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Review

Emerging issues in the practice of university learning and teaching: challenges and way forward for improving medical training in Nigeria

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Greater numbers of medical institutions in Nigeria are currently experiencing difficulties in providing the right quality and quantity of education due to underfunding, inadequate and obsolete facilities, absence of experienced and dedicated teachers, increased cost of schooling, lack of update training for teachers, students over population and rapidly deteriorating good morals and core values. The necessary 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 Nigeria are to be well-informed of the current information and innovations and utilize these to increase relevance and quality of education to produce competent human resources for the country. The objectives of this paper are: (i) to discuss innovative strategies and emerging trends, which have been successfully adopted by educators around the world for the reorientation of medical education to overcome the above mentioned problems of educational planning, review and development and (ii) to highlight the implications and the importance to initiate need-based reforms of medical training in Nigeria.

Keywords: Emerging; Learning; Teaching; Nigeria

INTRODUCTION

From 1999 to date, Nigeria educational, political and economic systems; epidemiological and demographic patterns, technology, and health care systems have undergone profound changes. These changes are similar with what operate across the globe. To cope with these changes, governments, health policy makers and educational institutions around the world have been increasingly confronted with the challenge of making the medical training 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 (WHO (1992), WHO (1987), World Federation of Medical Education (1988), Mediterranean Medical Meeting (1990), Advisory Committee on Medical Training of European Community (1993), General Medical Council-UK (1993), Pew Health Professions Commission (1993), WHO (1993), World Federation of Medical Education (1993), British Medical Association (1994). A good example is seen in "The *Edinburgh Declaration"* of World Federation for Medical Education (1998) and "Tomorrow's Doctors" of General Medical Council-UK (1993), outlined a number of specific strategies to guide reforms and bring need-based changes in medical education. The Edinburgh Declaration has been very widely adopted as basis for reform of medical education (Walton, 1999). Most medical schools in Nigeria are characterized by teacher-centred and hospital-based training with a few exceptions only (Colleges of Medicine of the Universities of Ilorin & Ibadan). Educational innovations and experiments are not quite evident in this country as seen in other parts of the world (Majumder, 2004). 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 country. The purpose of this paper is twofold: (i) to discuss innovative strategies and emerging trends, which have been

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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 Nigeria.

One of the major ways of addressing the challenges of undergraduate medical education and improve health system and human development is through health research. The research must be adequately funded by government. There is therefore an urgent need for research capacity strengthening in medical education and the promotion of health system research. The search for strategies to get research findings into policy and practice has gained momentum and the global literature has called for further exploration in the area of research to policy (Majumder, 2004). In particular, engaging decision makers in specific areas of health research, and promoting the use of surveys of decision makers has been advocated (Haines et al, 2004). Consequently, there has been increasing international interest currently in the transfer and uptake of research into policy and practice (DeRoeck, 2004; Haines et al, 2004).

Innovative Strategies and Emerging Trends

1. Early Clinical Contacts with Patients

This involves exposing students to a succession of subjects studied in different department. This has been observed by some researchers as ineffective in producing competent physicians (Association of American Medical Colleges, 1984). The disadvantages of this situation are (i) wasteful (because of unnecessary repetition), (ii) disjointed (because of isolation from other 'subjects'), and (iii) confusing (because of departmental differences of opinion). Due to these disadvantages, the Cape Western Reserve University, in the early 1950s, initiated an "integrated teaching" programme. The integrated teaching" programme has two approaches-multiprofessional and multidisciplinary. In multi-professional education, students of different professions, such as medicine, nursing and dentistry are taught together in certain appropriate situations. The approach encourages development of the student's ability to share knowledge and skills, enhances personal and professional confidence, helps attainment of respect between professionals, promotes reflective practice and ensures quality health services (Harden; 1988, Mires 1999). 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 approach 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 (World Federation for Medical Education, 1988; Kaufman et al 1989). Early clinical contact is taking seriously by students, who see the relevance and value of what they are learning. Despite its disadvantages early patient contacts motivate students to study, help them understand the impact of illness on patients' lives, and enhance professional socialisation and memory processes (Diemers et al., 2008). The contacts enhance knowledge construction and clinical reasoning (Diemers et al., 2008). In a curriculum with clear goals for early student-patient contacts, it is feasible to implement an early clinical programme in medical practice based on educational principles

2. Evidence–Based Medical Education and Practice

This took its origin from evidence based medicine (EBM) which is defined as an approach to caring for patients that involves the explicit and judicious use of the clinical research literature combined with an understanding of pathophysiology, clinical experience, and patient preferences to aid in clinical decision-making. EBM deemphasizes (but not eliminate) intuition, unsystematic clinical experience and physiologic reasoning as sufficient grounds for clinical decision-making and emphasizes the systematic evaluation of evidence from clinical research. There are several reasons for the sudden interest in EBM. There is increasing realization among clinicians that years of experience that has enabled them to sharpen the clinical skills and improve clinical judgment, if unaccompanied by updating of knowledge can result in decline of clinical performance. The need for valid information about diagnosis, therapy, prognosis, and prevention on a daily basis has assumed added significance in this era of consumer activism. The awareness level in the general public about health related has increased tremendously especially due to the Internet revolution sweeping the world. The common man has access to the very same medical literature as the clinicians through numerous sources, from the traditional print and electronic media to the mushrooming portals on the World Wide Web. The patients are increasingly accessing medical information and are looking to their physicians for interpretation and opinion. It is in this context that the physician of today pursues clinical practice. The traditional sources of information for the clinician are generally found to be inadequate because they are out of date (textbooks), frequently wrong (experts!!), ineffective (didactic continuing medical education), too voluminous and highly variable in their validity for practical clinical use. Additionally, the limited time available to the clinician for acquiring information is a major impediment for updating the knowledge from

traditional sources. Information revolution in the new millennium equips the clinician with newer and more efficient tools of information gathering and helps him arrest the decline in his clinical performance. At least four major factors are facilitating the adoption of EBM by clinicians. The type of literature being made available to the medical fraternity has undergone substantive qualitative change. The unstructured review articles based on personal opinions of experts in the field have been replaced by peer-reviewed reports of research studies designed and executed with scientific rigor. Systematic reviews of multiple research studies and the publication of a number of evidence-based journals provide validated information to the reader. The second major advance has been in the area of evolution of electronic information systems. Information dissemination systems have come a long way from the days of storing information in large mainframe computers at few privileged academic centers to making the information available on the desktop of users all across the globe through the World Wide Web. Simultaneously the librarians (Information Science specialists in modern day parlance) have evolved faster and far more efficient strategies for sifting through tons of literature and locating the evidence of interest to address the issues raised during a clinical encounter. Evidence-based Medical Education (EBMedEd) is the conscientious, explicit and judicious use of current best evidence in making decisions about individual educational programs. The practice of EBMedEd means integrating individual educational expertise with the best available external (i.e., literature) and/or internal (i.e., program evaluation) medical education evidence from systematic research. Evidence Based Medical Education is anchored on trustable and valid research findings. Currently, in medical education, a "trustable and valid research findings" instead of "personal opinions" is now being used as a basis for educational management and decision-making. Researcher has noted that opinion-based decision-making practiced in most medical schools in curriculum development and other educational planning involves 'debates over assumptions, cherished traditions, and quaint myths' (Jason, 2000) The University or any institution learning community is now 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 (Jason, 2000; Bligh et al 999). Curricular changes in the medical schools should be evidence-based and this evidence base should encompass all dimensions of medical education.

3. **Problem-based Learning (PBL) and Task-based Learning (TBL)**

PBL and TBL are two comparatively new models of language teaching and learning. They developed as a reaction to the traditional models of language teaching such as PPP (presentation, practice, production) and subject-based learning. The concept of problem-solving lies at the heart of TBL and PBL. Problems are essential in PBL, being the only things that students have to deal with. Problems and problem-solving activities in TBL are of somewhat less importance than in PBL. These models were pioneered by the McMaster Medical School in Canada in 1969 and since then many medical and health institutes across the world have adopted this innovative approach. The World Health Organization and World Federation for Medical Education have endorsed Problem-based learning as an educational strategy. PBL is students (learners) centered 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 (Barrows et al, 1980). PBL conforms to the principles of adult learning and cognitive science. In PBL, a small group tackles a paper simulation. In Task Based Learning (TBL), the focus for the learners is not a paper simulation but an actual task addressed by healthcare professionals. Problem-based learning (PBL) is a curriculum development and instructional system that develops both problem-solving strategies and disciplinary knowledge bases and skills by placing students in the active role of problem-solvers faced with an “ill-structured problem” that mirrors real world problems (Stovers, 1998). PBL emphasizes the learning part of the teaching-learning process (Gvardjancic, 2001). It is based on the idea that learners learn what is meaningful to them and learn better if they feel in control of what they are learning

4. **Continuing Professional Development** (**CPD**) or **Continuing Professional Education** (**CPE**)

This is the means by which members of professional associations maintain, improve and broaden their knowledge and skills and develop the personal qualities required in their professional lives. CPD is also defined as a commitment to structured skills enhancement and personal or professional competence (WHO, 1992). CPD can also be defined as the conscious updating of professional knowledge and the improvement of professional competence throughout a person's working life. It is a commitment to being professional, keeping up to date and continuously seeking to improve.

Continuing Professional Development (CPD) for

medical professionals is defined as the education of physicians following completion of formal training. CPD consists of any educational activity which helps to maintain, develop or increase knowledge, problem-solving, technical skills or professional performance standards all with the goal that physicians can provide better health care. CPD includes 'formal' activities, e.g. courses, conferences and workshops, as well as self-directed activities such as preceptorship and directed reading. The Federation of Medical Regulatory Authorities of Canada (FMRAC, the organization composed of the Colleges of Physicians and Surgeons or Medical Boards of all the provinces and territories), has stated that all licensed physicians in Canada must participate in a recognized revalidation process in which they demonstrate their commitment to continued competent performance in a framework that is fair, relevant, inclusive, transferable, and formative. In BC, the revalidation process came into effect January 1, 2010, and consists of mandatory compliance with continuing professional development (CPD) requirements of either the RCPSC or the CFPC.

CPD should be engaging, informative and progressive, embracing 'best practice' and easily digestible knowledge. It should neither be excessively demanding nor uninteresting. It should stimulate a desire to learn more about your profession and participate in it (The Association of Personal Assistants). CPD is also known as continuing medical education for medical professionals in Nigeria. CPD puts societal development before personal development among professionals. To ensure this accountability a professional is required to move beyond the achievement of initial qualification for CPD (Clyne, 1995). CPD is required to maintain the competencies of newer graduates, to influence the practice of older graduates, to remedy practice gaps, and to enable all doctors to respond to the challenges of the professional environment (World Federation for Medical Education, 1994). Professional bodies have a responsibility not only for safe-guarding standards but also for the professional development of their own members (Mediterranean Medical Meeting, 1990; Gezairy, 1994). There are eight principles for maintaining continuing medical education for health professionals (Abrahamson et al., 1990). 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 (Bligh, 1999; Stewart, 1997).

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 (Biggs et al., 1994). 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 (Kelley et al., 1992).

5. Self-directed/Learner –centred learning

Over the past four decades, a major paradigm shift in education has been the move to learner-centred approaches, one major change being the development of problem-based learning or, PBL (Barrows, 1983, 1986; Taylor and Miflin, 2008) and the move towards competency-based and outcome–based learning (Harden et al., 1999; Harden, 2002). These new approaches have sought to place students as the focus of learning, with their teachers in supporting roles (Dewey, 1956; Brandes and Ginnes, 1986; Neville, 1999; Spencer and Jordan, 1999; Ludmerer, 2004; Dornan et al., 2005). In medical and healthcare education, this paradigm shift was prompted by many factors, not least the need to produce independent, self-reliant doctors and professionals capable of adapting to and meeting the changing healthcare needs of the communities they serve (General Medical Council, 1993, 2002). According to Brandes and Ginnes (1986), whose six principles of student-centred learning integrate the cognitive and affective domains (see Table 1), the net result should be an individual who is empowered to be a life-long learner, who embraces his/her own abilities and who is accepting of others. The introduction of the humanities, communication skills training and early patient contact in the curriculum and the increasing influence of Family Medicine and community-based teaching in medicine have contributed to the understanding of the patient as an individual with feelings and needs, who is an integral member of a community (Balint, 1969; Stewart, 2001; Howe *et al*., 2004). This patientcentred care approach, together with the recognition of the value of building relationships (i.e. relationship-centred care) with patients (Frankel, 2004; Beach et al., 2006), has been incorporated into many medical curricula (Christenson et al., 2007; Cottingham et al., 2008).

We argue that while medical education generally subscribes to more student-focused curricula, the holistic concept of “centredness” is not always translated into practice or reflected in our interactions with students, which may partly account for the reported stress of medical students (Toews et al., 1997; Dyrbye et al., 2005; Taylor and Miflin, 2008). Few would disagree that the study of medicine should be a transformative experience that molds young medical students into caring doctors (College of Family Physicians of Canada, 2008; Shapiro, 2008). For most students, this journey is exciting and satisfying. For others, it is stressful (Toews et al., 1997; Dyrbye et al., 2005) and may contribute to the reported attrition from medical studies (Molnár et al., 2006; Arulampalam et al., 2007). From the time a student is

Table 1. Six principles of student-centred learning (Brandes and Ginnes, 1986)

1. The learner takes full responsibility for his/her learning.
2. Involvement and participation by the student are necessary for learning.
3. The relationship between learners is more equal, promoting growth and development.
4. The teacher becomes a facilitator and resource person.
5. The learner experiences confluence in his/her education (i.e. affective and cognitive domains are integrated).
6. The learner sees himself/herself differently as a result of the learning experience (i.e. develops a higher conception of learning).

admitted to medical school to when he/she enters the workplace as a newly graduated doctor, medical education should provide a nurturing educational and social environment to develop caring principles, professional attitudes and interpersonal relationships (Hafferty, 1998; Christenson *et al*., 2007; Shapiro 2008).

Most of the current undergraduate training in Nigeria is didactic and laborious, with the teacher as a source of information, which encourages students for surface learning and reading or cramming to pass examinations. After passing the examinations the knowledge base is below average due to non-development of deep learning. Self-directed learning involves the learner as an active participant and encourages the development of deep learning. Learner-centred learning is an active process, where the student does "learn to learn" through his own "digging" or study (Barrows et al, 1980). This provides the student to use his time to learn what is relevant to his educational needs and his style and manner of learning is according to his ability to learn or understand in any particular area (Barrows et al, 1980). This approach of learning motivates student to adapt to the new knowledge, challenges, and problems he will encounter in future in his professional life. The key features of self-directed learning (Spencer et al, 1999) agree with the principles of adult learning (Knowles, 1990) and also with the findings of research in cognitive psychology (Regehr et al, 1996). Strategies that have been developed as self-directed learning include ((Spencer et al, 1999) : 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.

6. **Community Orientation in Medical Education (COME)**

In response to major changes in Nigeria, expression and place of management of much illness, many medical schools are turning their attention increasingly to the community from where to derive their curriculum and wherein to effect their teaching. The traditional hospital base teaching is eroding, necessitating new, innovative approaches to medical education. Becoming community-oriented, or using community-based learning, offers potential benefits for the schools, the students, and the public. The experience of others demonstrates the necessity of enlisting community representatives as partners in the process of change. Institutional barriers are significant and careful planning is needed to overcome them.

One goal of COME is to introduce the student to the concept of the community practice of medicine, to make the student aware of the vital role which the hospital and its ancillary services have in the daily function of the local community. COME attempts to accomplish this goal by allowing the student to participate in the daily management of all phases of patient care delivery -- from physicians' offices to hospital-affiliated community activities; from the Outreach to the Emergency room; from the ambulance to the hospital ward. Just as importantly, the student is exposed to the administrative functions of the hospital, as well as the strictly technical and medical functions. As a result, participants experience all aspects of hospital functioning. Another COME goal is to effect the redistribution of physician manpower by exposing students to the health care system of the community. COME emphasizes the premise that numerous valid and worthwhile educational experiences are available in community health care institutions, based on the knowledge and experience of the community physician. In addition, this provides a mechanism to facilitate the continuing education of the practicing physician.

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 (WHO, 1987).

This is similar to Community Based Experience and Service (COBES) programme of University of Ilorin Medical School. 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 (General Medical Council- UK, 1993). 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 (Murray et al 1995; Oswald et al 1995).

7. Capability approach in Education

This is a justice based framework for interdisciplinary understanding of educational processes. The capability approach (CA) in education goes beyond the question whether young persons receive good educational services or a sufficient amount of resources (in material, cognitive and personal terms). In addition, the CA takes account of pervasive inter-individual differences in people's abilities to convert resources and services into valuable states, actions and affiliations. It refers to the realisation of valuable activities and states such as the mastering of linguistic and social competences that make up young people's wellbeing. An educational system which adequately provides fundamental capabilities constitutes not only a basis for social progress and productivity but also for educational justice with respect to a flourishing development of young persons particularly those who are considered as educationally disadvantaged.

Medical training in most Nigerian Medical schools provides a general education in a variety of medical subjects relevant to a doctor's need and this broad base education has made a significant contribution to the problem of information overload (General Medical Council- UK, 1993). 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 (British Medical Association, 1994; Harden et al., 1995). In order to overcome the problem of information overload, a new strategy called "core with options" has been advocated (Harden et al, 1995; Harden et al., 1984).

A Core curriculum should be developed by delineating basic knowledge, skills and attitudes, which must be studied "before a newly qualified doctor can assume the responsibilities of a pre-registration house officer (General Medical Council- UK,

1993). Currently, many medical schools and professional bodies are actively pursuing to delineate the core curriculum in their areas (Harden et al, 1984; Gunzburger et al., 1994;

Association of British Neurologists 1995; Rayner 1995). "Options" provides students with opportunities to 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 aspect of education for capability is the increased importance placed on practical training and generic competencies. Researchers (McManus et al, Lowry, 1992; Jolly et al., 1989) have expressed concern that the undergraduate curriculum fails to fulfil 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, ability to work effectively working in a team (a good team player), Information and technology skills and doctor-patient relationship. For all these competencies to be achieved, a student must have a positive attitude to work.

8. Education and Practice

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 (Mediterranean Medical Meeting 1990). Also the World Summit on Medical Education (World Federation for Medical Education, 1993) 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. In recent times, literatures (Lowry, 1993; Rees, 1993; Marandi, 1996) have been laying emphasis about the need to adapt medical education to changing patterns of health care delivery of the country. It is important for medical schools and institutions to have access to all the clinical facilities of the entire community, at all stages of the curriculum, for placement of the students (WHO, 1987). In this aspect, the University of Ilorin Medical College, Nigeria stands out. Medical education needs to be planned and implemented with full awareness of the aims and demands of the health care services needed by the community.

9. Information and Communication Technology (ICT)

The rapid advances in information and communication technology (ICT) together with the general availability of the worldwide web (web sites) into everyday life have provided many changes and challenges in medical education (Ward, 2001). Medical schools around the world have invested heavily in computing facilities, not only to attract the best students but also because ICT and informatics skills are seen as essential in a profession that is increasingly dependent on electronic information (Majumder et all 2004). ICT plays an important role in contributing to research, education and health care organization. Therefore, teaching ICT is important for medical students, as they will be the tomorrow's doctors. Medical schools should use all the educational possibilities of ICT, 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. The ICT has also encouraged medical education to turn gradually to web-based instruction (Judy et al., 2003), e-learning (Klass, 2004) and virtual education (The International Virtual Medical Schools, 2004; The International Virtual Medical Schools et al 2004).

Challenges and the Way Forward

Medical schools in Nigeria are faced with many challenges some of which include:

i. Poor funding.
ii. Inadequate modern facilities
iii. Admission trouble
iv. Inadequate experienced and committed staff
v. Students attitudinal problems
vi. Student indiscipline and poor behaviour
vii. Parental interference.
viii. Lack of training for teachers on medical education.
ix. Accreditation
x. Poor political commitment and ownership
xi. Social vices
xii. Inadequate library facilities

Way Forward

The following general recommendations are put forward to improve the medical education in Nigeria in the light of challenges and trends discussed above:

1. Federal and State governments' medical colleges should be adequately funded. The National University Commission should intervene by insuring that only medical schools with convincing evidence of adequate funds is accredited to operate and function.

2. Provision of modern facilities for teaching and research. The Nigerian Medical and Dental Council should support and collaborate with the Nigerian University Commission by granting license to only medical teaching hospitals with modern facilities for diagnosis and management of patients.

3. Medical schools should 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

4. The current trend of admission procedures and policies of most medical schools in Nigeria is worrisome. Admission should be based on availability of competent teaching staff and modern facilities. Admission of students should strictly be based on merit and not minding whose ox is gored. This will put a stop on current trend of parents wanting their children to read medicine by all means and cost.

5. Teachers in Medical School should be well remunerated and motivated in order to abate the ongoing brain-drain syndrome which started in the 1990s. Apart from these, conducive environment should be provided for teaching and learning

6. Only students with good moral standing should be admitted to medical school apart from academic qualifications. Good academic qualifications and morals should be golden requirements for admissions. Any student who fails to meet the two requirements should not be admitted because experience have shown that the two requirements are needed to function as a good doctor before effective and efficient health care can be delivered.

7. Parental interference in admission and academic performance of students should be restricted with heavy sanctions of teachers and parents as collaborators

8. Regular update training for teachers on medical education should be implemented by the institutional authority

9. Students caught with any social vice should be expelled or advised to withdraw.

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

11. The mission and objectives of medical education should be determined by priority health needs and health problems prevalent in the community and the country. Medical education needs to be planned and implemented with full awareness of the aims and demands of the health care services.

12. 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.

12. 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 study in-depth in 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.

13. Community health care should feature 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.

14. 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.

15. 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.

16.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.

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

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

19. Medical colleges should have sufficient autonomy to be able to direct resources to achieve the overall objectives of medical education.

CONCLUSION

The current trends in medical education can not be over emphasized because they aim 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 are ongoing in various medical and health institutions across the developed countries. As one of the leading countries in Africa, Nigeria can not but actively participate in the growing trends. For this to be achieved, all hand must be on deck to educate and inform teachers, trainers and planners about these trends in order to bring desired changes in medical education to produce need-based human resources for health in the country. The teachers, educators, planners and policymakers have important role to play in this regard.

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