiscal and equity perspectives, increasing public health expenditure must therefore be accompanied by explicit measures to secure a fair and visible tribal health share

within the expanded budget. A predictable and phased approach to increasing health spending allows absorption capacity to grow alongside resources, while explicit tracking ensures that equity objectives are not diluted as budgets expand.

Recommendation 9.2

Adopt a Phased Strategy to Expand Public Health Spending and Protect Tribal Health Allocations

The state should commit to raising public health expenditure toward three percent of Gross State Domestic Product as a medium-term objective over the next five to seven years. This commitment should be operationalised through annual incremental increases of approximately 0.15 to 0.2 percentage points of Gross State Domestic Product in public health spending, clearly articulated in annual budgets and medium-term fiscal frameworks.^[4]

In parallel, the state should institutionalise budget tagging and reporting mechanisms to explicitly track expenditure on tribal health as a defined share of total public health spending. Annual budget documents and expenditure reports should disclose the proportion of public health expenditure benefiting tribal populations, including spending routed through the Tribal Sub Plan and relevant health department programs.^{[1], [6]}

As public health expenditure increases, tribal health should receive at least a population proportional and progressively need adjusted share of the expanded resource envelope. Annual budget and outcome reviews should assess progress on overall health spending, per capita expenditure, the tribal health share, and trends in out-of-pocket spending. This combined approach will ensure that increased public investment strengthens the health system as a whole while delivering tangible and equitable gains for tribal communities.^{[2], [3]}



Theme 9.3 Timely Fund Flow, Effective Utilization, and Execution Capacity in Tribal Health

Even where allocations are adequate and overall public health spending is expanded, outcomes depend critically on whether funds reach the point of care on time and are effectively utilised. In Maharashtra's tribal health programs, delayed fund flow and consequent underutilisation of budgets remain persistent systemic challenges. Funds often reach districts and facilities late in the financial year, leaving health institutions under resourced for extended periods and forcing rushed expenditure in the final quarter or lapsing of unspent funds. Such delays directly undermine service continuity and planning at the frontline.

National level reviews of tribal health programs have observed that allocated funds are frequently not utilised optimally in tribal areas due to procedural and administrative bottlenecks rather than lack of need or intent.^[7] These findings were reinforced during the Committee's field interactions. The Committee personally interacted with several contractual Medical Officers posted in tribal blocks who reported delays in salary payments extending to four to six months. Many stated that repeated delays had significantly affected morale and financial stability, and had weakened their motivation to continue working in remote and difficult locations.^[8]

Recent system level disruptions have further highlighted vulnerabilities in execution systems. During the rollout of new payment platforms, contractual National Health Mission employees across Maharashtra experienced prolonged salary delays, with several staff reporting non payment for over two months.^[9] Frontline doctors, nurses, and community health workers in tribal areas, who depend entirely on government payments, were particularly affected. Such disruptions erode trust in administrative systems and contribute to attrition in hard to serve areas, aggravating

existing human resource shortages.

Operational and maintenance funds for health facilities face similar constraints. Past fund flow arrangements have resulted in delays between state level release and availability of funds at district and facility levels.^[4] Audit observations have highlighted weaknesses in the timeliness of fund release and downstream flow under the National Health Mission in Maharashtra, affecting the availability of operational funds at the facility level.^[10] Routine grants that should ideally be available at the start of the financial year often reached primary health centres only by mid-year or later, disrupting maintenance, procurement, and outreach services.

These execution gaps are not solely a function of fund availability, but also of limited administrative and financial management capacity at district and block levels. Clerical staff responsible for accounts, tendering, and utilisation reporting in tribal areas are often overburdened, insufficiently trained, and dependent on manual processes or ad hoc guidance. Delays frequently arise from uncertainty in procedures, documentation requirements, and compliance norms rather than intent.

Strengthening execution capacity, therefore, requires deliberate investment in human and institutional capability. Beyond conventional training, there is scope to leverage contemporary digital tools that allow officials to access relevant government orders, guidelines, and financial rules and seek clarifications in real time. Such tools can reduce dependence on hierarchical approvals, improve accuracy, and speed up routine financial processing. As administrative systems modernise, execution capacity must evolve accordingly.

Delayed fund flow undermines both efficiency and equity. A rupee that reaches a facility late is

less effective than one that arrives on time, particularly in tribal settings where uninterrupted services and staff retention are essential. Strengthening financial execution systems and capacity is therefore as important as increasing allocations or expanding budgets.

Recommendation 9.3

Ensure Predictable Fund Flow and Strengthen Execution Capacity

The state should prioritise reforms to ensure timely and predictable flow of funds to tribal health facilities and programs. Budgeted funds for salaries, medicines, diagnostics, and facility operations should be released on a clearly defined and predictable schedule, with quarterly releases aligned to service delivery needs rather than year-end expenditure pressures.

Salary payments to contractual health staff in tribal and remote areas should be treated as a protected and non-negotiable obligation. Systems should be designed to prevent prolonged delays, particularly during transitions to new financial platforms, and contingency mechanisms should be in place to ensure payment continuity during technical disruptions.^[9]

Operational and maintenance grants for primary health centres and sub centres should reach facilities at the start of the financial year to enable timely repairs, procurement, and

service planning. The state should fully operationalise electronic fund transfer and treasury systems for real time tracking of releases and expenditures, while simultaneously investing in structured capacity building for district and block level accounts and clerical staff responsible for financial processing, tendering, and utilisation reporting.^[2]

Capacity building should include exposure to modern digital tools that can support faster comprehension of rules, guidelines, and compliance requirements. Enabling finance staff to access user friendly digital knowledge platforms can reduce processing delays, improve accuracy, and decrease dependence on hierarchical clarifications. In addition, a simple expenditure monitoring dashboard should be instituted to track utilisation of tribal health funds across districts during the financial year, enabling early identification of delays and targeted administrative support.^[7]

By combining predictable fund flow with strengthened execution capacity, Maharashtra can ensure that budgetary commitments translate into functional services on the ground. Timely payments, empowered administrative staff, and responsive financial systems will improve facility functionality, staff morale, and service continuity in tribal areas, ensuring that increased investments in health deliver real and equitable outcomes.

Theme 9.4 Decentralised Flexible Financing and Convergence to Reduce Out of Pocket Burden

The financing rationale for decentralised flexible funding and convergence in tribal areas is fundamentally about equity and financial protection. Maharashtra's State Health Accounts for 2019 to 20 show total current health expenditure of about Rs 73,605 crore, with household out-of-pocket expenditure alone at about Rs 34,177 crore, approximately 46.43 percent of the total. This indicates that

households remain the single largest payer for healthcare in the state. High out-of-pocket expenditure disproportionately affects poorer and remote households, and in tribal geographies it commonly manifests as delayed care, reliance on informal treatment, and catastrophic spending, especially when access barriers force families to seek private services or incur repeated transport costs.^[2]



The same State Health Accounts financing mix also indicates that public financing is not the dominant payer. State government contribution is about Rs 9,654 crore or 13.12 percent and the union government contribution is about Rs 2,795 crore or 3.8 percent, while voluntary prepayment accounts for about Rs 15,005 crore or 20.38 percent. This mix underscores that insurance and prepayment mechanisms, while sizeable, do not automatically translate into access for tribal populations unless delivery platforms function reliably and entitlements are frictionless in tribal geographies.^[2]

Within the tribal development framework, the Tribal Sub Plan has been reframed as the Tribal Component Programme. For 2018 to 19, the TCP outlay is stated as Rs 8,969.05 crore out of a total state annual scheme expenditure of about Rs 95,000 crore, around 9.4 percent. The same document explicitly recalls the Sukthankar Committee view that a major portion of TCP outlays should be directed toward local schemes that directly benefit tribals, including maternal and child health, rural water supply, soil and water conservation, and link roads. This is a strong policy anchor for financing approaches that prioritise last mile service access and determinants rather than relying primarily on large, slow-moving expenditures.^[1]

The TCP documents also identify two governance levers directly relevant to tribal health financing. First, TCP resources related to access often sit outside health heads, including roads that link tribal habitations to primary health centres and other essential services. Without structured convergence, such allocations do not reliably translate into improvements in health access. Second, community-controlled finance is already present through PESA-related village-level resources. For 2018 to 19, Rs 267.88 crore is shown as made available across 5,905 villages in Scheduled Areas, with the Gram Sabha as

the authority to spend. These funds can support small but high-impact actions that improve access and reduce household expenditure, such as local transport support for referrals, minor facility upgrades, culturally appropriate outreach, and community-level actions linked to nutrition and sanitation.^[1]

A practical challenge is that urgent, locally specific health needs in tribal areas often do not fit neatly into rigid scheme guidelines and budget heads, and even when they do, approval and procurement processes can be too slow for the realities of tribal geographies. Typical situations include minor but critical repairs needed to keep a primary health centre operational, short term transport arrangements to reach scattered hamlets, and immediate support for vulnerable patients requiring urgent diagnostics or referral care. When systems cannot respond quickly, costs and risk shift to households, reinforcing the out-of-pocket burden described above.

Evidence from Maharashtra's public expenditure review indicates that when modest funds are genuinely untied and placed closer to facilities, utilisation is high and spending is oriented toward practical service improvements. This supports the case for expanding flexible financing with clear accountability, rather than relying exclusively on centrally controlled schemes.^[6]

Decentralisation and convergence therefore need to be treated as complementary parts of one financing strategy. Decentralised flexible pools enable rapid local action. Convergence aligns resources across departments so that determinants of health access such as nutrition, water, transport, and connectivity are financed and executed as part of health improvement rather than in isolation. Community oversight in Scheduled Areas provides an additional accountability layer that can strengthen legitimacy and alignment with local priorities.

Recommendation 9.4

Create a district Tribal Health Flexi Fund with convergence and an untied emergency patient support pool

A district level Tribal Health Flexi Fund should be established in predominantly tribal districts and tribal blocks, designed as a responsive pool to finance last mile service continuity and access actions that are routinely delayed under rigid scheme-based financing. The fund should be governed through a district mechanism chaired by the Collector or Zilla Parishad Chief Executive Officer with representation from Health, Tribal Development, Women and Child Development, Rural Development, Panchayati Raj, and relevant infrastructure agencies, so that convergence is built into planning and approvals. The permissible expenditure framework should explicitly include minor facility repairs, outreach logistics, transport solutions for scattered hamlets, short term service continuity measures, and time sensitive local public health responses.^[1]

Rogi Kalyan Samitis should be strengthened as frontline vehicles of flexible spending at facilities, with enhanced untied allocations, clear ceilings, transparent reporting, and regular audits. Their mandate should explicitly include patient welfare spending that prevents households from being pushed into private out of pocket spending due to small service gaps, such as emergency purchases, minor repairs,

and local service enabling expenditures. Evidence that untied grants in rural health facilities have high utilisation should be used to justify scaling this approach in tribal geographies while tightening accountability.^[6]

A small untied Emergency Patient Support Pool should be created at district level to support immediate expenditure for extremely vulnerable patients requiring urgent diagnostics, referral, or transport. The Civil Surgeon or District Health Officer should be authorised to sanction such expenditure immediately in exceptional cases, with post facto approval within a defined time window by the district committee and audit safeguards. This mechanism is essential to prevent procedural rigidity from delaying care and shifting catastrophic costs onto households in tribal areas, directly advancing the objective of reducing the high out of pocket burden documented in the State Health Accounts.^[2]

To institutionalise community accountability and align spending with local needs, Scheduled Area districts should issue guidance to integrate Gram Sabha oversight into periodic reviews of tribal health access and expenditure. PESA related village level funds should be explicitly mapped for health linked uses that improve access and reduce household costs, with clear do and do not lists and transparency requirements.^[1]

Theme 9.5 Bridging Last Mile Infrastructure Gaps as a Health Financing Priority

Physical access remains one of the most binding constraints on effective healthcare delivery in tribal areas of Maharashtra. Many tribal habitations are located in hilly, forested, or remote interiors with unreliable or absent road connectivity. This directly undermines the effectiveness of health spending by limiting ambulance access, delaying emergency referrals, constraining outreach services, and

discouraging health staff from serving in remote facilities. In such contexts, even well-funded health systems fail to deliver results because patients and providers simply cannot reach each other in time.

While rural road schemes such as the Pradhan Mantri Gram Sadak Yojana have significantly improved connectivity in many parts of the state, smaller and more dispersed tribal



habitations were often excluded due to population thresholds and eligibility norms. As a result, critical gaps persist. Recent reporting indicates that in just two districts, Gadchiroli and Chandrapur, seventy-eight Particularly Vulnerable Tribal Group hamlets still lacked proper road access as of 2025, highlighting the scale of the challenge in Scheduled Areas.^[34] Similar conditions are reported from other tribal regions such as Melghat and parts of the Sahyadri ranges.

From a financing perspective, these gaps reduce the return on public health investment. Expenditure on ambulances, institutional delivery incentives, outreach programs, and even staffing yields limited impact when last mile access is absent. In effect, infrastructure constraints convert health spending into sunk costs rather than outcomes. Bridging these gaps is therefore not a parallel development agenda, but a necessary enabling condition for health equity and financial protection in tribal areas.

Importantly, financing for access to care in tribal areas often already exists across multiple heads outside the health budget, including rural roads, tribal development, Scheduled Area grants, and district level funds. The challenge lies not in the absence of resources, but in the absence of a deliberate health-oriented prioritisation framework that aligns these investments toward closing access gaps that directly affect health outcomes.

Recommendation 9.5

Prioritise health linked connectivity in tribal areas through a mission mode approach

The state should adopt a time bound mission mode approach to ensure reliable all-weather

connectivity for tribal habitations where lack of access demonstrably constrains healthcare delivery. Health outcomes should be explicitly used as a prioritisation criterion for identifying such habitations, with focus on emergency referral delays, maternal and newborn care access, and outreach service coverage.

Rather than creating new schemes, the state should strategically align existing road and infrastructure programs, Scheduled Area grants, and tribal development allocations toward this objective, ensuring that connectivity gaps affecting access to health facilities receive priority treatment even where habitations fall below conventional eligibility norms. This approach would complement existing rural road programs by addressing the last mile gaps that have the highest health impact.

Planning and monitoring of such connectivity initiatives should be anchored in measurable health outcomes, such as reductions in referral delays, increases in institutional deliveries, and improved service utilisation in previously inaccessible areas. By explicitly linking infrastructure prioritisation to health outcomes, Maharashtra can ensure that investments across sectors reinforce the effectiveness of public health spending and reduce avoidable morbidity and mortality in tribal regions.

Treating last mile connectivity as a core component of health financing strategy will significantly enhance the impact of existing expenditures, improve equity, and ensure that distance and terrain no longer determine who can access timely care.

Theme 9.6 Outcome-linked Financing and Adaptive Spending Rules

Improving tribal health financing is not only a question of how much money is allocated, but whether spending translates into outcomes on the ground. Maharashtra's own State Health Accounts show that households still account for nearly half of total health expenditure in the state, with out of pocket spending forming about 46 percent of total current health expenditure. This financing pattern disproportionately harms poorer and remote tribal households, where delayed care, informal providers, and catastrophic expenditure are most common.^[2] High out of pocket spending is therefore a clear signal that public financing is not yet delivering effective last mile access.

Despite substantial allocations under the health budget and the Tribal Component Programme, outcomes in some tribal pockets remain unacceptably poor. A recent instance that brought this gap into sharp focus was the Bombay High Court taking suo-motu cognisance of reports from tribal areas of Nandurbar, where a new-born's umbilical cord was cut using unsafe methods during a home delivery. The court questioned how such conditions persist despite significant public spending on maternal and child health, and observed that basic services were failing to reach the most vulnerable populations.^[11] The issue was not the absence of schemes, but the failure of spending to translate into safe and timely care.

This reflects a structural weakness in the way financing decisions are reviewed and corrected. Budget monitoring largely tracks expenditure against heads, not outcomes achieved. Districts may have funds available but remain constrained by rigid spending rules, fragmented budget heads, or procedural ceilings that prevent timely action. At the same time, innovative or outcome-focused district proposals often fail to be sanctioned because they span departments or do not neatly fit

within existing heads, even when they directly address life-threatening gaps.

A financing system that does not respond to outcomes risks repeating this cycle, in which allocations continue but the impact remains limited. What is required is a feedback loop where health outcomes actively inform both future allocations and the rules governing how money can be spent.

Recommendation 9.6

Link outcomes to allocations and enable adaptive financing

Maharashtra should institutionalise outcome-linked financial review as a core part of tribal health budgeting. This should include an annual review of key tribal health outcomes alongside expenditure patterns, using disaggregated data at the district and block levels. Persistently poor outcomes should trigger both higher allocations and corrective changes in spending rules.

The state should enable adaptive financing by allowing modifications to budget norms when procedural constraints repeatedly impede service delivery. This includes revisiting rigid ceilings, approval layers, and narrowly defined expenditure heads that limit district responsiveness in tribal areas.

An innovation or adaptive budget window should be created within the tribal health financing framework, through which district administrations can submit outcome-driven proposals, including those spanning multiple departments or budget heads. Such proposals should be assessed on expected health impact and sanctioned through streamlined processes, with post facto reporting and audit rather than prior procedural rigidity.

Finally, outcome and expenditure scorecards should be reviewed periodically at the district and state levels to enable mid-year corrections.



Linking financing decisions to real-world outcomes will ensure that public spending reduces out-of-pocket burdens, improves access, and prevents situations in which severe

deprivation persists despite substantial expenditure. This shift from rule-bound spending to outcome-responsive financing is essential for tribal health equity.

Conclusion

Strengthening health financing for tribal areas is central to closing the persistent gap in health outcomes between tribal and non-tribal populations in Maharashtra. This chapter has outlined a focused roadmap that moves beyond headline allocations to address how money is planned, released, used, and reviewed. Adequate and fair budgeting, timely fund flow, local flexibility, targeted infrastructure investment, convergence across sectors, and outcome linked monitoring together form a coherent financing framework. These elements are interdependent. Higher allocations yield results only when funds reach facilities on time and can be used responsively. Infrastructure and convergence amplify the impact of health spending. Data and outcome feedback ensure that financing decisions remain grounded in real needs rather than procedural inertia.

If implemented in combination, these reforms can translate public spending into tangible improvements on the ground. Tribal women accessing safe and timely maternal care, ambulances reaching habitations that were previously cut off, children benefiting from coordinated health and nutrition services, and communities seeing consistent improvements in survival and well-being are the outcomes

that effective financing should deliver. Improved public provisioning will also reduce out of pocket expenditure, offering greater financial protection to tribal households that are currently the most exposed to health-related shocks.

At its core, this agenda reflects the principle of reaching the last mile first. Persisting gaps in tribal health are not inevitable. They are shaped by choices about how resources are allocated, governed, and adapted over time. Maharashtra has the fiscal capacity and administrative experience to lead by example.

By making tribal health financing robust, timely, flexible, and outcome oriented, the state can demonstrate how increased spending can be translated into real gains for populations that have historically been underserved.

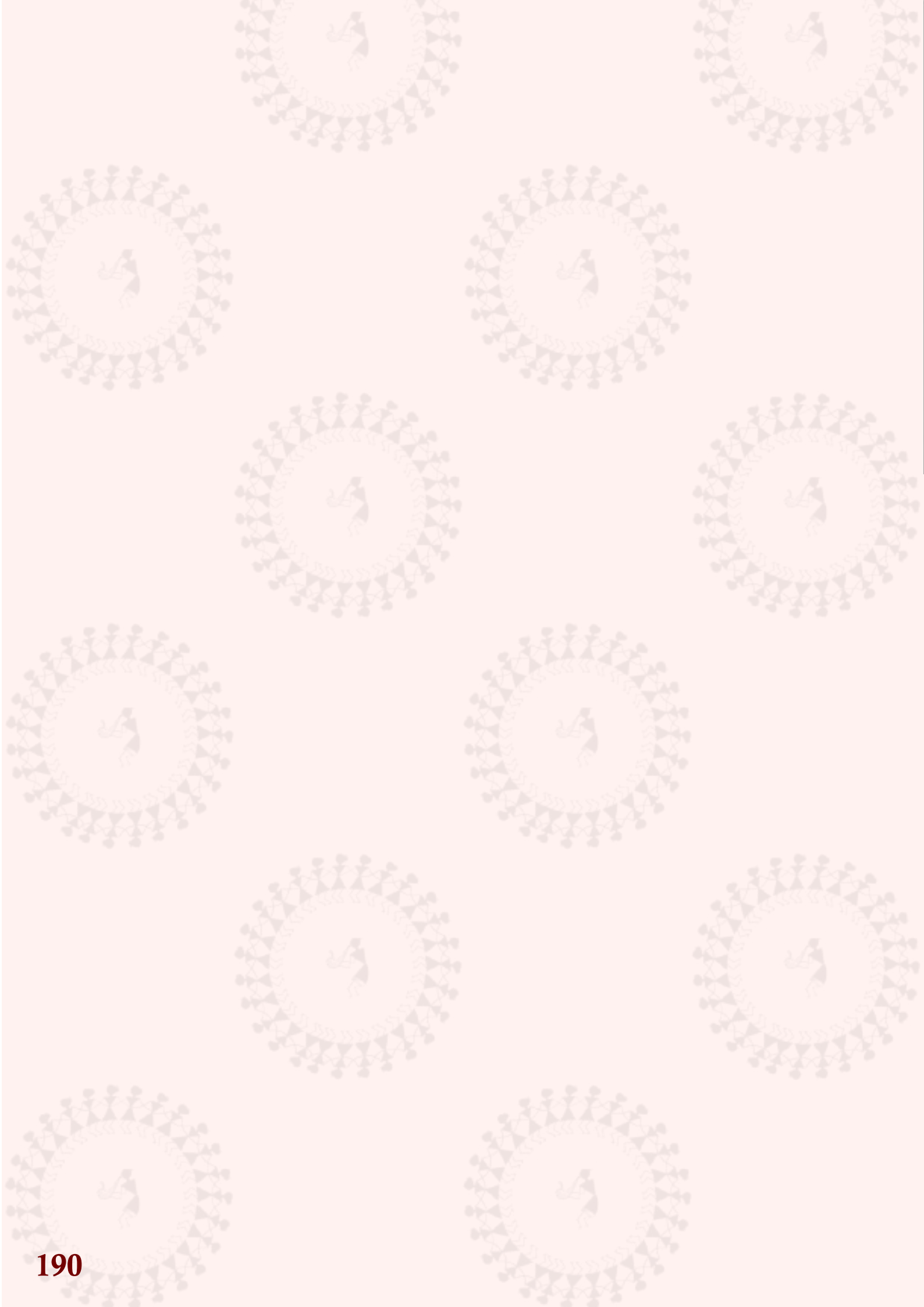
The investments recommended in this chapter are not merely budgetary decisions. They represent commitments to equity, dignity, and equal opportunity for tribal citizens. The ultimate measure of success will be when health outcomes for tribal mothers, children, and elders are no longer determined by geography or identity, but reflect the same standards of care and wellbeing enjoyed across the state.

10

Recommendations: Roadmap for Tribal Health



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रुग्ण वाहिकेतच यशस्वी प्रसूती: कुंभितोला उपकेंद्रातील आरोग्य कर्मचाऱ्यांची कार्यतत्परता कौतुकार्पद

अर्जुनी-मोर. :- शासकीय आरोग्य यंत्रणेत एखादी दुर्दैवी घटना घडली, तर नागरिकांकडून तीव्र संताप व्यक्त केला जातो. मात्र आरोग्य विभागाच्या माध्यमातून एखादी स्तुत्य व प्रेरणादायी घटना घडली, तर त्याचे कौतुक करण्याचे भान अनेकदा विसरले जाते. अशीच एक सकारात्मक व प्रेरणादायी घटना अर्जुनी-मोर तालुक्यातील



✦ Stories from Field

Care in Motion

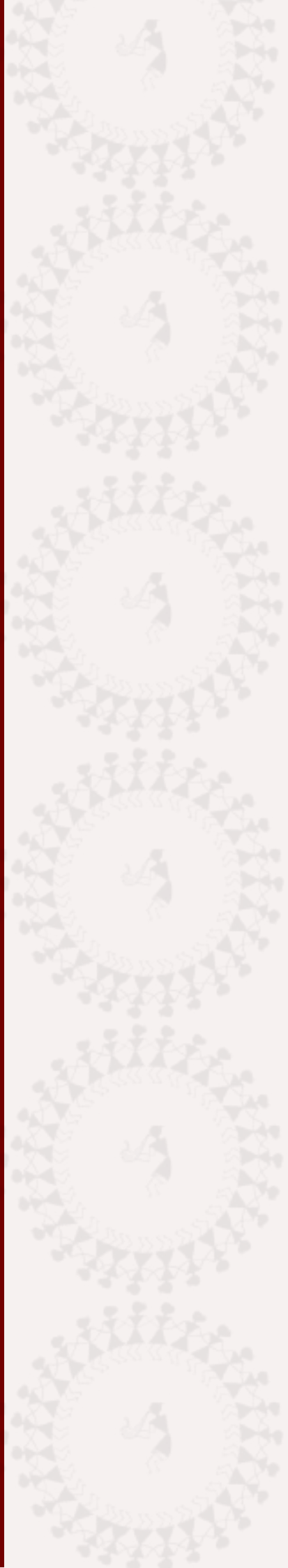
Safe Delivery Conducted Inside an Ambulance in a Remote Tribal Area

Arjun Morgoan, Gondia

Note: For the purpose of confidentiality and privacy, the name of the patient has been changed.

On 6 January 2026, Mrs. Suman Khilchand Margaye, a 25-year-old resident of the remote tribal village of Sukali Khairi under Kumbhitola Sub center, PHC Gothangaon in Gondia district, went into active labour during her second pregnancy. As soon as labour pains began, ASHA worker Sunita Gajbhiye informed the Community Health Officer of Kumbhitola, Ms. Trupti Gahane. At the time, Ms. Gahane was engaged in a routine vaccination session. Recognising the urgency, she immediately paused her work, mobilised her team, and reached the patient's residence to initiate essential care and arrange referral. The patient was shifted by ambulance towards the sub-centre. During transit, labour progressed rapidly. Based on clinical assessment, the team realised that reaching the facility in time was not possible. In a confined ambulance, with limited resources and no margin for delay, a clear clinical decision was taken to conduct the delivery on the spot. At 12:45 pm, a safe delivery was successfully conducted inside the ambulance. The mother delivered a healthy baby girl weighing 2.5 kilograms. The new-born cried immediately after birth. Both mother and child were stabilised and shifted to the Kumbhitola Sub-centre for postnatal care. At follow up, both were reported to be in good health. This outcome was made possible by coordinated field action and presence of mind. The timely alert by the ASHA worker, the swift response of the Community Health Officer, the clinical support of Mr. Gaurav Tembhekar, Ms. Nirasha Shahare, Ms. Shevanta Bhojar, and the steady handling of the situation by ambulance driver Mr. Shashikant

Khedikar together ensured a safe delivery under pressure. In remote settings, care does not always wait for infrastructure. Sometimes, it moves with the patient. And when field teams are prepared to act, that movement can save lives.



This chapter consolidates the key recommendations emerging from the report, providing a high-level roadmap for transforming tribal health systems in Maharashtra. While the preceding chapters offer in-depth analysis, thematic frameworks, and contextual evidence, drawing from field insights, stakeholder consultations, and data-driven assessments, this section distills them into a prioritized, time-bound matrix for actionable implementation. The previous chapters incorporate recommendations of their own domain.

To facilitate strategic planning and oversight, recommendations are categorized into three horizons:

Immediate (0–1 year)

Quick-win interventions focusing on pilots, policy clarifications, and low-cost infrastructure tweaks to build momentum.

Medium-term (1–3 years)

Systemic strengthening measures, including capacity building, process institutionalization, and scaled deployments.

Long-term (3–5 years)

Transformative reforms for sustainable outcomes, such as governance overhauls and full-coverage infrastructure.

Numbering to individual recommendations in tables of these chapters are done to improve readability and does not imply priority order. Some long-term reforms may begin as design work or pilots in the immediate period, while immediate actions may require reinforcement over multiple years to become durable.

The summarized WHO Pillar wise tables from the next section are meant to serve as an executive tool for policymakers, district administrators, and program managers to track progress and drive accountability. The recommendations below are organized by thematic chapters, with cross-cutting enablers highlighted for convergence.

For a comprehensive understanding of the rationale, evidence base, and implementation nuances behind each recommendation, readers are encouraged to refer to the relevant detailed chapters. A fully actionable spreadsheet with assigned responsibilities, timelines, indicators and Monitoring KPIs is available at:

Link: <https://tinyurl.com/59cac4e4>



Scan above QR Code to see the Actionable Spreadsheet

Table 10.1 Service Delivery (WHO Pillar 1): Phased Recommendations for Strengthening Tribal Health Services in Maharashtra.

Service Delivery (WHO Pillar 1): Phased Recommendations for Strengthening Tribal Health Services in Maharashtra

Immediate (0–1 year), Medium term (1–3 years), and Long term (3–5 years) actions to strengthen service delivery in Tribal areas of Maharashtra.

Immediate (0–1 year)	Medium term (1–3 years)	Long term (3–5 years)
1. Realign administrative and service delivery boundaries to better serve tribal populations.	1. Upgrade healthcare infrastructure in tribal areas through a Tribal Health Infrastructure Mission.	1. Operationalize and scale functional integrated disease control programs across tribal regions.
2. Launch a Tribal Migration Health Mission to ensure continuity of care for migrant families.	2. Expand the network of health service delivery to every tribal hamlet through community-level health posts and mobile units.	2. Build resilient primary care networks linking hamlets to district hospitals via all-weather access.
3. Strengthen operations and maintenance for emergency transport	3. Institutionalize third-party quality monitoring for tribal health infrastructure and services.	3. Foster community-owned health governance for sustained service delivery equity.
4. Institutionalize Tribal Helpdesks at Secondary and Tertiary Facilities	4. Establish decentralized stabilization and short stay observation points in the most remote clusters	
5. Strengthen financial protection for tribal populations by treating insurance delivery as a frontline health service.	5. Achieve complete habitation-level coverage with priority focus on children aged six months to three years	
6. Implement Solar for Health across underserved public health facilities.	6. Institutionalize Assured Minimum Service Delivery Standards in Tribal Areas	
	7. Establish District Health Action Centres for Proactive Primary Care Assurance	

Notes: Time horizons are indicative and intended for planning and monitoring. Items are numbered within each phase for readability; numbering does not imply priority order. Created with Datawrapper

Table 10.2 Health Information Systems (WHO Pillar 2): Phased Recommendations for Strengthening Tribal Health Data Systems in Maharashtra

Health Information Systems (WHO Pillar 2): Phased Recommendations for Strengthening Tribal Health Data Systems in Maharashtra

Immediate (0–1 year), Medium term (1–3 years), and Long term (3–5 years) actions to strengthen tribal health information systems and data governance.

Immediate (0–1 year)	Medium term (1–3 years)	Long term (3–5 years)
1. Integrate tribal-specific indicators into existing platforms like HMIS and RCH portal for real-time disaggregated reporting.	1. Develop a unified Tribal Health Information Portal and data-sharing system.	1. Maintain a continuous learning and adaptation loop through evaluations and a Tribal Health Knowledge Hub.
2. Integrating Migration Data into Health Information Systems for Continuity of Care	2. Intensify mortality surveillance and audits in tribal areas.	2. Mandate annual tribal health data impact assessments to refine national health strategies.
3. Establishing a Tribal Health Communication Architecture	3. Adoption of Residence Based Reporting for Key Health Indicators	3. Foster research activities and data repositories for learning and program development.
4. Train frontline workers and ensure resource availability for reducing the reporting gap from remote tribal areas.	4. Establish block-level data validation units with local tribal involvement to improve data quality and audits.	

Notes: Time horizons are indicative and intended for planning and monitoring. Items are numbered within each phase for readability; numbering does not imply priority order. Recommendations emphasize data disaggregation, quality assurance, and responsible data-sharing for improved decision-making in tribal areas.
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Table 10.3 Strengthening the Health Workforce (WHO Pillar 3): Phased Recommendations for Tribal Health in Maharashtra.

Strengthening the Health Workforce (WHO Pillar 3): Phased Recommendations for Tribal Health in Maharashtra

Immediate (0-1 year), Medium term (1-3 years), and Long term (3-5 years) actions to improve workforce availability, capability, motivation, and retention in tribal areas of Maharashtra.

Immediate (0-1 year)	Medium term (1-3 years)	Long term (3-5 years)
<ol style="list-style-type: none"> 1. Revise hardship area criteria and incentives for health staff in remote tribal postings. 2. Mandate structured induction training and cultural orientation for all health staff posted to tribal areas. 3. Deploy digital solutions and streamline payments to support frontline workers in tribal areas. 4. Institutionalizing a Role-Based Continuous Capacity Building Framework 5. Strengthen Mobility and Connectivity Support for Health Workers. 	<ol style="list-style-type: none"> 1. Establishing a Centre of Excellence for Tribal Health Training and Systems Learning 2. Improve Workforce Welfare Through Housing, Safety, and Support Infrastructure 3. Pilot a Protocol-Driven Aarogya Sakhi Model in the Most Remote Hamlets 4. Roll out a Tribal Health Workforce Development Plan, emphasizing skilling, support, and local recruitment. 5. Operationalize competency-based training programs in partnership with nursing and paramedical colleges for quota-based admissions from local tribal youth, with hands-on internships in remote facilities. (This will ensure retention of more skilled HR in difficult areas) 6. Introduce mentorship networks connecting experienced tribal health workers with new staff for creating community of practitioners. 	<ol style="list-style-type: none"> 1. Developing Strategic Leadership Capacity Through a Tribal Public Health Management Fellowship 2. Embed tribal health rotations and cultural competency certification as a requirement for medical licensure renewal. 3. Create dedicated cadre of tribal health officers with accelerated promotion tracks based on service duration in hard-to-reach areas.

Notes: Time horizons are indicative and intended for planning and monitoring. Items are numbered within each phase for readability; numbering does not imply priority order. Recommendations emphasize local recruitment, cultural competency, welfare and safety, competency-based skilling pathways, and retention in hard-to-reach tribal postings.

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Table 10.4: Medical Products, Vaccines & Technologies (WHO Pillar 4): Phased Recommendations for Strengthening Tribal Health Services in Maharashtra

Medical Products, Vaccines & Technologies (WHO Pillar 4): Phased Recommendations for Strengthening Tribal Health Services in Maharashtra

Immediate (0–1 year), Medium term (1–3 years), and Long term (3–5 years) actions to strengthen access to essential products, diagnostics, and health technologies in tribal areas.

Immediate (0–1 year)	Medium term (1–3 years)	Long term (3–5 years)
<ol style="list-style-type: none"> 1. Modernize the school health screening program (RBSK) with better staffing and digital tools. 2. Strengthen telemedicine and tele-mental health services tailored for tribal areas. 3. Deploy a Tribal Emergency Transport Strategy with Strategic Coverage and Capability 4. Update existing health apps and telemedicine portals to include local tribal dialects and icon-based navigation for improving use. 5. Ensure every tribal sub-center and PHC with 24x7 electricity, safe water, and reliable internet connectivity. 	<ol style="list-style-type: none"> 1. Strengthen medicine, vaccine, and diagnostics supply chains to guarantee last-mile availability. 2. Expand Blood Storage Capacity and Strengthen Regulation for Equitable Access 3. Institutionalize early pregnancy detection and comprehensive maternal risk screening in tribal areas 4. Institutionalize anemia screening and management for adolescent girls in Ashramshalas 5. Launch an Integrated Disease Control Initiative for malaria, tuberculosis and sickle cell disease in tribal areas. 	<ol style="list-style-type: none"> 1. Adopt a principled and adaptive framework for medical technology deployment in tribal areas 2. Build an ABHA id based Electronic Health Record (EHR) systems in tribal areas that allows smooth transition between different states/districts while maintaining a continuous digital medical history.

Notes: Time horizons are indicative and intended for planning and monitoring. Items are numbered within each phase for readability; numbering does not imply priority order. "ABHA-based EHR" refers to interoperable electronic health records linked to ABHA ID to support continuity of care across districts and states.

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Table 10.5: Health Financing (WHO Pillar 5): Phased Recommendations for Strengthening Tribal Health Financing in Maharashtra.

Health Financing (WHO Pillar 5): Phased Recommendations for Strengthening Tribal Health Financing in Maharashtra

Immediate (0–1 year), Medium term (1–3 years), and Long term (3–5 years) financing actions to improve adequacy, predictability, equity, and financial protection for tribal populations.

Immediate (0–1 year)	Medium term (1–3 years)	Long term (3–5 years)
1. Rebalance Tribal Sub Plan Spending to Strengthen Core Health Systems	1. Ensure Predictable Fund Flow and Strengthen Execution Capacity	1. Create a State Tribal Health Financing Committee for equity audits and sub-plan enforcement.
2. Adopt a Phased Strategy to Expand Public Health Spending and Protect Tribal Health Allocations	2. Prioritise health linked connectivity in tribal areas through a mission mode approach	2. Consolidate all fragmented funding streams (State Health Budget, Tribal Sub-Plan, and National Health Mission) into a single, unified health authority for tribal areas to reduce administrative overhead and improve coverage.
3. Earmark at least 10 percent of state health expenditure exclusively for tribal health and improve fund flow timeliness.	3. Link outcomes to allocations and enable adaptive financing	
4. Create a District Tribal Health Action Fund in each tribal-majority district for flexible local financing	4. Establish a system to regularly review utilization of MPJAY / PMJAY per 1000 population and explore opportunities for a continuous improvement.	
5. Conduct a Universal Insurance Coverage Drive to enroll all eligible tribal families in MJPJAY/PMJAY.	5. Train ASHA and frontline workers on financial literacy for out-of-pocket reduction in tribal households.	

Notes: Time horizons are indicative and intended for planning and monitoring. Items are numbered within each phase for readability; numbering does not imply priority order. "MPJAY/PMJAY" refers to state and national health insurance schemes; regular utilization review per 1,000 population is proposed to strengthen access and reduce out-of-pocket expenditure for tribal households.

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Table 10.6: Leadership & Governance (WHO Pillar 6): Phased Recommendations for Strengthening Tribal Health Governance in Maharashtra.

Leadership & Governance (WHO Pillar 6): Phased Recommendations for Strengthening Tribal Health Governance in Maharashtra

Immediate (0–1 year), Medium term (1–3 years), and Long term (3–5 years) actions to institutionalize governance, accountability, coordination, and community ownership for tribal health.

Immediate (0–1 year)	Medium term (1–3 years)	Long term (3–5 years)
<ol style="list-style-type: none"> 1. Enact a dedicated Maharashtra State Tribal Health Policy with defined targets. 2. Establish a permanent Tribal Health Cell within the Public Health Department. 3. Institute a Tribal Health Conclave as a regular forum anchored by the Public Health Department. 4. Streamlining and Tracking Administrative Approvals for Tribal Health Interventions 5. Establish weekly coordination meetings between state and district health officials focused on tribal health. 6. Operationalize a 24x7 Tribal Health Command Center at state level to monitor services and logistics. 	<ol style="list-style-type: none"> 1. Outcome Led Review Architecture through Gabha Samiti Meetings and the CM's Social Sector War Room 2. Rebuilding VHSND and AAA as the Backbone of Maternal and Child Health Governance 3. Strengthening Panchayat Ownership of Health Outcomes through Peer Learning and Recognition 4. Strengthen health communication and community engagement in tribal languages and contexts. 5. Incorporate tribal health planning into Panchayati Raj and local governance processes. 	<ol style="list-style-type: none"> 1. Ensure sustainability by embedding successful tribal health pilots into routine systems and scaling them up. 2. Foster inter-sectoral partnerships and social determinants action through high-level tribal development mechanisms.

Notes: Time horizons are indicative and intended for planning and monitoring. Items are numbered within each phase for readability; numbering does not imply priority order. "CM's Social Sector War Room" refers to the state's outcome-based review mechanism at CMO level for cross-departmental project monitoring.
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The 20 Percent That Will Change the 80 Percent: High Leverage Interventions for Tribal Public Health

Public health systems in tribal regions are often characterized not by an absence of intent, but by a diffusion of effort. Over time, incremental additions to programmes, reporting formats, reviews, and committees create a landscape where activity is widespread, yet outcomes remain uneven. In such contexts, the critical question is not what more should be done, but what must be done with greater focus.

This chapter responds to that question within the remit of the public health system, reflecting the mandate and institutional location of the Tribal Health Committee. While tribal health outcomes are shaped by nutrition, livelihoods, water, sanitation, education, and broader social conditions, the interventions identified here are those that can be initiated, stewarded, and institutionalized within the public health system and its immediate points of convergence.

Over the past decade, sustained effort has led to tangible improvements in several health indicators in tribal areas. Reductions in maternal and child mortality, improved immunization coverage, gains in disease control, and expanded service infrastructure reflect the cumulative impact of focused

programmes and administrative attention. These gains are real and must be acknowledged.

At the same time, the Committee's field engagement suggests that improvements in outcomes have not always translated into a comparable shift in how the system is experienced by tribal communities. For many families, interaction with public health services remains intermittent and event driven, often activated during illness or crisis rather than sustained through care. While services may reach households, continuity, predictability, and follow through are not always assured. Over time, this shapes trust, not as an abstract sentiment, but as a practical judgment about whether the system will respond when it matters most.

The interventions set out in this chapter are drawn from this gap between delivery and experience. They do not propose new schemes. Instead, they identify a small number of structural levers within the public health system where focused action can alter outcomes disproportionately. Together, they represent the 20 percent of public health action that can shape a large share of tribal health outcomes.

1. Establishing a Tribal Disaggregated Public Health Dataset

The absence of reliable tribal disaggregated data is not merely a technical gap. It is a governance limitation that affects planning, prioritization, and accountability across the system. Despite improvements in digital reporting, most health data continues to be reviewed at district or block level aggregates. In districts with mixed populations, this masks sharp intra district disparities and limits the ability of administrators to respond proportionately to tribal need.

The first high leverage intervention is therefore

the creation of a robust tribal disaggregated public health dataset. This dataset must operate at the level of block, village, and pada, and be aligned with tribal geographies, seasonal migration patterns, and service delivery realities. It must function as a living system that informs routine planning and review, rather than as a onetime enumeration exercise.

Within one year of the release of this report, the Tribal Health Cell constituted thereafter should publish a comprehensive Tribal Health

Report for Maharashtra, based on available disaggregated public health data. This report should serve both as a baseline and as an institutional signal of sustained focus.

In parallel, the Tribal Health Cell should initiate phased digitization of core public health registers, including antenatal, postnatal, child health, and disease surveillance records, beginning with districts with a high tribal burden. Where existing registers do not adequately capture tribal identifiers or relevant contextual variables,

additional columns should be introduced in a standardized manner.

An analytical unit within the Tribal Health Cell should be tasked with moving beyond descriptive reporting. Its role should be to identify inter-tribe and intra-tribe patterns, generate differentiated risk profiles, and inform tailored strategies rather than uniform responses. The purpose of disaggregated data is not visibility alone, but its translation into differentiated and actionable insight.

2. Strengthening VHSND and AAA Convergence as the Centrepiece of Maternal and Child Health Care

In tribal areas, Village Health, Sanitation and Nutrition Days are not merely another service delivery platform. They are the primary site at which the public health system becomes visible, accessible, and intelligible to women and families. For maternal and child health in particular, VHSNDs represent the point where pregnancy is first acknowledged by the system, risk is first identified, and continuity of care either begins or breaks.

Despite this centrality, VHSNDs have gradually been reduced in administrative practice to a reporting variable rather than treated as the foundation of community-based maternal and child health care. As portals, dashboards, and facility-level indicators have expanded, the quality and functioning of VHSNDs has become easier to overlook, even though their performance continues to shape outcomes at the community level.

The Committee's field observations indicate that where VHSNDs function well, improvements are seen across antenatal care, institutional delivery, immunization, nutrition, and postnatal follow-up. Where VHSNDs are irregular or poorly attended, even well-designed programmes struggle to translate into outcomes. This is not incidental. VHSNDs are the only platform where preventive, promotive, and curative elements of maternal

and child health intersect at the community level.

At the heart of effective VHSNDs lies genuine convergence between ASHA, Anganwadi worker, and ANM. These three functionaries do not represent parallel service providers. Together, they constitute the frontline maternal and child health system. The ASHA's proximity to households, the Anganwadi worker's sustained engagement with nutrition and early childhood, and the ANM's clinical role collectively create a comprehensive picture of vulnerability that no single cadre can generate alone.

AAA convergence is therefore not an administrative ideal but a clinical necessity. In tribal contexts, where access to facilities is constrained and trust is built slowly, the absence of convergence fragments risk and weakens follow-up. When convergence functions well, care becomes continuous rather than episodic.

To restore VHSNDs to their intended role, quality must be monitored as seriously as coverage. Existing digital platforms such as UWIN should be used not only to record whether sessions occurred, but to flag sessions that did not commence, were delayed, or were poorly attended. Block and district reviews should explicitly examine the



reasons for such lapses, including staffing gaps, logistical constraints, competing demands, or lack of local leadership engagement.

VHSND functioning must be embedded into routine governance. Indicators related to VHSND quality should form part of monthly review templates and be discussed consistently in weekly and monthly meetings. Regular meetings involving the Sarpanch and AAA functionaries should be institutionalized, recognizing the role of local leadership in mobilization, legitimacy, and follow up.

Equally critical is the quality of primary data generated at VHSNDs. Over time, the accumulation of multiple registers, formats, and parallel reporting requirements has increased the documentation burden on frontline workers without necessarily improving data quality. This has often resulted in duplication, retrospective filling, and weakened accuracy, which in turn compromises the value of digital systems and dashboards.

If VHSNDs are to serve as the centre-point of maternal and child health care, primary data captured at this level must be accurate, timely, and meaningful. This requires deliberate

rationalization and reduction of registers used by ASHAs, Anganwadi workers, and ANMs, with clarity on the core data set that must be captured at the point of care. Strengthening analytics without fixing primary data quality risks generating volume without insight.

Most importantly, VHSNDs must move beyond identification to tracking. Every high-risk pregnancy identified at a VHSND should enter a defined tracking pathway that ensures follow up through antenatal visits, referral when required, delivery, and the postnatal period. This requires adequate staffing. Improving VHSND quality without addressing vacancies in tribal areas is not feasible. Staffing decisions must align with service intensity and geographic vulnerability rather than population averages alone.

In an era increasingly dominated by portals and monitoring narratives, the centrality of VHSNDs can easily be pushed to the margins. For tribal maternal and child health, this would be a serious error. Protecting the quality of VHSNDs and strengthening AAA convergence remains one of the most powerful levers available to the public health system.

3. Operationalizing Health Action Centres for Continuity of Care

A persistent structural constraint in tribal public health delivery is the lack of continuity across the care pathway. Pregnancies are registered but not consistently followed, referrals are made but not always completed, and high risk cases move across facilities without a single point of accountability. These limitations are amplified by migration, distance, and constrained access to higher facilities.

Health Action Centres offer a way to address this gap by functioning as integrative operational hubs. While outbound calls are a visible component, the core value of a Health Action Centre lies in its ability to integrate information across programmes and ensure follow through.

A phased approach is recommended. In the short term, district level Health Action Centres should be established in high tribal burden districts, with Nandurbar serving as a reference district for design and implementation. Existing models, including continuity of care systems under maternal health initiatives in Madhya Pradesh, should be studied and adapted.

Health Action Centres should be supported by a backend tele platform that enables case escalation to referral facilities, tracks response timelines, and records outcomes. The emphasis should be on integration with existing programmes rather than duplication. Over time, a state level Health Action Centre may be considered for oversight, standardization, and cross district learning.

By providing a defined locus of follow up, Health Action Centres strengthen continuity and accountability. For families, the system

begins to feel present beyond the point of contact.

4. Creating a Structured Capacity Building Calendar Across Cadres

Capacity building in tribal areas has often been fragmented and episodic. Training sessions are frequent but uneven, digital modules substitute for practical learning, and knowledge is rarely reinforced across cadres. Within four months of the release of this report, a structured annual capacity building calendar should be prepared for all public health cadres operating in tribal areas. This period, equivalent to approximately one hundred working days, is both feasible and appropriate.

Each cadre should be mapped against what they are expected to learn over a year, who will teach, where training will occur, and when learning will be reinforced. The State Institute of Health and Family Welfare should function as the nodal hub, with decentralized delivery

through district hospitals, rural hospitals, medical colleges, and experienced field practitioners.

The focus must be on substantive, practice-oriented training rather than exclusive reliance on online portals. District level infrastructure should be actively leveraged. For example, ANMs can be periodically attached to rural or district hospitals for hands on exposure, and AAA staff should be trained together to reinforce convergence in practice rather than only in concept.

A predictable calendar builds rhythm, reduces cognitive overload, and restores institutional memory in settings characterized by frequent staff turnover.

5. Reorienting Health Communication Through Indigenous Language and Ashramshalas

Despite improvements in service delivery, trust in the public health system remains uneven in tribal areas. One contributing factor is that health communication has not evolved with the same seriousness as programme design. Information, education, and communication activities have often been treated as supplementary rather than as core infrastructure.

A deliberate reorientation of health communication, grounded in indigenous languages, local narratives, and familiar cultural contexts, is therefore essential. This requires moving beyond translation towards original design.

Structured partnerships should be developed with film institutes, communication schools, and creative professionals to produce high

quality content rooted in tribal contexts. The use of tribal brand ambassadors and culturally grounded scripts can help reposition public health messages as familiar rather than external.

Ashramshalas should be prioritized as key sites for dissemination and reinforcement. As stable institutions within otherwise mobile geographies, they offer sustained opportunities for shaping norms over time. Close collaboration with the Tribal Development Department will be essential to ensure coverage and continuity.

When children engage with culturally aligned health messages, they often carry these messages into their families. Over time, this contributes to a gradual rebuilding of trust that no single programme can achieve.



Conclusion

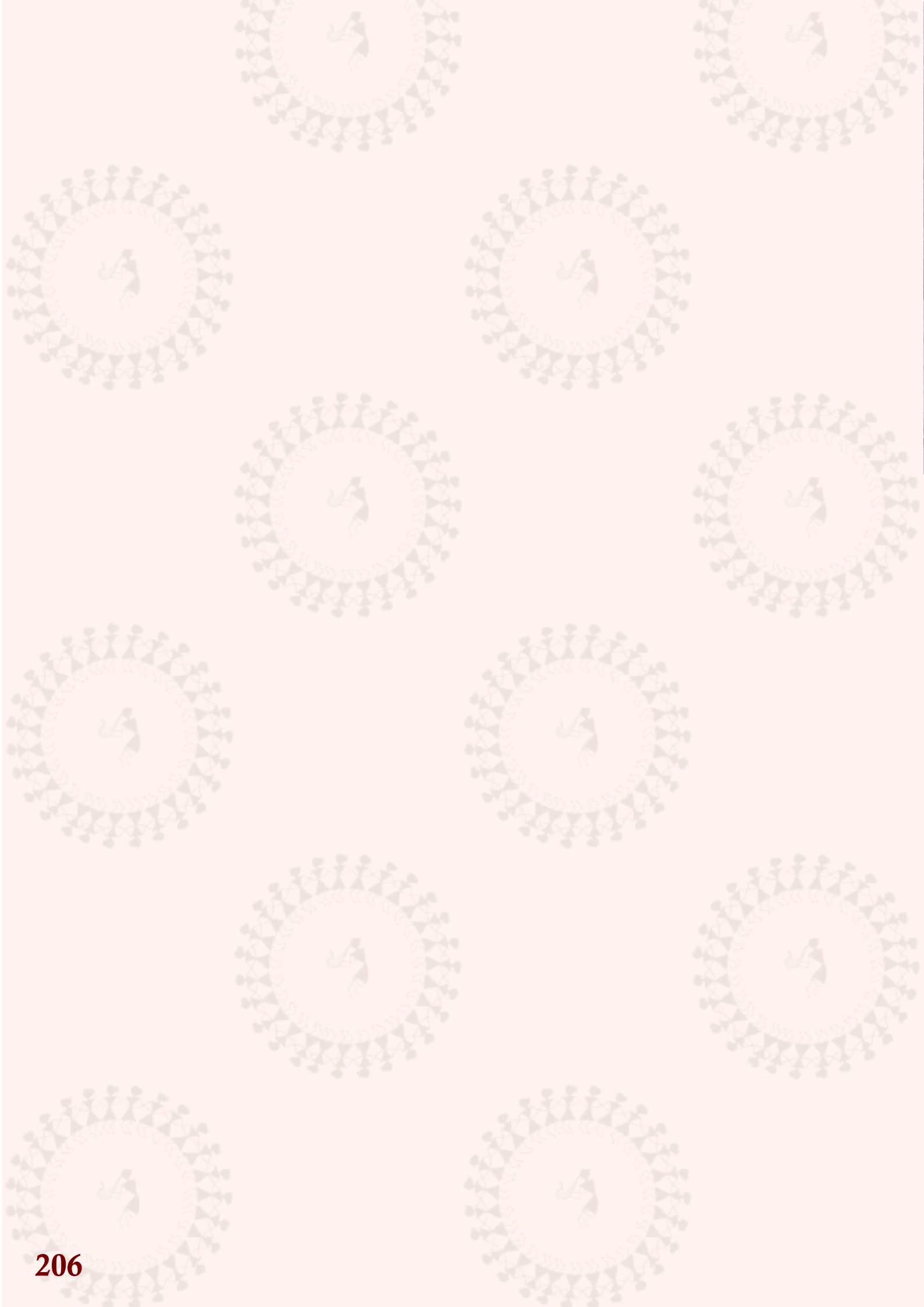
The interventions outlined in this chapter are deliberately selective. Each addresses a structural weakness that limits the effectiveness of multiple public health programmes simultaneously.

Together, they shift the system from diffusion

to focus, from episodic contact to continuity, and from formal delivery to lived credibility. For tribal public health systems, this shift is essential not only to sustain gains in indicators, but to rebuild trust in the system itself.

Socio-Economic Determinants of Tribal Health – Nutrition, Sanitation and Water, Education, Livelihood







✧ *Stories from Field*

An Act of Selfless Courage

Mother Carried Through Dense Forest in a Makeshift Cloth Sling

Melghat, Amravati

Deep inside the forests of Melghat in Dharni taluka of Amravati district, where narrow mud paths replace roads and mobile networks disappear into the hills, a quiet tribal hamlet faced a life-threatening emergency. It was the kind of place where reaching a hospital is not a matter of minutes, but of endurance. One evening, a pregnant woman from the village suddenly went into labour. Her pains intensified rapidly, and the family grew anxious. No vehicle could reach the settlement: the terrain was too rough, the paths too narrow, and recent conditions had made the forest tracks slippery and dangerous. Waiting was not an option; every passing minute increased the risk to both mother and child. When the message reached the local health team, they did not hesitate. Health workers, including Omkar Aundhe and his colleagues, immediately set out on foot toward the remote hamlet. Darkness was beginning to settle over the forest, and the path ahead wound through thick trees, uneven slopes, and a seasonal stream that had to be crossed carefully. On reaching the village and assessing the woman's condition, the team realized she needed urgent institutional care. But with no stretcher and no road access, they had to rely on ingenuity and sheer determination. They tied together sturdy bedsheets to create a makeshift cloth sling, gently placing the expectant mother inside. Then, taking turns, they lifted the sling onto their shoulders. What followed was a long and physically exhausting journey through the forest. The group moved carefully along rocky paths, slippery mud, and steep patches of land. At one point, they had to wade through a flowing stream, ensuring the sling stayed steady and the woman remained safe.

Every step required balance, strength, and constant reassurance to the frightened mother. Despite the darkness and difficult terrain, the health workers did not slow down. Their only focus was reaching a point where further transport could be arranged. After several kilometres of walking, they finally emerged from the forested stretch and managed to transfer her onward to a health facility. Thanks to their timely action and unwavering commitment, the woman received the medical care she needed. Both mother and newborn were safe — a happy outcome made possible not by infrastructure, but by human dedication. In the remote corners of Amravati's Melghat region, where geography often challenges survival itself, this incident stands as a powerful reminder: even where roads do not reach, the commitment of frontline health workers does.



Public health outcomes in Maharashtra's tribal regions are shaped less by episodic contact with the health system and more by the structural conditions in which households live, work, learn, and raise children. Nutrition, sanitation and water, education, and livelihoods function as foundational determinants that influence exposure to disease, the capacity to absorb and utilise food, care seeking behaviour, and resilience across the life course. Evidence drawn from multiple sources, including the National Family Health Survey, Census of India, UDISE education statistics, multidimensional poverty estimates, and administrative data from ICDS, health services, and rural development programmes, points to persistent and overlapping deficits across these domains among Scheduled Tribe populations in Maharashtra.

Data from NFHS show that Scheduled Tribe households continue to lag behind other social groups in access to basic amenities such as toilets, safe drinking water, and clean cooking fuel, with gaps most pronounced in rural and remote geographies. These infrastructural constraints are closely linked to higher exposure to enteric infections, parasitic disease, and skin conditions, which in turn undermine nutritional status and child survival. Despite improvements in programme coverage over time, NFHS and allied datasets continue to show a high burden of anaemia among children and women in tribal communities, along with poorer child growth outcomes, indicating that access to services has not translated into proportional biological gains.

Census and poverty related datasets add further context. Tribal dominated districts in Maharashtra overlap substantially with areas of high multidimensional poverty, characterised by concurrent deprivation in income, housing quality, education, sanitation, and access to services. These deprivations reinforce one another. Low and unstable incomes constrain diet diversity and healthcare utilisation. Inadequate water and sanitation increase disease burden and care demands. Educational disadvantage limits health literacy, employment

opportunities, and intergenerational mobility. Administrative data from ICDS and health programmes suggest that while delivery platforms exist, gaps remain in coverage, quality, continuity, and responsiveness, particularly in dispersed habitations and in areas with high service load.

Education emerges as a critical but often underestimated determinant of health. While primary school enrolment among tribal children is relatively high, retention declines sharply during adolescence, especially among girls. UDISE statistics and NFHS indicators on school attendance point to significant attrition at the secondary and higher secondary levels. Distance to schools, lack of transport, economic pressures, seasonal migration, and early marriage contribute to this drop off. These educational gaps have direct health consequences, influencing age at marriage, fertility patterns, maternal nutrition, uptake of preventive services, and the ability of households to navigate health and welfare systems that increasingly rely on written communication and procedural compliance.

Livelihood insecurity further compounds these vulnerabilities. Data from rural employment programmes and poverty assessments show that tribal households face high income volatility due to dependence on seasonal agriculture, forest-based livelihoods, and casual labour. This volatility directly affects food security, migration patterns, and continuity of care. Where employment guarantee programmes function effectively and asset creation is aligned with local needs, they stabilise consumption, reduce distress migration, and support investment in nutrition, sanitation, and education. Where these systems falter, health risks accumulate.

Taken together, these data sources converge on a clear conclusion. Health outcomes in tribal Maharashtra are not constrained primarily by the absence of schemes, but by a misalignment between programme design and the lived realities of tribal geographies. Standard delivery models struggle in contexts



of dispersed settlements, hilly and forested terrain, and seasonal mobility. Gains in one domain are frequently undermined by deficits in another, such as nutrition interventions weakened by unsafe water, or sanitation investments rendered ineffective by lack of water access and household time poverty.

This chapter examines nutrition, sanitation and water, education, and livelihoods as interlinked determinants of tribal health. Rather than treating them as parallel sectors, it explores how they interact to shape vulnerability and

resilience across the life cycle. Drawing on survey data, administrative records, and field level insights, the chapter identifies where current approaches fall short and where targeted, design focused reforms can yield durable improvements. The emphasis is on tightening delivery, strengthening quality and accountability, and adapting systems to tribal contexts, with the objective of reducing avoidable illness and creating the conditions for sustained health gains.

Theme 11.1 Nutrition

Chapter 2 outlines the nutritional challenges faced by tribal communities in Maharashtra. This section therefore focuses on how nutrition delivery must be reorganized so that existing interventions translate into sustained improvements, particularly in remote and dispersed tribal settings.

Malnutrition in tribal areas is sustained by three interacting constraints. Diet quality remains poor despite food availability (which in itself can be inadequate/poor many times). Nutrition support does not respond quickly enough when vulnerability is first identified. Delivery platforms are stretched beyond their functional capacity in remote and dispersed settings. Addressing these constraints requires attention to everyday feeding practices, quality assurance of nutrition inputs, and institutional responsiveness, rather than expansion of schemes alone.

Recommendation 1

Reorient nutrition delivery towards diet quality and protein adequacy

The most fundamental shift required is to move from a calorie centric approach to one that prioritizes diet quality, especially protein and micronutrient adequacy. Persistent anemia, wasting, and growth faltering cannot be corrected through cereal heavy diets or energy supplementation alone.

Where eggs are provided, consistency, quantity, and regular consumption are critical. Where eggs are not feasible, nutritionally appropriate alternatives must be used. Bananas should not be treated as a substitute for protein. Milk, curd, soya milk, pulses, groundnuts, and millets offer meaningful nutritional value and should be explicitly incorporated into supplementary feeding design with defined standards. Nutrition planning should also account for local availability, linking feeding strategies with local supply systems and livelihoods so that dietary improvements are sustained beyond programme feeding.

Recommendation 2

Issue a State Nutrition Policy to anchor all public feeding systems

Maharashtra currently operates multiple nutrition related programmes without a single policy framework that defines nutritional adequacy across the life cycle. In the absence of such a framework, public meals remain largely cereal heavy and administratively driven rather than biologically sufficient.

The state should issue a State Nutrition Policy that defines dietary requirements by age group, with explicit standards for protein, micronutrients, and dietary diversity across Anganwadis, schools, hostels, PDS, and maternal nutrition programmes. Existing Government Resolutions already address

several of these aspects and should be consolidated and tightened rather than duplicated. A clear policy anchor will allow consistent menu design, quality monitoring, and accountability for nutritional outcomes rather than food distribution alone. This policy should ideally be driven by the Public Health department and include a wide spectrum of nutrition across all age groups.

Recommendation 3

Reassess the design and quality of Take-Home Rations

Concerns persist regarding the quality, acceptability, and utilization of Take-Home Rations. Premixed preparations are often poorly consumed, shared within households, or prepared inconsistently. Taste fatigue and lack of familiarity reduce their effectiveness, particularly among nutritionally vulnerable groups.

The state should reassess whether highly processed premixed rations are the most effective mechanism for supplementary nutrition. An alternative approach is to provide simpler, high protein foods such as fortified millets, pulses, groundnuts, or blended grains that are culturally familiar and easier to integrate into regular meals. Such foods are more transparent in composition, easier to quality check, and more likely to increase actual protein intake. Delivery may occur through ICDS or be routed through PDS where appropriate, with defined quantities and quality standards.

Recommendation 4

Treat EDNF strictly as a medical nutrition intervention

Energy Dense Nutrient Food plays an important role in reducing mortality among children with severe acute malnutrition when used correctly. Its effectiveness, however, depends on quality, acceptability, and disciplined protocol adherence.

Field interactions indicate that some children do not consume EDNF adequately due to taste

preferences, unclear labelling, and high perceived sweetness. In addition, understanding and consistent application of appetite testing and referral protocols vary among frontline staff.

The state should strengthen the governance of EDNF as a medical product. This includes clear labelling of nutritional composition and usage instructions in local language, periodic review of formulation including sugar content and palatability, and regular refresher training of frontline workers on appetite testing, referral criteria, and follow up counselling. EDNF should remain a short-term clinical bridge, with a clear transition to household diets once the acute phase is resolved.

Recommendation 5

Reduce structural exclusion and overburdening within ICDS

Nutrition outcomes cannot improve if eligible beneficiaries remain partially or inconsistently covered. In tribal areas, coverage gaps arise because Anganwadi catchments have not kept pace with population changes, settlement expansion, and documentation challenges linked to migration. At the same time, many Anganwadi Centres are functionally overburdened, limiting the quality of counselling, growth monitoring, and follow-up.

The state should undertake habitation wise rationalization of Anganwadi coverage in tribal blocks at regular intervals (3-5 years). Additional Anganwadi Centres or mini centres should be sanctioned where beneficiary load exceeds functional capacity. Interim enrolment mechanisms should be enabled for children lacking immediately accessible birth certificates, using locally verifiable pathways, so that nutrition services are not delayed for administrative reasons.

Recommendation 6

Adapt Anganwadi delivery for dispersed habitations and early childcare needs

In areas with scattered padas, static centre-based models do not provide adequate reach,



particularly for children in the six months to three years age group, which represents the most critical window for nutrition intervention. Expecting families to travel long distances daily is neither realistic nor equitable.

The state should pilot flexible delivery models such as rotating or satellite Anganwadis operating on fixed schedules across habitations. Where appropriate, services may be delivered from community spaces or volunteer households, ensuring predictable access to feeding, growth monitoring, and counselling. Strengthening early childcare through such models can support working mothers and reduce nutrition risk during the most vulnerable age period.

Recommendation 7

Reaffirm Anganwadis as early childhood institutions

Anganwadis are not merely food distribution points but foundational early childhood institutions. Their functioning should reflect this role.

The state should review Anganwadi timings and daily schedules, particularly in high burden tribal areas. Extending centre hours to cover the working day, with home visits scheduled separately, can improve feeding regularity, early learning, and caregiver engagement. Recognizing Anganwadi workers as early childhood educators reinforces the importance of care and education alongside nutrition. Practices such as supervised rest or afternoon naps contribute meaningfully to child wellbeing and institutional stability.

Recommendation 8

Improve measurement quality and credibility of nutrition data

Reliable measurement is essential for nutrition governance. Field observations revealed widespread use of substandard weighing instruments, absence of systematic calibration, and lack of clear replacement protocols. These weaknesses contribute to large divergences between routine reporting systems and survey

estimates, with limited understanding of underlying causes.

The state should standardize anthropometric equipment, institute periodic calibration schedules, and establish clear maintenance and replacement protocols. Independent third party audits of measurement practices should be conducted periodically to restore confidence in routine nutrition data. Joint screening exercises are useful but must be supported by reliable instruments and measurement discipline to be meaningful.

Recommendation 9

Use Community Kitchen models

Centralized or cluster level food preparation models offer opportunities to improve quality control, fortification, and regulation of ingredients such as sugar and micronutrients, compared to fragmented vendor driven systems.

The state should examine where such models are appropriate in tribal areas, particularly in blocks with sufficient population density. Community kitchens or SHG led preparation at block or cluster level can deliver nutritionally structured meals at comparable cost while improving acceptability, transparency, and local employment. Such models should be guided by the State Nutrition Policy and supported by regular quality audits.

Recommendation 10

Focus intensified action on high burden villages

Malnutrition is concentrated in specific villages rather than evenly distributed. Each tribal and aspirational district should identify a limited number of high burden villages (50-100) and implement a focused multiyear lifecycle approach covering pregnancy, early childhood, and adolescence. Concentrated effort allows closer supervision, better convergence, and clearer accountability for outcomes.

Recommendation 11

Improve operational responsiveness of Take-

Home Ration for New Registrations

At present, demand for Take Home Rations is typically collected every fifty days. While this cycle functions for continuing beneficiaries, newly registered pregnant women often have to wait until the next cycle before receiving supplementary nutrition, resulting in avoidable delays during early gestation.

The state should introduce an operational mechanism that allows immediate inclusion of newly registered pregnant women into Take Home Ration distribution without waiting for the next fifty-day cycle. This is a simple administrative correction with meaningful potential impact.

Recommendation 12

Use community engagement models such as ‘Participatory Learning and Action’ (PLA) to enhance community awareness and participation

Current IEC efforts in tribal areas often rely on top-down messaging, which can fail to account for local beliefs, cultural dietary practices, or resource constraints. To shift from passive reception to active ownership, the state may consider institutionalizing Participatory Learning and Action (PLA) meetings which can transform the community from beneficiaries into active partners in the nutrition ecosystem. Positive deviance can also be institutionalized by the use of ‘buddy mothers’ model where mothers can actually learn from mothers of the same socio-economic strata as the same eating groups (vegetarian/eggetarian/nonvegetarians). There is also a need to connect multiple institutions’ messaging – NRC discharge summaries, for example, are not standardized.

Similarly, SNCU children are not tracked for proper nutritional tracking once back home.

Behavior change regarding breastfeeding, complementary feeding, and hygiene is significantly more sustainable with community participation in monitoring nutrition and health data. Although many abhiyaans are run for community participations, it might help to use behaviour communication change principles more strategically, especially in the high burden clusters.

Recommendation 13

Monitor and address nutritional requirements among 6 months to 3-year-old children through a creche model

The period between 6 months and 3 years is the critical ‘window of wasting’ where malnutrition onset is most rapid due to the cessation of exclusive breastfeeding and the introduction of solid foods. However, in many tribal habitations, the existing Anganwadi center is perceived primarily as a pre-school for older children (3-6 years).

Furthermore, tribal parents are often engaged in labor-intensive agriculture or daily wage work, forcing them to leave toddlers in the care of older siblings or bringing them to unsafe worksites where feeding schedules are disrupted. To reorganize delivery for this vulnerable cohort, the state must implement community-based Creches. These creches would provide a safe environment for 7-8 hours daily, ensuring supervised spot-feeding of nutrient-dense meals, timely hygiene, and psychosocial stimulation. This relieves the ‘time poverty’ of tribal mothers while ensuring the child receives the necessary calories and protein during the day.



Theme 11.2 Sanitation, Water, Livelihoods, and Education as Structural Determinants of Tribal Health

Sanitation, water, livelihoods, and education shape health outcomes in tribal areas through pathways that operate outside the health system. Maharashtra already has dedicated departments, flagship programmes, and substantial budgetary commitments in each of these domains. On paper, coverage indicators for drinking water, sanitation, and schooling show significant progress. Yet health outcomes in tribal areas continue to reflect persistent exposure to infection, undernutrition, and vulnerability.

This gap between programme coverage and lived conditions is not primarily a question of intent or scheme availability. It is a question of functionality, reliability, and convergence at the household and habitation level. This chapter therefore focuses on how the state can better identify where systems are not working as intended and target corrective action in a focused, evidence informed manner.

Recommendation 1

Move from scheme coverage to functionality assessment in tribal areas

Flagship programmes such as Jal Jeevan Mission and Swachh Bharat Mission report high coverage levels, including in tribal districts. However, these figures often do not capture whether water and sanitation facilities are functional, reliable, or usable on a daily basis.

The state should institute periodic third-party functionality assessments of water supply and sanitation facilities specifically in tribal areas. These assessments should be non-punitive and based on simple, standardized tools, such as ODK based surveys, administered to actual users including Anganwadi workers, school headmasters, hostel wardens, and health facility staff. The objective should be to capture year-round water availability, downtime,

distance to source, toilet usability, and basic maintenance status.

A dedicated sanitation and water functionality index for tribal areas may be developed, distinct from construction or connection-based metrics. This index can be used to prioritize corrective action rather than to rank or penalize districts.

Recommendation 2

Use data layering to identify high vulnerability geographies

Tribal health outcomes are not uniformly poor across all villages. They cluster spatially in areas with overlapping deficits in water reliability, sanitation, livelihoods, and access to services.

The state should use available datasets to identify such convergence zones. Digitization of household health registers through the Tribal Health Cell, combined with routine health outcomes such as malnutrition, anemia, and mortality, can be overlaid with sanitation and water functionality assessments and socio-economic indicators. With the forthcoming digital census, this capability will further improve.

Rather than spreading interventions thinly, the state should identify a limited set of high vulnerability villages or clusters in each tribal district and treat them as pilots for intensive, convergent action. These areas can also be prioritized for partnership with credible organizations experienced in water management, livelihoods, and community institutions.

Recommendation 3

Apply differentiated engineering and planning approaches for tribal terrain

Repeated investment in standardized water and

sanitation designs that are poorly suited to hilly and forested terrain has resulted in fragile infrastructure and recurring failures.

The state should formalize differentiated planning norms for tribal geographies. This may involve technical partnerships with academic institutions, engineering colleges, and organizations that have worked on gravity-based systems, terrain adapted storage, solar assisted pumping, and low water use sanitation designs. Proven solutions from within and outside the state should be documented and adapted rather than reinvented.

Early technical scrutiny at the planning stage should be prioritized to reduce life cycle costs and improve sustainability.

Recommendation 4

Address household air pollution as a neglected health determinant

During field visits, the Committee observed widespread reliance on firewood for cooking in tribal areas, with associated indoor smoke exposure. This remains a significant contributor to respiratory illness, eye irritation, and overall morbidity, particularly among women and children.

While schemes such as Ujjwala have expanded LPG access, sustained usage remains constrained by refill costs and supply reliability. The state should consider targeted, time bound refill support for tribal households, particularly in high vulnerability areas, combined with local distribution strengthening. Clean cooking should be treated as a public health intervention rather than a one-time asset transfer.

Recommendation 5

Treat livelihood security as a core health enabling intervention

Irregular livelihoods amplify health risk by forcing households to prioritize wage work over caregiving, sanitation, nutrition, and education. In tribal areas, employment programmes often

provide short term relief without creating durable assets.

The state should consider a focused intervention to ensure that all BPL households in tribal areas are able to access the full entitlement of one hundred and twenty-five days of work. Employment planning should prioritize asset creating works such as irrigation structures, water conservation, NABARD style wadis, and soil improvement, so that wage employment also strengthens long term income and food security.

Beyond wage labor, the state should strengthen pathways for agricultural entrepreneurship through Self Help Groups, Farmer Producer Companies, and allied activities such as storage, processing, and market access. Given the limited presence of large industry in forested areas, decentralized Agri-based enterprises are more appropriate. The state may explore innovation challenges or hackathons, in partnership with technical institutions, to develop locally relevant solutions.

Recommendation 6

Improve educational access to protect long term health outcomes

Education, particularly of girls, remains one of the strongest predictors of long-term health and social outcomes. In tribal areas, school dropout is often driven by distance, lack of higher secondary access, and safety concerns rather than lack of aspiration.

The state should aim to ensure that access to schooling up to Class 12 is available within a reasonable distance of every administrative circle or kendra in tribal areas. This may require relaxation of certain norms, innovative school clustering, or strengthened residential and transport solutions. Retention of girls in secondary and higher secondary education should be explicitly monitored as a determinant of health and wellbeing, not only as an education outcome.



Recommendation 7

Operationalize convergence rather than creating new schemes

Sanitation, water, livelihoods, and education interventions already exist but are often planned and reviewed in silos. The primary gap lies in convergence at the village and household level.

The state should mandate that high

vulnerability villages identified through data layering are taken up for convergent planning across departments, with clear sequencing of water, sanitation, livelihood, and education interventions. Partnerships with credible organizations may be prioritized in these locations to support implementation and community engagement. Success in these pilots should inform scale up rather than launching new schemes.

Conclusion

Health outcomes in tribal areas cannot improve sustainably unless the conditions in which people live, work, and study are addressed with the same seriousness as nutrition and healthcare. Maharashtra already has the institutional architecture and fiscal instruments to do this. What is required now is sharper

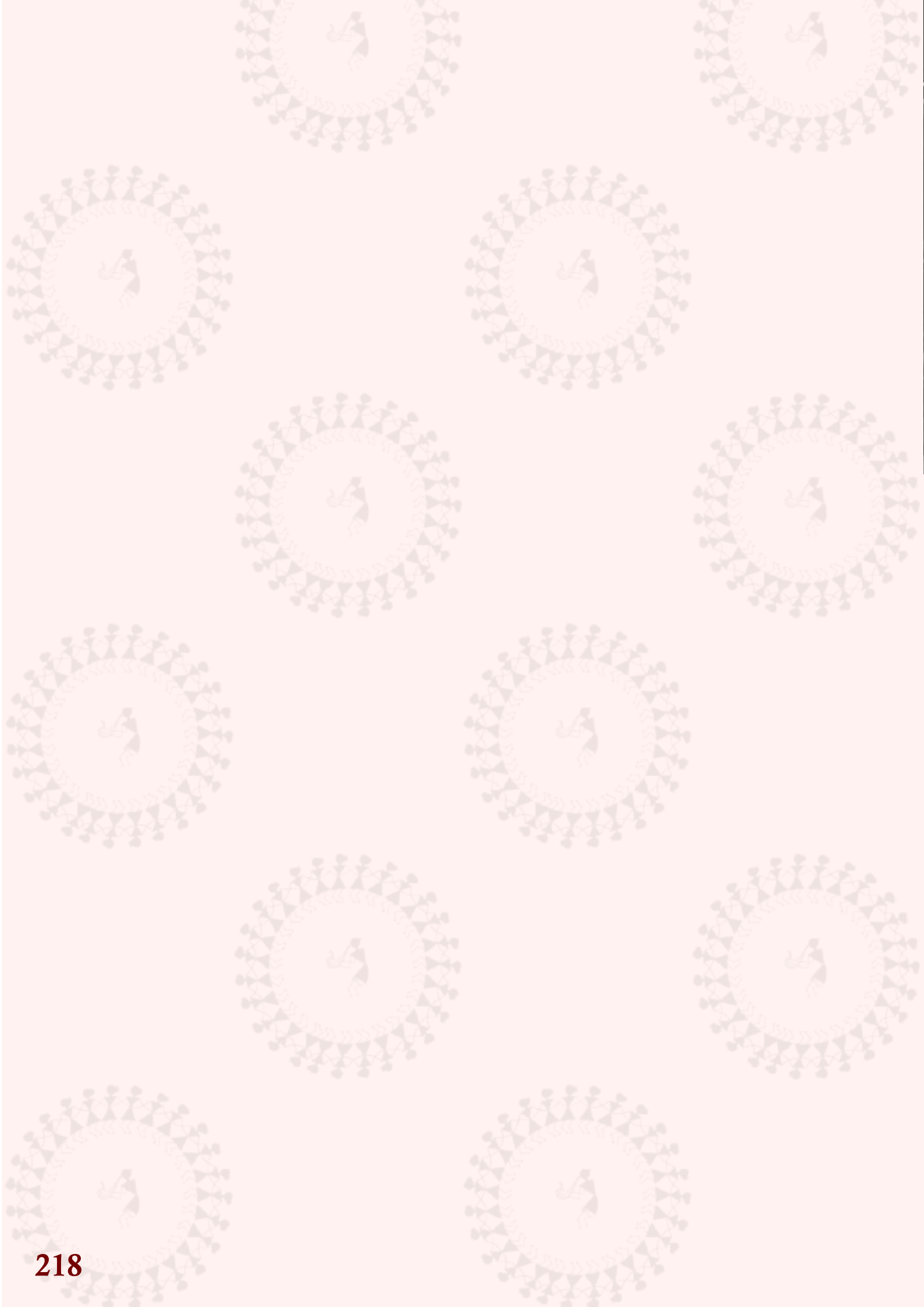
diagnosis, honest measurement of functionality, and disciplined convergence in the most vulnerable geographies. Done well, this approach can convert existing investments into lasting health gains rather than repeated compensatory interventions.

12

Public Health First: Best Practices for Tribal Health



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✧ *Stories from Field*

Holding the Line

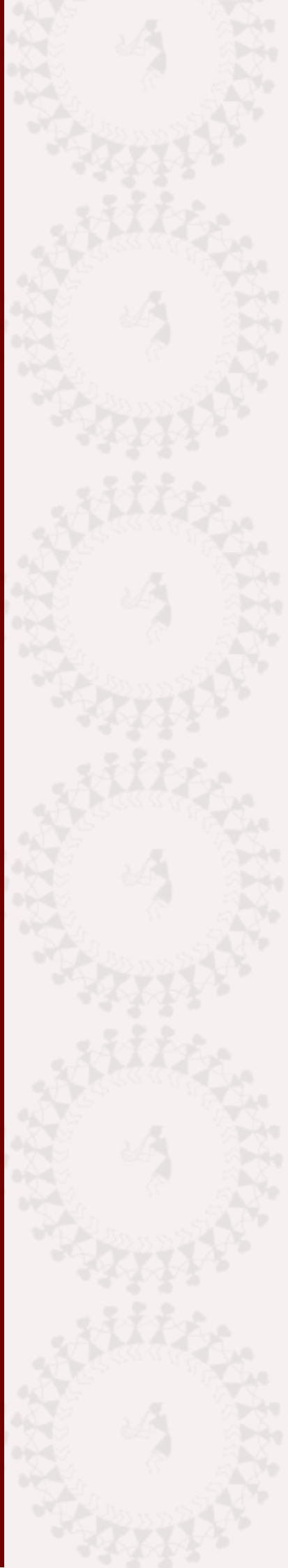
Frontline reassurance and follow up stabilise a mother after sudden pregnancy loss

Kalwan, Nashik

Note: For the purpose of confidentiality and privacy, the name of the patient has been changed.

On an evening under PHC Navi Bej in Kalwan taluka of Nashik district, a distress call was received from the sub centre area of Navi Bhendi. A five-month pregnant woman had suffered a sudden miscarriage, triggering panic and confusion within the household. At around 6:45 pm, the information was relayed to the health system. Immediate advice was given to call the 108-ambulance service. However, the woman's relatives were not in a condition to listen or act on instructions, overwhelmed by the situation. The matter was shared on the PHC group for prompt coordination. Although the ANM from Bhendi had suffered an injury the previous day due to a fall and was in pain, the seriousness of the situation prompted immediate field action. She coordinated with the ASHA worker and ensured that a visit was made to the woman's home without delay. The ASHA worker reached the house, conducted a detailed enquiry, counselled the woman and her family, provided reassurance, and facilitated basic medical support. Although the family remained reluctant to shift the woman to a health facility, her condition was closely assessed and found to be stable. This update was promptly communicated to the Medical Officer. The situation was managed through calm counselling, presence, and follow up rather than forceful referral. By the end of the visit, anxiety had reduced and the family was reassured. This incident reflects a quieter but equally important dimension of frontline health work. Even on holidays, and even when injured, ANMs and ASHA workers step in to

stabilise situations, offer clarity in moments of distress, and ensure that no mother is left without support.



Maharashtra has made substantial progress in public health outcomes over recent decades. Infant and maternal mortality have declined, immunisation coverage has improved, and access to institutional and primary healthcare services has expanded across much of the state. These gains reflect sustained investments in public health infrastructure, frontline health workers, referral systems, and programme implementation, and they form the foundation on which current tribal health strategies are being advanced.

The preceding chapters of this report have examined the specific health status, system gaps, and priority actions required to address inequities faced by Scheduled Tribe communities. That analysis and the recommendations that follow from it establish the direction for Maharashtra's tribal health response. This final chapter does not revisit the diagnosis or restate recommended actions. Instead, it serves a different purpose.

The chapter brings together a set of best practices drawn from across India that have been implemented in tribal or similarly hard to reach contexts and have demonstrably improved public health service delivery or

outcomes. The focus is on practices that moved beyond intent and pilots to sustained implementation, and that altered how the health system functioned on the ground. These are not scheme descriptions or programmatic summaries. They are operating approaches that addressed concrete delivery problems such as limited reach, weak continuity of care, delays in treatment and referral, unreliable service availability, or low community trust.

The practices documented here draw on experiences from multiple states including Kerala, Tamil Nadu, Odisha, Gujarat, Telangana, Chhattisgarh and comparable settings. Attention is given to which elements of these practices are plausibly transferable to Maharashtra's tribal districts and which are context specific.

Read together, these examples provide a practical complement to the recommendations outlined earlier in the report. They offer Maharashtra a curated set of implemented approaches that illustrate how similar challenges have been addressed elsewhere, and that can inform adaptation, design choices, and sequencing as the state moves from policy intent to execution in tribal health.

Theme A Reaching the Unreached: Decentralisation, Continuity, and Trust in Remote Tribal Areas

In tribal and geographically remote regions, barriers to healthcare extend beyond distance alone. Uncertainty about service availability, lack of continuity, and weak institutional presence often shape how communities experience the health system. Several Indian states have addressed these challenges by decentralising service delivery and embedding outreach into routine public health operations. [1] While the specific delivery mechanisms varied, the common thread across successful initiatives was predictable service presence, repeated contact, and clear linkage to the

formal health system.[2]

One such approach was implemented in Chhattisgarh through the Mukhyamantri Haat Bazaar Clinic programme. The initiative decentralised primary healthcare delivery by situating medical teams at weekly haat bazaars, which function as regular congregation points for populations living across scattered hamlets. [3] Clinics were held on fixed market days, with the same locations and timings each week. Teams comprising a doctor, mid-level provider, nurse, pharmacist, and laboratory technician provided outpatient care, antenatal services,



immunisation, and screening and treatment for malaria, tuberculosis, anaemia, diabetes, and hypertension. Essential diagnostics and medicines were available on site, and local Mitanin workers mobilised households in advance. Over time, the regularity of services transformed the haat from an informal marketplace into a predictable point of public service delivery. Programme records documented substantial scale up, improved first contact care among previously unreached populations, increased antenatal attendance, and better follow up for chronic conditions.^{[3],[4]}

In tribal areas of South Gujarat, a different form of decentralisation emerged through a hospital led outreach model operated by Shrimad Rajchandra Hospital in Valsad district. Mobile medical units followed fixed weekly routes covering the same villages on designated days, effectively adopting communities into a predictable service cycle.^[5] Although not government operated, the model illustrates how continuity and referral can be strengthened when outreach is routinised rather than episodic. Patients received follow up cards, returned for repeat consultations, and were referred systematically to the base hospital when higher level care was required. Over more than a decade, service utilisation increased steadily, referral volumes rose substantially, and evaluations noted improvements in management of chronic diseases and detection of serious illness.^[5]

In Kerala's Attappady block, the state government deployed mobile medical teams attached to primary health centres as part of a broader response to high infant mortality among tribal communities.^[6] Mobile units staffed by doctors and nurses visited remote hamlets on rotational schedules, providing on site clinical care while maintaining referral linkage to primary health centres, the community health centre, and the tribal

specialty hospital. This outreach was accompanied by strengthening of fixed facilities and coordination with nutrition and social sector interventions. While the Attappady context was highly specific, programme documentation indicates improved antenatal coverage and reductions in preventable infant deaths over time.^{[6],[7]} The initiative highlights the role of institutional anchoring, where outreach functions as an extension of facility-based care rather than a parallel service.

Across these examples, the mechanisms through which decentralised outreach improved access were consistent despite differences in ownership and context. Fixed schedules reduced uncertainty and allowed households to plan care seeking. Repeated presence enabled follow up for pregnancy, childhood illness, and long-term conditions. Clear linkage to facilities supported timely referral and continuity. Where outreach was visibly embedded within the public health system or connected to trusted institutions, community confidence increased and utilisation rose.^{[2],[4],[6]}

Documented impacts across these initiatives included increased service utilisation, improved antenatal and immunisation coverage, earlier detection of communicable and non-communicable diseases, and reductions in untreated morbidity.^{[3],[5],[7]} In some settings, improved referral completion and chronic disease control were also observed. Taken together, these experiences illustrate that in tribal contexts, decentralisation is not primarily about mobility, but about redesigning how the health system shows up. Predictability, continuity, and institutional presence were central to rebuilding trust and making services usable for communities that had historically remained beyond the effective reach of routine care.

Table 12.1 Gender Differences in House and Land Ownership across Caste and Tribe Groups in Maharashtra**Best-Practice Models for Mobile Primary Care in Tribal Areas (Selected State Examples)**

Approach, coverage achieved, and key outcomes across selected mobile service delivery models, with current gaps noted for Maharashtra.

State & Program	Approach	Coverage Achieved	Key Outcomes
Chhattisgarh: Haat Bazaar Clinics	Mobile teams at weekly markets; fixed day each week with doctor, CHO, nurse, etc. providing primary care, drugs, tests.	1,888 clinic sites in tribal markets, serving ~18 million population by 2022.	~95,000 people treated in 3 years; increased ANC visits and immunization; many first-time care seekers now regular clients; improved equity in access (women, elderly).
Gujarat: Dhamrupar MMU Program	NGO-run mobile medical units visiting 65+ remote villages on a weekly schedule ("fixed day - fixed time" clinics).	6 days/week service; ~100-120 patients seen per day per doctor; scaled from 7,800 to 108,000 annual visits over 10 years.	Early detection and referral surged (referrals increased tenfold); reduced untreated cases of TB and malaria; continuity via follow-up cards led to better chronic disease control; high community trust built over a decade.
Kerala: Attappady PHC Mobile Units	Two mobile health units attached to each PHC, regularly visiting forest hamlets; free care and transport for referrals.	All 192 tribal settlements of Attappady covered in rotation; mobile teams supplement 3 PHCs and 1 tribal hospital in the block.	Increased institutional ANC registration and immunization in remote Muduga/Irula villages; contributed to halving infant deaths from the 2013 high (though sociocultural barriers still limit full utilization).
Maharashtra: (Current)	Camps are conducted but can be improved for predictability, routine, and certainty for communities.	16 MMUs sanctioned for tribal talukas (as of 2020), with limited frequency.	Patchy reach; many tribal hamlets still more than 5 km from any facility; indicates scope for scaling up above models.

All figures are as reported in the cited sources; some values are approximate (denoted by "~"). "Coverage achieved" and "Key outcomes" are not directly comparable across states due to differing time periods, program maturity, and reporting methods; interpret as indicative evidence for design choices. Abbreviations: MMU = Mobile Medical Unit; PHC = Primary Health Centre; CHO = Community Health Officer; ANC = Antenatal Care.

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Theme B Ensuring Continuity of Care: Tracking, Follow-up and Community-Based Support

In tribal and remote settings, health outcomes are often shaped less by lack of initial contact and more by weak continuity of care. Pregnant women may be identified but not followed through to institutional delivery. Children may be treated once but drop out of monitoring. Chronic conditions may be detected but remain unmanaged. Several Indian states and institutions have addressed this challenge by creating systems that actively track individuals over time and combine follow up with community-based support. The defining feature of these approaches is not surveillance alone, but sustained engagement that ensures care is completed rather than merely initiated.

Pregnancy tracking and follow up in tribal areas of Telangana

In the tribal mandals of Adilabad district, the Integrated Tribal Development Agency implemented Project Avval with the objective of ensuring safe deliveries through active

tracking of all pregnant women .^{[8][9]} The intervention created a registry of expectant mothers at the primary health centre level, with expected delivery dates mapped and updated monthly by ANMs and ASHAs. Follow up was not left to passive reporting. A centralised call centre located at the ITDA office contacted families as delivery dates approached, reinforced counselling messages, and coordinated transport where required .^{[8][9]} Local health workers ensured that missed antenatal visits were completed and that high-risk pregnancies were flagged in advance.

Over a twenty-month period, Project Avval covered thirteen tribal mandals and facilitated approximately three thousand institutional deliveries .^[10] Home deliveries among tracked women were nearly eliminated. Programme documentation reported a marked reduction in infant mortality in the intervention area and a decline in maternal deaths, alongside improved timeliness of referrals for complications.^{[10],[11]}



Beyond the indicators, an important operational change was improved preparedness at the household level. Families reported greater confidence in navigating delivery decisions because contact points and timelines were clearly established.

Community crèches as a platform for continuous nutrition and early childhood care in Chhattisgarh

In tribal villages of rural Bilaspur district, Jan Swasthya Sahyog developed the Phulwari community crèche model to address severe malnutrition among children under three years of age.^{[12],[13]} The model responded to a continuity gap in nutrition and care, particularly during daytime hours when mothers worked in the fields. Phulwaris were established as hamlet level crèches operating daily, enrolling small groups of children and providing supervised care for most of the day.

Each crèche was managed by trained local women and provided multiple meals, micronutrient supplementation, growth monitoring, basic health checks, and early childhood stimulation on a daily basis.^{[14][15]} Children were weighed monthly, illnesses were detected early, and referrals were made through linkages with ANMs and Anganwadi workers. Evaluations documented significant reductions in moderate and severe wasting within months of enrolment, alongside consistent weight gain and fewer illness episodes.^{[16],[17]}

Based on these outcomes, the Chhattisgarh government adopted and scaled the model as the Fulwari scheme under the Department of Women and Child Development.^[18] By the mid two thousand, several Fulwari centres were operational across tribal blocks, with assessments indicating substantial improvements in child nutritional status and reductions in low birth weight among infants whose mothers participated during pregnancy.^{[19],[20]}

Technology enabled continuity through ImTeCHO in tribal districts of Gujarat

In tribal areas of Bharuch and Narmada districts, continuity of maternal and child healthcare was strengthened through ImTeCHO, a digital platform developed by SEWA Rural in partnership with the state health system.^{[21],[22]} ASHAs were equipped with smartphones loaded with the ImTeCHO application, which generated visit schedules for every pregnant woman, newborn, and young child in their catchment area. The application provided structured checklists for each visit, recorded service delivery, and flagged danger signs in real time.^{[21],[22]}

Supervisory staff at primary health centres accessed a web-based dashboard that allowed daily monitoring of field activities, follow up on missed visits, and prioritisation of high risk cases. Evaluations covering more than twenty primary health centres showed significant improvements in antenatal registration, institutional deliveries, postnatal home visits, and adherence to home based new-born care protocols.^[23] Independent assessments also reported reductions in neonatal and infant mortality in intervention areas.^[24]

Across these examples, different mechanisms were used to address continuity, including human tracking, community based daily care, and digital task management. Despite this variation, the underlying logic was consistent. Individuals were identified early, followed repeatedly, and supported until care milestones were completed. Documented impacts included improved completion of antenatal and postnatal care, reductions in untreated malnutrition, earlier detection of illness, and improved survival outcomes.^[25]

Theme C Timeliness and Referral Safety: Rapid Response for Emergencies and Obstetric Care

In tribal and geographically remote areas, emergencies and time critical conditions pose risks that routine service availability alone cannot address. Obstetric complications, snakebites, severe malaria, trauma, and acute childhood illness require rapid response, yet difficult terrain and long distances to higher facilities often delay care. Best practices in this domain have focused on reducing time to treatment through a combination of anticipatory strategies, decentralised emergency capability, and preventive public health action. The most effective approaches do not rely on transport alone, but redesign how and where the health system intervenes before delays become fatal.

Maternity waiting rooms in tribal areas of Tamil Nadu

In Tamil Nadu, despite high institutional delivery rates overall, a small but persistent proportion of maternal and neonatal deaths in tribal hill areas were linked to delayed arrival at facilities, particularly when labour began at night or during adverse weather conditions.^{[26], [27]} To address this, the state established Birth Waiting Rooms near government facilities serving remote tribal populations. These were short term residential facilities located adjacent to twenty-four-hour primary health centres or sub district hospitals, where women in late pregnancy or identified as high risk could stay in the weeks preceding delivery.^{[28], [29]}

Birth Waiting Rooms provided free accommodation, meals, and basic medical supervision for pregnant women and one accompanying attendant. Women were monitored daily by nursing staff, received antenatal check-ups, and were immediately transferred to labour rooms once labour began. Financial support was provided to compensate for wage loss during the stay, and village health nurses supervised operations and postnatal

follow up.^{[30], [31]}

Programme reviews documented that in tribal areas where Birth Waiting Rooms were fully operational, home deliveries fell to negligible levels and delays related to transport were largely eliminated.^{[26], [27]} Clinical audits reported reductions in obstetric complications associated with late presentation, including obstructed labour and intrapartum stillbirths.^{[32], [33]} Women reported greater confidence in institutional delivery because uncertainty around last minute transport and accompaniment was removed. The intervention demonstrates how bringing women closer to care in advance can be more effective than attempting to manage emergencies once labour has begun. Maharashtra runs a similar program (mahar ghar), but the monitoring needs to be strengthened, as also the financial regularity for operational expenses.

Decentralising emergency obstetric care through strengthened peripheral facilities in Gujarat

In tribal regions of eastern Gujarat, long referral chains historically delayed access to emergency obstetric and new-born care, particularly for caesarean sections. To address this, a comprehensive emergency obstetric and new-born care facility was established at the community health centre level in Jabugam block through a public private partnership involving the state health department and a non-government organisation.^[34] The facility was upgraded with an operating theatre, blood storage unit, and specialist staff, while remaining integrated within the government health system.

This decentralisation allowed complicated deliveries and neonatal emergencies to be managed locally rather than referred to distant



district hospitals. Programme documentation over several years showed substantial increases in emergency procedures performed at the block level and a corresponding reduction in maternal deaths attributable to delayed referral.^{[34],[35]} The example illustrates that referral safety improves not only by faster transport, but by reducing the distance emergency care must travel.

Preventing emergencies through early detection and treatment in Odisha’s malaria endemic tribal areas

Timeliness in public health is not limited to emergency response; it also includes acting early to prevent conditions from becoming life threatening. Odisha’s DAMaN initiative represents a population level approach to timeliness in malaria endemic tribal regions. Beginning in 2017, the state implemented biannual mass screening and treatment campaigns in hard-to-reach villages, identifying and treating malaria infections including asymptomatic cases before progression to severe disease.^{[36],[37]}

The programme combined active case detection with immediate treatment, widespread distribution of insecticide treated nets, and community education. State surveillance data documented a sharp decline

in malaria incidence and malaria related deaths, with an estimated eighty percent reduction in cases between 2017 and 2020.^{[38],[39]} By intervening early and repeatedly, the programme reduced the burden of severe malaria emergencies that previously overwhelmed referral systems. DAMaN demonstrates how preventive timeliness can dramatically reduce the need for emergency response in high-risk tribal settings.

Across these examples, improvements in timeliness and referral safety were achieved through different mechanisms, but the underlying logic was consistent. Anticipatory strategies reduced last minute decision making. Decentralised emergency capability shortened referral pathways. Preventive public health action reduced the incidence of acute emergencies altogether. Documented outcomes included reductions in maternal and neonatal complications, improved survival in obstetric and infectious disease emergencies, and greater confidence among communities in the system’s ability to respond when time mattered most.^{[27],[33],[39]} Together, these practices illustrate that in tribal contexts, timeliness is best achieved by redesigning systems to act earlier, closer, and more predictably rather than relying solely on transport after crises occur.

Theme D Reliable and Quality Services: Staffing, Incentives and Partnerships for Tribal Areas

A persistent challenge in tribal health systems is unreliability. Facilities may exist but remain intermittently closed, understaffed, or poorly supplied. Frequent staff turnover, prolonged vacancies, and stock outs undermine confidence in public services and discourage utilisation even when physical access is

available. Best practices from several Indian states indicate that reliability in remote areas improves when human resource strategies and institutional support mechanisms are explicitly designed for difficult contexts rather than treated as extensions of urban systems.

Building a local health workforce through tribal nursing education in Chhattisgarh

In tribal regions of Chhattisgarh, Jan Swasthya Sahyog established a nursing training school with the explicit objective of creating a locally rooted health workforce for underserved areas.^{[40],[41]} Beginning in 2010, the programme trained tribal girls from economically marginalised families as Auxiliary Nurse Midwives and General Nursing and Midwifery graduates, with full financial support for education, accommodation, and clinical exposure.^{[42],[43]} Selection emphasised both academic potential and willingness to serve in local communities.

Training was closely integrated with public health facilities, exposing students to sub centres, primary health centres, community health centres, and district hospitals. Graduates were subsequently placed in government facilities within or near their home regions through coordination with the state health department.^{[44],[45]} Programme records showed high completion rates and strong post-graduation retention in tribal postings, with a majority of graduates employed in government or mission hospitals serving similar populations.^[46]

Facility level assessments in areas where locally trained nurses were posted documented more regular service hours, improved patient trust, and greater continuity of care, particularly for maternal and child health services.^[47] Community members reported greater comfort interacting with providers who shared language and social context. The initiative demonstrates how local workforce pipelines can address chronic absenteeism and turnover by aligning professional training with community rootedness.

Contractual recruitment to stabilise staffing in underserved districts of Chhattisgarh

To address acute staffing shortages in its most remote districts, Chhattisgarh adopted an

outsourcing approach to health workforce recruitment, engaging professional agencies to recruit doctors and nurses on contract for tribal areas such as Bastar and Surguja.^{[48],[49]} These agencies were responsible for identifying suitable candidates, managing contracts, and ensuring rapid replacement when staff exited, while facilities remained under government supervision.

Through this mechanism, hundreds of nurses and doctors were deployed to facilities that had previously operated with severe vacancies.^[50] Health department reviews documented increased facility functionality, higher outpatient attendance, and improved delivery services following stabilisation of staffing.^{[51][52]} The approach allowed flexibility in remuneration and faster deployment compared to conventional recruitment processes, reducing prolonged service disruptions.

The experience illustrates how contractual staffing, when centrally coordinated and performance monitored, can serve as a system stabiliser in contexts where permanent recruitment is slow or ineffective.

Institutional incentives and governance mechanisms in Kerala and Tamil Nadu

In Kerala's Attappady block, persistent staffing challenges in tribal areas were addressed through a combination of financial incentives and institutional oversight. Health workers posted to the area received special allowances, and doctors were offered preferential consideration for postgraduate admissions following service in the tribal block.^{[53],[54]} These measures enabled sustained posting of specialists at facilities that had previously struggled to retain staff.^[55]

Reliability was further reinforced through high level inter departmental monitoring. A senior officer chaired regular reviews of health, nutrition, and infrastructure issues, enabling rapid resolution of problems such as staff accommodation, ambulance availability, and medicine supply.^{[56],[57]} Facility audits



documented improved service continuity and reduced stock outs following these governance interventions.

Tamil Nadu’s experience demonstrates a different pathway to reliability through strong public health administration. Strict attendance monitoring, predictable transfer policies, and a centralised medical procurement system ensured that even remote facilities remained staffed and stocked consistently.^{[58],[59]} While not implemented as a discrete programme, these institutional practices resulted in high community confidence in peripheral health facilities, including in tribal and hill areas.

Public private management of facilities to restore functionality

In contexts where government facilities were persistently non-functional, public private management arrangements have been used to restore reliability. In Karnataka and select north-eastern states, Karuna Trust managed primary health centres under formal agreements with state governments.^{[60],[61]} Facilities previously characterised by absenteeism and limited services were reorganised to provide round the clock care, with flexible hiring, performance linked

incentives, and community engagement mechanisms.^[62]

Independent reviews documented improved facility functionality, expanded service range, and increased utilisation over time.^[63] Similar improvements were observed in Gujarat’s Jabugam community health centre following partnership with a non-government organisation to manage emergency obstetric services, as discussed earlier.^{[34],[35]}

Across these examples, reliability improved not through a single intervention but through deliberate alignment of human resource strategies, incentives, logistics, and accountability. Facilities became dependable when staff were either locally rooted or contractually stabilised, when supply chains functioned predictably, and when institutional attention ensured problems were addressed promptly. Documented impacts included increased service utilisation, improved continuity of care, and greater trust in public facilities among tribal communities.^{[47][52][63]} These practices illustrate that reliability in tribal health systems is fundamentally a governance and workforce design issue, not merely a matter of infrastructure.

Theme E Building Trust and Community Engagement: Inclusive Healthcare for Tribals

Health interventions in tribal areas are unlikely to succeed without the trust and participation of the communities they serve. Historical marginalisation, cultural distance from formal institutions, and repeated experiences of service failure have shaped deep scepticism toward public health systems in many tribal regions. Best practices from across India demonstrate that trust is not created through information campaigns alone, but through sustained community engagement, cultural respect, shared accountability, and visible responsiveness to local priorities.

Community led monitoring and accountability in Gujarat and Maharashtra

In tribal areas of Gujarat, the organisation Area Networking and Development Initiatives facilitated community-based monitoring of maternal and child health services through women’s collectives.^{[64],[65]} These collectives were trained to track whether essential services were actually delivered, including antenatal check-ups, blood pressure and haemoglobin measurement, immunisation sessions, and growth monitoring. Every few

months, the women compiled simple report cards documenting service gaps and presented these findings in open village meetings with health staff and community members.^{[66],[67]} This process altered relationships on both sides. Health providers became more attentive to routine service delivery, knowing that communities were informed and observant. At the same time, women gained clarity about the importance of specific interventions and their entitlements, increasing demand for care. Programme evaluations documented substantial improvements in service coverage over time, including large increases in pregnancy registration, routine monitoring, and identification of high-risk pregnancies in participating villages.^{[68],[69]}

A similar approach was piloted earlier in Maharashtra under the National Rural Health Mission through Community Based Monitoring in select districts, including tribal blocks of Nandurbar.^[70] Public hearings and facilitated dialogue enabled communities to raise service failures directly with health authorities, resulting in corrective actions such as staff transfers and facility repairs. These experiences demonstrate that when communities are given structured voice and evidence-based platforms for engagement, trust improves alongside system performance.

Cultural mediation and respectful care in tribal contexts

Cultural disconnect between health services and tribal communities has repeatedly been identified as a barrier to utilisation. In Kerala's Attappady block, reviews found that despite expanded services, indigenous families often hesitated to access care due to perceived discrimination and lack of cultural sensitivity.^{[71],[72]} In response, the state trained tribal promoter volunteers to accompany patients to facilities, assist with translation and navigation, and mediate interactions between families and providers. Health staff were sensitised to cultural norms, language preferences, and social practices, helping reduce fear and misunderstanding.

Comparable approaches have been used elsewhere. In parts of Gujarat, local traditional birth attendants and healers were engaged as referral partners rather than excluded, receiving training to recognise danger signs and encouragement to link families to primary health centres.^{[73],[74]} This reduced antagonism between systems of care and increased acceptance of institutional services. Similar community health volunteer models in tribal regions of Nagaland supported immunisation and maternal health interventions in populations initially resistant to formal services.^[75]

These experiences indicate that trust is strengthened when health systems recognise existing social authority structures and work with them, rather than attempting to bypass or displace them.

Trust embedded through community ownership and transparency

Several of the interventions discussed earlier illustrate how trust can be embedded structurally rather than cultivated separately. The community crèche model developed by Jan Swasthya Sahyog functioned as a nutrition intervention and a trust building mechanism simultaneously. Because centres were run by local women, decisions were transparent, fund use was openly discussed, and participation was voluntary yet universal.^{[76],[77]} Communities that were initially wary of external programmes embraced the intervention once they saw collective ownership and visible improvements in child health.

Similarly, locally trained health workers, patient accompaniment practices, and repeated positive outcomes reinforced trust through lived experience. Families were more willing to seek care when they saw neighbours' benefit, when providers were familiar faces, and when the system responded respectfully during moments of vulnerability.

Across these examples, trust was built not through messaging but through practice.



Communities were treated as partners rather than beneficiaries, cultural context was respected rather than overridden, and accountability flowed both ways. Documented outcomes included improved service utilisation, greater adherence to treatment,

increased willingness to engage with formal care, and community participation in monitoring service quality .^{[69][77][78]} These practices demonstrate that in tribal health systems, trust is a cumulative outcome of voice, respect, responsiveness, and results.

Final Lessons & Conclusion

The best practices documented in this chapter, drawn from diverse tribal and hard to reach contexts across India, converge on a small set of clear lessons about what enables public health systems to work in marginalised settings. First, effective tribal health systems reduce distance in all its forms. Successful interventions brought services closer to people physically, but also reduced uncertainty, cultural distance, and procedural barriers. Predictable outreach, decentralised care points, and anticipatory arrangements such as maternity waiting facilities consistently improved access where static, facility centred models had failed.

Second, continuity mattered more than coverage alone. Interventions that tracked individuals over time, provided repeated contact, and ensured follow up until care was completed were more likely to translate access into outcomes. Pregnancy tracking, daily nutrition support for young children, and structured follow up by frontline workers reduced loss to follow up and enabled earlier identification of risk.

Third, reliability of services emerged as foundational. Outreach and community engagement had limited value where facilities were intermittently closed, understaffed, or poorly supplied. Practices that stabilised

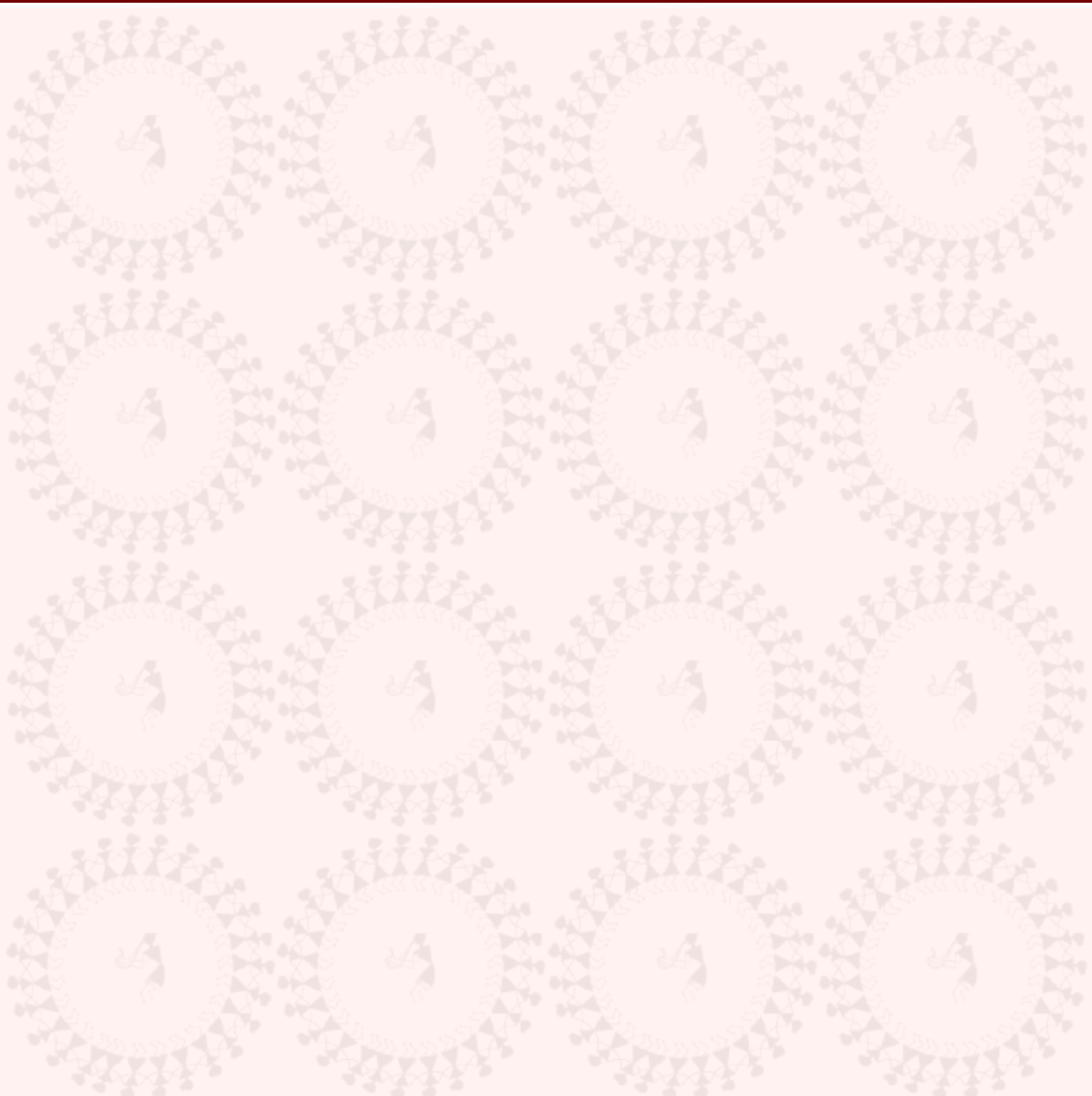
human resources, strengthened supply chains, or introduced institutional accountability improved utilisation primarily by making services dependable.

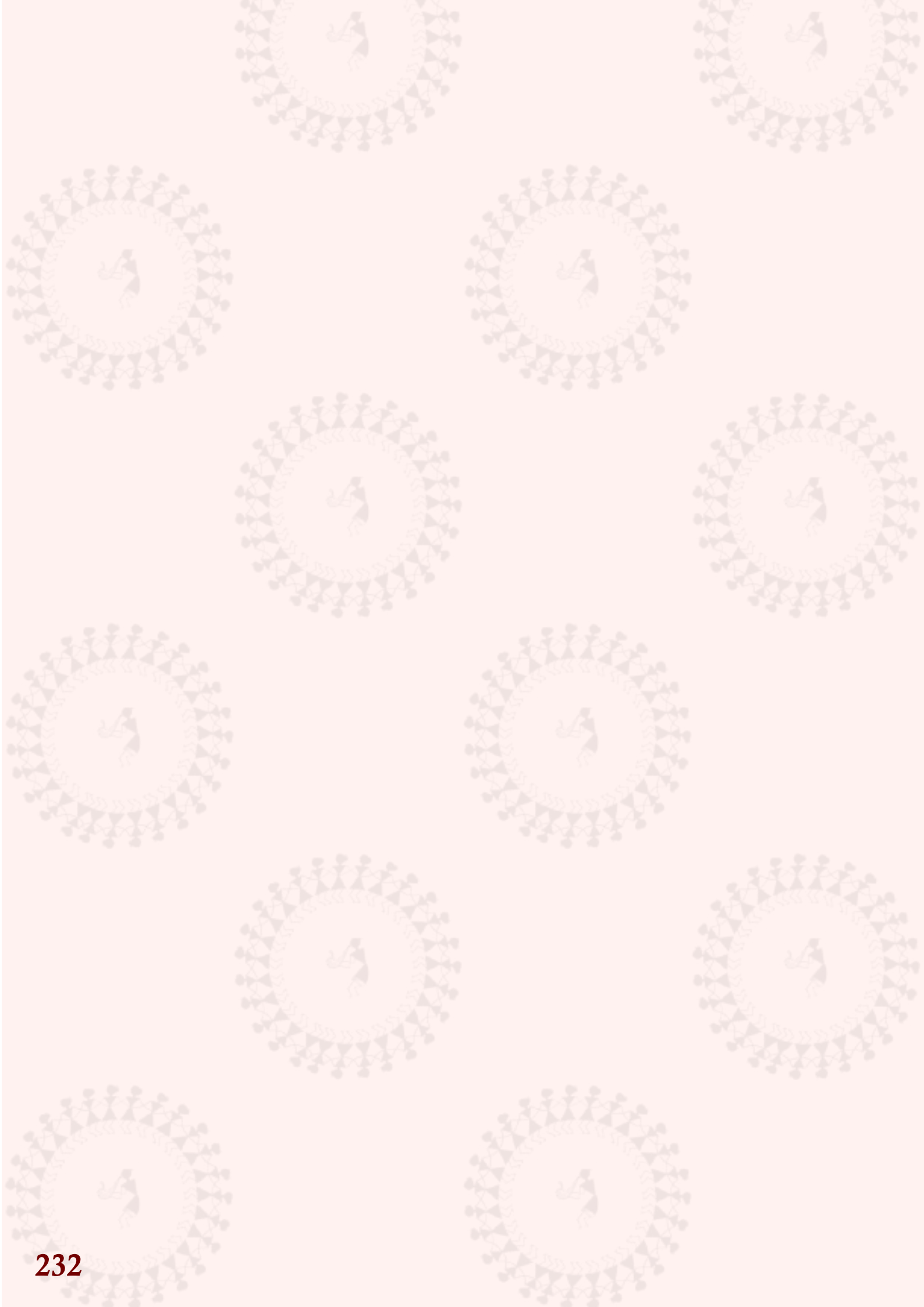
Fourth, trust was not an outcome of communication alone but of design. Where communities were given voice, cultural context was respected, and local actors played visible roles in service delivery or monitoring, engagement increased. Trust grew most strongly where communities experienced consistent service quality and saw tangible improvements in health outcomes.

Finally, the most effective practices acted early. Preventive approaches and decentralised emergency capability reduced the frequency and severity of crises, limiting dependence on delayed referrals in difficult terrain. Acting before conditions escalated proved more reliable than responding once emergencies occurred.

Together, these experiences demonstrate that improvements in tribal health are shaped less by individual schemes than by how health systems are organised to reach, stay with, and earn the confidence of underserved communities. Where public health design aligned with tribal realities, sustained gains followed.

Annexures





Annexure 1 Literature Review on Tribal Health

A curated compilation of key research, programme evaluations, and policy papers on tribal health in India and Maharashtra. It provides the evidence base that informed the Committee's analysis and recommendations.

Annexure 2 Field Visit Reports from Tribal-Dominated Districts of Maharashtra

Compiled field visit notes and photographs from Committee visits across tribal districts in Maharashtra. It documents facility observations and consultations with health workers, local officials, and community representatives.

Annexure 3 Focus Group Discussion Reports with Tribal Communities and Frontline Stakeholders

Consolidated reports and photographs from structured FGDs conducted during field visits. It captures community perspectives, frontline implementation challenges, and key socio-cultural barriers to care.

Annexure 4 Expert Consultations and the IIT Bombay Roundtable Report

Documentation of expert consultations and solution-oriented workshops, including the IIT Bombay roundtable report. It summarises technical inputs that guided the Committee's recommendations.

Annexure 5 Concept Note on Digital Health Census for Reliable Denominators

A concept note outlining the use of a digital health census (e-SUCHI) to generate reliable population denominators and baseline indicators. It draws on learnings from the e-SUCHI pilot in Maharashtra and highlights planning and monitoring use cases.

Annexure 6 Health Action Center Model for Tracking High-Risk Pregnancies and Children

A description of the Health Action Center model for proactive tracking of high-risk pregnant women and children through structured follow-up and escalation. It outlines the workflow and expected outcomes for continuity of care.

Annexure 7 Know Your PHC – Practical Orientation Handbook for Medical Officers

Draft 'Know Your PHC' handbook designed as a quick orientation resource for newly posted PHC Medical Officers. It covers core administrative and service delivery responsibilities, with practical context for local operations.

Annexure 8 Key Innovations & Best Practices in Med-Tech

Annexure 9 Tribal Health Policy

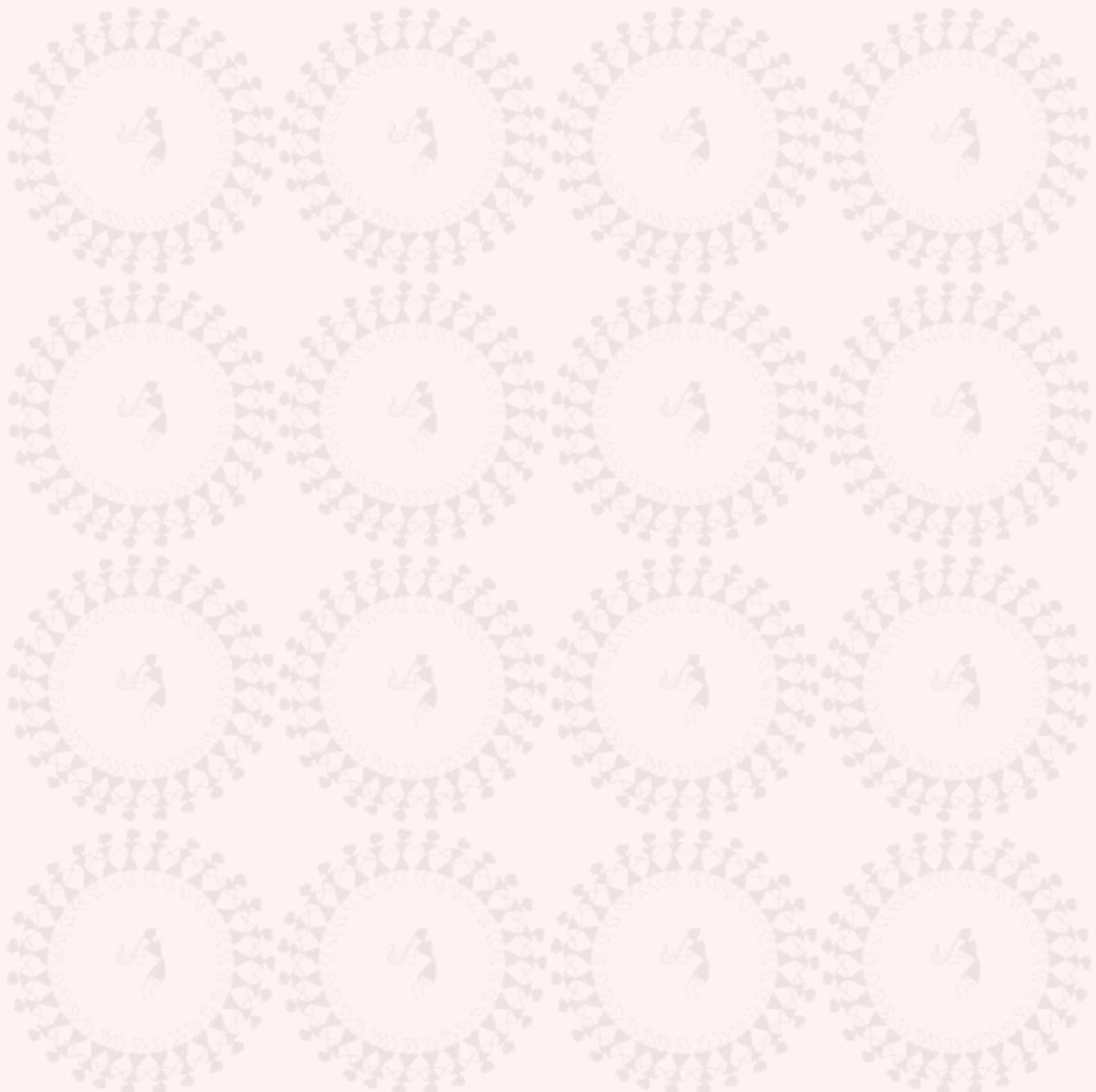
Annexure 10 Telangana Field Visit Note on ICDS and Supplementary Nutrition Best Practices

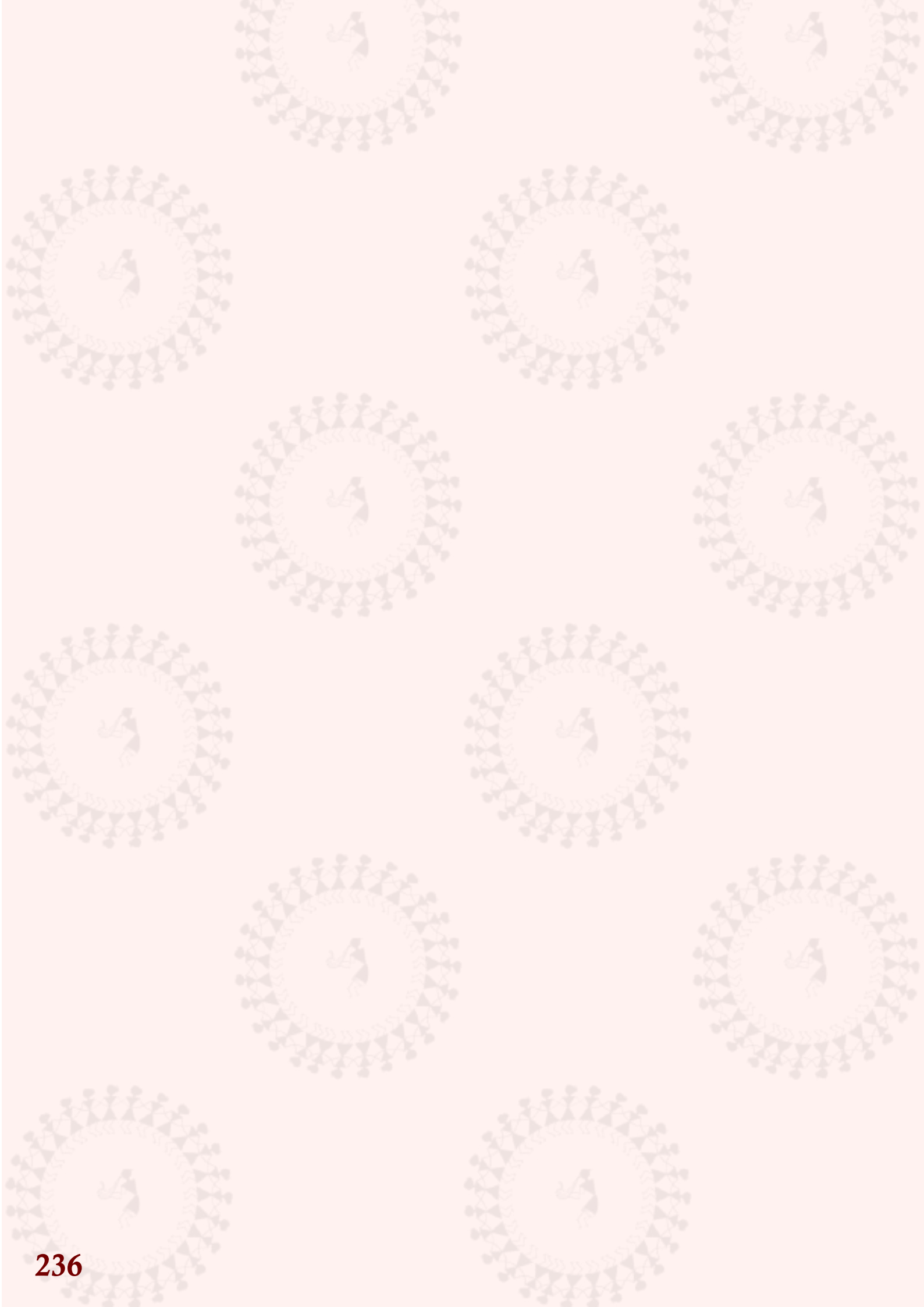
A brief note documenting the Telangana field visit focused on ICDS supplementary nutrition delivery and quality control systems. It captures operational best practices relevant for adaptation in Maharashtra, including ECCE-linked learnings.

Link: <https://tinyurl.com/2rt32s72> QR Code:



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**Informed consent has been taken for the images used in the 'Stories from Field' section*

