

When Traditional Model Meets Competencies in Singapore: Beyond Conflict Resolution

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Abstract

Introduction: The implementation of competency-based internal medicine (IM) residency programme that focused on the assurance of a set of 6 Accreditation Council for Graduate Medical Education (ACGME) core competencies in Singapore marked a dramatic departure from the traditional process-based curriculum. The transition ignited debates within the local IM community about the relative merits of the traditional versus competency-based models of medical education, as well as the feasibility of locally implementing a training structure that originated from a very different healthcare landscape. At the same time, it provided a setting for a natural experiment on how a rapid integration of 2 different training models could be achieved. **Materials and Methods:** Our department reconciled the conflicts by systematically examining the existing training structure and critically evaluating the 2 educational models to develop a new training curriculum aligned with institutional mission values, national healthcare priorities and ACGME-International (ACGME-I) requirements. **Results:** Graduate outcomes were conceptualised as competencies that were grouped into 3 broad areas: personal attributes, interaction with practice environment, and integration. These became the blueprint to guide curricular design and achieve alignment between outcomes, learning activities and assessments. The result was a novel competency-based IM residency programme that retained the strengths of the traditional training model and integrated the competencies with institutional values and the unique local practice environment. **Conclusion:** We had learned from this unique experience that when 2 very different models of medical education clashed, the outcome may not be mere conflict resolution but also effective consolidation and transformation.

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Introduction

In 2010, graduate medical education in Singapore underwent major reform. With the implementation of competency-based residency programmes, hospitals in Singapore became the first outside the United States (US) to adopt a training structure based on the Accreditation Council for Graduate Medical Education (ACGME) core competencies and seek accreditation by the same council. Internal medicine (IM) was one of the first 7 specialties that received a mandate from the Ministry of Health, Singapore (MOH) to redesign its postgraduate medical education (PGME) structure to meet the standards of the newly constituted ACGME-International (ACGME-I).

This educational reform marked a dramatic departure from the traditional process-based curriculum in Singapore that emphasised content delivery (medical knowledge and patient care), and relied heavily on workplace-based global ratings and high stake summative assessments to ensure competence. The transition to a competency-based curriculum that focused on the assurance of a set of 6 core competencies presented major challenges to the participating institutions. The mandate ignited debates within the local IM community about the relative merits of the traditional versus competency-based models of medical education in ensuring that residents could provide high-quality medical

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care when they enter independent practice.

Scepticism over the need and feasibility of the transition had arisen from 2 main concerns. First, the PGME administrative framework, healthcare structure, hospital workload and service requirements in Singapore were significantly different from those in the US. Many were worried that the ACGME-I competency framework and standard, which had evolved from the US healthcare structure, could not be readily adopted by the local institutions. Indeed the mandate was viewed by some as an unrealistic expectation. Second, the ongoing controversy over the competency-based approach to medical education suggested a lack of consensus in the larger medical education community on the value of the model.^{1,2,3}

Caught in the middle of this powerful wave of education reform and controversy, the University Medicine Cluster (UMC) of the National University Health System (NUHS) took the view that, though the mandate was likely to cause sharp division of opinions among faculty members, put a strain on the limited resources and threaten to disrupt the fragile balance between patient care, research and education, it presented an important opportunity for the department to re-evaluate its training structure. In fact, the momentum generated by the national effort to transform the landscape of PGME could serve as a useful force to overcome inertia that was inherent in large academic departments and allow broad education reform.

In this article, we describe a unique natural experiment where an IM residency programme based on the ACGME core competencies was created within the constraints and challenges described above. Because of the need to do more with less, both in terms of time and resources, the constraint had encouraged far-reaching innovations within the programme. We describe the steps taken by the IM residency committee in order to systematically examine the existing training structure and critically evaluate the relative merits of the traditional versus competency-based educational models to develop a new training curriculum aligned with institutional mission values, national healthcare priorities and ACGME-I requirements. The result was a novel competency-based programme that retained the strengths of the existing training model, and integrated the competencies with institutional values, and the unique local practice environment.

Materials and Methods

The Existing Training Structure

It is beyond the scope of this article to describe details of the existing training structure for IM in Singapore. Briefly, the existing training programme, known as basic specialist training (BST), commenced a year after housemanship

(internship) and normally lasted for a minimum of 3 years. Training was provided in accredited departments in all public sector teaching hospitals in Singapore. Learning objectives, learning content and posting requirements, were determined and centrally administered by the Joint Committee of Specialist Training (JCST). Residents in the programme typically were rotated through various departments in different hospitals and kept a logbook record of their work and training. The training was overseen by the JCST who received interval assessment reports on the global performance of trainees from the various clinical departments and concluded with a high stake summative clinical examination (Master of Medicine (MMed) and Diploma of Membership of the Royal Colleges of Physicians of the United Kingdom, MRCP (UK)).

A Collaborative Approach in Defining the Graduate Outcomes and the Curricular Blueprint

The IM residency committee recognised that a collaborative approach was essential to ensure sustainability and ownership of the new curriculum in UMC which was a large, university-affiliated department whose faculty members often had many competing priorities. A residency retreat was organised to bring together faculty from various subspecialties to initiate a collaborative and cross-disciplinary discussion, and to promote innovative curricular planning. The planning started with an attempt to define the characteristics of graduates from the NUHS IM residency programme and link these characteristics to the ACGME core competencies. From the extensive dialogue, a few themes emerged. First, at the level of personal attributes, the programme should focus on developing lifelong learners who are equipped with the capacity to continue to learn from experience and practice IM effectively in a rapidly changing environment. In addition, the programme graduates should possess professionalism that reflected the core mission values of this institution. Second, at the practice level, the new training curriculum should ensure that the graduates are sensitive to the “system” aspects of healthcare (such as system inefficiencies and medical errors) and possess a good understanding of the priorities and the unique system of care delivery in Singapore. Third, in developing the new graduate outcomes, the programme should attempt to contextualise the ACGME core competencies to reflect the local condition of practice and healthcare system. The programme should seek to retain the strengths of the existing training structure while integrating the elements of a competency-based model. Finally, the new graduate outcomes should be used as the blueprint for curricular design so that alignment between learning, teaching activities and outcomes could be ensured (Fig. 1).

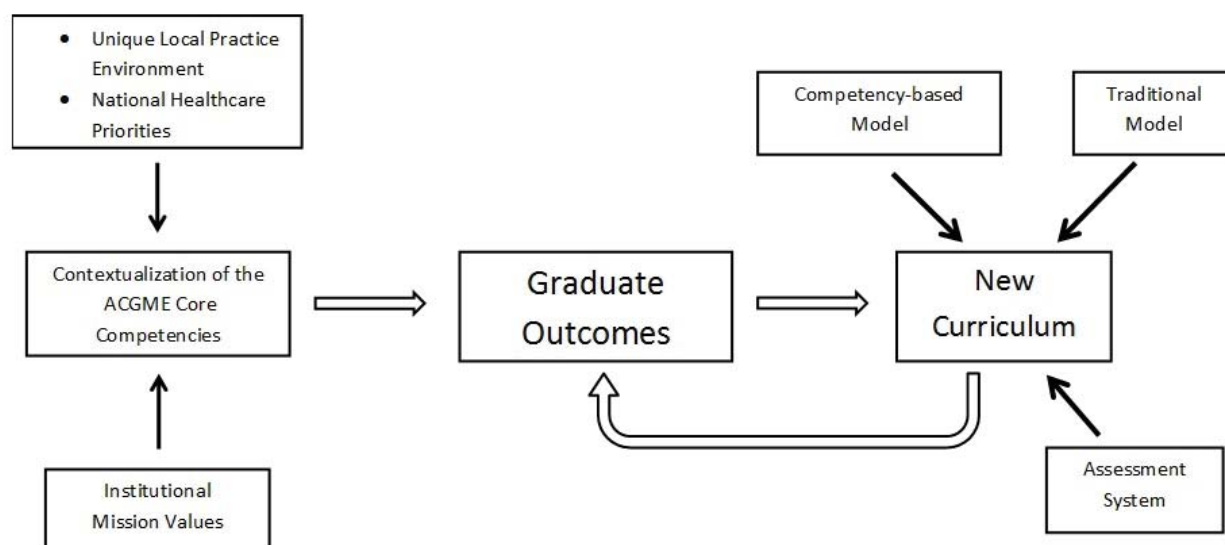


Fig. 1. Graduate outcomes were developed through contextualisation of the core competencies and used as blueprint for curricular design. This approach led to alignment between outcomes, learning activities and assessment system, and allowed integration of the traditional and competency-based models.

Results

Contextualisation of the Core Competencies

Society's expectations of doctors were the key factors that influenced the way the profession conceptualised its practitioners' competence. As the maxim of physician self-regulation was the altruistic expectation that the public interest be served, how the profession defined its practitioners' competence was very much related to how the population they served perceived and appreciated its professional service.⁴ Even though the doctors' competence was generally regarded as something that transcended borders, a definition of competence that possessed a certain level of context specificity would be more helpful and relevant for educators to focus their efforts when designing a curriculum. This was particularly true for competencies like professionalism and systems-based practice. To that end, the teaching, learning and assessment of competencies must respond to the healthcare needs of the larger society and the mission of the institution's local community.

Singapore's healthcare priorities are dominated by issues common to many developed countries: a growing ageing population, changing disease patterns from communicable diseases to chronic lifestyle-related diseases, higher public expectations and avoidance of fragmentation of care. Singapore has one of the fastest ageing populations in the world, with those over 65 years old estimated to represent 19% of the population by 2030, the second highest percentage in Asia, lagging behind only Japan.⁵ The combination of a healthcare funding model that was distinct from most developed economies,⁶ changing healthcare

priorities and rapidly expanding demand for healthcare services had resulted in a unique practice environment that demanded specific competencies from the internists in the areas of professionalism and systems-based practice for effective delivery of care. A useful context-specific attribute of a competent internist in Singapore would therefore be: professionalism in the care of elderly patients, ability to deliver holistic medical care to the geriatric population and patients with chronic diseases, and familiarity with the local healthcare resources and infrastructure in order to provide an effective connection between acute and long-term care. By the same token, as the core values of NUHS were summarised by the mnemonic 'TRICE', standing for Teamwork, Respect, Integrity, Compassion and Excellence, the definition of professionalism as a competence for practising physicians in this institution must reflect these core values.

Through contextualisation of the competencies, we were able to maintain the relevance and sustainability of the new programme. This alignment had helped to make the new programme more readily accepted by the faculty and hospital administration, and thus, facilitated its implementation.

A Systematic Re-examination of the Current System and Comparison of 2 Training Models

Traditional versus Competency-based Models

The existing training framework was one of workplace-based PGME where trainees learned through hands-on experience in everyday ward work. Learning occurred

through the apprenticeship model of clinical training. Assessment involved global ratings by faculty who had observed the residents in a clinical setting over the length of a clinical rotation. This traditional model which was process-based, gave equal weight to both process and outcome of learning, and evaluated skills globally contrasted with the competency-based model that required specification of learning objectives in relation to each of the broad competencies and objective measurement of their achievement by the residents. The debate on the relative merits of the 2 models was ongoing and was far from conclusive.¹⁻⁴

The traditional training model suffered from a number of deficiencies. First, even though the training curriculum had a well organised body of learning content and structure, it did not give adequate attention to the learning and development of competence in individual domains. Apart from medical knowledge and patient care, residents' development in other important roles of physicians (as communicator, collaborator, manager, health advocate, scholar and professional), though implied, was not explicitly expressed or addressed. Second, the use of global ratings at the end of rotations was prone to generosity bias, halo effect and the lack of reproducibility associated with subjective evaluation.⁷

However, it could be argued that the traditional model addressed a niche in medical teaching and assessment that could not be met by the competency-based approach. It had been suggested that focusing teaching and assessment on performance in individual domains of medicine, rather than on performance in caring for patients, would distract faculty from what they should be doing — observing residents caring for patients in a variety of clinical settings and under different clinical circumstances.^{1,4} The ability of residents to translate and integrate their knowledge, skills, and attitudes so that they could perform the complex tasks required to deliver high quality medical care was considered by some to be a more relevant high-level competence than the ACGME competencies that represented a set of measurable attributes.¹ This higher order competence involved sensitivity to clinical context and could only be validly appraised in such a context by fully competent appraisers.² The traditional model that emphasised the residents' overall performance in delivering medical care in the workplace and paid little attention to the individual domains may, paradoxically, be more useful in assessing this higher order competence and helping the residents to advance from someone who possessed the right attributes to someone who did the right thing.

From these considerations and adapting the concept proposed by other educators,^{8,9} we reconciled the differences between the 2 models by conceptualising the graduate

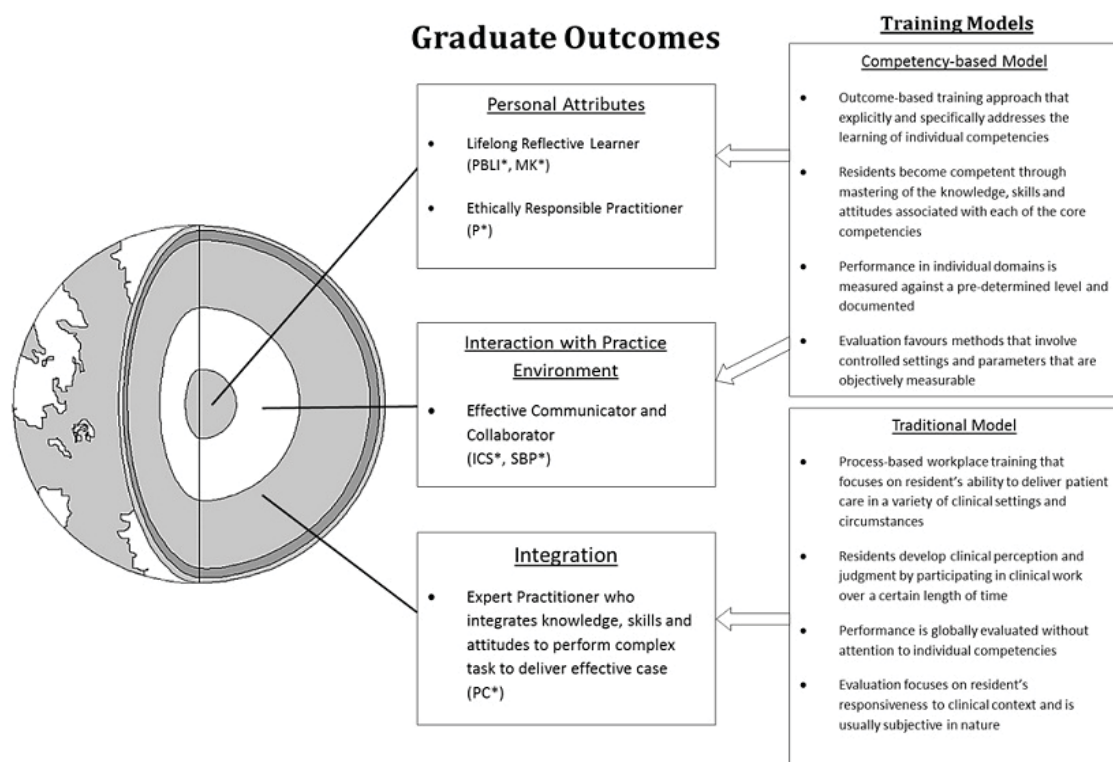
outcomes of this programme as a cutaway view of the earth (Fig. 2): the “core” was represented by competencies that reflected personal attributes (practice-based learning and improvement, professionalism, medical knowledge), the “mantle” consisted of competencies that represented interaction with the practice environment (communication skills, systems-based practice), and the “crust” depicted higher competency, that is the ability of a graduate to translate and integrate all the other competencies into the delivery of high-quality medical care (patient care). By organising the competencies into spherical layers that wrapped around the core, the graduate outcomes became an explicit and logical basis for the development of the new curriculum. Through achievement of the competencies, residents advanced stepwise from possession of the right attributes to effective interaction with the practice environment and finally successful integration of all the skills to deliver effective care. The learning content, rotation system, and assessment systems were restructured to match the new graduate outcomes, with the most appropriate activities and assessment tools selected to support each competency. The process was guided by 2 broad principles. First, the competency-based approach¹⁰ that explicitly and specifically addressed the learning of individual domains was adopted to enhance the learning of competencies related to personal attributes and interactional abilities. Second, the traditional model that was characterised by opportunistic workplace-based learning, observation and global ratings was retained to complement the teaching and assessment of the residents' holistic ability to bring the discrete “building blocks” competencies to bear in the clinical setting.

An Assessment System Aligned with Outcomes

We used the core competencies as the framework for assessment and linked all assessment methods to one or more of the 6 domains. Assessments methods were selected from the ACGME toolbox to match the competencies. The assessment system placed greater emphasis on continuous workplace performance with information-rich activities receiving more specific attention for assessments. To support the new model of graduate outcomes, on top of individual competencies, residents were evaluated by the supervisors on how well his or her performance met the actual demands of the clinical situations in workplace. The use of global ratings at the end of each rotation ensured that residents progressed from “someone who knows” to “someone who does”.¹¹

Portfolio

Periodically, residents performed a strengths-weaknesses analysis of the portfolio and constructed self-direction in



their learning and used that as the focus for discussion with their supervisors to achieve an agreement on the progress of their learning, formulate new learning goals, and construct personal development plans.

In summary, the mixed formative and summative approach to workplace-based assessment and the careful selection of assessment tasks to allow a portfolio-based reflective process were implemented to align the learning activities with the graduate outcomes. This deliberate design of the assessment system helped to consolidate the curriculum and ensure the graduate outcomes.

Conclusion

Recognising that debate on medical education was ongoing but curriculum reform was urgent, we seized the opportunity provided by the national mandate to achieve sweeping changes in the PGME at the UMC. Through contextualisation of the competencies and examination of the institutional mission values and national healthcare priorities, graduate outcomes were developed for the new programme. These were conceptualised as competencies grouped into 3 broad areas: personal attributes, interaction with practice environment and integration, and used as the blueprint to guide curricular design and achieve alignment between outcomes, learning activities and assessment system. Through achievement of the competencies, residents advanced stepwise from development of the right attribute to effective interaction with the system and finally integration

of all the skills, knowledge and attitudes to deliver medical care that met the demands of the local practice environment. Preliminary evaluation results showed that the programme was successful in focusing resident attention on the graduate outcomes.

However, our experience may have limited generalisability. NUHS had a different organisation structure, learning environment, set of core institutional values and priorities from many institutions. These factors had enhanced our programme's ability to implement changes that may not be so readily adapted by programmes situated in other institutions. We were also aware that the redesigned programme was only in its infancy and long-term data regarding the results were not yet available. Nevertheless, we had learned from this unique experience that when 2 very different models of medical education clashed, the outcome may not be mere conflict resolution but also effective consolidation and transformation.

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