

**Original articles**

**GLOBAL STANDARDS IN  
BASIC MEDICAL EDUCATION**

**Are they suitable for Accreditation of Schools of  
Medicine in Developing Countries?**

**The Sudan Experience**

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**Abstract**

**Background:** The World Federation of Medical Education (WFME) has defined standards to outline minimum requirements for medical education (ME). The standards are divided into two levels, basic standards which must be fulfilled by all medical institutions and standards for quality development which serve as an incentive for development.

The school of medicine of the Academy of Medical Sciences & Technology (AMST), Sudan, conducted self evaluation using WFME standards to prepare the school for accreditation and to test whether the standards are attainable and practical for medical schools in developing countries.

**Methods:** AMST committee for self evaluation was established to collect data by standard questionnaires prepared by three official bodies responsible for medical education & health in the Sudan. Questionnaires are based on WFME standards addressing

9 areas and 36 sub areas.

**Results:** AMST school of Medicine attained 95% of basic standards and 85% of quality development.

Advantages and disadvantages were identified. New standard on quality development is suggested. Benefits from applying the WFME standards for self evaluation include:

- Staff members get to know their own school's qualities.
- We all develop knowledge and experience in the accreditation process
- We established a systematic approach to school evaluation.
- WFME standards increase staff satisfaction on school performance.
- The process identified areas of strength and weakness which are scheduled for further action.

**Conclusion:** WFME standards are considered an essential mean for achieving the highest standards of medical education. They are found practical & attainable by our school.

**Key Words:** global standards; accreditation; students; staff; educational programme; curriculum

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**Background:**

The World Federation for Medical Education (WFME) is enhancing the quality of medical education worldwide. It has defined standards to outline minimum requirements for medical education (ME). The standards are divided into two levels, basic standards which must be fulfilled by all institutions and standards

for quality development which serves as an incentive for development.<sup>(1)</sup>

The Accreditation Committee of the Ministry of Higher Education & Research in Sudan and the Sudan Medical Council are adopting the WFME global standards to accredit medical schools in the Sudan. These two institutions constitute decision-makers in medical education and healthcare in Sudan. A central committee from these institutions held a series of meetings to adopt and adapt the WFME Global Standards. The twenty six medical schools in Sudan were requested to do a self-evaluation using the prepared formats based on the 9 areas and the 36 sub-areas identified by WFME.<sup>(2)</sup>

The Academy of Medial Sciences and Technology is a privately owned institution started in 1996. It has graduated 6 batches of medical graduates to date (123 graduates).

The duration of study for MBBS course is 5 years, divided into 10 semesters. Each semester is 19-22 weeks. The student admission policy complies with the Sudan National Admission Office. Each student has to spend one semester in an orientation course studying chemistry, physics, and biology, computer and communication skills.

The curriculum is neither a classical one nor a system based integrated curriculum, it is based on two years of basic medical sciences followed by 3 years clinical training. Therefore it is a hybride taking some aspects of each.

The curriculum is divided into 3 phases. Phase one is for basic medical sciences, phase two is for paramedical sciences and phase three is clinical. At the end of each phase external examiners are invited to take part.

Being a private institution it is considered that the highest

standard of medical education is achieved. For this reason the process of this evaluation is considered critical.

**The overall aims of the evaluation were:**

1. To test whether the standard levels are applicable
2. To determine if the basic standards can be met by our school
3. To assess the level our school has achieved in quality development
4. To determine the benefit of this self-study to the school

**Methods:**

In August 2004 a faculty board meeting was held to discuss the issue of self-evaluation and accreditation. Three documents were made available to all staff-members 3 weeks before the meeting. These documents were Basic Medical Evaluation, WFME Global Standards for Quality Improvement as found in the WFME Website: <http://www.wfme.org>. The second document was the Standard Faculty, prepared by the accreditation committee of the National Ministry of High Education & Research. The third document was prepared by the Sudan Medical Council, Accreditation Committee, Data collection Form (Ref. Accreditation Committee, at Sudan Medical Council, e-mail: [sudmedaccr@yahoo.com](mailto:sudmedaccr@yahoo.com)).

All staff members accepted the idea of self-study and the whole topic was intensively discussed. The meeting established a committee for self-evaluation. The committee was further divided into small groups. Each group was to address one of the following areas:

1. Mission and objectives
2. Educational programme
3. Assessment of students
4. Students

5. Academic staff/faculty
6. Educational resources
7. Programme evaluation
8. Governance and administration
9. Continuous renewal

The self evaluation process was discussed with the President of the Academy. He was supportive of this initiative as he regarded it as an evaluation of the faculty's performance. This evaluation could be a starting point for further evaluation to prepare the school for international accreditation.

Data was collected by means of standard questionnaires containing both closed and open ended questions. The questionnaires were prepared by the National Committee of Accreditation which was based exclusively on areas and sub-areas of WFME standards. Each committee presented its work to faculty staff meetings in the form of mini workshops according to an agreed timetable.

The meetings were to ensure systematic completion of the questionnaires.

## **Results:**

### **Characteristics of the study:**

- Membership of the committee included the Vice-president of the Academy, the Academy principal, the Academic Secretary, Dean, Clinical Dean, staff-members and 3 administrators.
- Setting this self-assessment study was quite an undertaking. The compilation of information and completing the questionnaire took a lot of staff time and had to be done between their regular duties. Data collection took a period of 7 months. During this time each member had to commit

about 3 hours per week of extra time, giving a total of 84 hours.

- Standards addressed:

The 9 areas identified by WFME were addressed. The 36 subareas addressing basic standards and quality development were used as a guide for the study.

### **Data Collection Problems:**

Data were collected by questionnaires prepared by the National Accreditation Committee. Existing documents were analyzed and interviews were conducted. There were no problems experienced in data collection except that the staff was overloaded with work.

Obstacles met were:

- Data compilation in the Dean's Office necessitated one secretary to be full time dedicated to the task.
- The curriculum document had not been completed. The evaluation process revealed this deficit which to us was a valuable contribution. The completion of the curriculum necessitated a lot of extra work parallel to the self-assessment activities.
- Being the first extensive data collection, we experienced difficulty in summarizing the data.
- Data collection had to be done in Arabic and English language to satisfy the accrediting bodies.

### **Attainment of standards:**

#### **1. Mission and Objectives**

The school has a mission statement and clearly defined objectives, which is made available to all staff members and students on entry to medical school. Sixty percent of the staff did not participate in formulation of mission

statement and objectives because they were newly recruited to the Academy.

## **2. Educational Programme**

The curriculum aspires to integrate the basic medical sciences, community health and the clinical disciplines in both a horizontal and vertical manner. There is a semester system, credit hours, grade points and cumulative grade average up to the end of the fourth semester. There is integration both at horizontal level between the basic sciences in which anatomy and histology teaching are made prerequisites for physiology and biochemistry teaching. Vertical integration also exists where longitudinal integrated clinical sessions are included from the beginning of the third semester where topics are presented by basic scientists, surgeons and physicians in the form of joint seminars.

The curriculum is neither a classical one based on 2 years basic medical sciences followed by 4 years clinical, nor it is a system based integrated curriculum. Our curriculum is a hybrid taking some aspects of each.

Being a private institution it is considered essential that the highest standards of medical education are achieved.

Community based activities are introduced between semester 5 and 8.

### **These activities include:**

- Teaching community Paediatrics & reproductive health in rural and peri-urban health centers. These sessions include active student's participation in immunization programmes, growth monitoring, oral rehydration, antenatal care and some basic laboratory tests.
- Students must undergo a rural residency course where they are sent to rural hospitals for a period of 3 -4 weeks to work

with the doctor in charge, midwife, medical assistant, nurses and sanitary overseers. The evaluation of this course is summative.

- Clinical sessions are offered in the Academy Charity Hospital which is the only hospital in Khartoum offering full medical service free of charge

### **3. Assessment of Students:**

The school is using the following system for student assessment in all phases of the curriculum.

1. One best answer MCQs and extended matching questions in basic and clinical subjects.
2. Objective structure clinical examination (OSCE) is used in all disciplines in clinical exams. The OSPE is used in the first 4 semesters of the curriculum.
3. Oral exams are still in use beside the OSPE in anatomy, physiology, biochemistry, and paraclinical subjects. No oral exams were used in the clinical disciplines except for surgery.
4. Structured short essay questions are used instead of classical essay questions.
5. Clinical examinations include one long case and 3 short cases actual patients. The system of simulated patients is not yet in use. This is because there are plenty of patients in the hospital who are willing to participate because they will be seen by most seniors available and may be discussed with external examiners, moreover, the Academy is offering the chance for further special investigations like CT, Serial CT, MRI, EMG free for those who are participating in exams. As the school is using mid and end of semester exams for summative assessment formative assessment is not frequently used. The system of external examiners is in use since the start of the school and in the three phases of the curriculum. A total of 67 external examiners participated,



61% of them were from United Kingdom, 7% from U.S.A., 3% from Sweden and the remaining were from the Arab Countries.

### Students:

**Table 1 shows the existing number of students at the time of assessment.**

<b>Batch No.</b>	<b>No. of Male Students</b>	<b>No. of Female Students</b>	<b>Total</b>
6	10	22	32
7	19	24	43
8	39	31	80
9	43	71	114
10	36	59	95
11	60	55	115
<b>Total</b>	<b>207</b>	<b>262</b>	<b>479</b>

There is clear and well respected admission policy. There is a system of student mentoring by members of academic staff. There is also a student advisory system where students in each batch are assigned to full-time staff-members as academic supervisors. The supervisor has an access to the student's academic records. There is no system of students' representation on the Faculty Board. This is seen as a deficiency to be corrected.

### Academic Staff / Faculty:

The Academy is one of the very few institutions which have managed to persuade Sudanese doctors who have migrated to return to Sudan by offering them improved conditions of service. Out of 59 full-time staff-members available 21 were appointed during the last two years (35.5%). All belong to the main 4 clinical disciplines. All of them were trained in U.K.

The school is also using part-time staff members from other universities in Khartoum to facilitate small group teaching and

expose students to more teaching locations.

In the staff policy and development the school is alerted to the danger of not encouraging staff to apply for promotion. The Academy actively encourages staff members to develop their skills through attending conferences and taking part in continuous medical education.

The WFMA sub-area academic staff/faculty, however is not addressing the staff/student ratio neither the quality of staff qualifications which may reflect on training.

The educational facilities in the form of lecture theatres, teaching laboratories are sufficient for 300 students.

**Table 2 shows the number of staff members per department and the number and types of specialties persuaded to comeback.**

Department	Full-time Staff	Part-time Staff	Staff Persuaded to Return
Paediatrics	7	7	4
Medicine	9	8	3
Obstetrics & Gynecology	8	8	5
Surgery	8	7	5
Department of Anesthesia	2	-	-
Ophthalmology	1	-	-
Radiology	3	-	2
Pathology	1	2	1
Microbiology	8	-	-
Pharmacology	1	-	1
Forensic Medicine	1	-	-
Community Medicine	3	1	-
Anatomy	3	3	-
Biochemistry	4	1	-
Physiology	-	5	-
<b>Total</b>	<b>59</b>	<b>42</b>	<b>21</b>

**Table 3 shows the staff/students ratio is different stages of the curriculum**

<b>Curriculum</b>	<b>Ful l- tim e</b>	<b>Part- time</b>	<b>Tot al</b>	<b>No. of studen ts</b>	<b>Student/st aff ratio</b>
Foundation/preparatory	11	2=1	12	115	1:9.5
Basic medical sciences	21	11=5.5	26.5	210	1:7.9
Paraclinical sciences	10	2=1	11	114	1:10.3
Clinical specialties	38	31=15.5	53.5	269	1:5
<b>Total</b>	<b>80</b>	<b>46=23</b>	<b>103</b>	<b>479</b>	<b>Av=1:4.6</b>

The clinical training facilities include a 217 bedded teaching hospital. This is a charity hospital and accepts all patients that are referred. All patients who are admitted receive their investigations, treatment and management free of charge. The hospital is supported financially by the Academy.

#### **The information technology:**

The library complex consists of a traditional library with a total of 5000 volumes. There is an electronic library where a total of 600 CDs of different specialities are available with 30 computer locations. The internet computer is enough for 20 students at a time and there is a nominal fee charged of about 30 cents US per hour.

#### **Research:**

There is a research and thesis committee composed of senior academic staff from the Academy and from other universities

Published papers in international journals are one of the important criteria for faculty promotion. Staff and students are encouraged to publish their graduation thesis. A total of 18 papers have been published or presented in national and international conferences.

### **Educational Expertise:**

The academy has not yet established a medical education centre. However, the need for one is becoming obvious after the self-evaluation exercise. Few staff members are interested in research in medical education.

### **Educational Exchanges:**

The Academy has successfully established strong collaboration with other educational institutions. The system of external examiners contributed significantly to this collaboration. Students are spending 4-6 weeks in exchange programme in the UK and USA. A total of 73 students were involved in training courses in UK between the years 2000-2004. Student exchange programme starts after the end of semester 8.

### **Mechanisms for Programme Evaluation:**

A programme evaluation committee is not yet established. The Self-Evaluation Committee will be asked to continue as a Progressive Evaluation Committee.

The Curriculum Committee introduced integration at a horizontal level in basic sciences during the last two years.

Postgraduate evaluation questionnaire is included in the website of the Academy [www.amst-edu.com](http://www.amst-edu.com)

### **Teacher and Student Feedback:**

Feedback questionnaires for students and examiners are used routinely after examinations. They are analyzed by course coordinators. This often leads to a decision in modification in the

curriculum.

### **Student Performance:**

The Academy has a unique system for continuous assessment of individual student performance. This is done through including a percentage from performance in previous semesters. Fifteen percent of the marks is taken from the aggregate of that subject. The result also includes a remark column to show whether the student is a pass, fail or in probation. A final decision on the student's performance is decided by the highest academic committee which is the Academic Board. This is equivalent to Senate decisions.

### **Involvement of Stakeholders and Governance:**

All end – of - semester examination results are passed by the Academic Board. The members of this board include the President and Vice-President, the Academy Principal and the Academic Secretary, all Deans in the eleven faculties of the Academy, all full-time staff members, 3 representatives nominated by the Ministry of Higher Education and Research, one member nominated by the Sudan Medical Council and one member from the National Ministry of Health. Students are not yet presented in the Academic Board.

### **Educational Budget and Resource Allocation:**

A dedicated educational budget is allocated for the faculty to support a system of external examiners, staff development activities and improve resources in lecture theatres and laboratories.

### **Interaction with Health Sector:**

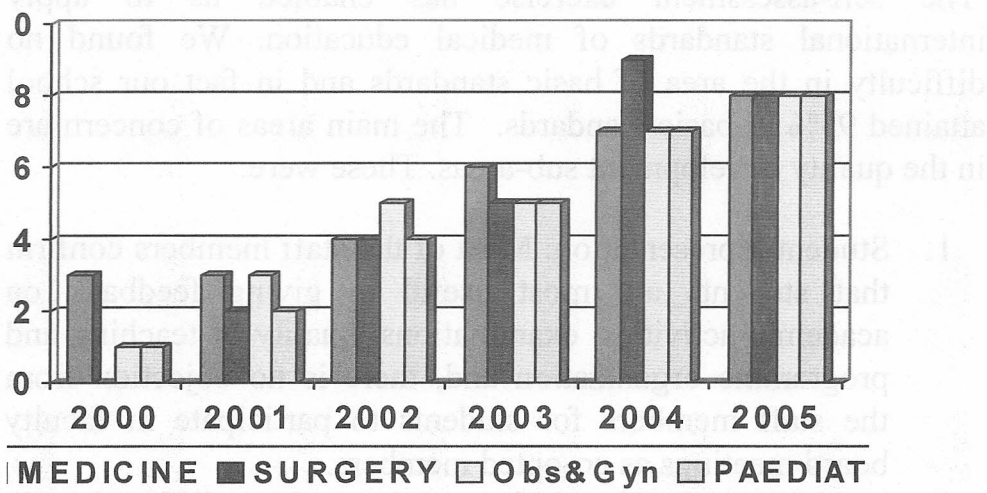
The Academy is strongly involved in national policies of the Minister of Health. The national programmes exclusively run by the Academy include the National Onchocerciasis Control Programme and the National Lymphatic Filariasis Programme.

The Academy is supporting two health centers by providing consultants to clinics regularly 2-3 times/week. six staff members are appointed to membership of the Sudan National Specialized Board which is responsible for specialist training in Sudan.

### Continues Renewal:

Since the Academy was established till 2000 the medical school, depended to a great extent on part-time staff.

**Fig. (1) Shows staff development over the last 5 years.**



### Renewal and innovation in the curriculum included:

- In 2001 the block system was established in all clinical departments to replace the shift system practiced before.
- One best answer MCQs replaced true/false type of MCQs in all disciplines.
- A review of the curriculum was done after the graduation of the first batch in 1998 and a new curriculum document has been prepared to accommodate the changes introduced by the block system and evaluation.
- OSCE/OSPE Examination has replaced the oral examinations in all clinical departments. Except but the

surgical department who returned to enable them to assess surgical emergency.

- Problem-based-teaching has been introduced in the clinical teaching and evaluation.
- We have established a skill laboratory, where students can practice resuscitation on manikins, syringe injections, doing lumbar punctures, putting intravenous lines, practicing neonatal, child and adult intubations etc.

### **Discussion:**

The self-assessment exercise has enabled us to apply international standards of medical education. We found no difficulty in the area of basic standards and in fact our school attained 95% in basic standards. The main areas of concern are in the quality development sub-areas. These were:

1. Student representation: Most of the staff members confirm that students are most useful in giving feedback on academic activities, examinations, quality of teaching and programme organization and, there is no objection from the staff members for students to participate in faculty board meetings as co-opted members.
2. Recruitment policy: The academy has difficulties in recruiting professors and associate professors. The limitation is in the availability of these staff members because there is no budget limitation.
3. Research: The Academy is attempting motivated staff members to conduct research by:
  - Offering designated funds for research
  - Contact other organizations to collaborate in research
  - The Academy finances full time staff members to attend international conferences when their papers are accepted. In spite of this only small number of staff members are conducting research.

4. Programme management: The Curriculum Committee is not given full authority to innovate in the curriculum. This is because innovation in the curriculum needs more medical education training for the staff who are highly qualified in their areas of specialties and many of them were employed in service delivery in the Gulf area and do not have much experience in academic life. Nevertheless our medical school has attained about 80% in the area of quality development.
5. There are many benefits from applying the WFME standards for self evaluation. These include:
- Staff members get to know their own school's qualities.
  - We all develop knowledge and experience in the accreditation process
  - We establish a systematic approach to school evaluation.
  - WFME standards increase staff satisfaction on school performance.
  - The process identified areas of strengths and weaknesses which are scheduled for further action.

The disadvantages and difficulties largely derived from time, data accessibility and clarity of some quality development standards, are as follows:

- Time: It took us 7 months extra work to finish data collection and analysis
- Some standards are difficult to interpret as experienced in the following sub areas:
  - Educational expertise
  - Governance
  - Academic leadership



Universities and hence schools of medicine are places of knowledge and wisdom. The values defended at universities make sense of human life and ascribe dignity to it. University community should therefore be concerned about the pain and tragedy of human lives. This will even be more needed if the events that cause this pain take place in the region or in the country that is home to the university. Hence we suggest including a subarea in quality development standards to address the presence of human rights centre or Truth Commission organization and to encourage universities to participate more in human rights worldwide.

The focus of health care has shifted from episodic care of individuals in hospitals to promotion of health in the community. <sup>(3)</sup> The school is becoming more community based during the last two years; however self evaluation has encouraged us to be more community based by including more health centers for student training.

### **Conclusion**

Private institutions have a need to be accountable to maintain good continuity. The WFME standards are considered an essential mean for achieving the highest standards of medical education. The standards are found practical, attainable and a mean for constant up-grading performance. Due to increasing internationalization of the medical profession and the explosion of the number of medical schools at a national and international levels accreditation using global standards have become of paramount importance.

### **Acknowledgements**

This self evaluation could not have been done without the dedication of our staff members and encouragement of the President of the Academy.

Special thanks are extended to Professor Robin L. Broadhead, Professor of Paediatrics, University of Malawi, and Professor M.M.A. Homeida for their assistance in preparation of this manuscript.

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