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SUMMARY OF A REPORT ON THE WORKSHOP HELD IN BERLIN (WEST) ON TRAINING IN MEDICAL GENETICS

by

Professor W. Fuhrmann
Institut für Humangenetik, Giessen, FRG

The Workshop on Training in Medical Genetics with WHO financial support, was organized by Professor W. Fuhrmann during the 7th International Congress of Human Genetics held in Berlin (West), 22-26 September 1986.

In the short time available for this workshop it was only possible to consider the special training of medically qualified geneticists and the associated rules and regulations. It was recognized that this must be seen within the broader context of teaching of human genetics to students and physicians in general and to the training of non-medical geneticists.

There is a general consensus that in order to guarantee quality and status of medical genetics it is necessary to establish formal recognition of this specialty, be it in the form of a specialty or an otherwise documented competence or authorization. The participants recognized that such regulations must consider the local medical system, the needs of the population and the priorities given, the availability of physicians interested in human genetics and other factors. These being highly variable throughout the world it could not be the goal to formulate internationally applicable rules and possibly not even a rough frame for training in our specialty, that could be used universally. However, it was thought to be useful to exchange experiences, which could be particularly helpful for people about to build up a training scheme and rules for their own country.

It must be understood that the participants of this workshop were not nominated by national authorities or societies but were invited because of their known interest in the field, thus rendering this a very informal consultation.

In preparation of this workshop a questionnaire was sent to representatives of 37 countries and was completed by 27. While many countries acknowledged the need for a formal recognition of medical genetics as a special field of medicine, only a minority has established rules. Although this summary is presented with the best of my knowledge and is backed up by written information in many cases, incompleteness and misinterpretation of information received cannot be excluded.

The succession of special presentations was opened by a more detailed account of the rules and regulations in Great Britain, Canada and the USA, since these seemed to be the most elaborate and to have been enacted for the longest length of time. They also seem to have influenced the regulations established in other countries. Due to different medical systems in these countries, it was also possible to identify some special problems which exist in each country.

The first speaker was Professor Rodney Harris from Great Britain. He pointed out that the teaching of genetics in some medical schools is insufficient and there is consequently a need for medical geneticists in the additional role of teacher. Higher specialist training in medical genetics is regulated by the Clinical Genetics Sub-committee of the Joint Committee of Higher Medical Training of the four Royal Colleges of Physicians (JCHMT). After 5 years of the undergraduate course and 1 year of Pre-registration House Posts ("internship"), 3 years of general professional training are required including Paediatrics (1 year), General Internal Medicine and membership of the Royal College of Physicians (a formal examination). This is followed by 1 year of Basic Genetics (or an equivalent degree) and 3 years with increasing responsibility for decisions on patient care as Senior Registrar in Clinical Genetics in a post inspected and approved by the Clinical Genetics Sub-committee of the JCHMT. In common with other clinical specialties in Great Britain there is no "exit" examination in medical genetics. The JCHMT emphasizes the desirability for flexibility in the recommendations and stresses the need for first-hand experience in laboratory techniques and research.

The Canadian views were presented by Dr Martin. The Canadian College of Medical Genetics (CCMG) was incorporated in 1975. It may certify as accredited fellows, individuals with a Ph.D., M.D., or equivalent degree, who possess the necessary qualifications. It also regulates the requirements for training programmes. For persons with an M.D. degree, a minimum of 4 years training after obtaining the M.D. qualification is required, which must include 2 clinical years and 2 years in medical genetics. In addition, 1 year of approved internship is necessary. Further detailed requirements regulate the content of special training (paediatrics etc) to be included in the clinical training or in the medical genetics programme (e.g. laboratory experience). Research training is considered essential for the CCMG fellowship. All trainees must devote a minimum of six months to a research project related to their specialty in genetics. In turn the experience must be reported in an appropriate form suitable for publication in a referred journal. The final evaluation process includes a written and oral examination.

Rules and regulations followed in the USA were presented by Professor V.M. Riccardi. The American Board of Medical Genetics (ABMG) was incorporated in 1980. It certifies clinical geneticists, Ph.D.-medical geneticists and clinical laboratory geneticists as well as genetic counsellors, who may hold an M.D., Ph.D. or other qualification. A clinical geneticist should have residency and fellowship training and possess a valid licence to practice medicine or dentistry in a state or territory of the USA. Special requirements for newly graduated candidates include a 2 year clinical residency programme in any medical or dental specialty and at least 2 years in a medical genetics training programme accredited by the ABMG. Professor Riccardi emphasized the historical background of the regulations now in power in the USA. Reference was specifically made to the Ph.D. medical geneticists and the position of genetic counsellors with lower degrees.

While there was unanimous consensus about the great value of the non-M.D., i.e. non-physician geneticists in the team of any medical genetics centre, the majority of participants at the Workshop had reservations about the title "medical geneticist" for a non-M.D. person, as this may easily be misleading and be understood as a medical qualification. Most participants in the discussion also felt that a Ph.D. medical geneticist should only work in a team with a clinical geneticist who is a fully licensed physician. Professor Riccardi emphasized in turn the generally good experiences which this category of specialists yielded in the USA.

A short outline of procedures followed in the Soviet Union was given by Professor N.P. Bochkov. Two kinds of special training are offered: one enabling the trainee to act as a genetic counsellor at a public health center; the other qualifying for work at a specialized institute. Individuals who apply for training in medical genetics are informed about the basic knowledge required permitting them to follow special courses. They receive a special training programme lasting one year, at the end of which they must pass a short qualifying entrance examination before they are admitted to special courses. The special courses last 2-3 months each and cover clinical genetics, cytogenetics or biochemical genetics. They are followed by an examination in the respective field. This type of training is frequently used as an additional qualification. Participants who attend these courses then return to their specialties, e.g. paediatrics, gynaecology etc.

The Australian scheme, as reported by Professor Danks, takes into consideration the concentration of the population in 5 major cities. Medical genetic services, so far, are historically grown. Recommendations for recognition and training of medical geneticists will have to take into consideration the diverse background of working medical geneticists. Under new regulations, it is assumed that after 6 years of basic medical training as a student and 1 year of internship, 3 years of general postgraduate training in internal medicine, paediatrics or obstetrics are served followed by 3 years of specialty training, in this case medical genetics. An examination must be passed to enter specialty training, but no final examination is planned. Approval of supervisors and of training posts, and submission of log books will be used for quality control of specialty training.

Doc. Dr Maria Kucerova from Czechoslovakia reported that routine systematic training began in 1973 and that paediatricians, gynecologists or internists may become specialists in clinical genetics. After graduation and professional experience in their respective specialty, they must serve an obligatory 3 years training in medical genetics, including special training in the Postgraduate Medical Institute - and then pass a final examination.

For the 3 Scandinavian countries, Dr Ursula Friedrich stated that training has been formalized and recognized at present only in Norway. Requirements are 4 years at an Institute for medical genetics. Future revisions will lay more weight on practical experience in genetic counselling, cytogenetics and DNA-diagnostics. One year of clinical training at a relevant clinical department is required. Also, 20 lessons in statistics and 100 in genetics must be attended. In Sweden, a general rule implies that there have to be at least 20 clinical specialist positions guaranteed or established before specialization in a field is formally accepted. This figure has not been reached for clinical geneticists. Meanwhile, an 'authorization' in clinical genetics can be obtained in 2 ways: (a) specialist in internal medicine, paediatrics, psychiatry or gynaecology and obstetrics, plus 1 1/2 years training in an institute for clinical genetics; (b) 2 1/2 years at an institute for medical genetics, 1/2 year at a relevant laboratory and 1 1/2 years at a relevant clinical department. Proposed rules in Denmark call for a 1 year training at an institute for clinical genetics; 1 year at a relevant clinical department; 2 years at an institute for clinical genetics with specified times in cytogenetics, DNA-diagnostics and genetic counselling; and, 1 1/2 years as a full-time consultant clinical geneticist; attendance at 200 lessons on theoretical courses is obligatory.

In Finland clinical genetics has been a medical specialty since 1981. Dr Norio reported the following regulations: 2 years of general clinical preparatory training; 4 years of specialty training at a unit of medical genetics (at least 2 years in clinical genetics and 1 year of laboratory training) - 80 hours of theoretical courses and finally a board examination.

In the German Democratic Republic, as reported by Professor Göhler, postgraduate education in Human Genetics has been possible since 1977 at either an institute or department of human genetics, and lasts 4 years. Training must include 1 year of clinical medicine, predominantly paediatrics, and at least 4 weeks each in obstetrics and gynaecology, sero- and immunogenetics and biochemical diagnosis. A final examination is set by a centralized committee.

For the Federal Republic of Germany, reported Professor Cleve, medical genetics has not reached the rank of medical specialty as yet, as all attempts to establish medical genetics or human genetics as a medical specialty have been unsuccessful. However, a formal authorization or recognition of competence may be achieved. While this in previous times, following the licence as a physician, required only 2 years of training in a department of human genetics authorized for training in medical genetics, since 1986, it is obligatory for each candidate to obtain, in addition to that requested in previous years, formal recognition in any medical specialty or show proof of 4 years in clinical training, fields of training not having to be specified.

According to written information received from Professor Ten Kate and Professor Niermeijer of the Netherlands, rules to take effect from 1987 will include 4 years training being 1 year theoretical, 1 year basic diagnostic skills of genetic diseases and handicaps and 2 years of genetic counselling under supervision. No examination will be required but a controlled system of survey of trainees and training departments is intended.

At this point, one question was raised with regard to regulations in the Netherlands, which may apply to other countries as well - 'achieving and using the recognition of a specialty may require that the physician restricts his activities to a special group of diseases or patients'. Thus a paediatrician who wishes to obtain recognition in the specialty of medical genetics in addition, would have to restrict himself to the former or latter specialty, whereas in the case of an 'authorization' he could use both. Such a restriction could be an unwanted side effect and should be paid attention to when negotiating/setting rules.

Rules applied to Northern Ireland are the same as those for Great Britain, as per written information received from Professor Nevin.

In Yugoslavia, as Professor Liljana Zergollern reported, postgraduate training for physicians in medical genetics was started in 1975. Training was organized in centralized postgraduate courses. Medical genetics has not as yet been established as a medical specialty, but will be a subspecialty, mainly for physicians in the field of paediatrics or obstetrics and gynaecology. Courses are organized in 250 lessons in fundamental genetics: 150 hours devoted to lessons and practical work in medical genetics; and a third part, lasting from 1 to 4 years, filled with oral examinations and preparation of a thesis under supervision.

Recent information on the situation in Israel was submitted by Professor C. Legum. The Israel Society for Medical Genetics (ISMG) was formally recognized and its constitution was accepted by The Israel Medical Association (IMA) in November 1986. This confers the status of "Medical Specialty" and obliges members to conform to the rules of the IMA. The Israel Department of Health can now recognize such specialist status and this has, for the first time, made it possible to request paid posts for medical geneticists, non-M.D geneticists and laboratory workers in the Public Hospital System by way of the Treasury. A syllabus and a programme for postgraduate study for qualifying M.D. medical geneticists has been submitted to the Scientific Council of the IMA for approval. All future geneticists and genetic units will require accreditation by the ISMG Scientific Council. Preliminary ideas on requirements for certification include: after 6 years undergraduate training, 2 to 4 years of specialist training in any of the other medical specialities recognized by the IMA but with emphasis on longer periods of clinical experience in paediatrics, internal medicine and obstetrics and gynaecology; 2 years of clinical genetics in an approved genetics unit; 6 months of basic science training in a medical genetics laboratory; and, theoretical requirements in classical genetics, cytogenetics, biochemical genetics, molecular biology, teratogenesis, clinical syndromology and genetic counselling have been delineated. Preparation for a final theoretical examination will be in the form of formal postgraduate courses to be given at the Tel Aviv and Jerusalem Medical Schools.

Written reports of a greater number of other countries and several contributions to the discussion indicated that rules and regulations were in an early state of preparation. These were not presented in detail at the workshop.

Time did not permit a more extensive general discussion and although no unifying concept could be expected, the need for a recognized specialty of medical genetics was emphasized. It was the impression of most participants that the exchange of experience and opinion was worthwhile and should be continued on a broader scale. As the World Health Organization expressed interest in this field through its representative at the meeting, Dr V. Bulyzhenkov, it might perhaps provide a forum for such a discussion.

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