IPHA MAHARASHTRA BRANCH Newsletter

Volume: 18 Issue: 01 January – March 2026

Executive Committee (2024 – 27)
IPHA Maharashtra Branch

- President
  Dr. Prasad Waingankar
- Immediate Past President
  Dr. Gajanan Velhal
- Vice-President
  Dr. Prashant Solanke
- Secretary
  Dr. Deepak Khismatrao
- Joint Secretary
  Dr. Varsha Vaidya
- Treasurer
  Dr. Nandkumar Salunke
- Executive Committee Members
  Dr. Reshma Patil
  Dr. Vivekanand Giri
  Dr. Ashlesha Tawde Kelkar
  Dr. Sujata Murarkar
  Dr. Sudhanshu Mahajan
  Dr. Vikas Kshirsagar

Editor IPHA Maharashtra Newsletter
Dr. Harshal Pandve

IPHA Maharashtra expresses gratitude towards UNICEF Maharashtra Field Office for providing financial assistance for printing & distribution of this Newsletter issue.

IPHA Maharashtra Secretariat

Department of Community Medicine,
Mahatma Gandhi Mission Medical College,
Kamothe, Navi Mumbai – 410209
Tel: 022-2743 79 96/97
Mobile: 9011062306, 9324714313
Email: iphamaha@gmail.com
(Newsletter): editor.iphamaha@gmail.com
Web: www.iphamaha.org

IPHA MAHARASHTRA STATE BRANCH NEWSLETTER
JANUARY – MARCH 2026 ISSUE

TABLE OF CONTENTS

Padavidhar (UG) & Padvyuttar (PG) Sanshodhan Prakalp Anudan: 2026

IPHA MH Research Grants for UG & PG Students of Medical Colleges in Maharashtra

Applications Open:	01 May 2026
Applications Close:	31 May 2026
Declaration of Results:	30 Jun 2026

For Online Application - Visit: *www.iphamaha.org*

Images of the JAN – MAR Quarter

From the Desk of Conference: MHIAPSMIPHACON 2026

Spoken Tutorial Stall at Conference: MHIAPSMIPHACON 2026

President's Page

World Health Day 2026: Together for Health – Stand with Science

A Call for Evidence-Based Public Health Action in an Era of Global Interdependence

Every year on April 7, the global public health community comes together to commemorate World Health Day, marking the founding of the World Health Organization in 1948. This annual observance serves as a strategic platform to highlight priority health issues and mobilize action at global, national, and community levels. In 2026, the WHO has articulated a powerful and timely theme:

"Together for health. Stand with science."

This theme underscores a fundamental truth: that science, collaboration, and evidence-based policy are indispensable pillars for protecting and promoting health in an increasingly complex and interconnected world. It also launches a year-long global campaign emphasizing the importance of scientific cooperation across sectors - human, animal, plant, and environmental health - through the One Health approach. In the wake of global crises such as pandemics, climate change, antimicrobial resistance, and widening health inequities, World Health Day 2026 is not merely commemorative—it is a clarion call to reaffirm trust in science and strengthen collective action.

World Health Day has evolved significantly since its inception in 1950. Each year's theme reflects emerging global health priorities—from communicable diseases to non-communicable diseases, mental health, environmental health, and universal health coverage. Over the decades, themes such as "Health for All," "Universal Health Coverage," and "Our Planet, Our Health" have progressively emphasized the equity, sustainability, and system strengthening. The 2026 theme builds upon this trajectory by placing science and collaboration at the centre of global health action, recognizing that:

- Scientific evidence drives effective interventions
- Multilateral cooperation enhances health system resilience
- Interdisciplinary approaches are essential for addressing modern health challenges

Thus, World Health Day 2026 represents a convergence of science, solidarity, and systems thinking.

Understanding the Theme

The 2026 theme emphasizes two interlinked dimensions:

1. Together for Health

   This component highlights the need for collective responsibility and global solidarity. Health is no longer confined within national boundaries; it is shaped by global determinants such as:
   - Climate change
   - Migration
   - Urbanization
   - Trade and globalization
   - Emerging infectious diseases

   The COVID-19 pandemic vividly demonstrated that no country can achieve health security in isolation.

2. Stand with Science

   This dimension emphasizes the centrality of evidence-based decision-making. Science informs:
   - Disease surveillance and outbreak response
   - Vaccine development & strategies for immunization
   - Public health interventions
   - Health system strengthening
   - Policy formulation

   WHO emphasizes that scientific collaboration and evidence translation into policy are essential for improving population health outcomes.

The One Health Approach: A Cornerstone of the 2026 Campaign

A defining feature of World Health Day 2026 is its focus on the One Health approach, which recognizes the interconnectedness of:

- Human health
- Animal health
- Plant health
- Environmental health

This integrated framework is crucial for addressing contemporary challenges such as:

- Zoonotic diseases
- Antimicrobial resistance (AMR)
- Food safety and security
- Environmental degradation

The WHO and partner organizations emphasize that protecting ecosystems and ensuring sustainable interactions between humans and animals are essential for long-term health security.

Why Science Matters More Than Ever in Public Health

1. Combating Misinformation & Infodemics: One of the major challenges in recent years has been the spread of misinformation, particularly during health emergencies.
   The 2026 theme calls for-
   a. Strengthening scientific communication
   b. Promoting health literacy
   c. Building public trust in institutions
2. Driving Innovations through Scientific research: It has led to breakthroughs such as-
   a. Rapid vaccine development
   b. Genomic surveillance
   c. Digital health technologies
   d. Artificial intelligence in healthcare
   These innovations have transformed public health practice and improved outcomes.
3. Evidence-based policies: These ensure-
   a. Efficient allocation of resources
   b. Effective program implementation
   c. Measurable health outcomes
   Without science, public health risks becoming reactionary rather than proactive.

Global Health Challenges in 2026: A Scientific Perspective

1. Emerging and Re-emerging Infectious Diseases: The world continues to face threats from infectious diseases due to:
   a. Climate change
   b. Urban crowding
   c. Increased human-animal interaction
   Scientific surveillance systems are critical for early detection and response.
2. Non-Communicable Diseases (NCDs): NCDs such as cardiovascular diseases, diabetes, cancer, and chronic respiratory diseases account for the majority of global mortality. Scientific research informs:
   a. Risk factor identification
   b. Preventive strategies
   c. Health promotion interventions
3. Antimicrobial Resistance (AMR): AMR is a silent pandemic threatening modern medicine. The One Health approach is essential for tackling AMR across:
   a. Human healthcare
   b. Veterinary practices
   c. Agriculture
4. Climate Change and Health: Climate change is increasingly recognized as a health crisis. Its impacts include:
   a. Heat-related illnesses
   b. Vector-borne diseases
   c. Food insecurity
   d. Air pollution-related morbidity
   Scientific evidence is critical for designing adaptation and mitigation strategies.

Implications for India: A Public Health Perspective

India, with its vast population and diverse health challenges, stands at a critical juncture in aligning with the 2026 theme.

1. Strengthening Primary Health Care in Urban area and Secondary Health Care in Rural area: India's commitment to Ayushman Bharat and Health and Wellness Centres reflects progress toward universal health coverage. However, challenges remain in:
   - Accessibility
   - Quality of care
   - Workforce shortages
2. Promoting Evidence-Based National Health Programs of Priority: Programs such as:
   - National Tuberculosis Elimination Programme (NTEP)
   - National Programme for Prevention and Control of NCDs (NP-NCD)

   require continuous integration of scientific evidence for effectiveness.
3. Addressing Health Inequities: Despite progress, disparities persist across:
   - Rural vs urban populations
   - Socioeconomic groups
   - Gender & marginalized communities

   Science-driven policy can help bridge these gaps.

4. Leveraging Digital Health: India's digital health initiatives, including:
   - Telemedicine
   - Health data platforms

   offer opportunities for scaling evidence-based interventions.

Role of Public Health Professionals

World Health Day should not remain symbolic. It must translate into Policy reforms, Programmatic interventions, Community mobilization, Sustainable investments. The 2026 campaign calls for a year-long engagement, ensuring that the momentum extends beyond a single day. Public health professionals play a pivotal role in operationalizing the 2026 theme:

1. Translating Evidence into Action: Bridging the gap between research and implementation.
2. Strengthening Surveillance Systems: Enhancing data collection, analysis, and dissemination.
3. Community Engagement: Building trust and promoting health literacy.
4. Policy Advocacy: Ensuring that policies are grounded in scientific evidence.

Community Participation and Civil Society Responsibility

World Health Day 2026 emphasizes that health is a shared responsibility. Citizens can contribute by:

- Following scientifically validated health practices
- Avoiding misinformation
- Participating in community health initiatives
- Supporting vaccination and preventive programs

Community engagement is essential for achieving sustainable health outcomes.

Intersectoral Collaboration: The Way Forward

The complexity of modern health challenges necessitates collaboration across sectors:

- Health
- Agriculture
- Environment
- Education
- Technology

The One Health approach exemplifies this integration, emphasizing that health outcomes are shaped by policies beyond the health sector.

Policy Recommendations for Strengthening Science-Based Health Systems

1. Invest in Health Research: Strengthening national and global research capacities
2. Enhance Data Systems: Real-time data for informed decision-making
3. Promote Health Literacy: Countering misinformation
4. Strengthen Global Collaboration: Sharing knowledge and resources
5. Integrate One Health into Policy: Addressing cross-sectoral health challenges

"Health is not achieved in isolation. It is built through science, sustained through collaboration, and secured through collective action."

To conclude, World Health Day 2026, with its theme "Together for health. Stand with science," serves as a powerful reminder that the future of global health depends on our collective commitment to science, collaboration, and equity. In an era marked by unprecedented challenges — pandemics, climate change, and health inequities — science offers both a compass and a solution. However, science alone is not enough; it must be accompanied by political will, community engagement, and global solidarity.

For India and the world, the message is loud and clear:

- Trust science
- Act collectively
- Prioritize equity
- Strengthen systems

As public health professionals, policymakers, and citizens, we must move beyond rhetoric to evidence-based action. Only then can we realize the vision of health for all, ensuring that every individual, regardless of geography or socioeconomic status, has the opportunity to live a healthy and dignified life.

[Ref: WHO Website]

Dr. Prasad Waingankar

Disclaimer

Views expressed by the Authors in this Newsletter are their own and not official views or stand of Indian Public Health Association.

Building AI-Ready Healthcare Workers in Advancing Digital Public Health in India

Maj Dr. Ashlesha Tawde Kelkar[1], Dr Madhura Bhosale[2]
[1]Associate Professor, [2]Assistant Professor, Digital Health Department, Centre for Health, Applied Knowledge and Research Autonomy (CHAKRA), Nashik

Introduction

The Artificial intelligence (AI) is significantly influencing disease surveillance, diagnostics, and health planning in India, particularly through the Ayushman Bharat Digital Mission, which enhances access to structured health data. However, successful AI integration requires a trained workforce capable of interpreting algorithmic results and applying them effectively within public health workflows. Key drivers include the growing incidence of chronic and infectious diseases, rapid digitization, and the rise of telemedicine. The vision is to cultivate an AI-ready public health workforce in India for ethical, data-driven health decision-making, with a focus on structured digital health education to ensure safe AI adoption in public health.

The Basic Building Blocks of AI in Indian Public Health

The successful adoption of artificial intelligence (AI) in Indian public health requires three foundational components: high-quality data, a robust technology stack with relevant use cases, and a human ecosystem equipped with talent and ethical awareness. Transitioning from paper-based to interoperable electronic health records (EHRs) is essential, spearheaded by the Ayushman Bharat Digital Mission (ABDM). However, simply digitizing data is not enough; attention must be paid to data quality, governance, and representativeness to avoid biases in AI models. Issues such as a lack of standardization and limited rural health data pose significant challenges, necessitating careful governance frameworks to ensure that the data is clean, standardized, interoperable, and representative. Building the technology stack in India's healthcare, particularly through telemedicine platforms like eSanjeevani, has gained momentum, especially during the COVID-19 pandemic. Key use cases include integrating clinical decision-support systems (CDSS) and AI for remote consultations, as well as AI in diagnostics for conditions like diabetic retinopathy and tuberculosis. Additionally, AI systems are enhancing public health surveillance with early outbreak detection and resource optimization. However, successful implementation hinges on workforce AI-literacy and ethical practices, as healthcare professionals must not only use AI tools but also understand and trust them. There is a critical need for governing frameworks that ensure transparency, fairness, and mitigate biases in AI within the Indian healthcare context.

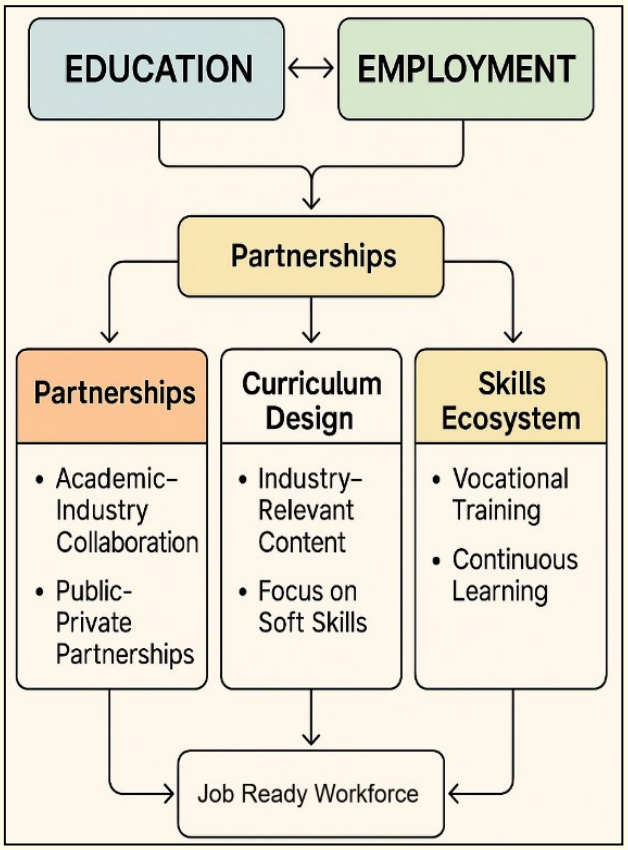
Linking AI in Public Health with Digital Health Education

Linking AI in Public Health with Digital Health Education emphasizes a systems perspective on AI adoption, identifying workforce preparedness as the primary barrier to translating technological potential into public health impact in India. The approach underscores the importance of integrating AI competencies within existing health education, focusing on scalable models like hub-and-spoke networks to align training with national digital health initiatives such as the Ayushman Bharat Digital Mission. The necessity for workforce transformation is highlighted, with job profiles evolving towards oversight and collaboration. Additionally, an ethical AI framework is proposed, addressing transparency, fairness, and algorithmic bias, with tailored governance for the Indian healthcare setting.

A. *The Skills Gap:* India's healthcare workforce faces a marked deficiency in digital health and AI literacy, particularly in rural areas and lower-tier institutions. While there is considerable enthusiasm

for digital health, many clinicians are untrained in interpreting AI outputs, understanding uncertainties in algorithms, or incorporating AI into their workflows. This lack of human-capacity development limits the potential of AI in healthcare.

B. *Need for Tailored Education:* Effective education in healthcare must extend beyond basic IT skills to include AI-specific competencies such as data interpretation, system integration, and ethical scrutiny. Professionals should grasp concepts like probability and bias, effectively use AI-integrated tools in daily workflows, and critically evaluate algorithmic fairness and transparency. A national digital health education framework is crucial for standardizing curricula and mass up-skilling India's extensive healthcare workforce.



Linking Education & Employment

CASE STUDY:

Institutionalizing Digital Health Education for an AI-Ready Workforce

In April 2025, Maharashtra University of Health Sciences established CHAKRA as a Section 8 company to enhance digital health and AI capacity within public health education. Launched in June 2025, CHAKRA operates as a hub-and-spoke model, impacting over 43,000 students across 586 affiliated institutions. The Digital Health Department is key to fostering talent for responsible AI use in public health. The Digital Health vertical focuses on education and applied research, offering structured training for medical students, healthcare professionals, and public health practitioners, covering topics from digital literacy to AI ethics.

A key initiative is the Digital Health Foundation Course (DHFC), the first state-led digital health training in India, developed by MUHS with the Koita Foundation and endorsed by the National Health Authority (NHA). This course is recognized through an MoU signed in August 2024, enabling MUHS to serve as a model for national digital health education. Its alignment with national frameworks, such as the Ayushman Bharat Digital Mission, ensures that training meets the practical needs of Maharashtra's public health system. The Digital Health vertical utilizes a competency-based, blended learning model for scalable and adaptable training. Foundational modules on digital health, AI literacy, data interpretation, and ethics are provided via e-Prabodhini—MUHS's Learning Management System—allowing standardized content access across affiliated colleges. Applied learning, including case studies and digital tools integration, occurs at spoke institutions to align with local practice. Faculty development is crucial, with structured train-the-trainer programs for educators, ensuring they are well-prepared to deliver AI-informed education and support workforce upskilling.

The Digital Health vertical promotes applied research in digital health implementation, focusing on AI tool adoption, telemedicine outcomes in rural Maharashtra, decision-support systems in resource-limited settings, and digital health education's effect on workforce skills. This research ensures that training programs are evidence-based, adapt to technological changes, and produce relevant knowledge for health-system decision-making.

Core Training Domains

The Digital Health vertical organizes its educational activities around 4 core domains, each mapped to a distinct dimension of AI-enabled public health practice.

Domain 1 — Telemedicine and Remote Care Healthcare professionals are trained to utilize platforms like eSanjeevani, India's national telemedicine service, which has enabled over 330 million consultations through 131,147 Health and Wellness Centres with more than 230,000 registered providers. Training includes clinical triage protocols, medico-legal aspects, and patient communication in virtual settings. With the introduction of an AI-based clinical decision support system in eSanjeevani 2.0, clinicians need to engage critically with AI-assisted triage recommendations rather than accept them without scrutiny.

Domain 2 — Electronic Health Records and ABDM Integration. Training in this domain focuses on developing skills to create, maintain, and interpret electronic health records (EHRs) within the ABHA/Health ID ecosystem. By February 2025, over 739 million ABHA accounts and approximately 490 million linked health records highlight the necessity of EHR competency. Participants learn about interoperability standards (HL7 FHIR, SNOMED CT, LOINC), data governance principles, and the Digital Personal Data Protection Act (2023), emphasizing the importance of reliable data for effective AI models.

Domain 3 — AI for Diagnostics and Clinical Decision Support. This training domain focuses on equipping clinicians and public-health managers to effectively interpret AI-generated outputs like screening flags and diagnostic suggestions. It covers model limitations, the probability of errors, and when to question or override algorithmic recommendations. Ethical aspects, such as algorithmic bias and the importance of human oversight, are central to the curriculum, emphasizing the potential for AI to exacerbate socio-demographic inequities if mismanaged. This training prepares professionals to be informed intermediaries in clinical and public-health decision-making.

Domain 4 — Wearable Devices and Remote Monitoring. Healthcare workers must understand wearable health technologies and their integration into care pathways as the Indian healthcare wearables market grows. This includes telemedicine, AI diagnostics, and the implications of data use for chronic disease management and outbreak detection. Familiarity with data privacy, algorithmic bias, and informed consent is essential for effective oversight.

Paving the Way for Precision Public Health

To realize the vision of precision public health in India—where care is accessible, efficient, equitable and data-driven—the synergy between foundational AI infrastructure (data, technology, human-ecosystem) and robust digital health education is indispensable. Through the integrated approach, AI can become a genuine enabler of public-health transformation across India's diverse socio-demographic landscape.

As AI becomes embedded in surveillance, screening, and health-system operations, strengthening public-health education is essential. Nationally aligned curricula, scalable digital-learning platforms, and competency-based training will be critical for preparing India's workforce to interpret and apply AI tools responsibly. Such investment will determine how effectively AI contributes to equitable & data-driven public-health transformation.

References

1. Rana RK, Kapoor N, Kumar D, Verma M, Taneja G. Digital Health Revolution in India: Transforming Health and Medicine. Indian J Community Med. 2024 Dec;49(Suppl 2): S205-S209. doi: 10.4103/ijcm.ijcm_803_24.
2. Gore MN, Olawade DB. Harnessing AI for public health: India's roadmap. Front Public Health. 2024 Sep 27;12:1417568. doi: 10.3389/fpubh.2024.1417568.
3. Das SK, Dasgupta RK, Roy SD, Shil D. AI in Indian healthcare: From roadmap to reality. Intelligent Pharmacy. 2024;2(3):329-334.
4. Naik S, Reddy B. A framework for the governance of AI in healthcare for India: an exploratory model. Indian J Med Ethics. 2025;0(0). Available from: https://ijme.in/articles/a-framework-for-the-governance-of-ai-in-healthcare-for-india-an-exploratory-model/. Accessed 2025 Nov 24.
5. Xu X, Zhang M, Huang S, Li X, Kui X, Liu J. The application of artificial intelligence in diabetic retinopathy: progress and prospects. Front Cell Dev Biol. 2024 Oct 25;12:1473176. doi: 10.3389/fcell.2024.1473176.
6. Tezpal M, Ghosh S, Lalwani R, Yadav J, Yadav AK. Artificial Intelligence in Health Care – a study on perceptions of and readiness for artificial intelligence in health-care professionals. J Mar Med Soc. 2024;26(3):376-381. doi:10.4103/jmms.jmms_161_23.
7. Wang X, He X, Wei J, Liu J, Li Y, Liu X. Application of artificial intelligence to the public health education. Front Public Health. 2023 Jan 10;10:1087174. doi: 10.3389/fpubh. 2022. 1087174.
8. Sharma K. Shaping India's healthcare workforce for the digital era. Express Healthcare. 2025 Nov 18. Available from: https://www.expresshealthcare.in/news/shaping-indias-healthcare-workforce-for-the-digital-era/451469/. Accessed 24 Nov 2025.
9. Vesna L, Dash S, Verma VK, Shankar U, Rao AS. The Role of Digital Education Tools in Healthcare Training and Professional Development. Frontiers in Health Informatics. 2024 Apr 1;13(3).

10. Deshpande C. CHAKRA by MUHS: a new nucleus for healthcare innovation and education. The Times of India [Internet]. 2025 Jun 05 [cited 2025 Nov 24]. Available from: https://timesofindia.indiatimes.com/city/nagpur/chakra-by-muhs-a-new-nucleus-for-healthcare-innovation-and-education/articleshow/121632193.cms
11. Singh A. MUHS launches CHAKRA to drive innovation in health education and research. India Today – Best Colleges [Internet]. 2025 Jun 06 [cited 2025 Nov 24]. Available from: https://bestcolleges.indiatoday.in/news-detail/muhs-launches-chakra-to-drive-innovation-in-health-education-and-research-3820
12. Centre for Health Applied Knowledge and Research Autonomy (CHAKRA). CHAKRA–MUHS [Internet]. [cited 2025 Nov 24]. Available from: https://chakra.muhs.ac.in/
13. Ministry of Health and Family Welfare; National Health Authority & Maharashtra University of Health Sciences. National Health Authority (NHA) and Maharashtra University of Health Sciences (MUHS) sign MoU to drive digital health education [Internet]. Press Information Bureau; 2024 Aug 13 [cited 2025 Nov 24]. Available from: https://www.pib.gov.in/PressReleasePage.aspx?PRID=2044857
14. Centre for Health Applied Knowledge and Research Autonomy. CHAKRA-COE: Maharashtra's state-led Centre of Excellence for medical education, digital health and clinical research [Internet]. [cited 2025 Nov 24]. Available from: https://chakra-coe.com/
15. Ministry of Health and Family Welfare. National Health Authority (NHA) and Maharashtra University of Health Sciences (MUHS) sign MoU to drive digital health education: Digital Health Foundation Course [Internet]. New Delhi: MoHFW; 2024 [cited 2025 Nov 24]. Available from: https://www.mohfw.gov.in/?q=en/pressrelease-44
16. Arora RK, Huda RK, Verma S, Jakhar K, Joshi C. Challenges, barriers, and facilitators in telemedicine implementation in India: a scoping review. Cureus. 2024 Aug 21;16(8):e67388. doi: 10.7759/cureus.67388.
17. Wadhwa R, Priya K, Gupta A, Mehrotra R, Rao B. AI clinical decision support system (CDSS) for teleconsultations in eSanjeevani, India telemedicine service: a prospective implementation study [Preprint]. medRxiv. 2025 Nov 22. doi: 10.1101/2025.11.22.25340800.
18. Ministry of Health and Family Welfare. Update on the implementation of Ayushman Bharat Digital Mission (ABDM) [Internet]. Press Information Bureau; 2025 Feb 13 [cited 2025 Apr 10]. Available from: https://www.mohfw.gov.in/?q=en/pressrelease-209
19. Priya K, Nair R, Krishnamurthy R, Singh RK. India's evolving digital health strategy. NPJ Digit Med. 2024;7(1):267. doi: 10.1038/s41746-024-01267-6. PMID: 39375527; PMCID: PMC11484760.
20. Sanjana SN, Mahajan M, Gupta P, Preethi S, Jain A. AI horizons in Indian healthcare: a vision for transformation and equity. Indian J Community Med. 2024 Dec 30;49(Suppl 2):S210–S216. doi: 10.4103/ijcm.ijcm_806_24.
21. David D, Rajeshwari B, Timhna S. Algorithmic bias and discrimination in India: a looming crisis. Glob Media J. 2026. doi: 10.1177/24551333251343358.
22. World Economic Forum. Four ways India is deploying AI and innovation to revolutionize healthcare [Internet]. Geneva: WEF; 2025 Apr [cited 2025 Apr 10]. Available from: https://www.weforum.org/stories/2025/04/india-healthcare-ai-innovation/
23. Hanafi MO, Adediran GA, Akinfemisoye I, Tafirenyika S, Bello O, Chikezie CN. A review of AI-wearable technologies for public health surveillance in the US: challenges and recommendations. J Med Sci Biol Chem. 2025;2(2):37–49. doi: 10.69739/jmsbc.v2i2.739.

Padavidhar (UG) and Padvyuttar (PG) Sanshodhan Prakalp Anudan: 2026

For more Information

Visit: IPHA Maharashtra Website

(..... Continued from Page 24: Yellow Fever)

17. Nichols RF, Powell JH. Bring Out Your Dead! The Great Plague of Yellow Fever in Philadelphia in 1793. William Mary Q [Internet]. 1950 [cited 2026 Apr 15];7(2):289. Available from: https://books.google.gm/books?id=CSCvAwAAQBAJ&printsec=copyright&source=gbs_pub_info_r#v=onepage&q&f=false
18. Theiler M, Sellards AW, Sellards AW. The Immunological Relationship of Yellow Fever as It Occurs in West Africa and in South America. Ann Trop Med Parasitol [Internet]. 1928 Dec 28 [cited 2026 Apr 15];22(4):449–60. Available from: /action/showLogin?uri=%2Fdoi%2Fpdf%2F10.1080%2F00034983.1928.11684585
19. Theiler M, Smith HH. THE USE OF YELLOW FEVER VIRUS MODIFIED BY IN VITRO CULTIVATION FOR HUMAN IMMUNIZATION. J Exp Med [Internet]. 1937 Jun 1 [cited 2026 Apr 15];65(6):787–800. Available from: https://pubmed.ncbi.nlm.nih.gov/19870634/
20. (PDF) The Yellow Fever Vaccine: A History [Internet]. [cited 2026 Apr 15]. Available from: https://www.researchgate.net/publication/44853136_The_Yellow_Fever_Vaccine_A_History
21. The Long Road to the Yellow Fever Vaccine - REsource [Internet]. [cited 2026 Apr 15]. Available from: https://resource.rockarch.org/story/the-long-road-to-the-yellow-fever-vaccine/
22. Max Theiler - Wikipedia [Internet]. [cited 2026 Apr 15]. Available from: https://en.wikipedia.org/wiki/Max_Theiler
23. Requirements for yellow fever vaccine, Annex 2 [Internet]. [cited 2026 Apr 15]. Available from: https://www.who.int/publications/m/item/requirements-for-yellow-fever-vaccine-annex-2
24. Barrett ADT. Yellow Fever in Angola and Beyond — The Problem of Vaccine Supply and Demand. N Engl J Med [Internet]. 2016 Jul 28 [cited 2026 Apr 15];375(4):301–3. Available from: https://www.nejm.org/doi/pdf/10.1056/NEJMp1606997
25. KU Leuven and the Institut Pasteur of Dakar join forces for local vaccine production in Africa — News [Internet]. [cited 2026 Apr 15]. Available from: https://nieuws.kuleuven.be/en/content/2023/vaccine-production-in-africa
26. Amendment to International Health Regulations (2005), Annex 7 (yellow fever): Term of protection provided by vaccination against yellow fever infection. [cited 2026 Apr 15]; Available from: http://www.who.int/ihr/publications/9789241596664/en/
27. Yellow Fever Vaccine Booster Doses: Recommendations of the Advisory Committee on Immunization Practices, 2015 [Internet]. [cited 2026 Apr 15]. Available from: https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6423a5.htm
28. Maltezou HC, Rahiotis C, Tseroni M, Madianos P, Tzoutzas I. Attitudes toward Vaccinations and Vaccination Coverage Rates among Dental Students in Greece. Int J Environ Res Public Health. 2022 Mar 1;19(5).
29. YF_Booster.pdf [Internet]. India: MoHFW; Available from: https://ihpoe.mohfw.gov.in/assets/pdf/YF_Booster.pdf

IPHA MH Research Grants for UG & PG Students of Maharashtra

Applications Open: 01 May 2026

Applications Close: 31 May 2026

Declaration of Results: 30 June 2026

Visit: www.iphamaha.org

MHIAPSMIPHACON 2026: 27th Joint State Conference

Report By: Dr. Vijaykumar S. Singh

Organizing Chairperson & Professor & Head, Community Medicine
Seth G. S. Medical College & K. E. M. Hospital, Mumbai

The Department of Community Medicine, Seth GS Medical College & KEM Hospital, Mumbai successfully organized the 27th Joint Maharashtra State Conference of the Indian Association of Preventive & Social Medicine (IAPSM) Maharashtra Chapter and Indian Public Health Association (IPHA) Maharashtra Branch - MHIAPSMIPHACON 2026 on 6th and 7th February 2026, with a pre-conference workshop on 5th February 2026.

The theme of the Joint conference was **"Universal Health Care: Bridging Gaps in Rural and Urban Health,"** focusing on identifying and addressing gaps in healthcare delivery within rural and urban areas, aiming to achieve Universal Health Coverage (UHC) in India. UHC means that all people can access the health services they need-preventive, promotive, curative, rehabilitative and palliative care, without facing financial hardship. It is not only about building hospitals or providing insurance. It is about creating a health system that is fair, inclusive, affordable, accessible and responsive to the need so that all people are involved.

The conference served as a platform for dialogue, learning, and collaboration. By bringing together policymakers, health professionals, researchers, and community leaders. It aimed to share experiences, highlight best practices, and explore innovative approaches to bridge the gaps in urban and rural healthcare. The conference was organized as a part of the Centenary Year Celebration of Seth GS Medical College & KEM Hospital, adding prestige and historical importance to the event.

Dr. Sangeeta Ravat, Dean of Seth GS Medical College and KEM Hospital served as the Patron of the conference. The organizing committee was headed by Dr. Vijaykumar S. Singh, Professor & Head of Dept. of Community Medicine who served as the Organizing Chairperson and Dr. Yuvaraj B Chavan served as the Organizing Secretary. Dr. Janardhan Bandi was the Chief Joint Organizing Secretary. The Joint Organizing Secretaries included Dr. Pradeep Sawardekar, Dr. Smita Chavan, Dr. Amit Bhondve, and Dr. Deepika Sadawarte. Mr. Pratap Jadhav served as the Treasurer, and Dr. Sandeep Mishra served as the Co-Treasurer.

PRECONFERENCE WORKSHOP

A pre-conference workshop titled **"AI in Medical Research"** was organized on 5th February. The session titled "Introduction to AI in Medical Research" delivered by Dr. Amit Bhondve. The session on "Effective literature review using AI tools" was conducted by Dr. Ashlesha Tawde. The session on "Role of AI in Data Analysis and Research submission" was conducted by Dr. Alok Modi. This was complemented by a hands-on group activity

wherein participants analysed a sample dataset using AI tools. After the working lunch, the workshop continued with an

engaging session, “Role of AI in Data Mining” by Dr. Saugat Ray. The participants were involved in designing a study protocol and data collection tools using AI, reinforcing

experiential learning. The final technical session on “Role of AI in Ethics and Future Directions” was conducted by Dr. Amit Bhondve. The session concluded with appreciating the contributions of resource persons, organizing team, and supporting staff in the successful conduct of the event.

PATHNATYA SPARDHA

The Pathnatya Spardha (Street play competition) by IPHA Maharashtra branch was conducted on 5th February 2026, wherein a total of 6 teams participated from various medical institutes in Mumbai.

This competition helps enhance communication, leadership, and teamwork. The teams had prepared the Pathnatya on various themes like deaddiction, prevention of communicable and non-communicable diseases, Hurdles in immunization, breastfeeding, adolescent health, geriatric health, women empowerment, etc.

The 1st prize was shared by MGM Medical College, Kamothe, who presented a Pathnatya on Healthy Ageing, and School of Nursing, KEM Hospital, who presented a Pathnatya on Deaddiction. The runner-up was the team from the School of Nursing, Sion hospital with topic of breastfeeding.

Day 01: 06 February 2026

Day 1 commenced with the Padmashri Dr. D.N. Pai Memorial Oration, delivered by Dr. Muralidhar Tambe under the chairpersonship of Dr. Harshal Pandve, with co-chairpersons Dr. Dipak Patil and Dr. Roshni Miranda. The

oration focused on assessing unmet needs for assistive technologies using a digital rapid Assistive Technology Assessment (rATA) tool among the general population. The speaker emphasized inclusivity within public health and highlighted the importance of technology-driven assessment approaches for identifying disabilities, functional limitations, and access gaps.

The second session, titled Pathways to Cervical Cancer Elimination, was delivered by Dr. Rajesh Dikshit and Dr. Gauravi Mishra, chaired by Dr. Y.B. Chavan, with co-chairpersons Dr. Madhavi Mankar and Dr. Yogita Bavaskar. This scientific session provided a comprehensive epidemiological

overview of cervical cancer burden and prevention strategies. Discussions focused on trend mapping, risk stratification, and emerging screening modalities such as HPV-based screening and self-sampling techniques.

The Padma Bhushan Dr. Banoo Jehangir Coyaji Oration, delivered by Dr. Jayashree Gothankar and chaired by Dr. Prasad Waingankar with co-chairpersons Dr. Abhiram Kasbe and Dr. Padmavathi

Dyavarasetty, addressed the mapping of COPD and asthma within the NCD control

program of India. The speaker discussed epidemiological trends, environmental determinants, and challenges related to early diagnosis and management.

The quarterly issue of IPHA MH Newsletter was released by past presidents of IPHA Maharashtra, Dr Muralidhar Tambe & Dr. Gajanan Velhal.

INAUGURAL CEREMONY

The Inaugural was conducted with academic solemnity and institutional dignity. The inaugural ceremony established the scholarly framework for the scientific deliberations aligned with the conference theme, “Universal Health Care: Bridging Gaps in Urban & Rural Health.” The masters of ceremony were Dr Swati Deshpande and Dr Amit Bhondve. The programme commenced with a cultural invocation followed by the traditional Lamp Lighting Ceremony by the esteemed dignitaries on the dais, symbolizing enlightenment, knowledge dissemination, and collective academic commitment. The rendition of the Maharashtra Geet reinforced regional pride and the shared responsibility of strengthening public health systems.

Each dignitary was presented with a sapling symbolizing sustainability and growth, along with a commemorative memento as a token of gratitude and respect. The Chief Guest for the occasion was Mr. Sharad Ughade, Deputy Municipal Commissioner. The Guests of Honor included Dr. Shashank Dalvi, Vice Chancellor of MGM University; Dr. Nitin Ambadekar, Director of Health Services; and Dr. Shailesh Mohite, Director of Medical

Education and Major Hospitals. Their presence underscored the collaborative interface between academia, administration, and public health governance. The inaugural function was graced by Dr. Sangeeta Rawat, Dean; Dr. Vijaykumar Singh, Head of the Department and Organizing Chairperson; Dr. Harish Pathak, Academic Dean; and Dr. Daksha Shah, Executive Health Officer. Representatives of professional bodies included Dr. Purushottam Giri, President of the IAPSM State Chapter; Dr. Prasad Waingankar, President of the IPHA State Branch; Dr. Harshal Pandve, Secretary of the IAPSM State Chapter; and Dr. Deepak Kismatrao, Secretary of the IPHA. Eminent dignitaries such as Dr. Sachin Mumbare, Dr. Sanjay Zodpey, Dr. R. C. Goyal, Dr. Murlidhar Tambe, Dr. Mohan Desai, and Dr. Upal also graced the occasion.

Dr. Sangeeta Rawat reflected upon the institution’s century-long legacy and reaffirmed its commitment to academic excellence and societal transformation. She underlined that education has a transformative power that goes beyond earning a degree to have a significant impact on the community. Dr. Shailesh Mohite elaborated on the integration of medical education with healthcare service delivery across municipal medical institutions. Dr. Nitin Ambadekar highlighted strategic initiatives aimed at improving public health infrastructure and service outreach. He emphasized coordinated administrative action and community-centered planning as critical to achieving Universal Health Care. Dr. Shashank Dalvi appreciated theme chosen for the conference as it is a need of time.

Mr. Sharad Ughade delivered a motivational address acknowledging the vital role of academic institutions and professional bodies in shaping public health systems. He highlighted the cooperation and dedication of SETH GSMC and KEMH with public health initiatives. and appreciated the functioning of IAPSM & IPHA in the state. He emphasized administrative support in bridging urban–rural health gaps.

The Keynote Address was delivered by Dr. Sanjay Zodpey and chaired by Dr. Vijaykumar Singh along with co-chairpersons Dr. R.C. Goyal and Dr. Abhay Saraf. The keynote focused on the future trajectory of Community Medicine in achieving the vision

of "Viksit Bharat." Key themes included strengthening academic and public health integration, leadership development, digital transformation, and strategic policy engagement.

The Dr. D. K. Ramadwar Memorial Oration was delivered by Dr. Hrishikesh Khadilkar under the chairpersonship of Dr. Purushottam Giri with co-chairpersons Dr. Shobha Salve and Dr. Santosh Haralkar. This session explored cancer care pathways and patient navigation systems, focusing on reducing delays in diagnosis and treatment. The speaker highlighted real-world health system barriers and discussed the need for coordinated, patient-centered models to improve outcomes and continuity of care.

The HPV Screening and Vaccination Panel Session, moderated by Dr. Sharmila Pimple with panel faculty including Dr. Hitt Sharma and Dr. Muralidhar Tambe, was chaired by Dr. Janardhan Bandi with co-chairpersons Dr.

Vikas Kshirsagar and Dr. Violet Pinto. This multidisciplinary panel discussed global evidence for HPV screening and vaccination, the transition toward HPV DNA-based screening in the low-and-middle-income countries, and the implementation of indigenous HPV vaccines. Discussions extended from policy-level frameworks to field-level challenges, highlighting strategies necessary for successful cervical cancer elimination.

The session on Epidemiology of Obesity – Updates, delivered by Dr. Virendra Patil, Dr. Rohit Barnabas, and Dr. Aditya Phadte, was chaired by Dr. Amit Bhondve with co-chairpersons Dr. Sandhya Singh and Dr. Upalimitra Waghmare. The speakers discussed obesity trends and their implications for metabolic diseases, emphasizing early holistic interventions.

The Dr. Mrunalini Pathak Memorial Oration, delivered by Dr. Prashant Bagdey and chaired by Dr. Rujuta Hadaye with co-chairpersons Dr. Sujata Pol and Dr. Dharampal Dambare, highlighted climate change as an emerging determinant of health.

The discussion centered on climate-sensitive diseases, disaster preparedness, and

adaptive public health responses, emphasizing resilience-building at community and systems levels to tackle future climate-related health risks.

The final plenary of Day 1, India's Robust Defense Against Yellow Fever, was delivered by Dr. Vivekanand Giri under the

chairpersonship of Dr. Ravindra Kembhavi with co-chairpersons Dr. Pallavi Uplap and Dr. Rosna Mary Anto. The session focused on surveillance mechanisms, international travel vaccination policies, and regulatory preparedness for yellow fever prevention, emphasizing compliance with international health regulations and strengthening travel medicine services. The final session was followed by the Annual General Body Meetings of both the associations.

The conference banquet was a joyful gathering centered around a magnificent feast wherein the delegates, speakers, and organizers were brought together in a relaxed setting to network, celebrate achievements, and strengthen professional relationships.

The highlight of the banquet was the orchestra by "Sur N Saaz" organized by Dr. Aditi Phulpagar, followed by Karaoke singing by the delegate members. The delegates enjoyed the singing performances and tapped their feet to most of the songs.

Day 02: 7 February 2026

Day 2 began with the Dr. P.S.N. Reddy (IAPSM) Oration, delivered by Dr. Ashish Mishra under the chairpersonship of Dr. Balkrishna Adsul with co-chairpersons Dr.

Sriram Gosavi and Dr. Rishikesh Ajit Wadke. The oration presented occupational health as an emerging domain for public health specialists, discussing workplace risk surveillance, preventive occupational medicine, and expanding public health roles within industrial and corporate settings.

This was followed by a session on Recent Advances in Rabies Post-Exposure

Prophylaxis, delivered by Dr. Ravish H.S., chaired by Dr. Lalit Sankhe with co-chairpersons Dr. Swati Deshpande and Dr. Sandeep Mishra.

The Thalassemia @100th Year session was delivered by Dr. Ratna Sharma under the chairpersonship of Dr. Sumedha Joshi with co-chairpersons Dr. Armaity Dehumed and Dr. Avanti L. Gokhale.

Session on Metadichol – Connecting Ancient Wisdom to Modern Science, delivered by Dr. Raghavan and chaired by Dr. Gajanan Velhal with co-chairpersons Dr. Lalit Anande, Dr. Duryodhan Chavan, and Dr. Satish Mali.

A panel discussion titled From Act to Implementation: MTP, PCPNDT, ART and Surrogacy Act featured panelists Dr. Vijay Kandewad, Dr. Daksha Shah, Dr. Padmaja

PRIZE WINNERS IN MHIAPSMIPHACON 2026

	WINNER	TITLE OF PAPER
Oral Paper Presentation - (Dr Khergaonkar Prize -IAPSM) Theme: Urban Public Health		
1	**Dr. Sushmita** Senior Resident Seth GS Medical College & KEM H, Mumbai	An Assessment of Quality of Life in Drug-Resistant Tuberculosis patients in a Tertiary Care Hospital of Metropolitan City
1	**Dr. Purva Deepak Patil** Senior Resident MGM Medical College, Panvel	Osteoarthritis Knee – Prevalence and associated factors among adults: a community based cross sectional study
2	**Dr. Sujata Pol** Professor (Addl.) Lokmanya Tilak Municipal Medical College Sion	Assessment of Compliance and Violations of Tobacco legislation (COTPA) across public transport- Buses, Bus Depots, and Bus Stops in Mumbai
2	**Dr. Ravi Sapkal** Junior Resident Lokmanya Tilak Municipal Medical College Sion	Attributes and Predictors of Tobacco Cessation Attempts Among Tobacco users attending an Urban Health Centre in a metropolitan city
Oral Paper Presentation (Dr M V Kulkarni Prize - IAPSM) Theme: Maternal & Child Health		
1	**Dr. Pratik Tawade** Junior Resident Datta Meghe Institute of Higher Education and Research, Sawangi	Association Between Household Livestock Ownership and Stunting in Under-Five Children in Central Rural India: A Case-Control Study.
2	**Dr. Shwetangi Shinde** Senior Resident Lokmanya Tilak Municipal Medical College Sion	Insights into public-private sector variations in maternal health care and pregnancy outcomes in an urban slum of Mumbai
Oral Paper Presentation (Dr Vijaya Bhalerao Prize - IAPSM) Theme: School Health		
1	**Dr. Sonu Meher** PhD Scholar Indian Institute of Health Management and Research, Nagpur	Adverse and Positive Childhood Experiences, Resilience, Life-skills and Mental Well-Being among Adolescents Residing in the Urban Slums of Nagpur, Maharashtra.
2	**Dr. Shubhangini Singh** Junior Resident Armed Forces Medical College, Pune	Impact of a Gender-Inclusive School-Based Intervention on Menstrual Health Equity: A Pre–Post Study in Government and Private Schools.
Oral Paper Presentation (Dr Saroj Jha Prize -IAPSM) Theme: Health Education/ Gender Issue		
1	**Dr. Roshani Cynthia Miranda** Associate Professor (Additional) HBT Medical College and Dr R N Cooper hospital	Effect of stigma and Discrimination among PLHIV and Key population on HIV/AIDS control and care efforts in Mumbai, Maharashtra.
2	**Dr. Nidhi Pradeep Sastry** Senior Resident Lokmanya Tilak Municipal Medical College Sion	Health profile, concerns and quality of life of people from LGBTQIA+ community: A mixed methods study in Maharashtra
Oral Paper Presentation (Dr Sonaji Jogdand Prize - IAPSM) Theme: Occupational Health/ Environmental Health		
1	**Dr. Naveenprasad G** Junior Resident Seth GS Medical College & KEM Hospital, Mumbai	Behind the Wheel: Risk Clustering and Health Outcomes among Urban Bus Drivers- A Cross-Sectional Study
2	**Dr. Adnan Ansari** Junior Resident Topiwala National Medical College & B. Y. L. Nair Charitable Hospital	Study of Occupational Lung Disorders Among Power Loom Workers in Bhiwandi: A Cross-Sectional Study
2	**Dr. Juhi Raut** Senior Resident K J Somaiya Medical College & Research Centre, Sion	A Mixed-Method study to assess Morbidity, Healthcare Access, and Service Utilization among Daily-Wage Workers in Central Urban India.
Oral Paper Presentation (Dr Sharangdhar Kanhere Prize - IAPSM) Theme: Community Based Intervention/ Appropriate Technology		
1	**Dr. Vasundhara Y Kulkarni** Scientific Officer Tata Memorial Centre	Barriers to Cervical Cancer Screening by HPV Self-Sampling (HPV-SS) across Diverse Settings: A Multi-setting Assessment of Women's Attitudes and Perceptions.
1	**Dr. Madhavi Bhargava** Professor and Deputy Head, Centre for Nutrition Studies Yenepoya Medical College, Mangalore	Changes in body composition in patients and household contacts in the RATIONS trial
2	**Dr. Anuradha Shah** Associate Professor K J Somaiya Medical College & Research Centre, Sion	An interventional study assessing the effect of color-coded menus on food choices among medical college students.

	WINNER	TITLE OF PAPER
Oral Paper Presentation (Best Paper award for UG Student - IPHA)		
1	**Sarth Rajesh Parekh** 3rd MBBS GMC, Alibag	Racial and Gender Representation in Medical Illustrations: Cross-sectional Analysis of MBBS Textbooks Recommended in Indian Curriculum
2	**Anushka Tiwari** 3rd MBBS GMC, Alibag	Comprehensive Evaluation of Road Traffic Accidents in a Alibag Peri-Urban Indian Region: A Data-Driven Analysis using the Haddon's Matrix Framework.
Poster Presentation (Best Poster - Male Researcher - IPHA)		
1	**Dr. Abhishek Dhawan** Junior Resident Mahatma Gandhi Mission Medical College & Hospital, Chh Sambhajinagar	Perception among Medical Undergraduates in view of Schizophrenia as a psychiatric illness- an in-depth study
2	**Dr. Deviprasad Rath** Junior Resident GMC Nagpur	Fathers as Health Champions: A Cross-Sectional Study on Maternal Outcomes at an Urban Primary Health Centre
Poster Presentation (Best Poster - Female Researcher - IPHA)		
1	**Dr. Harsha V Nannaware** Junior Resident GMC Gondia	Understanding the Healthcare Needs and Healthcare Seeking in Tribal Communities: A Qualitative Study in tribal district of central India.
2	**Dr. Kosturi Dakshit** Senior Resident All India Institute of Medical Sciences, Kalyani	Diabetes distress and its relationship with depression in Type 2 Diabetes Mellitus patients: A cross-sectional study.
Oral Paper Presentation (Organizing Committee) Theme: Medical education		
1	**Dr. Minal Borode** Junior Resident Grant Government Medical College & Sir JJ Hospital Mumbai	Perceptions of Students on the Entry-Level Foundation Course Conducted at a Newly Established Medical College: A Mixed-Methods Study
2	**Dr. Pogula Preethi** Junior Resident GMC Nagpur	Assessment of Knowledge, Attitude, and Practices regarding Self-Directed Learning among Medical Undergraduates of Government Medical College Nagpur: A Cross-Sectional Study
Oral Paper Presentation (Organizing Committee) Theme: Communicable Diseases		
1	**Dr. Alan Jacob** Abraham Senior Resident HBT Medical College and Dr R N Cooper hospital	A Cross-Sectional Study on Patient Delay and Health System Delay Among Newly Diagnosed Pulmonary Tuberculosis Patients in an Urban Slum Area.
2	**Dr. Akshay Kumar B Hawaladar** Junior Resident PCMC's Post Graduate Institute & YCM Hospital, Pimpri, Pune	Treatment Non-Compliance Among Leprosy Patients Attending the Skin OPD of a Tertiary Care Teaching institute in Western Maharashtra: A Cross-Sectional Study
Oral Paper Presentation (Organizing Committee) Theme: Non-Communicable Diseases		
1	**Dr. Amey Oak** Assistant Professor- Division of Cancer Care, HBCR & SS, CCE, ACTREC, Tata Memorial Centre	Role of Sociodemographic, Clinical factors & their Association with Colon Cancer Survival- A retrospective study in Tata Memorial Hospital, Mumbai
2	**Dr. Sandeep Sunilrao Nandode** Junior Resident GMC Kolhapur	Determinants of Childhood Obesity Among School-Going Children in a District of Western Maharashtra: A Cross-Sectional Study
Oral Paper Presentation (Organizing Committee) Theme: Health Systems		
1	**Dr. Pritesh Raut** Associate Professor GMC, Satara	Challenges in implementation of 'Direct Benefit Transfer' scheme of Nikshay Poshan Yojana – A Qualitative study
2	**Dr. Vaibhav Mahatme** Senior consultant Nutrition bureau UNICEF supported	Integrating ECD into the HBYC Programme by Enhancing ASHA Skills

	WINNER	TITLE OF PAPER
Oral Paper Presentation (Organizing Committee) Theme: Reproductive and Child Health		
1	**Dr. Mohini Mhaske** Assistant Professor, MGM Medical College, Kamothe	Descriptive Cross-Sectional Study to Assess Nutrition and Hygiene Practices Among Adolescent Inhabitants of an Observation Home in Dongri, Mumbai.
2	**Dr. Sheeza Javed Shaikh** Junior Resident Dr. D Y Patil Medical College, Hospital and Research Centre Pimpri Pune	Awareness, Attitude & Practice Regarding Kangaroo Mother Care (KMC) Among Mothers of Infants in tertiary care hospital
Oral Paper Presentation (Organizing Committee) Theme: Mental Health		
1	**Dr. Ajinkya Nimbalkar** Junior Resident	Masculinity in Transition: Identity Formation and Behavioural Patterns Among Delhi NCR Male Students
2	**Dr. Aishwarya Balakrishnan** Junior Resident Grant Government Medical College & Sir JJ Hospital Mumbai	Prevalence of Depression, Anxiety, and Stress Among Adolescents in an Observation Home in a Metropolitan City of Maharashtra: A Cross-Sectional Study
Oral Paper Presentation (Organizing Committee) Theme: Miscellaneous		
1	**Dr. Bharat Masal** Junior Resident Seth GS Medical College & KEM Hospital, Mumbai	Knowledge, Attitude and Practices regarding Biomedical Waste Management among ANMs and staff Nurses in PHCs of Tribal block.
2	**Dr. Chinmayee Chandurkar** Junior Resident GMC Akola	Evaluating The Cyberchondria Construct among the Agriculture students in Central India – A Cross-sectional study.
2	**Dr. Chinmai S. Anand** Junior Resident Grant Government Medical College & Sir JJ Hospital. Mumbai	Development and Preliminary Validation of a Travel Preparedness Scale for International Travellers.
Poster Presentation (Organizing Committee) Theme: Disease Patterns, Clinical & Epidemiological Studies		
1	**Dr. Aswathy Madhu** Junior Resident Dr. D Y Patil Medical College, Hospital and Research Centre Pimpri Pune	Parenting Stress and Daily Hassles Among Parents of Children with ADHD: An Overlooked Component in Family-Cantered Care - Cross-sectional Study
1	**Dr. Ayushi Anil Rathod** Junior Resident Bharati Vidyapeeth Medical College, Pune	Experiences of Women of Reproductive Age, working as Housekeeping Staff in Private Medical College on using Sustainable Menstrual Products
2	**Dr. Neha Patil** Junior Resident Mahatma Gandhi Mission Medical College & Hospital, Chh Sambhajinagar	A Survey on Digital Literacy in Senior Citizens
2	**Dr. Susheel D Biradar** Junior Resident GMC Kolhapur	Knowledge, Attitude, Practices Regarding Cervical Cancer and Human Papillomavirus Vaccination Among Women of Reproductive Age in city of Western Maharashtra
Poster Presentation (Organizing Committee) Theme: Health Systems, Medical Education & Workforce		
1	**Dr. Andrea Anthony Almeida** Junior Resident Mahatma Gandhi Mission Medical College & Hospital, Chh Sambhajinagar	A Boon or a Curse: A KAP Study on AI in Education Amongst School Students'
2	**Dr. Taneya Singh** Junior Resident D Y Patil Medical College Nerul Navi Mumbai	Navigating the Digital Shift: A Qualitative Analysis of the Hidden Cost of Digitalisation on India's Frontline Health Workers
Pathnatya Spardha / Street Play Competition – IPHA		
1	MBBS Students **MGM Medical College, Kamothe**	Topic: Healthy Ageing
1	Nursing Students Team A **School of Nursing, KEM Hospital**	Topic: Deaddiction
2	Nursing Students Team A **School of Nursing, Sion Hospital**	Topic: Breastfeeding

Samant, Dr. Purnima Satoskar, and Dr. Nitin Chaubal. The session was moderated by Dr.

Vaishali Chandanshive, chaired by Dr. Geeta Pardeshi, with Dr. Rakesh Waghmare as the co-chairperson. The panel examined legal frameworks, ethical considerations, and implementation challenges related to reproductive health legislation, emphasizing compliance & effective regulatory enforcement.

A panel discussion on Addressing Non-Communicable Diseases in Urban Health featured panelists Ms. Videhi Klazunkar, Dr. Bhargav Gaikwad, Dr. Daksha Shah, Dr. Nitin

Ambadekar, Dr. Vijayakumar Singh, Dr. Anagha Palekar, Dr. Shailendra Hegde, and Dr. Neeta Rao. The session was moderated by Dr. Vaishali Chandanshive, chaired by Dr. J. V. Dixit, with Dr. Deepali Kadam and Dr. Priya Kulkarni serving as co-chairpersons. The discussion focused on governance models addressing urban NCD challenges, including regulatory levers in food systems, financing innovations, and multisectoral partnerships aimed at scalable interventions.

A session on Veterinary Innovations in One Health: Diagnostics, Technology and Policy; One Health & Disease Prevention – Current Global Scenario; and One Health Perspective in Preventive and Social Medicine featured Lt. Gen. (Retd.) Dr. P. R. Venkatesh, PVSM, SM; Dr. Uday Kakroo; and Dr. Smita Chavan as speakers. The session was chaired by Dr. P. K. Uppal, with Dr. R. N. Kulkarni and Dr. Sujata Lavangare as co-chairpersons. The speakers discussed emerging veterinary innovations and emphasized the One Health approach in strengthening disease prevention and control, highlighting the integration of human, animal, and environmental health within public health practice.

The session on Occupational Health as Preventive Medicine in Action, delivered by Dr. Ashish Mishra, Dr. Amruta Desai, and Dr. Neetika Chauhan, chaired by Dr. Harshad

Thakur with co-chairpersons Dr. Subita Patil and Dr. Chaitali Borgaonkar, highlighted workplace wellness models and preventive strategies for reducing NCD risk among working populations.

A session on National Response for Ending AIDS Epidemic by 2030 – Challenges and Way Forward featured Dr. Shrikala Acharya as the speaker. The session was chaired by Dr. Mridula Solanki, with Dr. Ashlesha Tawade and Dr. Padmaja Kanchi serving as co-chairpersons. The session highlighted India's strategic response towards ending the AIDS epidemic by 2030, discussing key challenges, programmatic priorities, and the need for strengthened public health interventions & multisectoral collaboration.

In the session titled Childhood NCDs – The Next Frontier, speakers Dr. Akanksha Jambusaria, Dr. Simin Irani, Dr. Ravindra

Bagal, and Dr. Aakash Bang, under the chairpersonship of Dr. Shrikala Acharya and co-chairpersons Dr. Pallavi Shelke and Dr. Aftab Siddiqui, emphasized early-life determinants of chronic disease and

highlighted pediatric preventive interventions and policy innovations.

The session The First 1,000 Days and Beyond, delivered by Dr. Abhishek Raut and Dr. Mrudula Phadke, chaired by Dr. Sachin Mumbare with co-chairpersons Mr. Pratap

Jadhav and Dr. Deepika Sadawarte, focused on maternal nutrition, developmental programming, and early-life interventions as key strategies for long-term NCD prevention.

The Padmashree Dr. Suhaschandra V. Mapuskar Oration, delivered by Dr. Karbhari Kharat and chaired by Dr. Varsha Vaidya with co-chairpersons Dr. Yasmin Kazi and Dr.

Prasad Dhikale. The oration addressed the Zero Dose Implementation Plan (ZIP), highlighting strategies to improve immunization equity by identifying missed populations and strengthening outreach systems.

ORAL & POSTER PRESENTATIONS

Throughout the two days, the Oral and Poster Sessions were conducted with seamless coordination, showcasing a substantial volume of scientific contributions. In total, the conference featured 202 scientific presentations, comprising 159 oral presentations and 43 poster presentations across various themes. To encourage scientific rigor and honor outstanding research contributions, the conference recognized several scholars across various competitive categories. These awards, spanning both IAPSM and IPHA honors, and special awards by organizing committee represent the pinnacle of academic achievement during the two-day deliberations.

VALEDICTORY

The Valedictory Function marked the successful conclusion of the conference, hosted by the organizing committee. The proceedings commenced with dignitaries gracing the dais, followed by distribution of tokens of appreciation, felicitations, and prize

announcements. All committee members were appreciated for their hardwork. The proceedings concluded with the vote of thanks delivered by Dr. Janardan Bandi, Joint Organizing Secretary. Followed by a heartful message by Dr Vijaykumar Singh, Organizing chairperson of the conference.

YELLOW FEVER DISEASE: HISTORY & VACCINATION

Dr. Vivekanand C Giri[1], Dr. Mohammed Kashif[2], Dr. Ashwini Patekar[3]
[1]Joint Director & Port Health Officer,
[2&3]Public Health Specialist (PMABHIM), Port Health Organization, Mumbai

Yellow fever, the virus-based hemorrhagic illness transmitted via mosquitoes particularly the Aedes aegypti by the Flavivirus, has holds a special place in the history of contagious diseases. For three centuries it killed non-immune foreigners while sparing the locally immune natives, thus becoming a powerful factor influencing colonialism, warfare, and international business.

The building of the Panama Canal serves as a perfect example of yellow fever's historical impact. It is well known that the project's attempt by the French led to tragedy: out of 22,000 people who died during the work, most were victims of yellow fever and malaria. Despite that, a few years later, Americans managed to build the canal with relative ease; thanks to the research done by Dr. Carlos Finlay and the Walter Reed Commission as well as William Crawford Gorgas who used newly discovered vector-control technologies, an unfeasible task was turned into a triumph of engineering.

This article highlights aspects of yellow fever in five dimensions that include the geopolitical significance, burden, natural and evolutionary history of the pathogen and its vector, the past and current regulation of the 17D vaccine, the WHO amendment to the International Health Regulation in 2016 which made lifetime vaccination mandatory, and the framework of India against yellow fever infection, covering the cold chain from Central Research Institute, Kasauli to its 70 designated Yellow Fever Vaccination Centres, among which ten operate in the state of Maharashtra.

Part 1: Setting the Stage: Yellow Fever and the Panama Canal

1.1 The French Catastrophe (1881–1889)

Few chapters in the history of infectious disease intertwine so dramatically with geopolitical ambition as the story of yellow fever and the Panama Canal. The Panama Canal is an artificial waterway about 82 kilometers in length, situated in Panama, linking the Caribbean Sea to the Pacific Ocean. In 1881, French engineer Ferdinand de Lesseps, began work to carve a sea-level canal through the Isthmus of Panama, then part of Colombia, with a workforce, drawn largely from France, Afro-Caribbean islands (notably Barbados and Jamaica) and part of Europe, but stopped in 1889 because of a high worker mortality rate no engineer had anticipated: yellow fever, known colloquially as "yellow jack" or "*vomito negro*"- the black vomit (1).

French engineers who arrived in Panama had no acquired immunity to the disease. Conditions in the tropical isthmus sweltering heat, heavy seasonal rainfall creating stagnant water pools, inadequate sanitation, and densely packed labour camps created a perfect ecological nursery for Aedes aegypti mosquitoes, the primary vector. (2,3)

At its worst, an estimated three-quarters of French engineers died within months of arrival. (4) At least 25,000 workers died in the construction of the Panama Canal over the course of more than three decades, primarily from yellow fever and malaria. (5) The financial loss was approximately equivalent to several billion US dollars today and the human cost was immeasurable. The spectacle of the Panama Canal project became a cautionary tale of what tropical disease could do to even the most ambitious engineering enterprise.

There was a prevailing miasma theory of disease, that yellow fever arose from "bad air," filth, and decaying organic matter. This fundamentally wrong understanding led sanitary authorities to focus on cleaning up visible dirt rather than targeting mosquito breeding sites.

After returning to Cuba, Dr Carlos Finlay, a Cuban epidemiologist, conducted the first scientific study of yellow fever transmission. The disease and mosquitoes shared the same environmental constraints (altitude and temperature), with this, he

deduced that yellow fever wasn't spread by contact or ingestion but by Aedes Egypti mosquitoes. (6)

1.2 The American Intervention: From Panic to Triumph (1904–1914)

The United States purchased French canal assets for in 1902 and officially assumed canal construction in 1904 under the aegis of the Isthmian Canal Commission. President Roosevelt was duly aware that the primary obstacle to success was defeating yellow fever. Symbolizing that conquering the disease must precede conquering the terrain, a political cartoon in Harper's Weekly in 1905 depicted yellow fever as a skeletal mountain, looming before Roosevelt and Uncle Sam. (7)

Following Dr. Carlos Finlay's 1881 theory and its confirmation by the Walter Reed Commission in 1900, scientists proved by 1904 that mosquitoes spread both yellow fever and malaria.

Clara Maass, a U.S. Army contract nurse, famously volunteered for purposeful yellow fever infection in 1901. She had been bitten seven times by infected mosquitoes over the course of a few months and became the only female and American participant in the research study. (8) Maass believed that her experience would deepen her empathy and effectiveness as a nurse because she could gain an inside view of the disease. (9)

Using this information, Colonel William Gorgas used specific sanitary practices to eliminate the mosquitoes, putting a stop to the spread of yellow fever and controlling cases of malaria amongst the workforce. (10)

Colonel Gorgas spearheaded an enormous campaign to ensure the safety of the workers by eliminating their breeding areas. This included draining standing water, using oil to kill off the larvae, and installing indoor plumbing in place of the water barrel systems. Furthermore, to prevent the spread, he fumigated the houses and quarantined the patients in screened-off "fever cages". (11)

The results were dramatic. By the end of December 1905, there were no new deaths from yellow fever in Panama and by 1906, the disease had been virtually eliminated from the Canal Zone. The Panama Canal was completed and inaugurated in August 1914, a testament to what public health, when correctly applied, could achieve.

Part 2: The Economic and Public Health Impact of Yellow Fever

2.1 Direct Economic Impact of the French Failure

The economic losses of the French canal enterprise were staggering. The French effort failed at a staggering cost of $270 million, much of which was spent on hospitals and replacing sick workers. In contrast, the United States completed the canal for approximately $375 million, a figure that included payments to both Panama and the French company. (12) The human capital losses were incalculable. The bankruptcy of the Compagnie Universelle wiped out the investments of French shareholders, triggering one of France's worst financial scandals of the 19th century. (13) The social disruption in sending communities due to labour replacement was profound.

The French failure also had major geopolitical consequences: it created a power vacuum in Central America that the United States exploited, ultimately supporting Panamanian independence from Colombia in 1903 and securing the 10-mile canal zone with a one-time payment of USD 10 million to Panama and continuing an annual annuity. Yellow fever, in essence, reshaped the geopolitics of an entire hemisphere. (14)

2.2 Broader Global Economic Burden of Yellow Fever

Yellow fever is endemic across 42 countries- 29 in Africa and 13 in the Americas, with Africa bearing approximately 92% of the global disease burden. (15) Case fatality rates for people who are unvaccinated fall within the range of 20-50 percent during the toxic phase of the illness.

There are many other economic implications aside from the high case fatality rate. Yellow fever outbreaks will lead to emergency vaccination programs and disrupt trade by imposing travel restrictions; at the same time, discourage foreign investments and tourism in the area.

In the context of India, the economic importance of yellow fever importation involves the disruption of international travels and trade through PoEs. One imported case leading to an outbreak in an area where there are endemic Aedes aegypti may have dire implications due to the lack of immunity in the native populace in India.

Part 3: Evolution and Natural History of Yellow Fever

3.1 Origins and Evolutionary History

Phylogenetic analyses indicate that Yellow Fever Virus originated in Africa approximately 1,500–3,000 years ago. (16) It was brought to the Americas by the slave trade in the 17th century, resulting in many outbreaks in ports such as New Orleans and Rio de Janeiro. A prime example was the 1793 Philadelphia outbreak, which killed 10% of the population and forced a mass evacuation of the U.S. capital. (17) In 1927, researchers at the Rockefeller Foundation isolated the Asibi strain from the blood of a Ghanaian man named Asibi. This discovery revolutionized the history of yellow fever. This strain became the parent of the 17D vaccine. Simultaneously, the Institute Pasteur in Dakar, Senegal isolated the "French strain". The discovery that both African and South American YFV strains were immunologically identical confirmed by Max Theiler and Andrew Sellards in 1928 opened the door to universal vaccine development. (18)

3.2 Vector Biology and Ecological Determinants

Aedes aegypti is uniquely suited to yellow fever transmission in urban environments. In contrast to many mosquito species, Aedes aegypti is an anthropophilic (human-preferring) endophilic species with a limited flight range of approximately 100 meters. It breeds exclusively in small, clean artificial water containers like flower pots, water storage vessels, discarded tins, tyres making it exquisitely adapted to human habitations without modern water infrastructure.

Part 4: The Yellow Fever Vaccine — From 17D to Lifetime Immunity

4.1 The Road to Vaccine Development

Before Max Theiler's breakthrough, earlier yellow fever vaccine attempts had failed. The most notorious was by Hideyo Noguchi of the Rockefeller Institute, who incorrectly claimed yellow fever was caused by the bacterium *Leptospira icteroides* and developed a vaccine against it. Noguchi's misidentification was comprehensively disproven by Theiler and Sellards in 1926. (19) The path to a safe and effective vaccine required two discoveries: (i) identifying an appropriate animal model to study the virus, and (ii) attenuating the virus to a form that induced immunity without causing disease.

4.2 The 17D Strain: Development and Nobel Prize

In 1930, Max Theiler and Hugh Smith weakened the yellow fever virus by passing it 176 times through mouse and chick tissues. This created the 17D strain, which lost its ability to attack organs or the nervous system while still providing full immunity. After successful monkey trials, human testing in 1937 confirmed the vaccine was safe and highly effective. (20)

The first field trial of the 17D vaccine was conducted in Brazil in 1938 under the auspices of the Rockefeller Foundation, with remarkable success. As the United States prepared to enter World War II, the Rockefeller Foundation immunized the entire US military free of charge and this mass military vaccination programme demonstrated the feasibility of large-scale immunization and validated the vaccine's safety at population scale. (21)

As of 2026, Max Theiler is the only Nobel Prize recipient ever to receive a prize for a virus vaccine, for his discoveries concerning yellow fever and how to combat it. (22)

4.3 Current Vaccine Production and WHO Approval

The 17D vaccine is currently produced using a method similar to Theiler's original technique: live attenuated virus is grown in embryonated chicken eggs, harvested, lyophilized (freeze-dried), and then stored at -20°C. The vaccine must be reconstituted with a diluent immediately before use and has a potency requirement of at least 1,000 International Units (IU) per dose, as specified by the WHO. (23)

WHO prequalification — the international gold standard for vaccine quality, safety, and efficacy has been granted to four manufacturers currently supplying vaccine internationally: (i) Bio-Manguinhos / Fiocruz, Rio de Janeiro, Brazil; (ii) Institute Pasteur de Dakar (IPD), Senegal; (iii) Chumakov Institute of Poliomyelitis and Viral Encephalitis, Russia; and (iv) Sanofi Pasteur, France. (24) India imports vaccine from Bio-Manguinhos (Brazil), and the Chumakov Institute (Russia).

All WHO-prequalified vaccines are

subject to rigorous batch release testing by the National Regulatory Authority (NRA) of the country of origin before shipment. In India, the Central Drugs Standard Control Organization (CDSCO) serves as the NRA.

4.4 New Developments and Emerging Technologies

While the 17D egg-based vaccine has an outstanding safety record with over 850 million doses distributed since 1938, several limitations drive ongoing research: (i) dependency on embryonated eggs (susceptible to supply disruption and not suitable for egg-allergic individuals); (ii) requirement for continuous cold chain; (iii) manufacturing capacity constraints that resulted in global shortages during the 2016 Angola outbreak; and (iv) rare but serious adverse events. (24)

Research directions currently being pursued include: (i) cell culture-based production using Vero cells; (ii) bacterial fermentation-based production of thermostable YF vaccine antigens (being developed by KU Leuven's Rega Institute and AstraVax in collaboration with Institute Pasteur Dakar), which offers the dual advantage of bacterial-scale production and reduced cold-chain dependence; (iii) chimeric vaccines using the 17D backbone to carry antigens of other flaviviruses (Dengvaxia, which uses the 17D backbone to carry dengue antigens, and Imojev); and (iv) fractional dose studies demonstrating immunogenicity with one-fifth of the standard dose, enabling stockpile extension during emergencies. (25)

4.5 The 2016 WHO IHR Amendment: Lifetime Validity of Vaccination Certificates

One of the key policy changes made recently in relation to yellow fever vaccine include the elimination of the need for a booster. For decades, the International Health Regulations (IHR) specified that the International Certificate of Vaccination or Prophylaxis (ICVP) whose validity was only 10 years, with revaccination required at the end of this period. (26)

In 2013, the WHO concluded that a single dose of yellow fever vaccine provides lifelong immunity and no booster is needed. This was based on data from 540 million doses showing negligible vaccine failures and persistent immune responses for decades.

Consequently, as of July 2016, international regulations formally recognize the vaccine's validity for the life of the traveller. (27,28) Change applies retroactively to all existing certificates, regardless of their issue date. India formally adopted this policy by official memorandum from the Directorate General of Health Services (DGHS), Ministry of Health and Family Welfare, in 2017. Old 10-year validity certificates can be replaced by authorized YFVC with new lifetime validity certificate upon application by vaccinee. (29)

4.6 International Cold Chain Requirements

The 17D vaccine is highly thermolabile. WHO specifies that: (i) the lyophilized vaccine must be stored between -20°C and -25°C; (ii) during transport, the cold chain must be maintained between 2°C and 8°C with appropriate vaccine carrier inserts; (iii) the reconstituted vaccine (once the diluent is added) must be used within 6 hours and must not be re-frozen; and (iv) the diluent itself must be maintained between 2°C and 25°C. (23)

International shipments from Brazil or Russia enter India via air in temperature-controlled containers monitored by Port Health Officers. Every batch is then sent to CRI Kasauli for rigorous quality testing, including potency and sterility assays; only approved batches receive a Certificate of Analysis for release. The vaccines are distributed to centers complying with rigorous cold chain guidelines (2–8°C), via continuous temperature logging and scheduled audits to ensure quality assurance.

Part 5: Yellow Fever Vaccination Centres in India and Maharashtra

5.1 The Authorized YFVC System in India

India is considered a yellow fever-free country but has an established Aedes aegypti vector populations, a year-round tropical climate and significant international travel connecting it with yellow fever-endemic regions in Africa and South America. This creates a real and ongoing risk of importation and potential transmission yellow fever.

To manage this risk and implement the IHR 2005 requirements, the Ministry of Health and Family Welfare (MoHFW), Government of India through the Directorate General of Health Services (DGHS) designates and regulates a network of Authorized Yellow Fever Vaccination Centres (YFVCs) across the country.

SN	Yellow Fever Vaccination Centres in Maharashtra	Location	Timings	Contact
1	Airport Health Organization, Mumbai	Mumbai	Wed & Fri, 10:00–13:00	022-20886427
2	Grant Medical College & Sir J.J. Group of Hospitals	Mumbai	Mon–Fri, 09:00–12:30	022-23735555
3	National Institute of Public Health Training Research (formerly FWTRC), Khetwadi	Mumbai	Mon & Fri, 14:00–16:00	022-23881724
4	National Institute of Public Health Training Research (formerly FWTRC), Panvel	Navi Mumbai	Every Tue, 14:00–16:00	022-23881724
5	Dr. R. N. Cooper Municipal General Hospital	Mumbai	Mon & Thu, 09:30–13:00	022-26207257
6	K.E.M. Hospital & Seth G.S. Medical College	Mumbai	Tue & Thu, 13:30–15:00	022-24107484
7	PHO, Mumbai (Seaport)	Mumbai	Mon-Fri 10:00-12:30	022-22020027
8	YFVC, BJGMC and Sassoon Hospital	Pune	Mon, Wed, Fri 2:00 to 3:30	
9	Daga Memorial Government Women Hospital	Nagpur		
10	Station Health Organisation (Navy), Old Navy Nagar Colaba (only for Defence personal)	Mumbai	Only for Defence personal	022-22152080 (O)

Table: Authorized Yellow Fever Vaccination Centres in Maharashtra (Source: www.iprpoe.mohfw.gov.in)

These centres are the only entities legally authorized to: (i) administer the YF 17D vaccine; (ii) issue the International Certificate of Vaccination or Prophylaxis (ICVP) under the IHR framework; and (iii) issue medical letters of exemption from vaccination for contraindicated individuals.

As of 2026, there are 70 authorized YFVCs across India. Each centre is assigned a unique centre code (e.g., PHB/YFVC/032/PHM for Port Health Office Mumbai). The complete and updated list of authorized centres is maintained on the MoHFW IHR website at https://ihpoe.mohfw.gov.in/vaccination_centres.php Vaccination charges are standardized at Rs. 300/- per dose; a duplicate certificate costs Rs. 150/-.

5.2 Requirements and Procedure at YFVCs

At authorized centres, travelers must present a valid passport for a 0.5 mL subcutaneous dose, eligible for those aged 9 months and older. The certificate becomes valid after 10 days and lasts a lifetime; older 10-year cards can be updated, but those from unauthorized clinics are invalid. Individuals with contraindications (e.g., egg allergies, pregnancy, or immunocompromised status) receive medical exemptions, though they may still face quarantine at their destination.

5.3 Yellow Fever Vaccination Centres in Maharashtra

Maharashtra has 10 authorized Yellow Fever Vaccination Centres as per the MoHFW list, 7 of which are in Mumbai (including two NIPHTR centres covering Khetwadi and Panvel/Navi Mumbai) as mentioned in the above table.

5.4 Quality Control at YFVCs

Quality assurance at YFVCs operates at multiple levels:

(i) Pre-distribution batch testing by CRI Kasauli (as described above);

(ii) Compliance with MoHFW guidelines for YFVC operations dedicated manpower, validated cold-chain equipment, government/self-governance institutional setup, trained staff, and strict reporting;

(iii) Periodic supervisory visits and audits by DGHS/MoHFW authorities, with a formal review process for renewal or revocation of YFVC authorization; and

(iv) Cold chain monitoring at the centre level, with temperature logs, vaccine vial monitors (VVMs), and reporting of any excursions. The procedure for setting up a new YFVC requires submission of a proposal by the Head of the Institution to the DDG (International Health), MoHFW,

covering space, logistics, equipment, manpower, training, and reporting mechanisms.

5.5 India's Regulatory and Surveillance Framework

India's legal framework for yellow fever surveillance, vaccination, and port health is anchored in:

(i) International Health Regulations 2005 (amended 2024);
(ii) Indian Ports Act, 2025;
(iii) Indian Port Health Rules, 1955;
(iv) Merchant Shipping Act, 2025;
(v) Bharatiya Vayuyan Adhiniyam, 2025; and
(vi) Aircraft (Public Health) Rules, 1954.

At Points of Entry (PoEs) 29 Airports (APHOs), 11 Seaports (PHOs), and 3 Land border health units (LBHUs) at Attari, Agartala, and Petrapole, respective Health Officers are empowered to screen passengers, inspect vessels, enforce quarantine, maintain 400-metre vector-free buffer zones, and impose penalties for non-compliance. Violations under the Indian Port Health Rules, 1955 can result in fines of up to Rs. 1,000 or imprisonment up to 6 months.

India's response to the IHR 2024 amendments includes strengthening the National IHR Authority, establishing a National Yellow Fever Risk Assessment framework, and ongoing work on digitization of YFVC records and online appointment tools are some important priorities towards betterment of the system.

To conclude the history of yellow fever illustrates the impact that scientific progress can have on global destiny, from the tragic French failure in Panama to the early work of Finlay, Reed, and Theiler, and from theories of bad air to mosquito-vector control. The 17D vaccine is a medical wonder that provides lifelong immunity with a single dose and is the only vaccine ever to win a Nobel Prize. India needs to maintain a zero-tolerance policy, using strict batch testing at CRI Kasauli, in combination with a highly regulated network of authorized vaccination centers. Ultimately, the success of these measures proves that through international cooperation and constant vigilance, we can prevent the historical tragedies of "Yellow Jack" from ever returning to the modern world.

References:

1. Panama Canal - Wikipedia [Internet]. 2020 [cited 2026 Apr 13]. Available from: https://en.wikipedia.org/wiki/Panama_Canal
2. Souza-Neto JA, Powell JR, Bonizzoni M. Aedes aegypti vector competence studies: A review. Infect Genet Evol [Internet]. 2018 Jan 1 [cited 2026 Apr 13];67:191. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC8135908/
3. Lippi CA, Stewart-Ibarra AM, Franklin Bajaña Loor ME, Dueñas Zambrano JE, Espinoza Lopez NA, Blackburn JK, et al. Geographic shifts in Aedes aegypti habitat suitability in Ecuador using larval surveillance data and ecological niche modeling: Implications of climate change for public health vector control. PLoS Negl Trop Dis [Internet]. 2019 [cited 2026 Apr 13];13(4):e0007322. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC6488096/
4. Panama fever: the epic story of the building of the Panama Canal: Parker, Matthew: Free Download, Borrow, and Streaming: Internet Archive [Internet]. [cited 2026 Apr 13]. Available from: https://archive.org/details/panamafeverepics0000park
5. Why Building the Panama Canal Was So Difficult—and Deadly | HISTORY [Internet]. [cited 2026 Apr 13]. Available from: https://www.history.com/articles/panama-canal-construction-dangers
6. Clements AN, Harbach RE. History of the discovery of the mode of transmission of yellow fever virus. J Vector Ecol [Internet]. 2017 [cited 2026 Apr 15];42(2):208–22. Available from: https://onlinelibrary.wiley.com/doi/10.1111/jvec.12261,
7. Sutter PS. "The First Mountain to Be Removed": Yellow Fever Control and the Construction of the Panama Canal. Environ Hist Durh N C [Internet]. 2016 [cited 2026 Apr 15];21(2):250–9. Available from: https://pmc.ncbi.nlm.nih.gov/ articles/PMC8932943/#R7
8. Clara Maass, the Nurse Who Gave Her Life in the Name of Science [Internet]. [cited 2026 Apr 15]. Available from: https://historynet.com/clara-maass-the-nurse-who-gave-her-life-in-the-name-of-science/
9. Clara Louise Maass: Heroic Nurse Who Gave Her Life for Yellow Fever Research - Nurseslabs [Internet]. [cited 2026 Apr 15]. Available from: https://nurseslabs.com/clara-louise-maass-heroic-nurse-who-gave-her-life-for-yellow-fever-research/
10. Tropical Diseases and the Construction of the Panama Canal, 1904–1914. Contag Hist Views Dis Epidemics [Internet]. [cited 2026 Apr 15]; Available from: https://researchhistory.org/2011/04/13/tropical-diseases-and-the-construction-of-the-panama-canal-1904-1914/
11. Health measures during the construction of the Panama Canal - Wikipedia [Internet]. [cited 2026 Apr 15]. Available from: https://en.wikipedia.org/wiki/Health_measures_during_the_construction_of_the_Panama_Canal
12. History of the Panama Canal - Wikipedia [Internet]. [cited 2026 Apr 15]. Available from: https://en.wikipedia.org/wiki/History_of_the_Panama_Canal
13. Combatting Disease and Delays to Build the Panama Canal | Engineering News-Record [Internet]. [cited 2026 Apr 15]. Available from: https://www.enr.com/articles/62215-combatting-disease-and-delays-to-build-the-panama-canal
14. Milestones in the History of U.S. Foreign Relations - Office of the Historian [Internet]. [cited 2026 Apr 15]. Available from: https://history.state.gov/milestones/1899-1913/panama-canal
15. Yellow fever. Wkly Epidemiol Rec [Internet]. 1998 [cited 2026 Apr 15];73(45):351–2. Available from: https://www.who.int/news-room/fact-sheets/detail/yellow-fever
16. Bryant JE, Holmes EC, Barrett ADT. Out of Africa: A molecular perspective on the introduction of yellow fever virus into the Americas. PLoS Pathog [Internet]. 2007 [cited 2026 Apr 15];3(5):0668–73. Available from: https://journals.plos.org/plospathogens/article?id=10.1371/journal.ppat.0030075

(Continued on Page 08.....)