RESPONSES TO THE SIX MAJOR THEMES OF THE WORLD FEDERATION FOR MEDICAL EDUCATION

At the conference for the Gesellschaft für Medizinische Ausbildung (German section of the AMEE) in Cologne on November 19, 1986, the following positions were established regarding the Six Major Themes (see booklet No. 3/2 of Medizinische Ausbildung, pp. 96-115). These positions were prepared based on suggestions (from members of the Gesellschaft für Medizinische Ausbildung, faculties of medicine, and various ministries in the FRG) and were completed by: Prof. Wirsching (Gießen), Prof. Renschler (Bonn), Prof. Habeck (Münster), Prof. Hinrichsen (Bochum), Dr. Hoppe (Düren) and Dr. Wilm (Frankfurt a.M.).

THEME 1: EDUCATIONAL PRIORITIES FOR MEDICAL SCHOOLS

1.1 "Should medical school education give primary attention to the science of medicine or to the services that graduating doctors must provide?"

Medical services as provided by the graduated (or graduating) doctor have to be oriented towards the real needs of the people and at the same time have to be scientifically established. "Science" encompasses from this point of view the biological, psychological and social dimensions of health and disease as opposed to a reductionist (monocausal) and mechanistic concept of medicine. Thus far there is no alternative to scientifically or service oriented education. Both aspects together provide the integrative base of medical education.

1.2 "What are the minimum acceptable competences to be demonstrated at the time of graduation from medical school?"

After graduation the medical doctor should be acquainted with the epistemological and ethical foundations of his profession. A basic medical knowledge and basic medical abilities (methods) must have been acquired.

In further detail the following criteria can be specified:
Preparation for further learning: Regarding a continuous, accompanying learning process the following aspects must already be provided during medical training (medical education in the FRG is regulated by federal law):

a) To be aware that in a highly industrialized country with a complex medical system the doctor cannot act independently in full medical responsibility right from the beginning on. A medical profession requires a permanent process of further learning.

b) To be aware of the rapid turnover of medical knowledge as a motivation for an ongoing learning process. A critical reflection of medical knowledge is necessary as opposed to an accumulation of facts.

c) To be able to learn in a self-motivated manner and to have access to the different media (eg. literature, informational systems, etc.).

Individual diagnosis and management of illness: At the time of graduation the doctor must know the basic rules of diagnosis and treatment of the most important diseases (for a more detailed list of basic diagnostic and therapeutic methods see Appendix 1).

Promotion of health and prevention of disease: According to the situation of his country the doctor must be familiar with modern concepts of how to prevent infectious diseases (hygiene, vaccinations), how to change riskful lifestyles (eg. nutrition) and he must be able to early diagnose and treat psychological conflicts (including suicide). Finally he must be acquainted with institutions and activities for health promotion, prevention of diseases and health education.

Collaboration with other health workers: The doctors should have a profound knowledge of other professional groups which also participate in medical care. Thus it is necessary to be willing from the beginning and to be able to cooperate in a responsible manner with these different professional groups.

Appendix 1

Basic diagnostic and therapeutic skills which should be present at the end of the medical studies:

a) patient-oriented attitudes, with communication skills for the establishment of a doctor-patient relationship as well as for adequate advice and information,

b) familiarity with: history-taking, the basic physical and psychological examination procedures, the most important of the lab findings, imaging modalities and ECG,

c) knowledge of the most important mutual relations in pathophysiology and pathobiochemistry, of various diseases and their epidemiology as well as the diagnostic process of reasoning,

d) ability to evaluate symptoms, signs of illness and basic and technical findings. Ability to perform an individual diagnosis and prognosis or differential diagnosis, and to make a possible decision for further diagnostic investigations,

e) first aid for emergency cases,

f) knowledge of the relevant non-surgical (especially pharmalogical) and surgical treatments (including prescriptions) and their possible side-effects or complications,

g) knowledge of the most important strategies for rehabilitation,

h) critical evaluation of one's own competence and assessment,

i) documentation in the records and in the doctor's reports of the most important data, findings and problems as well as the drafting of routine professional statements (ie. death certificates, inability to work).

THEME 2: EDUCATIONAL STRATEGIES FOR MEDICAL SCHOOLS

2.1 "Shall medical school education be dominated by the effort to transmit biomedical content, or shall equal attention be given to the acquisition of professional skills, attitudes and values?"

In medical education equal weight should be given to biomedical content and professional skills, attitudes and values.

2.2 "Whatever the answer to #1, shall the instructional process be one that is dominated by active learning opportunities, or those not so demanding of autonomous initiative by the student?"

Students should be supported to accept and to acquire the capacity of self-directed learning, eg. in small groups. Active learning should have priority over passive receptive learning.

2.3 "Whatever the answers to #1 and #2, shall examinations and other evaluation procedures be directed primarily toward assessment of the knowledge students have acquired, their ability to use knowledge, or to their proficiency in a broader

range of professional competence?"

Examinations should be written, oral and practical. Theoretical examinations should evaluate the capacity to understand integrating the basic principles and rational use of knowledge, which is tested simultaneously. Practical examinations should assess the professional competence using typical examples and patients. Practical examinations can be taken both within courses and at the end of the training.

2.4 "Do medical schools need to require or encourage or reward teaching staff members to become increasingly familiar with, and skilled in the use of, a wide range of educational strategies and tactics?"

Commitment to teaching and good knowledge of the basic principles and methods of instruction in medicine as well as familiarity with the most important results of educational research are essential for all teachers in order to improve their teaching. Educational activities should be acknowledged and honored equally as research activities. For promotion education experience and qualifications should be in future more considered than in the past.

2.5 " What shall be the primary setting for clinical education in a medical school which aims to produce graduates capable of dealing successfully with the common problems of health and illness?"

Students should be prepared comprehensively for their future work. Besides the university hospitals, a network of qualified hospitals, offices of practising physicians, institutions for rehabilitation and for industrial medicine and similar settings should be made available to medical schools.

2.6 "What mechanisms need to be instituted to monitor and record the implementation by educational bodies (eg. medical schools) of the strategies that have been agreed upon?"

Besides the individual efforts of teachers, institutions for research and methodology of medical education are essential. Faculties are to remain autonomous in educational matters, the curriculum and teaching should be evaluated through faculty committees composed of representatives of teachers and students.

THEME 3: SUPPORTING RESOURCES

3.1 "Is a nucleus of teaching staff who have full-time appointments required for a sound programme of medical education?"

A core of professors and assistant professors in the sense of "full-time teachers" is essential. All professors, doctors and scientists in West Germany are currently required, in addition to their hospital commitments and research, to teach 4-12 hours a week. A balanced distribution of time spent in teaching, research and hospital care should be strived for, as well as the occasional release from teaching and research assignments.

3.2 "If so, can a minimal and/or optimal student/full-time teacher ratio be suggested?"

Such a ratio cannot be specified, since internationally, the definition of "teacher" differs greatly. In West Germany, for example, the most recently graduated assistant doctors working at the university clinic or in the Medical Faculty institutes are classified as "teaching staff".

3.3 "What ratio of supporting personnel would be acceptable?"

For the same reason as given in 3.2, it is not possible to specify the acceptable ratio of supporting personnel.

3.4 "What portion of operational

support to students can be derived from tuition charges to students?"

In spite of the high costs of post-secondary education (the six year medical education programme in West Germany costs approximately DM 250,000 per student), students in West Germany are not required to pay tuition fees. In this way, each student is offered the opportunity of a university education. Students are required, however, to pay for their own books and other learning material.

3.5 "Is there a minimum acceptable description of basic science and clinical facilities in terms of specific student numbers?"

The minimal acceptable description can only be derived from the respective curriculums, the number of students and the size of the groups. Due to national and international differences in the aforementioned, it is impossible to give a generalized answer to this question.

3.6 "Is it possible to define a suitable library resource, without which an acceptable programme is unlikely to be mounted?"

A medical library is essential not only to the medical programme itself, but also to research and hospital care. There is, then, no need to have a library only for medical students, but rather to have a library where doctors and students alike have complete access to all books and periodicals. There should be a minimum of approx. 1,000 books per year and 1,000 national and international periodicals. There should also be links to literature and data banks. It is important that current funds be allocated to the library, that sufficient space for new publications and periodicals be available and that the library be open all day long, as well as evenings and weekends. Finally, the library should include an audio-visual section with at least 300 audio-visual programmes (video tapes and narrated slides) and facilities for computer simulations.

THEME 4: ADMISSION POLICIES, MEDICAL SCHOOL AND MEDICAL MANPOWER

4.1 "Should medical school admission policies in a country reflect national (or regional) needs for doctors?"

Criteria for medical professions are not fundamentally different from criteria for other academic professions. The constitution of the Federal Republic of Germany guarantees the right of an independent choice of a career. It cannot be the task of a university to transform an occupational risk into some kind of occupational guarantee.

The numerical requirement for doctors is estimated differingly, reliable assessments are not available. It may be the tak of government planning to guarantee a certain balance between places for medical training and the demand for doctors. This form of central planning and control can work through the funds provided for facilities of medical schools. However, it cannot be the task of medical schools to perform career control concerning professional ability.

The task of universities can only be to quantify their educational facilities and to keep a ratio between teaching staff and students necessary for an adequate education. In the Federal Republic of Germany there exists a formalized system of "Kapazitätsermittlung" (assessment of numerical requirements) and of governmental fixing of capacities which at the moment is under review. The universities do not regard it as an adequate system for the guaranteeing of the quality of education. The number of medical admissions is viewed as considerably too high (ca. 12,000

per annum with a total population of 60 million and a drop-out rate of under 5%).

4.2 "Is open admission (in contrast to entry by selection, or "numerus clausus") still a reasonable practice?"

Each admission regulation is necessarily oriented on criteria which refer more to the level so far reached in education than to the later profession. A reliable definition of how a "good doctor" has to be does not exist. The possible fields of a doctor are on the whole so varied that it is hardly possible to speak of a certain specific ability. Open admission with consecutive selection means a selection on the basis of the according levels of education reached. For example, selection after the first year would mean orientation predominantly on the results in scientific subjects. Selection following the "numerus clausus" system aims at predicting at least the aptitude of applicants for studying medicine.

It is not correct, as stated in the previous text, that "numerus clausus" selection is exclusively based on secondary school qualifications. This does not apply to the English, Irish nor German system.

After a test phase of six years, a psychological entrance test has become a general admission requirement for the first time in the FRG, in the three medical courses of studies (human medicine, dentistry, veterinary medicine) for the winter term 1986/87. Admission is granted according to the following scheme:

- 10% preshare (hardship cases, foreigners, important secondary course of studies).
- 55% because of achievement, namely 10% for the highest performers on the test and 45% for school examinations (rated with 55%) and test performance (rated with 45%) in combination.
- 15% because of performance in an interview at a medical department; this interview cannot be repeated (applicants failed in the interview have to fall back on the waiting list).
- 20% because of an accountable waiting period (number of unsuccessful applications).

An accountable waiting period is the time spent performing an occupational or occupation-like activity, the fulfillment of military or social service, etc. Three times as many applicatants are drawn by lot and invited to the interview as there are places to be given. Its purpose is to assess the aptitude and motivation for the chosen course of studies and the profession aimed at.

A change in the number of applicants can already be observed in reaction to the occupational situation of medical doctors (oversupply, reduced income). The ratio of applicants per place has decreased from 5:1 to 3:1. At the moment it is difficult to estimate whether this trend is continuing and whether this will make a selection unnecessary in the not too distant future.

The psychosocial competence is probably without any doubt an extremely important criterion for the doctor to fulfill, but it is rather difficult to recognize and hardly examinable. A social or nursing activity (eg. six months of practical studies as a nurse) preceeding an application for a course in medicine would certainly prove to be a good additional criterion for selection. However, discussion of this point has been broken off in the FRG (not least due to the resistance from hospitals).

4.3 "Are academic performance data still appropriate as the sole, or the major criterion for selection or retention of medical students?"

The results of academic examinations should not be the only decisive qual-

ification needed to become a doctor. They should not, however, be underestimated. Whereas knowledge and skills can be examined, this cannot be done in the case of medical attitudes. Here, emphasis can only be placed on education. A refusal of the medical qualification because of unsatisfactorily developed medical skills and attitudes has to be judged by strict rules as it is a question of law. In the FRG only those objections can be lasting before the law which would lead to a revocation of the medical approbation.

4.4 "If additional criteria should be employed which are the most important?"

It would be of more importance rather than to formulate formal admission criteria, to enable every university to set down by itself the profile of requirements it expects as a prerequisite from their first-year students. Such a catalogue of requirements would serve the applicants as a means of self-orientation, perhaps it would even alter the initial choice of the academic course. It would find its expression in the subjects the pupils choose during the last phase of their secondary education. In the case of the special situation of the FRG such a profile of requirements might be formulated as follows and it could be rated in the interview:

1. Knowledge.
Sound basic knowledge of the subjects physics, chemistry, biology and mathematics. Knowledge in these subjects should be oriented on the level they are taught on in the last two years of secondary school education. This should be the precondition for an unbroken transition to the introductory lectures and courses in the scientific subjects of anatomy and histology, biochemistry, physiology and biomathematics.

2. Skills:
a) linguistic skills
Differentiated use of the mother tongue in writing and speaking: the ability to describe facts clearly and correctly, to explain causal links and to substantiate them logically, the ability to contribute to argumentative discussion. Desired is basic knowledge in Latin and possibly Greek (basic knowledge of the grammar after a one year course would be satisfactory). Founded knowledge of English is essential. Students are required to be able to read English textbooks and later on even scientific publications in the English language, as approx. 80% of today's medical correspondence is in English.

b) operational thinking:
The required skills in this category are set down in the different fields of the new entrance test for medical studies: internalization of formalized information, mathematic-scientific understanding, three-dimensional perception and working out of according contexts, working concentratedly and carefully, textual understanding, training of the mind to grasp and reproduce facts and forms, especially the ability to recongnize internalized morphological patterns. Furthermore, the ability to work independently without being guided, understanding facts by the study of books and encyclopedias, and reproduction of the extracted facts.

3. Social disposition.
Medical applicants are expected to be exceptionally capable of realizing social situations and reacting most appropriately. This includes alert observation of human conduct, interpretation of conduct in reference to human need or disabilities, readiness to help in the broader sense of the word.

4. Self discipline and ability to to criticize self.

Medical applicants are supposed to be especially capable of controlling their own behaviour. This means, for example, the ability to conduct a controlled conversation as well as the ability to behave appropriately as a participant in conversation, to adjust linguistically to the partner in conversation. Assessment of one's own capacity and limits.

THEME 5: THE CONTINUITIES BETWEEN THE PHASES OF MEDICAL EDUCATION

5.1 "Is the medical school curriculum planned with appropriate attention to the training which will follow, and is needed, after graduation?"

The present medical faculties' curriculum in the FRG aims at educating a physician ready to practise medicine. It is left to the physician's own decision to specialize (to do postgraduate medical education) after completion of his undergraduate education.

The curriculum makes no provision for giving students of medicine any advice concerning their aptitude for postgraduate and continuing medical education.

5.2 "Does the curriculum taught in medical schools reflect appropriately and sufficiently what doctors will actually be called upon to do in later practice, particularly the new components of primary health care?"

The present curriculum does not offer sufficient scope for preparing future doctors for medical practice, particularly in primary medical care, nor does it give any consideration to the new concept of "primary health care".
To make up for this deficiency a new additional practical training period has been introduced. The contents of this new practical phase is largely identical with the future directives of the European Communities on the preparation of physicians for primary medical care practice.

The intention is to improve communicative abilities towards establishing a doctor-patient relationship and providing adequate advice and information to the patient. Psychosocial abilities are to be developed. The managerial act of deciding diagnostic techniques and treatment methods in hospital oriented medicine is definitely neglected at present.

5.3 "Is medicine as actually practised (in primary health care, primary medical care, and specialist medicine) in keeping with the knowledge, skills, professional attitudes and values which are advanced as educational objectives of the curricula of the medical schools?"

The latest medical scientific knowledge, new pharmaceutical products and technical applicances are in general introduced into medical practice and the curriculum rather quickly in the FRG. However, there is little feedback between curriculum and medical practice regarding the practical handling and experience gained, since general practioners and specialists in private practice have next to no participation in the education of future doctors.

5.4 "Is continuing medical education (CME) given due importance in maintaining the competence of experienced doctors and ensuring their continuing fitness to practise, and are proper resources made available for it?"

Legal regulations in the FRG impose the responsibility for continuing medical education on the individual doctor.
The medical associations, the scientific medical specialist societies and medical faculties endeavour to maintain medical standards and competence of doctors by offering a host of continuing medical education congresses, seminars, lectures and practical demonstrations. Apart from these, there exist a

large number of publications and audio-visual media for continuing medical education.

5.5 "Are the medical school curricula and postgraduate training programs sufficiently aligned with the proper provision of health care to the population, on an equitable basis and not on a basis which discriminates unduly in favour of the priviledged?"
More than 90% of the FRG population is covered by membership in the social security system (compulsory health insurance). This guarantees an evenly distributed medical care system for the population.

Medical education and specialisation purposefully aim at safeguarding a high quality medical care of the entire population and not only of certain priviledged groups. Every German citizen may consult the doctor of his own free choice and has to a large extent free access to the various institutions of medical care in the country.

THEME 6: LINKAGES BETWEEN MEDICAL EDUCATION AND THE HEALTH CARE SYSTEM

6.1 "Should medical school education give greater attention to providing more learning opportunities in non-hospital ambulatory settings?"

During medical education, opportunities for learning in ambulatory settings should be used more intensely.
In the FRG medical education is predominantly determined by structures and range of patients of university hospitals as tertiary care units. Out-patient departments of university hospitals are only rarely integrated into medical education. Elective periods in private practices are possible only optionally.

6.2 "Should more intimate links be established between medical education ant the health service system?"

More intense integration of institutions of the health care system into medical education should be affirmed.

In the FRG integration of institutions of the health care system or service is hindered by: 1) the manifold and federalistic health care system with defined competences 2) the so-called "Kapazitätsverordnung" (regulation of capacity) coupling the number of students to be educated closely to the available opportunities for education, 3) the small opportunity of medical faculties for designing the curriculum together with the absence of a clause allowing experiments in the federal regulations for education, thus preventing a new orientation for particular courses, and 4)certain objections by some of the faculty members against an integration of non-university institutions.

Contractual ties are established between the 29 medical faculties and 301 so-called "academic hospitals" for the instruction of students during the 6th and last year of studies. Further connections have been built only in some faculties e.g. town district surveys to monitor socio-medical structures (Medical Sociology in Hamburg), integration of institutions for occupational medicine, social medicine and rehabilitation (course in ecology in Ulm) or integration of 40 non-university hospitals into instruction during the third, fourth and fifth year of studies (model project in Münster), similar to the practice used in a very much smaller extent in other medical faculties.

6.3 "Should medical schools assume responsibility for a system comprehensive health care (health promotion, disease prevention, diagnosis and management of acute illness, care of chronic disorders, and rehabilitation)?"

The university hospitals in the FRG care for less than 10% of all in-patients, e.g., about 1% of all patients predominantly on a tertiary level thus playing an important but small role in the health service system. Considering the extensive range of out-patient and in-patient institutions, it seems to be inefficient in terms of health service planning to expand this tertiary frame of university hospitals. New foundations of medical schools are not planned in the foreseeable future. On the other hand an expansion of the health care range covered by the medical faculties to primary and secondary levels within the meaning of "comprehensive health care" seems to be recommendable in terms of adequate education and research (e.g. epidemiology). In this connection a considerable closer cooperation is obvious with institutions of primary and secondary care level without undertaking direct responsibility. However in the FRG numerous corresponding agreements could be necessary with hospitals, private practioners, centers for rehabilitation and other institutions.

6.4 "Should medical schools assume responsibility for some defined population group?"

The university hospitals in the FRG assume responsibility for the total population within the scope of tertiary care as outlined in 6.3. Responsibility for some defined population groups partially exists for special circles of patients with some rare disorders or risk factors (e.g. patients with leukemia, children with rare metabolic disorders or genetic advisory centers). Responsibility for the care of population groups in terms of regional (district, community) or social aspects (elderly, outsiders) should be given to institutions as community-organized as possible.

For educational matters, close cooperation between these institutions and some institutes or working groups of the medical faculty (e.g. social or occupational medicine) should be strived for. The university can easily perform functions like stimulation of community-oriented projects, transfer of know-how or personal assistance.

6.5 "Should medical schools establish closer links with other health professions in both education and service?"

Closer links of medical students with those of other health professions (MTA, nurses, gymnastic therapeutists, dietitians, speech therapeutists, social workers, etc.) in education could be efficient to meet different fields of work and for training cooperation in a team. An integration of education of all health professionals in a single institution as outlined in detail by e.g. the OECD as "regional university for health sciences" nevertheless is hindered in the FRG by a number of obstacles. Considering the specific curricula of the subjects an integration would also adversely affect duration and expense of education. More advisable seems to be the employment of teachers from other professions in some courses (dietetics) and education together with students from other professions in some courses and workshops (rehabilitation, physical therapy, etc.) during this time of studies. This can be pursued in joint continuing educational lectures given by teachers from various professions on specific themes.

Practical cooperation of doctors and members of other health professions exists in diverse institutions and practices differentiating the varying competences.