



EDITORIAL

National Digital Medical Education Grid (NDMEG): Integrating Community Health Centres in Clinical Training

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The **National Digital Medical Education Grid (NDMEG)** is a comprehensive national framework designed to modernise medical education by uniting artificial intelligence, digital learning systems, simulation-based training, and workplace-based clinical assessment into a single coordinated ecosystem. Its central mission is to create a **scalable, competency-driven educational architecture** that can produce future-ready physicians who are **clinically skilled, technologically fluent, and capable of delivering high-quality care in an increasingly digital healthcare environment.**

NDMEG connects medical colleges, teaching hospitals, district health facilities, simulation centers, and national digital health platforms, forming a **“phygital”**—physical plus digital—network. This integrated structure allows academic learning, clinical training, and technological innovation to continuously inform and reinforce one another.

The model is built on three major pillars:

- FIRST PILLAR:** The first is a national digital learning backbone powered by AI. This includes adaptive learning tools, virtual patient cases, intelligent tutoring systems, and standardised content libraries that ensure consistent, high-quality education across institutions while still allowing personalisation based on learner needs.
- SECOND PILLAR:** The second pillar is simulation-augmented training. High-fidelity simulators, VR platforms,

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and structured skills labs offer a safe, controlled environment where learners can practice difficult or high-risk procedures, receive targeted feedback, and demonstrate competence before treating real patients.

3. THIRD PILLAR: The third is workplace-based learning integrated directly into clinical service. Students

build real-world competence through supervised patient care activities across hospitals and community health centres. These experiences are evaluated using structured assessment tools such as Mini-CEX, DOPS, and case-based discussions, all documented digitally in evolving learner portfolios (Figure 1).

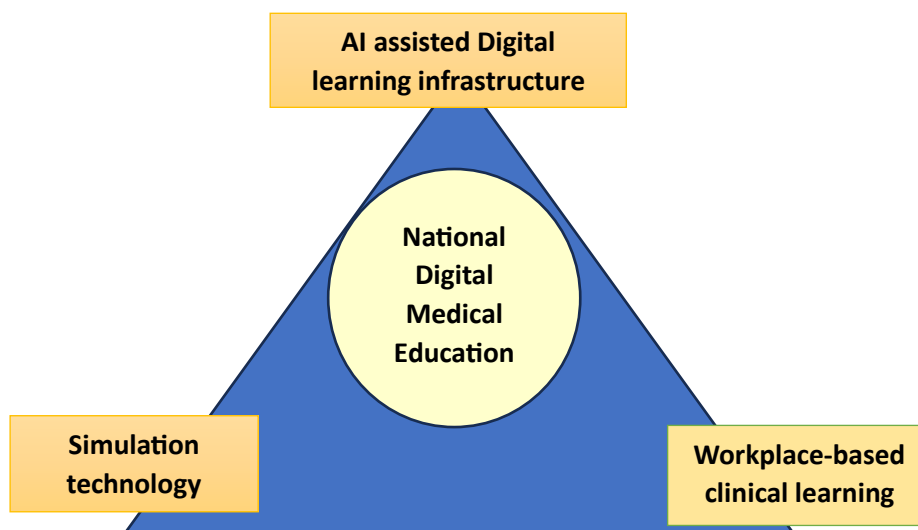


Figure 1. An AI-Enabled Phygital Model, Integrating Simulation-Augmented Teaching and Workplace-Based Assessment with Faculty as Clinical Learning Architects

AI acts as the unifying engine that synthesizes data from digital platforms, simulation sessions, and workplace assessments. It generates individualized competency dashboards, identifies learning gaps, and recommends targeted

interventions. Faculty review these analytics to guide mentorship, determine supervision levels, and make evidence-based entrustment decisions, shifting away from reliance on single high-stakes exams.

Integrated Clinical Training Network

Training extends beyond the teaching hospital to a **distributed clinical ecosystem**.

Network nodes include:

- district hospitals
- community health centres
- specialty referral hospitals
- telemedicine-linked rural facilities

This model exposes students to **diverse clinical environments**.

NDMEG also creates a national academic network where institutions share resources, collaborate on research, and benchmark performance. By linking medical education to national digital health

systems—EHRs, telemedicine, and real-world clinical registries—the framework ensures that students learn in environments aligned with the digital transformation of healthcare.

At a system level, NDMEG offers several strategic advantages: standardization of competency-based education nationwide, expanded access to advanced simulation tools, integration of district hospitals into the training ecosystem, better governance through data-driven decision-making, and enhanced patient safety through improved clinical preparedness.

Faculty as Clinical Learning Architects: A core transformation lies in redefining the faculty's role. Instead of primarily delivering lectures, **faculty become Clinical Learning Architects** who design integrated learning experiences across digital, simulated, and clinical settings. They guide learners through complex cases, interpret AI-generated insights, and help shape clinical reasoning and professional judgment. Sustained national faculty development programs are

essential to prepare educators for these expanded responsibilities.

Ultimately, NDMEG envisions medical education as a connected, intelligent, national learning ecosystem—where AI, digital technologies, simulation, and real-world clinical practice converge under skilled faculty leadership to produce competent, confident, and digitally empowered physicians for the healthcare systems of the twenty-first century.