

Exploration and Practice of Homogenization in Clinical Teaching Based on the “Medical Education Community”

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Abstract

Clinical teaching homogenization is a crucial component in guaranteeing the quality of medical talent training and constitutes a significant issue confronting higher medical institutions. Shandong Second Medical University has initiated problem-oriented reforms, dismantling barriers between the university and affiliated hospitals. By collaborating with 15 affiliated teaching hospitals, the university has implemented a teaching system reform centered on “Seven Unifications,” integrating the Clinical Medical School with its directly affiliated hospital under a unified management model to establish a three-tier management system encompassing the university, clinical medical school, and affiliated teaching hospitals. Homogenization practices have been carried out across multiple dimensions, including teaching management, content standards, faculty development, and quality monitoring. Results demonstrate a significant reduction in teaching quality disparities across training bases, a notable improvement in the quality of talent cultivation, and an overall increase of approximately 16 percentage points in students’ pass rates for the medical licensing examination. This paper systematically elaborates on the background, implementation pathways, and outcomes of clinical teaching homogenization at the university, providing references for enhancing clinical teaching quality in local medical institutions.

Keywords clinical medicine; teaching homogenization; medical-education community; affiliated teaching hospitals; talent training quality

1 Introduction

Medical education, as a foundational undertaking for the Healthy China initiative, directly influences the supply of healthcare professionals and the overall health of the population. Clinical teaching, being the core practical component of medical education, serves as a crucial link between theoretical knowledge and clinical practice. The extent of homogenization in clinical teaching essentially determines the uniformity in the quality of talent development. The Guiding Opinions of the General Office of the State Council on Accelerating the Innovative Development of Medical Education (State Office Document [2020]

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No. 34) explicitly emphasizes the need to “consolidate the primary role of university-affiliated hospitals in cultivating medical talent and reinforce their central function in clinical teaching.”^[1]

As a regional medical university, Shandong Second Medical University allocates its clinical medicine students across three directly affiliated and twelve non-directly affiliated teaching hospitals. The geographical dispersion of these clinical training sites has resulted in variability in pedagogical approaches, faculty qualifications, and teaching resources, which in turn contributes to decentralized educational management, inconsistent teaching capacities, and a lack of uniform assessment standards. These factors collectively undermine the stability and homogeneity of clinical training outcomes. In response, the university has adopted a systematic approach centered on its Clinical Medical School to explore and implement pathways for achieving teaching homogenization. This initiative aims to establish a scientifically designed and operationally efficient standardized teaching system, thereby providing a robust foundation for cultivating high-caliber medical professionals.

2 Current Challenges in the Homogenization of Clinical Teaching

The advancement of clinical teaching homogenization continues to face multiple pressing challenges, stemming primarily from objective constraints such as fluctuating numbers of training sites, their geographical dispersion, and uneven resource allocation. In many non-directly affiliated hospitals, the prioritization of clinical duties over teaching responsibilities—driven by heavy patient care workloads—has resulted in insufficient coordination in educational management. These institutions often lack dedicated administrative support for teaching activities, exhibit limited flexibility in balancing clinical and instructional commitments, and engage in minimal interdisciplinary communication with other training sites. Furthermore, institutional mechanisms for systematic oversight, incentive structures, and accountability remain underdeveloped.

Concurrently, significant variability persists in the instructional competence of clinical educators. Faculty members are frequently burdened with competing demands from clinical practice, research, and teaching, often at the expense of pedagogical engagement. Non-directly affiliated hospitals in particular employ a higher proportion of early-career faculty, who tend to have less teaching experience. Compounding this issue is the absence of unified standards for instructor recruitment, pre-service training, and performance evaluation across different training institutions, leading to inconsistencies in teaching methodologies and procedural execution.

Disparities in the allocation of educational resources further impede homogenization efforts. While directly affiliated hospitals generally benefit from stronger institutional support—manifested in better-equipped teaching facilities and more consolidated educational resources—many non-directly affiliated hospitals face logistical and financial limitations. These often translate into outdated clinical skills laboratories, delayed updates to simulation equipment, and insufficient digital teaching repositories. Moreover, the lack of an integrated mechanism for sharing high-quality educational materials across institutions continues to hinder efficient cross-institutional collaboration and resource utilization.

Finally, ambiguity in assessment and evaluation frameworks presents a persistent obstacle. Grading standards for summative examinations remain inconsistent and lack discriminative rigor. Although foundational protocols for practical skills assessment have been introduced, their implementation suffers from insufficient standardization, with notable variability among evaluators in interpreting and applying scoring criteria. Existing quality assurance systems continue to rely heavily on end-of-term inspections rather than incorporating robust, continuous formative assessment. The limited scope and frequency of process-oriented evaluation, coupled with an underdeveloped feedback and improvement cycle, constrains the systematic and sustained enhancement of teaching quality across all training sites.

3 Practical Pathways for Promoting Homogenization in Clinical Teaching

3.1 Establishing a Three-tier Management System to Strengthen Institutional Foundations

3.1.1 Strengthening the Vertical Management Structure

A three-level management network of “university–clinical medical school–affiliated teaching hospitals” has been established to clarify the boundaries of authority and responsibility. The university’s Academic Affairs Office and Practice Teaching Management Office are responsible for coordinating the overall outline of talent cultivation and quality standards. The Teaching Department of the Clinical Medical School is tasked with decomposing teaching assignments, coordinating processes, and allocating resources. Each teaching hospital has set up a dedicated teaching management unit, staffed with teaching supervisors and teaching secretaries, forming a management chain characterized by “responsibility at every level and full-process coverage.”

3.1.2 Developing Rigid “Seven Unifications” Standards

These include unifying the qualification criteria for clinical teaching bases and conducting dynamic reviews of teaching hospitals; unifying faculty entry standards, clearly defining core requirements such as teaching qualifications and assessment criteria; unifying teaching system standards, revising 16 normative documents, including the *Clinical Teaching Management Regulations* and *Internship Teaching Management Regulations*; unifying teaching plans and specifications, preparing standardized academic calendars and course schedules, and issuing the *Clinical Teaching Activities Implementation and Recording Regulations*; and unifying the assessment and evaluation system by establishing an evaluation framework that integrates “formative and summative assessments.”

3.2 Implementing a Whole-Cycle Faculty Development Program to Strengthen Core Driving Force Support

3.2.1 Strict Faculty Entry Requirements

A comprehensive admission mechanism encompassing “selection–training–assessment–certification” has been established. Clinical teaching instructors must pass a trial lecture and evaluation by university supervisors before assuming their roles, while all skills training instructors are required to pass university-conducted skills assessments and obtain certification before teaching.

3.2.2 Establishing a Tiered Training System

Utilizing the university’s Teacher Development Center, a three-level model of “foundational training–capacity enhancement–core faculty leadership” has been implemented. Foundational training covers nearly 700 faculty members, including content on curriculum ideology and politics, teaching norms, and professional ethics. Activities include watching lectures on the spirit of educational practitioners and organizing learning campaigns focused on exemplary figures such as Comrade Zhang Junqiao, honored as one of “China’s Most Beautiful Doctors.” Capacity enhancement training targets early-career faculty, with regular specialized workshops on blended learning and instructional design. Cross-hospital teaching collaboration groups have been established, and management experience exchange sessions are held each semester in hybrid formats, both online and offline, to promote the sharing of teaching management practices.

3.2.3 Enhancing Incentive and Support Mechanisms

Teaching hospitals are encouraged to implement policy incentives, such as priority consideration in professional promotion and performance-based compensation, for faculty members with outstanding teaching achievements. Platforms for “improving teaching through competitions” have been established, including hospital-level teaching contests for young faculty and innovation competitions for medical education test bank design, thereby driving the enhancement of teaching competencies through competitive engagement.

3.3 Standardize the Entire Teaching Process to Reinforce the Core Elements of Homogenization

3.3.1 Unifying Teaching Content Standards

In accordance with the *Guidelines for Undergraduate Clinical Medicine Program Accreditation*^[2], a standardized talent cultivation plan and unified teaching syllabus have been developed, with all teaching sites adopting identical prescribed textbooks. For eight core courses, including Internal Medicine and Surgery, regular collective lesson preparation sessions are conducted through both online and offline formats. These sessions ensure consistency in teaching pace, key points, challenging topics, and assessment methods, while also integrating standardized norms for clerkship instruction as a central component of the preparation process.

3.3.2 Standardizing the Clinical Practice Teaching Process

Guided by the competency requirements of licensed physicians, a “standardized + practical” clinical training system has been established. This system defines 29 core clinical skill items and implements a “stage-by-stage assessment” approach, complemented by a comprehensive three-level question bank for rotation exit examinations. Innovative practice training platforms have also been developed, including various skill competitions, integrating skill training into both routine teaching and hands-on practice sessions.

3.3.3 Establishing a Resource Sharing Mechanism

A university-level smart teaching platform has been constructed to integrate high-quality educational resources and enable cross-hospital online sharing. The development of clinical skills centers in directly affiliated teaching hospitals has been coordinated, with practical training provided for instructors from non-directly affiliated teaching hospitals^[3]. Two key documents, the *Clinical Skills Operation Procedures and Standards* and the *Practicing Physician Skill Assessment Manual for Interns*, have been compiled to offer unified reference templates for practical teaching across all training sites.

3.4 Empowering Quality Monitoring Through Digitalization to Enhance Outcome Assurance

3.4.1 Establishing a Comprehensive Quality Monitoring System

An intelligent online course supervision platform has been developed to achieve full and seamless monitoring of courses across the medical school and all affiliated teaching hospitals, thereby bridging the “last mile” in teaching supervision. For the clinical medicine program, a unified examination model using answer sheets combined with centralized digital scoring has been implemented. All answer sheets are processed through a cross-instructor batch-scoring mechanism to ensure consistency in evaluation and enhance the standardization and fairness of assessment practices.

3.4.2 Standardizing Assessment and Evaluation Criteria

Theoretical course examinations are conducted under a unified framework encompassing “uniform test design, simultaneous administration, standardized proctoring, and centralized scoring.” Test items are

developed by expert panels organized by the Clinical Medical School, while dedicated inspection teams supervise the examination process across all teaching hospitals. Specialized training is provided to proctors and scorers to ensure rigorous examination discipline^[4]. Practical skills assessments follow refined evaluation standards, with examiners receiving targeted training prior to evaluations to unify scoring criteria and minimize subjective discrepancies.

3.4.3 Improving the Feedback and Rectification Mechanism

A closed-loop management system of “inspection–feedback–rectification–reinspection” has been established. Teaching supervision results are promptly communicated in written form to each hospital, with clear rectification requirements and deadlines, thereby forming a virtuous cycle for the continuous improvement of teaching quality.

3.5 Integrating Medical Care, Teaching, and Research to Build a Cohesive Development Ecosystem

3.5.1 Building a Tightly Integrated Collaborative Consortium

Fifteen affiliated teaching hospitals jointly established the “Medical-Education-Research Collaborative Development Consortium.” The consortium has adopted the core principles of “university-led, hospital co-construction, resource sharing, and shared responsibility,” deliberated and passed the *Implementation Plan for Building a Tightly-Knit Medical-Education-Research Collaborative Development Community*, and set up a steering group to oversee the implementation of key projects^[5]. This framework has created an integrated system that “takes healthcare as the core, with teaching and research serving as its two driving forces.”

3.5.2 Establishing a Collaborative and Shared Platform

Building on the consortium framework, the 15 affiliated teaching hospitals have integrated their high-quality clinical cases, research data, and educational resources into a unified shared database and case repository. The teaching responsibilities of non-directly affiliated hospitals have been clearly defined and reinforced. A close-knit collaborative mechanism characterized by “resource sharing, complementary strengths, and mutual development” has been established with each teaching hospital^[6].

4 Outcomes of the Homogenization Initiative

4.1 Significant Improvement in Standardized Management

The three-tier management system and the “Seven Unifications” standards have been effectively implemented. Operational standardization in teaching has markedly improved across all 15 teaching hospitals, with significantly enhanced coordination in teaching plans and schedules. The tendency to prioritize clinical duties over teaching responsibilities in non-directly affiliated teaching hospitals has been effectively addressed. The Medical-Education-Research Collaborative Development Consortium has fostered an integrated mindset among the 15 affiliated hospitals, leading to regular cross-hospital teaching exchanges, resource sharing, and research collaborations.

4.2 Comprehensive Enhancement of Faculty Quality

The whole-cycle faculty development model has yielded significant outcomes, with teacher awareness of teaching standards and training coverage both reaching 100%. In 2025, a series of teaching competition accolades were achieved: one second prize in the Provincial University Teaching Innovation Competition,

and one second prize in the Provincial Young Faculty Teaching Competition. In national-level events, one third prize each was secured in the 7th “Chaoxing Cup” National Blended Instructional Design Innovation Competition and the 2nd National Medical Education Test Bank Design Innovation Competition. Consistency in instructional processes across all teaching sites has notably improved, effectively alleviating the issue of uneven teaching capabilities among faculty members^[7].

4.3 Gradual Convergence of Disparities in Teaching Quality

Standardization across the entire teaching process has driven a trend toward greater equilibrium in the quality of education across all training sites. The gap in academic performance between students in directly and non-directly affiliated hospitals has narrowed, with key assessment indicators showing notable progress: in recent years, the pass rate of the Medical Licensing Examination for clinical medicine students has improved steadily, reaching 80.62% in 2025—5.84 percentage points above the national average. From a perspective of dispersion, the standard deviation of the pass rates across teaching hospitals decreased from 6.1% in 2023 to 5.8% in 2025, while the coefficient of variation declined from 7.5% to 7.1% over the same period. Moreover, over the past three years, approximately 70% of students achieved scores above the national postgraduate entrance exam threshold, further evidencing the enhancement of educational quality.

5 Discussion and Prospects

The homogenization of clinical teaching is a systematic endeavor that requires the integrated management of multiple elements, including administration, faculty, resources, and assessment, to establish a sustainable mechanism. Shandong Second Medical University, through the establishment of the “Medical-Education-Research Collaborative Development Consortium,” has effectively addressed the challenge of uneven teaching quality across multiple training sites in regional medical colleges by implementing the “Seven Unifications” management standards and a three-tier management system.

Nevertheless, certain limitations persist in practice: non-directly affiliated hospitals face insufficient funding for teaching activities, and the potential of digital teaching resources remains underutilized. Additionally, there is room for improvement in the teaching innovation capabilities of early-career faculty. Moving forward, the university will focus on three key dimensions—funding assurance, digital-intelligent infrastructure development, and international collaboration—to drive the homogenization of clinical teaching toward higher standards.

In summary, advancing clinical teaching homogenization in regional medical universities requires aligning with institutional characteristics, identifying core challenges, and developing practical pathways tailored to specific contexts. The exploration and implementation by Shandong Second Medical University provide valuable insights for similar institutions. Continued deepening of reforms and ongoing refinement of the standardized teaching system will lay a solid foundation for cultivating more medical professionals with exemplary ethics and outstanding clinical competence.

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