TRENDS IN MEDICAL EDUCATION: CHALLENGES AND DIRECTIONS FOR NEED-BASED REFORMS OF MEDICAL TRAINING IN SOUTH-EAST ASIA

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ABSTRACT

Most medical schools, especially in South-East Asia, currently are experiencing difficulties in providing the right quality and quantity of educational experiences as the curricula have failed to respond to the needs of the community and country. The pedagogic shift from traditional approach to a need-based approach requires a fundamental change of the roles and commitments of educators, planners and policymakers. Teachers of health professional education in the region are to be well-informed of the trends and innovations and utilize these to increase relevance and quality of education to produce competent human resources for the region. The purpose of this paper is twofold: (i) to discuss innovative strategies and emerging trends, which have been successfully adopted by educators around the world for the reorientation of medical education and suggested strategies for direction of such changes.1,10 For example, “The Edinburgh Declaration” of World Federation for Medical Education (WFME)3 (Table 2) and “Tomorrow’s Doctors” of General Medical Council (GMC) of UK,6,11 (Table 3), outlined a number of specific strategies to guide reforms and bring need-based changes in medical education. The Edinburgh Declaration, now translated into all major languages, has been very widely adopted as basis for reform of medical education.12

Most of the medical schools in Asia have traditional, teacher-centred and hospital-based training13,15 with a few exceptions only.13 Educational innovations and experiments are not quite evident in this region as seen in other parts of the world.16 Medical teachers, planners and policymakers are to be well-informed of such trends and utilize these in planning, implementing and evaluating training programs to increase relevance and quality and to produce need-based human resources for health for the region. The purpose of this paper is twofold: (i) to discuss innovative strategies

INTRODUCTION

In recent years, political systems, epidemiological and demographic patterns, micro-economic strategies, technology, and health care systems have undergone profound changes (Table 1). To cope with these changes, educational institutions around the world have been increasingly confronted with the challenge of making their curricula more meaningful and relevant to the needs of the time to produce doctors oriented to the real needs of the community. Many authorities highlighted the need for reorientation of medical education and suggested strategies for direction of such changes.1,10 For example, “The Edinburgh Declaration” of World Federation for Medical Education (WFME)3 (Table 2) and “Tomorrow’s Doctors” of General Medical Council (GMC) of UK,6,11 (Table 3), outlined a number of specific strategies to guide reforms and bring need-based changes in medical education. The Edinburgh Declaration, now translated into all major languages, has been very widely adopted as basis for reform of medical education.12

KEY WORDS: Reorientation, medical education, South-East Asia.

Table 1: Factors affecting medical education

<table>
<thead>
<tr>
<th>Factor</th>
<th>Description</th>
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<tbody>
<tr>
<td>Political</td>
<td>Extending democratization in many countries of the world</td>
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<tr>
<td>Demographic</td>
<td>Increased population including elderly</td>
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<tr>
<td>Epidemiological</td>
<td>Emerging and re-emerging diseases</td>
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<tr>
<td>Education and training</td>
<td>Demand for more relevance in education and training</td>
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<tr>
<td>Medication</td>
<td>Obligation for social accountability</td>
</tr>
<tr>
<td>Health care</td>
<td>Promoting specialization when generalists are badly needed</td>
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<tr>
<td>Health care services</td>
<td>Maldistribution of doctors and other health professionals</td>
</tr>
<tr>
<td>Maldistribution of doctors</td>
<td>Diminished access to care for poor and underserved people</td>
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Table 2: The Edinburgh Declaration of 1988

- Reduction of factual burden
- Promotion of learning through curiosity
- Developing appropriate attitudes
- Developing essential skills
- Defining the core curriculum
- Introducing special study modules
- Developing system-based and integrated curricula
- Developing communication skills
- Promoting public health medicine
- Adapting to changing patterns of health care
- Developing appropriate learning systems
- Developing appropriate assessment schemes
- Establishing sound supervisory structures

Table 3: Key recommendations of Tomorrow’s Doctors

1. Obligation for social accountability
2. Promoting specialization when generalists are badly needed
3. Demand for more relevance in education and training
4. Maldistribution of doctors and other health professionals
5. Diminished access to care for poor and underserved people

N.B. GMC added two recommendations to the above, as an afterthought, in 1995, namely developing competence in ethical reasoning and an understanding of the law in relation to medicine; and developing awareness of trans cultural medicine17.
and emerging trends, which have been successfully adopted by educators around the world for the reorientation of medical education to overcome existing traditions of educational planning, review and development and (ii) to highlight their implications and importance to initiate need-based reforms of medical training in South-East Asia.

**Trend 1: Education for Capability**

In most of the medical schools, existing medical training provides a general education in a variety of subjects relevant to a doctor’s need and this broad base has made a significant contribution to the problem of information overload. Education for capability is a move to strike a balance between general education and vocational training to bring relevance in education in order to reduce information overload in curriculum.

To overcome the problem of factual or information overload, a new strategy “core with options” has been advocated. Core curriculum is to be developed by delineating basic knowledge, skills, and attributes, which must be studied “before a newly qualified doctor can assume the responsibilities of a pre-registration house officer”. Currently many medical schools and professional bodies are actively pursuing to delineate the core curriculum in their areas. “Options” provides areas to the students for study depending on individual needs or interests. Mastery of the core ensures the maintenance of standards; the options provide in-depth work and achievement of high-level competencies, such as critical thinking.

Another facet of education for capability is the increased importance placed on practical training and generic competencies. Concern has been expressed that the undergraduate curriculum fails to fulfill this expectation, despite students’ extensive exposure to clinical teaching. In addition to clinical competencies, students must develop generic competencies or transferable personal skills essential to their roles as health professionals, which include bio-ethics and communication skills, interpersonal skills, problem-solving ability, decision-making capability, management and organization skills, working in team, IT skills and doctor-patient relationship.

**Trend 2: Community Orientation in Medical Education (COME)**

COME is an educational process, which focuses on population groups and individual persons in the community, and takes into consideration the health needs of the community concerned. A community-oriented curriculum should also encompass health promotion, illness prevention, assessment and targeting of population needs and awareness of environmental and social factors in disease. The strategic hallmark of COME is community-based training, where students are placed in the community and learn by delivering the care using the existing health services. Adoption of community orientation in health professional education has potential benefits for the students, the medical schools, and also for the community. WHO outlined six reasons in favour of community-based education, which are outlined in Table 4.

**Trend 3: Self-directed/learner-centred learning**

Self-directed learning involves the learner as an active participant and encourages the development of deep learning. Most of the current undergraduate training is didactic and pedagogical, with the teacher as a source of information, which encourages students for surface learning. Learner-centred learning is an active process, where the student does “learn to learn” through his own “digging” or study. This provides the student to use his learning relevant to his educational needs, and his style and manner of learning, and can pace his learning appropriately, according to his ability to learn or understand in any particular area. Moreover, the approach motivates student to adapt to the new knowledge, challenges, and problems he will encounter in future in his professional life.

<table>
<thead>
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<th>Table 4: Rationale for adopting community-based teaching</th>
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<tr>
<td>- It gives the students a sense of social responsibility by enabling them to obtain a clear understanding of local community needs and the problems</td>
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<td>- It enables the students to relate theoretical knowledge to practical training</td>
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<td>- It helps to break down barriers between trained professionals and the lay public and to establish closer communication between campus and community</td>
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<tr>
<td>- It helps to keep the educational process up-to-date by continuously confronting the students with reality</td>
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<tr>
<td>- It helps the students to acquire competency in areas relevant to community health needs utilizing only available the health service facilities</td>
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<tr>
<td>- It is a powerful means of improving the quality of the community health services</td>
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The key features of self-directed learning, which include: problem-based learning; discovery learning; task-based learning; experiential and reflective learning; portfolio-based learning; small-group, self-instructional and project-based learning; peer-evaluation and learning contracts.

**Trend 4: Problem-based Learning (PBL) and Task-based Learning (TBL)**

Problem-based learning has been described as one of the most significant developments in professional education, which was pioneered by the McMaster Medical School in Canada in 1969. Soon, thereafter many medical and health institutes across the world adopted this innovative approach. The WFME and the WHO have endorsed PBL as an educational strategy.

PBL adopts learner-centered method where students learn by working on real life problems and activities, where teacher acts as a facilitator. The problems are used as a focus for learning basic science and clinical knowledge along with clinical reasoning skills in an integrated manner, which follows a particular sequence such as the Maastricht “seven jump” (Table 5).

It is argued that such a method is more effective than learning based on established disciplines and clinical reasoning skills in an integrated manner, which follows a particular sequence such as the Maastricht “seven jump”. It helps the students to acquire competency in areas relevant to community health needs utilizing only available the health service facilities. The strategic hallmark of COME is community-based training, where students are placed in the community and learn by delivering the care using the existing health services. Adoption of community orientation in health professional education has potential benefits for the students, the medical schools, and also for the community. WHO outlined six reasons in favour of community-based education, which are outlined in Table 4.

Another strategy, which has the similarities with problem-based learning, is task-based learning. In PBL, a small group tackles a paper simulation. In TBL, the focus for the learners is not a paper simulation but an actual task addressed by healthcare professionals.

**Trend 5: Integration and Early Clinical Contact**

Some critics felt that a system which many
In multidisciplinary integration, courses may be integrated horizontally, where topics traditionally taught separately in one level of the course are taught together, or they may be integrated vertically, where topics can be taught by two or more departments. Vertical integration is associated with the earlier introduction of clinical work incorporating basic science throughout the undergraduate program. This strategy is found to be more effective way of preparing students for their future roles. Far from being premature and interfering with the study of basic sciences, the evidence is that early clinical contact is handled well by students, who see the relevance and value of what they are learning.

Trend 6: Continuing Professional Development (CPD)
CPD emphasizes the responsibility of the professional beyond their personal development and recognizes that professionals have a special responsibility towards their society. To maintain this accountability a professional is required to move beyond the achievement of initial qualification to CPD. CPD is essential to maintain the competencies of newer graduates, to influence the practice the older graduates, to remedy practice gaps, and to enable all doctors to respond to the challenges of the professional environment. Professional bodies have a responsibility not only for safe-guarding standards but also for the professional development of their own members. Abrahamson et al suggested eight principles for continuing medical education for health professionals (Table 7).

In the 1990s, a clear trend was observed in the health professions education towards more professionalism - training on planning, management and evaluation of curricula. Experts in medical education emphasized consistently that more attention should be paid to the quality of teaching, as an important condition for improving medical education. The teachers and trainers need to develop professionally in relation to their abilities as teachers or trainers, i.e. in their educational development activity and also in their abilities as a professional health worker i.e. in their professional discipline activity. Through faculty-development programmes and other strategies, trainers should be taught to train, teachers to teach and educators to educate. Provisions for incentives and rewards are to be created for those who spend time and energy on educational activities.

Trend 7: Unity between Education and Practice
There has been much discussion in the recent literature about the need to adapt medical education to changing patterns of health care delivery of the country. The World Summit on Medical Education identified the “disjunction between medical education and the medical practice environment” as one of the important constraints that medical education is currently facing in an effort to bring relevance in medical training. It has been observed that most medical schools are mainly theoretical and at the same time it is unfortunate to note that much of the health service lies unused for teaching. Medical institutes should have access to all the clinical facilities of the entire community, at all stages of the curriculum, for placement of the students. Medical education needs to be planned and implemented with full awareness of the aims and demands of the health care services including consistent integration of the sciences of medical practice.

Trend 8: Evidence-based medical education
Currently, in medical education, a trend has
emerged to utilize “trustable research findings” in place of “personal opinions” as a basis for educational management and decision-making. Opinion-based decision-making practiced in most of medical schools in curriculum development and other educational planning involves ‘debates over assumptions, cherished traditions, and quaint myths’. The educational community is also becoming more aware of the importance of evidence in educational decision-making. It is also expected that educational researchers, teachers, academic administrators, health managers, care-providers and policy-makers, join together to develop strategies, and set priorities to enable educational research to guide the future medical education, justify huge investment and address social accountability. This has given rise to “evidence-based medicine (EBM)” and “best evidence medical education (BEME)”.

Utilizing the research findings, most medical schools are inclined to move from opinion-based tradition to evidence-based education. BEME is the practice and implementation of methods and approaches to education based on the best evidence available to teachers in their practice. It is to be ensured that curricular changes in the medical schools are evidence-based and this evidence base should encompass all dimensions of medical education.

**Trend 9: Communication and information technology (C&IT)**

Recent and rapid advances in communication and information technology (C&IT) together with the pervasion of the worldwide web into everyday life have offered many changes and challenges in medical education. Medical schools around the world have invested heavily in computing facilities, not only to attract the best students but also because C&IT and informatics skills are seen as essential in a profession that is increasingly dependent on electronic information. C&IT should contribute to research, education and health care organization. Therefore, teaching C&IT is important for medical students, as they will be the tomorrow’s doctors. Medical schools should use all the educational possibilities of C&IT, either in the classroom or the non-classroom environment to educate students in such a way that they use this technology in their efforts at self-directed learning.

Such explosion of technology has also encouraged medical education to turn gradually to web-based instruction, e-learning and virtual education. However, for Internet education to be successful, particularly in developing countries, medical students must have access to computers and the Internet as well as positive attitudes toward this form of learning.

**Challenges and implications for medical education in South-East Asia**

Like other parts of the world, medical education in South-East Asia has also experienced many changes and challenges over the last few years. The countries of the region have taken initiatives with the help and support of international organizations (e.g. WHO, World bank, Overseas Development Administration, UK etc.) to reorient their medical education in order to meet the emerging community needs. The profile of the doctor has been refashioned; the curricula has been reviewed with an increased use of community as learning resource; innovative approaches to medical education, such as problem-based learning and community-oriented education have been adopted; greater flexibility has been introduced in to the educational programmes; teachers’ training on medical education has been initiated; and quality assurance, accreditation and curriculum evaluation mechanisms are being implemented. The establishment of medical education units in many medical schools and initiation of teachers’ training programmes in recent years have led to increased interest in teaching methodologies and sporadic research activities in medical education. The overall outcome is not frustrating, rather encouraging, as an “educational environment for change” is beginning to emerge in the arena of medical education.

However, the challenge ahead for improving the standard of medical education in South-East Asia is enormous and is not an easy task. Political commitment and leadership in the arena of medical education is urgently and acutely needed with provision of allocation of enough funds and resources. The following general recommendations are put forward to improve the medical education in South-East Asia in the light of trends discussed above:

1. The mission and objectives of medical education should be determined by *priority health needs and health problems prevalent* in the community. Medical education needs to be planned and implemented with full awareness of the aims and demands of the health care services including consistent integration of the sciences of medical practice.

2. Educational programme
   - Educational principles should be student-centred with provisions for self-directed learning, early clinical contact and early contact with health care services. Design and implementation of the curriculum should demonstrate that content and balance of the curriculum and its assessment matches the explicit objectives of medical education.
   - Core curriculum encompassing the essential knowledge, skills and appropriate attitudes to be attained by the graduates should be outlined. It should be augmented by a series of *special study modules*, which allow students to studying depth areas of particular interest to them. The core curriculum should be *system-based and integrated*, to break the rigid pre-clinical/clinical and departmental boundaries. Basic science teaching should be relevant to the overall objectives of the medical course and its *relevance* should be clear to the students.
   - The theme of the *primary health care* should figure prominently in the curriculum, encompassing health promotion and disease prevention, assessment and targeting of population needs, and awareness of environmental and social factors in disease. Special emphasis should be given to priority community health needs and issues.
   - Teaching and learning methods should be consistent with medical education objectives and promote *student-centred and competency-based learning*, simulate *analytical and problem-solving abilities*, and foster *life-long learning skills*.
   - Use of *extended learning settings*, including primary care and non-medical
settings, is needed. **Community-based teaching** should be introduced very early and must continue throughout the educational program. Medical institutes should have access to all the clinical facilities of the entire community, at all stages of the curriculum, for placement of the students. **Clinical teaching settings** should be extended to rural, urban, suburban, community and private hospitals, in general practice, in community health centers and other settings which will allow students to gain the necessary clinical experiences of ambulatory care.

- Methods of student assessment should match and reinforce the goals and objectives of medical education and should encourage **appropriate learning skills** and should reduce emphasis on the uncritical acquisition of facts. Emphasis should be given to assess relevant skills and attitudes, communication skill, and problem-solving skills.

3. Medical schools should have **policies** for recruitment of quality teaching staff, staff development and review, promotion and posting.

4. Medical schools should have adequate **teaching facilities and library resources** to achieve objectives of the medical schools.

5. Medical colleges should have continuous and inbuilt **curriculum evaluation mechanism** to receive feedback from the stakeholders and to bring changes accordingly.

6. **Governance and administration:**
   - Medical colleges should have sufficient **autonomy** to be able to direct resources to achieve the overall objectives of medical education.
   - Medical, dental and nursing colleges and other health care professions should be put under the same umbrella (for, example under the faculty of health sciences) to promote **multiprofessional education** and ensure effective integration.
   - A **supportive health authority and appropriate channels of communication** is needed to allow problems to be addressed and new initiatives to be developed.

7. In addition to social needs, medical schools need to continuously **adapt to changes** in scientific, educational and health practices worldwide. **Accreditation, quality Assurance and best-evidence-based medical education** should be the basis for such initiatives and changes.

**CONCLUSION**

Change in medical education is currently a worldwide phenomenon. It is needed to prepare doctors to fulfill the expectations of society, to cope with the exponential growth of medical and scientific knowledge, to inculcate physicians’ ability for lifelong learning, to ensure mastery in information technology, and to adjust medical education to changing conditions in the health care delivery system. These trends have been introduced in the different health institutes in most of the developed countries. In South-East Asia, greater efforts are to be taken to orient teachers, trainers and planners about these trends to bring desired changes in medical education to produce need-based human resources for health in the region. However, such pedagogic shift from traditional approach to a need-based approach requires a fundamental change of the roles and commitments of educators, planners and policymakers.

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