

Point of View



Maharashtra's Digital Health Foundation Course: a pioneering initiative transforming medical education in India

Aniket Mathesul, Mandar Chandrachood*, Sanjeev Chincholikar

Department of Community Medicine, MIMER Medical College, Talegaon Dabhade, Pune, India

Correspondence: drmandar5@gmail.com

 <https://orcid.org/0000-0001-5111-2983>

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The Maharashtra University of Health Sciences (MUHS) launched the Digital Health Foundation Course (DHFC), which represents a paradigm shift in medical education in India and serves as a comprehensive model for integrating digital health literacy into healthcare workforce development. This pioneering initiative aligns with the World Health Organization's Global Strategy on Digital Health 2020-2025 (1). It demonstrates how strategic partnerships can drive transformative changes in medical education.

The critical need and DHFC objectives

The healthcare sector in India has experienced significant digitization lag compared to other industries, creating critical gaps in healthcare professionals' preparedness to leverage digital tools effectively. The COVID-19 pandemic further accelerated the urgency for digital health capabilities, revealing the need for structured digital health education in medical curricula. The DHFC addresses this need through clearly defined objectives that focus on building foundational digital health literacy among medical students and healthcare professionals, ensuring they possess the knowledge and skills necessary for effective digital health application

in clinical practice, and thereby bridge the gap between theoretical knowledge and practical application in digital health contexts (2).

Target beneficiaries and impact

The DHFC initiative benefits multiple stakeholder groups across the healthcare ecosystem. Primary beneficiaries include medical students and faculty. National expansion through the National Health Authority (NHA) partnership and availability on the iGOTKarmayogi platform extends this reach across India. Success metrics demonstrate widespread acceptance of over 200,000 national registrations with 50,000 successful completions and more than 2600 MUHS medical interns enrolled (2).

Historic achievement and national recognition

The MUHS-Koita Foundation collaboration, formalized through a memorandum of understanding (MoU) in April 2023 exemplifies effective public-private partnership. Subject matter experts from various institutes and medical colleges contributed to curriculum development, ensuring diverse expertise and high academic standards while enabling rapid scaling and quality maintenance. In February 2024, Maharashtra

became the first state in India to formally integrate digital health education into its medical curriculum (2). This achievement gained national prominence when the NHA and MUHS signed an MoU in August 2024. This partnership marked a significant milestone in integrating digital health education into medical curricula, which laid the foundation for a more connected and effective healthcare ecosystem (3).

Comprehensive curriculum

The DHFC curriculum comprises 13 strategically designed modules addressing critical digital health competencies, which provide a comprehensive understanding of digital health fundamentals. These modules cover foundational understanding of Indian healthcare systems, digital health conceptual frameworks, data management, diagnostic system integration, telemedicine, Artificial Intelligence (AI)/Machine Learning (ML) applications and explores career opportunities in digital health.

Ayushman Bharat Digital Mission (ABDM) integration and policy compliance

The curriculum specifically prepares healthcare professionals for effective ABDM ecosystem participation covering Ayushman Bharat Health Account (ABHA) ID creation and management, eSanjeevani, Health Facility Registry (HFR), Health Professional Registry (HPR), Unified Health Interface (UHI) and Consent Manager systems (4). Regarding AI applications and Digital Personal Data Protection (DPDP) Act, 2023 compliance, the curriculum covers AI applications in diagnostic assistance, predictive analytics, personalized treatment recommendations and healthcare workflow optimization. The DPDP Act compliance is addressed through patient data privacy and consent management, data processing and storage requirements, cross-border data transfer regulations and healthcare provider compliance obligations (5).

Telemedicine and virtual digital health lab innovation

The telemedicine module addresses remote healthcare delivery capabilities, covering Telemedicine Practice Guidelines compliance, remote consultation platforms and protocols, digital therapeutics and remote monitoring, and integration with existing healthcare systems. A distinguishing feature is the Virtual Digital Health Lab (DHL), providing hands-on experience with real-world applications including Health Management Information Systems (HMIS), Electronic Health Records (EMR), Telemedicine and TeleICU systems.

WHO Global Strategy alignment

The DHFC demonstrates remarkable alignment with the WHO's Global Strategy on Digital Health 2020-2025, addressing all four strategic objectives, which ensures comprehensive integration of global digital health priorities into medical education. These objectives cover global collaboration and knowledge sharing through international best practices and multi-institutional expert collaboration, advancing national digital health, strengthening governance for digital health and advocating for people-centered health systems (1).

SWOC analysis

- **Strengths** - First-mover advantage as India's first state-level digital health curriculum, comprehensive curriculum design, strong government-academia-industry partnerships, official national recognition, and expert faculty from renowned institutions. Also, the participants will earn credit points upon completion of the course.
- **Weaknesses** - Current geographic limitation to Maharashtra, technology infrastructure dependency, language barriers for non-English speakers.
- **Opportunities** - International replication potential for developing countries, advanced

certification program development, research collaboration opportunities, policy influence on national medical education standards, and technology integration with emerging innovations.

- **Challenges** - Rapid technology evolution requiring continuous curriculum updates, regulatory compliance with evolving laws, resource allocation for sustained delivery, stakeholder coordination among diverse partners, and evaluation metrics for measuring long-term impact.

Global significance and future implications

The DHFC serves as a model for developing countries facing similar healthcare digitization challenges, contributing to global digital health capacity building and aligning with United Nations (UN) Sustainable Development Goals (SDG). Other states and institutions can actively adopt and adapt this model, recognizing that healthcare digital transformation requires not just technological infrastructure but also a digitally literate healthcare workforce. The initiative's emphasis on equity, accessibility and practical relevance ensures digital health education benefits reach diverse populations and practice settings. It will empower students and healthcare professionals to stay at the forefront of this evolving field. Considering India's large population base, this technology can significantly enhance patient care and remain competitive in the healthcare industry. The MUHS DHFC provides the blueprint for achieving this critical objective while demonstrating that comprehensive digital health education is both feasible and essential for future healthcare delivery.

Conclusions

The DHFC of Maharashtra University of Health Sciences represents a transformative paradigm shift recognizing digital health as a fundamental

competency for modern healthcare practice. This comprehensive initiative addresses urgent digital health literacy needs while providing a scalable model for national and international replication. The alignment with global digital health strategies, national health policies and emerging regulatory frameworks positions the DHFC as a forward-looking initiative preparing healthcare professionals for evolving digital health implementation demands to improve healthcare delivery, patient outcomes, and research in the medical field.

Author Declarations

Competing interests: The authors declare that they have no competing interests.

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