

# WORLD DIRECTORY OF MEDICAL SCHOOLS



WORLD HEALTH ORGANIZATION

GENEVA

1963

1st edition, 1953

2nd edition, 1957

3rd edition, 1963

PRINTED IN SWITZERLAND

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## INTRODUCTION

The Third Edition of the *World Directory of Medical Schools* lists institutions of medical education in eighty-seven countries and gives a few pertinent facts about each. General statements describing the salient features of undergraduate medical training in each country have also been included.

No attempt has been made to draw firm conclusions or to make pronouncements on medical education as a world-wide phenomenon. The descriptive accounts and factual material which make up this Directory may be considered as part of the raw data on which the reader can base his own independent analysis; they are intended to be no more than a general guide, and investigators in the subject of medical education should not expect to find a complete report therein. In many countries, there is a council or association, with either official or non-official standing, which could direct inquirers to a more abundant source of information. In other countries the national ministry most closely concerned would be able to furnish additional details.

Despite these limitations, however, readers of the Directory will be able to refer to the system of medical education in any country and to examine certain data on the institutions existing therein. It should be pointed out that the term "system", as used in this context, refers to the characteristic method of preparing medical practitioners in a particular country or group of countries, and not to any of the existing specific medical doctrines. The listing of a school in the Directory is not meant to be a recognition of the value or level of teaching, but merely of the fact of its existence and functioning. However, there is one important reservation: the lists contain the names of only those medical schools that teach medicine exclusively on a scientific and objective basis, and not those that base their teaching on any specific medical doctrine (such as, for instance, the Ayurvedic or osteopathic systems), or that give preference to some selected concepts instead of maintaining an impartial scientific approach. Such schools are not listed in this Directory, even if they are officially recognized by the State. (For example, in the USA, schools of osteopathy are eligible for certain governmental grants, and their graduates are considered in some governmental services to be of the same status as graduates from regular medical schools; in South-East Asia, a number of governments recognize the several specific systems of medicine practised in some countries of that region.)

One of the most complicated aspects of a comparative study of medical education is the variation in the length of the medical course, which ranges from four years in some countries to seven years in others (see Annex 2). It appears that the difficulty is largely one of terminology rather than of substance. For this reason, the following clarification may help the reader to find a satisfactory basis of comparison.

The term *pre-medical* is used in some countries to denote the period during which the future medical student takes subjects preliminary to the actual study of medicine, such as physics, chemistry, biology, mathematics, languages, and general culture. These studies are pursued during one of the three following stages: (1) during the secondary-school course; (2) after secondary-school graduation, usually for a fixed period of time, ranging from one to four years, in an institution of higher learning, such as a faculty of science or a college of arts and science; (3) during the years spent in a faculty or school of medicine. In the last event, the total number of years given for the medical course includes the period devoted to pre-medical studies, although the part of the course that is occupied by these subjects may not be specifically designated the pre-medical period.

The *pre-clinical* and *clinical* periods together constitute the medical course proper; in some countries they are not differentiated one from the other. In an accurate comparison of medical education in different countries only these two periods should be measured.

Finally, the period which is generally called *internship* is likewise subject to a variety of interpretations in different countries. Several possibilities exist: (1) a certain period of hospital work occurs after the end of formal classroom studies; (2) hospital work is undertaken by the student during the clinical part of the medical curriculum; and (3) the student begins to attend hospital wards during his pre-clinical studies. Of course, the proportion of time that he spends and the amount of responsibility that he carries vary considerably according to whichever system happens to be in operation. In most instances, only the first of these is called *internship*, the others being known generally as clinical clerkship (*stage de l'étudiant hospitalier*) or equivalent terms. In some countries hospital service following graduation is compulsory, and in several instances a period of service in a rural area or other specified type of medical practice is required of the young physician before he receives permission to practise independently.

These are only a few of the considerations that may prove to be important in a comprehensive analysis of medical education on a world-wide basis. As more information is made available, such analyses will lead in the future to a better understanding of the subject and to a clearer indication of the steps necessary to further its development.

This Third Edition has been enlarged by the inclusion of information on the admission of foreign students to medical schools, and on the condi-

tions governing the practice of medicine by: (1) nationals with foreign qualifications, (2) foreigners with foreign qualifications, and (3) foreigners who have qualified in the country. The World Health Organization has done its utmost to gather this information for the countries dealt with in this volume, as well as for the countries with no medical schools (see Annex 1). This was not always possible, and it is hoped that through the willing co-operation of the countries concerned the missing information will be included in a subsequent edition of the Directory.

The countries are listed in alphabetical order, and each is dealt with in a separate chapter, at the head of which are recorded pertinent data, such as the number of schools existing in the country concerned, their ratio to population,<sup>1</sup> etc. It should be noted that these data refer to the year 1960, unless otherwise stated. In general this Third Edition of the Directory reflects the situation in the various countries during the academic year 1960/61, but in some instances more recent information has been made available (for example, on the founding of new schools), and it has been thought useful to include it.

### Explanatory Notes to Lists of Medical Schools

After each chapter the schools in the particular country are listed alphabetically as follows:

first—by city. (Exceptions are India, the USA and the USSR, where the schools are listed first under the state or republic and then under the city, and the United Kingdom, which has been subdivided into England and Wales, Northern Ireland, and Scotland);

second—by institution.

The data pertaining to enrolment, admission, graduation, etc., refer to the academic year 1960/61. They were obtained directly from the schools themselves.

The following explanation, which deals with each column in turn, will give an indication of the symbols used and the system adopted in the compilation of these tables.

#### Column 1 — Name and address

The name and address of the institution are given in the language of the country concerned. A version in English has been used where the national language has a non-Roman alphabet. If the national language differs markedly from English (e.g., Finnish, Hungarian) a translation of the name of the school has been added. The name of the city is also given parenthetically in English if it is

<sup>1</sup> Population figures were taken from the United Nations *Demographic Yearbook, 1961*. Data relative to the number of schools were supplied by the health authorities of WHO Member States; data concerning the number of physicians were transmitted by national administrations, either through official publications or through questionnaires sent by the World Health Organization to the relevant authorities.

not immediately recognizable to the English-speaking reader in the original language.

### **Column 2 — Year founded**

This is the year in which it is considered that medical education began at the institution, and does not necessarily correspond to the date of the founding of the university as a whole. Also, as the history of some institutions contains several mergers and changes of name, the earliest date is considered the appropriate year.

### **Column 3 — Teaching staff**

The numbers refer to persons who were officially connected with the institution as teachers in the academic year 1960/61, regardless of faculty rank. An attempt has been made to classify these teachers according to whether they work full time or part time in the institution—for example, 63 f and 137 p means that 63 teachers are counted as full time and 137 as part time.

*Full time* has been defined as referring to the person who derives all or most of his professional income from his salary as teacher, and who is not expected to conduct a private practice outside the institution. *Part time* refers to the person who receives a nominal salary, or none at all, and who spends less than full time in his teaching and other institutional duties. Finally, in the USA there is a group of persons, known as "volunteers," who also contribute to the training of future physicians; these are indicated by "v" whenever their number is specified.

### **Column 4 — Total enrolment**

This refers to the number of students enrolled at the medical school in all classes during the academic year 1960/61. Whenever known, the numbers of male and female students are given separately. Thus 157 m and 31 f means that a total of 157 male and 31 female students were enrolled.

### **Column 5 — Admissions**

This figure refers to the number of first-year students who entered studies at the institution at the beginning of the academic year 1960/61.

### **Column 6 — Graduates**

This is the number of persons who received their medical degrees or diplomas in 1960. A dash (—) means either that the school is too young to have guided a class through their complete studies or that it does not offer a complete course of studies.

### **Column 7 — Annual tuition fees**

The figures given here (in local currency) refer only to money paid in the academic year 1960/61 for inscription, tuition, laboratory fees, etc., and do not include board, lodging, other living expenses, or transportation to and from the student's home. The letters R and NR, used in some instances, apply respectively to residents and non-residents, in the sense of citizenship of the particular country, province, or municipality, as the case may be.

**DETAILS OF SYSTEMS OF MEDICAL EDUCATION  
AND LISTS OF MEDICAL TEACHING INSTITUTIONS**



## AFGHANISTAN

### Introductory data\*

Population . . . . .	13 800 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	349
Number of medical graduates . . . . .	34
Population per medical school . . . . .	13 800 000
Population per physician . . . . .	40 000

\* 1960 figures.

Medical education in Afghanistan lasts for six years, not including the pre-medical year, and leads to the degree of Doctor of Medicine.

### Administration

The Faculty of Medicine is an integral part of Kabul University (Pohantoon Kabul). It is headed by a Dean and is administered by a College Council in close collaboration with a specially appointed delegate of the Afghan Government.

No tuition fees are charged. The students' living expenses are defrayed in part by the Faculty and thus, indirectly, by the State, which owns and operates the University. The academic year is divided into two semesters, running from April to August and from September to December. The teaching staff consists of 88 Afghans assisted by 7 foreigners.

### Conditions of admission

To be admitted to the Faculty of Medicine, a student must hold the secondary-school certificate, obtained after completing a six-years course at one of the *lycées* (subsequent to six years of primary education), or an equivalent certificate—for example, that of the Afghan Military Lycée. A one-year pre-medical course (the "M.P.C.B."—mathematics, physics, chemistry, biology) must be taken at the Faculty of Science. Only after a student has passed the examination held at the end of that course is he or she permitted to begin medical studies proper.

Co-education was introduced in Kabul University in 1957. Foreigners are eligible for admission to the medical course.

### Curriculum

The medical curriculum is arranged as follows:

*First year:* anatomy; physiology; biochemistry; embryology; histology; bacteriology

*Second year:* physiology; anatomy; biochemistry; bacteriology; general pathology (theory during the morning and practical work in the afternoon)

*Third year* : surgery; special pathology; preventive medicine and hygiene; medicine; dermatology (clinical work during the morning and theory in the afternoon)

*Fourth year* : pharmacology; paediatrics; neurology; medicine; preventive and social medicine and hygiene; obstetrics; surgery; otorhinolaryngology; stomatology (clinical work during the morning and theory in the afternoon)

*Fifth year* : gynaecology; preventive and social medicine and hygiene; radiology; ophthalmology; pharmacology; forensic medicine; anaesthetics; neuropsychiatry; medicine; surgery (including practical work in the clinics of the Faculty)

*Sixth year* : rotating internship in different departments of the Faculty.

### Examinations

An examination is held at the end of each academic year (in November and December) on the subjects studied during that period. For those students who fail, a supplementary examination is held in March. A candidate who fails again, even in one subject only, must repeat the entire year's course. Pass-marks must be obtained in every subject. There are always at least two examiners—the professor of the subject and one or more of his colleagues.

### Qualification and licence to practise

After passing the final examination, a student is awarded the degree of Doctor of Medicine, which gives him the right to practise medicine in Afghanistan. All graduates are, however, required to give two years of State service for every year of study at Kabul University, although after official working hours they may engage in private practice. Foreigners who have qualified in Afghanistan are also allowed to practise.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Faculty of Medicine Kabul University KABUL	1932	95 f	329 m 57 f	79 m 27 f	34	None

## ALBANIA

## Introductory data\*

Population . . . . .	1 607 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	444
Number of medical graduates . . . . .	94
Population per medical school . . . . .	1 607 000
Population per physician . . . . .	3 600

\* 1960 figures.

Medical education in Albania lasts for six years and leads to the diploma of Physician.

## Administration

The Faculty of Medicine is part of the State University of Tirana, which depends administratively on the Ministry of Education and Culture. The Faculty of Medicine, headed by a Dean, prepares its own budget; it is financed by the State. The medical course is given free of charge.

The academic year begins on 1 September and ends on 30 June and is divided into two semesters.

## Conditions of admission

For admission to the Faculty of Medicine candidates must be at least 18 years of age and hold the certificate of secondary education or the "medical aide" diploma. The duration of general secondary education and of the training course for "medical aides" is four years; previous elementary schooling lasts for seven years. There is no entrance examination; students are admitted in accordance with a plan fixed by the State.

Candidates are required to present a medical certificate to the effect that they are not suffering from any disease or physical defect which would make it impossible for them to complete the course or to practise medicine.

Foreign students who are citizens of countries with which Albania has concluded the necessary agreements are admitted to the medical course.

## Curriculum

The Faculty of Medicine provides two types of curriculum: the curriculum for students taking the diploma in general medicine, and the curriculum leading to the degree of Physician-Stomatologist. The first two years of the course are the same for both groups. The technical training proper is closely related to practical work in laboratories, clinics, etc. The programme comprises a compulsory semester

in the hospital, where students work in groups according to an established programme.

### Examinations

In addition to the half-yearly examinations covering all the subjects taught during the period, oral and written class examinations are organized during the academic year. At the end of the medical course, students take a State examination in the following subjects: Marxist-Leninist philosophy; internal medicine; surgery; obstetrics and gynaecology.

Students who fail in not more than two subjects in a half-yearly examination may sit again at the next session; students who fail in more than two subjects must repeat the whole year.

### Qualification and licence to practise

Candidates who pass the State examination obtain the diploma of Physician, which entitles them to practise the medical profession in any health establishment in the country, according to requirements. Graduates who have obtained fellowships must work for the duration of their fellowship in health establishments designated by the public health authorities; thereafter they may apply for posts in health establishments of their own choice.

Foreign physicians may practise in Albania subject to authorization by the Ministry of Public Health.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Fakulteti i Mjekësisë Universiteti Shtetëror i Tiranës (Faculty of Medicine, State University of Tirana) TIRANA	1952	60	600	230	94	None

## ARGENTINA

### Introductory data\*

Population . . . . .	20 006 000
Number of medical schools . . . . .	9
Number of physicians . . . . .	30 295
Number of medical graduates . . . . .	1 770
Population per medical school . . . . .	2 223 000
Population per physician . . . . .	660

\* 1960 figures.

Medical education in Argentina lasts for six years and leads to the degree of *Médico* (Physician). One additional year of hospital internship is compulsory after graduation, and authority to practise is not granted until the period of internship has been completed.

### Administration

The universities in Argentina are State institutions under the supervision of the Ministry of National Education. They enjoy a large degree of autonomy, but their administrative systems operate, in general, along the same lines. One of the universities, for example, is headed by a Rector, who is assisted in his functions by a Governing Council (*Consejo Directivo*) consisting of the deans and other representatives of each faculty. The Faculty of Medicine includes a school of medicine and a school of pharmacy, and is headed by a Dean, assisted by a Governing Council common to both schools. The Governing Council is elected by the members of the faculty, generally for a three-year term. The universities are financed by State subsidies, and no tuition fees are charged.

The academic year begins in April and ends in November.

### Conditions of admission

The State *bachillerato* (obtained after six years of secondary school, preceded by six years of primary education) is a basic requirement for entrance to a medical school; persons with equivalent certificates must have them validated by a State *colegio*. There are at present no other requirements although, at one time, candidates had to take an entrance examination in chemistry, physics, biology, and two foreign languages, one of which had to be either English or French.

Foreigners are eligible for admission to the medical course.

### Curriculum

The curriculum is divided into three periods each of two years. The first of these is devoted to anatomy, histology, embryology, physiology, biochemistry,

and biophysics; the second period consists of morbid anatomy, bacteriology, parasitology, pharmacology, medical and surgical pathology, diagnostics, and operative techniques; the third, or clinical, period is devoted to work in medicine, surgery, midwifery, paediatrics, infectious diseases, dermatology and other special subjects, as well as to instruction in hygiene and forensic medicine.

A student begins clinical work during the third year, when he attends hospitals and makes his first contact with patients. There, he receives practical instruction in methods of physical examination, case-history taking, laboratory diagnosis, and so on. The time spent in hospitals and the work performed by a student in the wards increase in subsequent years of the course.

Teaching is by way of lectures, practical work, and clinical work, according to the nature of the subject.

### Examinations

Examinations are compulsory in those subjects which are regarded as basic and essential, and are written, oral, practical, and clinical. Although some of the special subjects, such as dermatology, ophthalmology, and radiology, are not included in the final examination, students must undergo practical tests in these subjects.

### Qualification and licence to practise

After passing his final examination, a student receives the degree of *Médico* (Physician). This degree, together with a compulsory year of hospital internship, confers authority to practise medicine in Argentina, no further licence being required. Those graduates who wish to acquire the higher degree of *Doctor en Medicina* (Doctor of Medicine) must submit a thesis.

Foreigners holding the Argentine national diploma may practise medicine in Argentina on condition that they meet the same requirements as Argentine candidates for admission to the Faculty. Argentine citizens and foreigners holding foreign medical qualifications must have their diplomas validated before they can practise in Argentina.

Medical graduates are under no obligation to serve the State before engaging in private practice.

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees (Pesos)
Facultad de Ciencias Médicas de la Universidad de Buenos Aires Paraguay 2155 BUENOS AIRES, D.F.	1821	279	12 237 m 4 131 f	1549 m 414 f	1049	None

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pesos)</i>
Facultad de Medicina de la Universidad del Salvador Callao 542 BUENOS AIRES, D.F.	1957	65	76 m 56 f	40 m 33 f	—	1000
Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba Obispo Trejo 241 CÓRDOBA, Córdoba	1877	115	4215 m 757 f	1059 m 218 f	345 m 34 f	None
Facultad de Medicina de la Universidad Católica de Córdoba Trejo 323 CÓRDOBA, Córdoba	1959	35	114 m 17 f	57 m 6 f	—	100
Facultad de Medicina de la Universidad del Nordeste Sargento Cabral 2001 CORRIENTES, Corrientes	1953	27	286 m 79 f	82 m 24 f	2 m	None
Facultad de Ciencias Médicas de la Universidad Nacional de la Plata 60 y 120 LA PLATA, Buenos Aires	1919	96	5646 m 1160 f	540 m 89 f	119 m 18 f	None
Facultad de Ciencias Médicas de la Universidad Nacional de Cuyo Avenida Leandro N. Alem Hospital Central, 1º Piso MENDOZA, Mendoza	1950	65	879	103 m 35 f	25 m 10 f	None
Facultad de Ciencias Médicas, Farmacia y Ramos Menores de la Universidad Nacional del Litoral Santa Fe 3100 ROSARIO, Santa Fe	1919		2569 m 523 f	513 m 161 f	106 m 20 f	None
Facultad de Medicina de la Universidad Nacional de Tucumán Lamadrid 875 TUCUMÁN, Tucumán	1853	20	1029 m 253 f	329 m 103 f	38 m 4 f	None

## AUSTRALIA

### Introductory data\*

Population . . . . .	10 275 000
Number of medical schools . . . . .	6**
Number of physicians . . . . .	12 000
Number of medical graduates . . . . .	472
Population per medical school . . . . .	1 713 000
Population per physician . . . . .	860

\* 1960 figures.

\*\* Not including the Faculty of Medicine of Monash University at Clayton, Victoria, which opened in 1961.

Medical education in Australia lasts for six years, including the pre-medical year, and leads to the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.). The University of Tasmania gives only the first year of the course, and students who wish to do so can complete their studies at other Australian universities.

### Administration

The Australian universities are, by statute or Royal Charter, self-governing academic corporations. Their governing bodies are composed of representatives of the state,<sup>1</sup> the general body of graduates, the teaching staff, and, in most instances, the undergraduate body. The Australian universities have a co-ordinating committee, located at the Australian National University in Canberra, to deal with matters of common interest. It is composed of the universities' senior administrative officers—that is, the Vice-Chancellors—and is known as the Australian Vice-Chancellors' Committee.

Each university has at its disposal several large teaching hospitals for undergraduate and post-graduate training. These teaching hospitals are not under the direct control of the universities, but the latter are represented on the selection boards that appoint the physicians and surgeons responsible for clinical teaching. All the universities have residential colleges, but residence at a college is optional. All provide health services for the students.

The various universities' sources of revenue are grants from the Commonwealth Government, grants from the respective state governments, students' fees, endowments, and donations.

The academic year begins in March and ends in November or December. It is divided into three terms of some eleven weeks each, which may include special examination periods.

<sup>1</sup> The Commonwealth of Australia is a federation of six states and two areas on the Australian continent designated "Territories" and subject to the Commonwealth Government.



### Conditions of admission

Candidates for entrance to an Australian university must take either a matriculation examination conducted by the university itself or an examination conducted by the state education department. The matriculation standard examination, sometimes known as the school-leaving certificate, is taken after five years of secondary-school education (preceded by six years of primary school) and includes English, chemistry, and physics or mathematics; it must be passed at not more than two attempts. Although the requirements for entrance to the various universities are not uniform, qualification for matriculation at one Australian university is generally recognized by the others.

Provided these requirements are satisfied, there are no restrictions on entrance to the first year of the medical course. However, there are sometimes limitations on the number of students who may be admitted to the second year of the course. Conditions governing the enrolment of foreign students vary from university to university.

### Curriculum

The curriculum in each faculty of medicine is divided into three parts—namely, pre-medical, pre-clinical, and clinical. The subjects listed under each period are common to all the faculties, although additional courses may be included at one or another of these institutions.

The pre-medical period—i.e., the first year of the course—is devoted to chemistry, physics, botany and zoology, or biology. All these subjects are taught by way of lectures and through practical work with a view to their application in medicine.

The pre-clinical period—i.e., the second and third years of the course—is devoted to anatomy, histology and embryology, physiology, pharmacology, biochemistry, psychology, and pathology. Systematic lectures are given in all these subjects, and in most of them practical laboratory work is performed as well. In anatomy, the students, working in small groups, dissect the whole human body. In histology, a box of prepared slides to be studied in the classes and at home is lent to each student.

The clinical period occupies the last three years of the course. During its early stages, study of the basic sciences (i.e., pathology, bacteriology, and pharmacology and materia medica) is completed. The courses devoted to pathology and bacteriology include lectures, demonstrations, practical classes, and attendance at post-mortems, with students preparing and staining their own microscopic sections of the case. Students also study sets of histopathological preparations in the classroom and at home, and prepare their own bacteriological slides during the practical classes in bacteriology. The course in pharmacology and materia medica includes both lectures and practical classes.

Concurrently with the completion of the study of the basic sciences, clinical studies in medicine, surgery, obstetrics and gynaecology, paediatrics, psychiatry, and the medical and surgical specialties are commenced. As a rule, a student in his first clinical year (that is, the fourth year of the course) is likely to divide his time between in-patient medicine and surgery, on the one hand, and the study

of the basic sciences, on the other. Most of the systematic courses are completed by the end of the fifth year, so that a student is able to devote the sixth year of the course almost entirely to clinical work.

Clinical study in the wards begins with instruction on the taking of case histories and on physical examination. Later on, students are required to keep full case records and to carry out ordinary routine ward investigations on those patients who are allotted to them. These patients are then fully discussed, during "teaching rounds", with the physician-in-charge. Systematic lectures are given, beginning with a series on the principles and mechanisms involved in the genesis of symptoms and signs, and continuing with lectures on specific diseases. During this period students also act as clinical clerks in the out-patient department.

Several hospitals have arranged for selected general practitioners to take into their practice for one or two weeks a student who has reached an advanced stage of his clinical instruction. The student then accompanies the doctor in the course of his daily work.

### Examinations

Class examinations, aimed at assessing progress, are held during the various courses, and the main examinations at their end. A student who has not attended the requisite number of classes, or whose marks in the class examinations are poor, may not be admitted to the main examinations. These main examinations are written and oral and, where appropriate, clinical or practical. In the final examination, held at the end of the curriculum, particular importance is attached to clinical ability. All examinations are conducted by the universities.

A student may not advance to any stage of the curriculum until he has passed his examinations for all the preceding stages. Students who fail in an annual examination may, at the discretion of the examiners, be permitted to take a supplementary examination, which is held some months later. If a student fails in the supplementary examination, he must repeat the whole of the relevant courses before being allowed to sit again for an examination.

### Qualification and licence to practise

In each state, a State Registration Board, established by law, is empowered to ensure that candidates who wish to practise medicine in the state attain certain standards of proficiency. All State Boards recognize that these standards have been attained if the intending practitioner has obtained the degrees of M.B., B.S. from one of the Australian universities.

The registration of foreign degrees and the registration of foreigners with Australian degrees varies from state to state, and recognition by any one State Board does not necessarily signify recognition by another. Some states have regional registration, which allows a medical practitioner to operate in a certain area (generally a small country town in an isolated district with no doctor) for a determined period; thereafter he may apply for full registration, which, if granted, allows him to practise in any part of the state.

Most states provide that a person who possesses special qualifications and experience and has completed a course of not less than five years' duration in a

medical school may by virtue of his special qualifications be given full registration.

The degrees of M.B., B.S. conferred by the Australian universities are recognized by the General Medical Council of the United Kingdom as registrable in the British Medical Register (Commonwealth List).

The higher degrees of Doctor of Medicine, Master of Surgery, and Master of Gynaecology and Obstetrics are awarded after presentation of a thesis and examination or after examination only.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (£A)</i>
Faculty of Medicine University of Adelaide North Terrace ADELAIDE, South Australia	1885	61 f 122 p	493 m 104 f	135 m 35 f	52 m 12 f	140 average
Faculty of Medicine University of Queensland Herston BRISBANE, Queensland	1936	43 f* 250 p*	776	186	62	144
Faculty of Medicine Monash University Box 92 CLAYTON, Victoria	1961	30 f	101	101	—	135 (nationals)
The University of Western Australia School of Medicine NEDLANDS, Western Australia	1957	46 f 124 p	265 m 34 f	68 + 22 in repeat years	15	99.7.0 (nationals)
Faculty of Medicine University of Melbourne PARKVILLE, N.2, Victoria	1862	92 f 350 p	859 m 152 f	180	118	140 average
Faculty of Medicine University of New South Wales Box 1, P.O. Kensington SYDNEY, New South Wales	1960	14 f	63 m 15 f	78	—	120
Faculty of Medicine University of Sydney SYDNEY, New South Wales	1883	72 f 221 p	1777 m 338 f	500	213	116

\* These figures do not include staff teaching first-year (science) subjects.

## AUSTRIA

## Introductory data\*

Population . . . . .	7 081 000
Number of medical schools . . . . .	3
Number of physicians . . . . .	11 396**
Number of medical graduates . . . . .	182
Population per medical school . . . . .	2 360 000
Population per physician . . . . .	620

\* 1960 figures.

\*\* Excluding 1494 doctors of medicine practising dentistry (*Zahn-ärzte*) and 1044 physicians not in practice.

Medical education in Austria lasts for five years and leads to the degree of *Doctor Medicinae Universalis* (Doctor of Medicine). A compulsory three-year period of hospital work is then required before the licence to practise is granted.

## Administration

The medical faculties in Austria are financially supported by the Government through the State-owned universities, and their budgets have to be approved by the Ministry of Education (Bundesministerium für Unterricht).

Professors are appointed by the President of the Republic, after having been proposed by the Professors' Collegiate and nominated by the Minister of Education. The Dean of each faculty is elected yearly by the professors. He is eligible for re-election after he has completed his term of office.

The academic year consists of two semesters of about sixteen weeks each; the winter semester runs from October to February, and the summer semester from March to July. First-year students are admitted twice a year, at the beginning of each semester.

## Conditions of admission

A student who seeks admission to a medical faculty must produce the *Matura*, or matriculation certificate, obtained after eight years of secondary school, preceded by four or five years of primary education. There are three types of secondary school, differing in the time devoted to classical or scientific subjects—namely, the *Gymnasium*, which is largely classical; the *Realschule*, which is chiefly scientific; and the *Realgymnasium*, which is between the two. A knowledge of Latin is compulsory for all candidates, so that those who have attended a *Realschule* must follow a complementary course in that language. There is no further selection process, and no *numerus clausus*.

A certain number of foreign students may be admitted to the medical course and, where necessary, a selection based on qualifications is made. The minimum

requirement is a secondary-school certificate equivalent to the Austrian *Matura*. Students whose mother tongue is not German must pass an examination in that language before admission, and those from countries where Latin is not compulsory for medical students must pass in Latin during the medical course.

### Curriculum

The five-year curriculum consists of not less than ten semesters. The first four semesters are known as the pre-clinical, and the remaining six as the clinical, semesters. The fifth semester, in the course of which a student sits for his first *Rigorosum*<sup>1</sup> examination, is recognized as the first clinical semester.

Attendance is compulsory only at certain practical classes and clinical demonstrations. These exceptions apart, the student himself decides which lectures he will attend; he must, however, register for an average of at least twenty lectures per week. Admission to an examination, although not conditional on attendance at lectures in the subject concerned, is conditional on the student's having attended the faculty for a certain minimum number of "recognized" semesters which is specified for each examination. A semester is "recognized" if, in the course of it, a student has registered for an average of twenty lectures per week in any subject. For the semester in which the first *Rigorosum* is completed, a registration of sixteen hours per week is sufficient.

The subjects studied in the pre-clinical period are chemistry, physics, general biology (botany and zoology), anatomy, histology, embryology, physiology, and biochemistry. All these are taught by way of lectures and, in addition, practical work is undertaken in chemistry, anatomy, histology, physiology, and biochemistry. The lectures on general anatomy must be taken during the first and second, and those on regional anatomy during the third and fourth, semesters. Dissection—a compulsory subject—is performed during a period of two semesters.

The first semester of the clinical period (that is, the fifth semester of the course) is devoted to pathology, morbid anatomy, medical propaedeutics and introductory teaching in physical diagnosis, and general surgery. For the remaining semesters, courses are taken in pathology and morbid anatomy, medicine, surgery, midwifery and gynaecology, hygiene, radiology, psychiatry and neurology, dermatology and venereology, paediatrics, pharmacology, ophthalmology, otorhinolaryngology, dentistry, forensic medicine, parasitology, serology, practical materia medica, and vaccination. The chief teaching methods employed are lectures and clinical demonstrations. Apart from the introductory course of the fifth semester, the students themselves may, within certain limits determined by the sequence in which examinations are held, choose the order in which they wish to study the various subjects. Attendance is compulsory for the prescribed period at clinical demonstrations in medicine, surgery, midwifery, psychiatry, paediatrics, otorhinolaryngology, ophthalmology, dentistry, and dermatology.

### Examinations

Examinations are mainly oral; there are no written tests. In anatomy and morbid anatomy a dissection has to be performed before the examiner, and in

<sup>1</sup> This is the title applied to the three groups of examinations that are given during the medical course and known, specifically, as the first, second, and third *Rigorosum*.

other subjects, too, practical examinations may be held. In the clinical subjects, a student is required to examine a patient in the presence of the professor.

The first *Rigorosum* examination covers chemistry, physics, biology, anatomy, histology, physiology, and biochemistry. In order to be allowed to sit for the examinations in physics, a student must have completed at least two "recognized" semesters. For his examinations in chemistry, he must have completed at least three and for the other subjects at least four such semesters. The fifth semester is "recognized" only if a student has passed these examinations during that period. Pre-clinical training must be completed, and the first *Rigorosum* must be passed, not more than two years after a candidate has passed the examination in anatomy, otherwise he is not permitted to continue the medical course. (This term may be extended in exceptional cases.) The order in which the examinations must be taken is prescribed by regulations.

After ten "recognized" semesters, a student is given the certificate of *Absolutorium*, which entitles him to enter for the remaining required examinations—that is, the second and third *Rigoroza*. Generally, these two final groups of examinations occupy a student for a full year, over and above the five years required to complete the medical course itself.

The second *Rigorosum* examination covers pathology, pharmacology and pharmacy, internal medicine, paediatrics, psychiatry, and neurology. The third *Rigorosum* is in surgery, obstetrics and gynaecology, ophthalmology, dermatology and syphilology, hygiene, and forensic medicine.

### Qualification

After a student has passed the third *Rigorosum* examination, he receives the university degree of Doctor of Medicine, and must then undertake a compulsory three-year period of hospital work in certain approved hospitals before the State licence entitling him to practise is issued. This three-year period of hospital work is arranged as follows: medicine (nine months), surgery (six months), paediatrics (six months), gynaecology and obstetrics (six months), otorhinolaryngology (three months), dermatology and venereology (three months), as well as a further three months to be devoted to a subject of the graduate's own choice.

For those candidates who wish to become specialists the period devoted to hospital training is in most cases six years. The regulations governing the post-graduate training of physicians prescribe exactly how much time must be devoted to a specialty and to certain sub-specialties. The Federal Ministry for Social Administration publishes a list of hospitals approved for specialist training.

### Licence to practise

Graduate physicians who have completed the three-year period of post-graduate hospital work are free to set up in private practice. Austrian nationals with foreign diplomas may be admitted to practise (a) at university hospitals, with the permission of the chief of the clinic, for a maximum of one year; (b) at departments of public hospitals (which are directed by a member of the teaching staff of an Austrian university medical school), with the permission of the chief of the department, for a maximum of one year; (c) at other public hospitals for

the purpose of study for a limited time, with the permission of the Ministry for Social Administration.

Foreign diplomas may be recognized by an Austrian university under certain conditions (e.g., that their holders take certain semesters or examinations). Diplomas thus recognized have the same validity as national diplomas.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Schillings)</i>
Medizinische Fakultät der Universität Graz GRAZ	1863	45 f 37 p	722 m 212 f	227	52	800 (nationals); 2 200 (foreigners)
Medizinische Fakultät der Universität Innsbruck Innrain 52 INNSBRUCK	1674	19 f 44 p	822 m 236 f	84 m 30 f	32	1200 per semester
Medizinische Fakultät der Universität Wien WIEN	1365	198	5800	1207	98	700-800 (nationals); 2000-2400 (foreigners)

## BELGIUM

### Introductory data\*

Population . . . . .	9 153 000
Number of medical schools . . . . .	4
Number of physicians . . . . .	11 180**
Number of medical graduates . . . . .	519
Population per medical school . . . . .	2 288 000
Population per physician . . . . .	820

\* 1960 figures.

\*\* Excluding stomatologists and doctors of medicine practising dentistry.

The medical curriculum in Belgium is established by law, and is uniform in all medical schools. The course lasts for seven years and leads to the university degree of *Docteur en Médecine, Chirurgie et Accouchements* (Doctor of Medicine, Surgery and Midwifery).

### Administration

The Universities of Ghent and Liège are State-owned, and are supervised by the Ministry of National Education and Culture (Ministère de l'Éducation nationale et de la Culture). Each of these two universities is administered by an Administrative Board (Conseil d'Administration), presided over by the Rector, who is elected by the professorial staff at a meeting of the Academic Council (Conseil académique) and is then appointed for a four-year period by the Crown. The Ministry of National Education and Culture appoints directly, and independently of any university recommendation, a State representative to the Administrative Board. Its other members are representatives of the various faculties. In financial matters, heads of departments (that is, the professors) deal directly with the Administrative Board, and not through the intermediary of the deans of the respective faculties. The faculties do not have central budgets; each head of department (that is, each professor) submits his budget to the Administrative Board, which then distributes the funds allocated to it by the Ministry of National Education and Culture. The Academic Council, which consists of the professors of all the faculties, formulates academic policies and establishes rules and regulations for academic procedure within the limits set by State laws.

The Free University of Brussels is an independent institution supported by voluntary contributions and governed by an Administrative Board of 37 members, none of whom represents the State. The Rector of the University is selected by the professors from among their own group, and each faculty elects its dean in a similar manner.

The Roman Catholic University of Louvain is a non-governmental institution, which is directed by an Administrative Board composed of all the bishops of Belgium. The chief executive officer of the University—its Rector Magnificus—



is chosen from among the clergy and is appointed on a permanent basis by the Administrative Board. He is assisted by an advisory body, the Conseil rectoral. Deans are chosen each year by their respective faculties.

About 95 % of the funds of the State universities, and more than 50 % of those of the other two institutions, are provided by the Government.

At all the universities the academic year consists of two semesters, running from October to January and from February to July. The last month of the second semester is free of classes in order to allow students sufficient time to study for their examinations.

The courses are given in Dutch at the University of Ghent, and in French at the Universities of Brussels and Liège; the University of Louvain provides for French and Dutch language sections, and each student is free to join whichever he prefers. The University of Brussels is progressively adopting the same system.

### Conditions of admission

Entrance requirements are fixed by law, and are the same for all the Belgian universities. In order to be eligible for admission to a faculty of medicine, a student must hold the *diplôme d'études secondaires* (a certificate obtained after six years of secondary education preceded by six years of primary school), showing that he has passed in Latin (a major entrance requirement) as well as in Greek, mathematics, or science. All students holding that certificate and wishing to study medicine may then be admitted to the medical faculties; there is no further selection procedure, and no *numerus clausus*. All students are, however, required to undergo a preliminary health examination, and can be admitted only if the result of that examination is satisfactory.

All the Belgian universities are provided with student health services and facilities for an annual medical examination. A general physical examination, including a chest X-ray on entry to the university and annually thereafter, is compulsory.

Foreign students are admitted to medical studies on the same basis as Belgian students.

### Curriculum

The minimum medical curriculum, established by law, is the same for all the four Belgian medical faculties. It extends over a period of seven years and is divided into two main stages. The first of these consists of three years' preparatory work, leading to the *Candidature en Sciences naturelles et médicales* (a certificate in natural and medical sciences). The second stage, of four years' duration, leads to the *Doctorat en Médecine, Chirurgie et Accouchements*. The first of these stages is devoted to the study of pre-medical and pre-clinical subjects, whereas the second stage is given over to that of clinical subjects. The final year of the course consists of practical work or the performance of internships in hospitals.

The subjects studied during the first, or pre-medical and pre-clinical, period include philosophy (logic, ethics, psychology), mathematics, chemistry (inorganic and organic), physics, botany, zoology, anatomy, comparative anatomy, embryo-

logy, histology, physiology, and biochemistry. The courses in chemistry, physics, botany, and zoology are given in the faculties of science; the other subjects are taught in the faculties of medicine. Teaching is by way of lectures, demonstrations, practical work, and dissection. The order in which the various subjects are studied differs slightly from university to university. Attendance at the above-mentioned courses is compulsory. In addition, optional courses are available in mineralogy, geology, analytical geometry, and other sciences.

The curriculum for the second (or clinical) period described below is that of one of the universities, but may be taken as a general example, since the main difference between this and the curricula of the other three universities is merely in the order of presentation of the various subjects:

*Fourth year* (the first year of doctorate studies): morbid anatomy; morbid histology; general pathology; bacteriology; parasitology; medical pro-paedeutics; clinical medicine; general surgery; radiology

*Fifth year* (the second year of doctorate studies): general pharmacology; pharmacodynamics; hygiene; internal medicine; special surgery; clinical paediatrics; obstetrics

*Sixth year* (the third year of doctorate studies): psychiatry; morbid anatomy; forensic medicine; medical ethics; physiotherapy; radiotherapy; clinical medicine, surgery, obstetrics and gynaecology, paediatrics; ophthalmology; dermatology and syphilology; otorhinolaryngology; urology.

Clinical instruction during the fourth, fifth and sixth years of the course consists of demonstrations and practical exercises, in wards and out-patient departments.

During the seventh and final year of the course (the fourth year of doctorate studies) students devote four months each to medicine, surgery, and obstetrics, but part of the year may also be spent in special branches. Students are assigned in groups to the chiefs of the various hospital services to perform clinical work, to write up case histories, to examine patients, and to record their findings, but are not given direct responsibility for patients. A period of practical work such as this is known as a *stage*, and while performing it the student is known as a *stagiaire*. Facilities are available for about one half of the students, selected by competitive examination, to serve as residents in the hospitals during this clinical year; they are then known as *stagiaires-internes*. The *stages* are supplemented by practical demonstrations in regional anatomy and operative surgery.

In addition to the compulsory subjects, optional courses can be attended on which there may be no examinations. These courses cover such subjects as medical toxicology, tropical medicine, mental health, insurance medicine, history of medicine, medical statistics and Dutch medical terminology. Students may also participate in sports and physical education.

## Examinations

Examinations are held at the end of each academic year in the subjects studied during that period.

Three annual examinations are held during the pre-medical and pre-clinical period, and lead to the degree of *Candidat en Sciences naturelles et médicales*, which is awarded after a student has passed the third of these examinations.

Following this stage, a further four annual examinations are held. After a student has passed the last of these, he is awarded the degree of *Docteur en Médecine, Chirurgie et Accouchements*. The various examinations are known by their number and title, such as, for example, the second candidature, the third doctorate.

Examinations are oral, practical, and clinical, but only seldom written. They are held in June-July and September-October. A student who fails in the June-July examinations may sit for the entire examination again in September-October. If, however, he fails again, he must repeat the entire year's courses in all the subjects. Any student has the right to request that he should be examined before a Central Examination Board sitting in Brussels. That board is appointed by the Minister of National Education and Culture and is composed of representatives of the faculties of the four universities.

### Qualification and licence to practise

Students of Belgian nationality who have passed the fourth doctorate receive an official degree, the *diplôme légal*, which authorizes the holder to practise medicine in Belgium after registration.

Possession of the degree of Doctor of Medicine, Surgery, and Midwifery does not in itself confer the right to practise medicine. Each practitioner must have his degree registered by the Medical Board of the province (Commission médicale provinciale) in which he intends to practise. Each provincial Medical Board issues every year a list of practitioners authorized to practise in the province. The presidents of these boards are appointed by the Ministry of Public Health and Family Welfare (Ministère de la Santé publique et de la Famille).

In addition to registration with a provincial Medical Board, any graduate desiring to practise medicine in Belgium must also be registered with the Medical Association (Ordre des Médecins). This association exercises control over professional ethics and is, moreover, invested with disciplinary powers that extend to the temporary or permanent suspension of a practitioner.

Belgian nationals who hold a foreign medical qualification may have their degree recognized as fully equivalent if approved by a special commission, which must confirm that the studies leading to that degree are equivalent to those required in Belgium.

Nationals of foreign countries who hold a foreign medical degree may obtain an authorization to practise in Belgium if a board of studies has confirmed that the studies leading to their degree are equivalent to those required in Belgium. This board must also expressly state that the applicant possesses exceptional scientific attainments and that his knowledge may be of special use to the country.

Nationals of foreign countries holding the Belgian degree of Doctor of Medicine, Surgery and Midwifery are entitled to practise medicine in Belgium.

Medical graduates are under no obligation to serve the State before engaging in private practice.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Francs)</i>
Faculté de Médecine et de Pharmacie Université libre de Bruxelles 115, boulevard de Waterloo BRUXELLES	1834	48 f 56 p	743 m 243 f	292	93	6000
Faculteit der Geneeskunde Rijksuniversiteit te Gent Sint-Pietersnieuwstraat 25 GENT	1817	27 f 9 p	736 m 100 f	159	55	1500
Faculté de Médecine Université de l'Etat à Liège Place du 20 Août LIÈGE	1817	32 f* 4 p	464 m 72 f	91	87	1500
Faculté de Médecine de l'Université catholique de Louvain 4, rue Kraeken LOUVAIN	1425	89	2796 m 327 f	470	284	5400

\* Not including *agrégés*, *chefs de travaux*, *conservateurs* and *assistants*, who take part in practical training.

## BOLIVIA

## Introductory data\*

Population . . . . .	3 453 000
Number of medical schools . . . . .	3
Number of physicians . . . . .	895
Number of medical graduates . . . . .	**
Population per medical school . . . . .	1 151 000
Population per physician . . . . .	3 900

\* 1960 figures.

\*\* Data incomplete.

Medical education in Bolivia lasts for seven years and leads to the degree of *Médico Cirujano* (Physician and Surgeon).

## Administration

Each university is headed by a Rector, elected by the professors of all its faculties and by an equal number of students. The same system is adopted for the election of deans of faculties. Rectors and deans are elected for three years. The Rector is assisted by a University Council (*Consejo Universitario*), of which he is the chairman. The dean of each faculty is assisted by a Governing Council (*Consejo Directivo*).

The Bolivian universities, although owned and operated by the Government, have complete autonomy in the handling of their funds, except for the control exercised by Treasury auditors.

The duration of the academic year differs at the various Bolivian universities. At Cochabamba it runs from March to December, at La Paz from May to December, and at Sucre from January to November.

## Conditions of admission

Candidates applying for admission to a medical school must hold the *bachillerato* (a certificate obtained after six years of secondary education preceded by six years of primary school), or its equivalent and pass an entrance examination.

Foreign students are admitted on the same basis as Bolivian citizens.

## Curriculum

The curriculum is arranged as follows:

*First, second and third years* : medical chemistry; medical physics; zoology; biology; anatomy; surgical anatomy; histology; physiology; pathology; bacteriology; parasitology

*Fourth and fifth years*: medicine and surgery; tropical medicine; morbid anatomy; symptomatology and traumatology; forensic medicine; clinical medicine and surgery

*Sixth and seventh years*: medicine; surgery; obstetrics; gynaecology; paediatrics; hygiene; phthisiology; urology; ophthalmology; otorhinolaryngology; forensic medicine; history of medicine.

From the sixth year of the course onwards, students work in the wards as *practicantes* (clinical clerks) with progressively increasing responsibilities. They take an active part in ward duties and "rotate" through the different services, such as medicine, surgery, obstetrics, and the specialties. Outstanding fifth-year students too may become *practicantes* provided there are vacancies. *Practicantes* receive a small remuneration.

### Examinations

Examinations in all subjects of the curriculum are compulsory. A student who fails in one or two subjects may take the examination again as soon as the new academic year opens, but a student who fails in three or more subjects must repeat the whole year's course.

The end-of-the-year examinations are always oral; the only written examinations are certain tests held during the year in order to assess the students' progress.

Upon completion of the seven-year course, final graduation examinations in clinical medicine, clinical surgery, and the specialties are held in the Faculties of Medicine of Sucre and Cochabamba. In La Paz, the examination is a combined one, covering both clinical medicine and clinical surgery. At Sucre, a student must also write a thesis and submit it to the faculty before the final examination takes place.

### Qualification and licence to practise

After a student has passed all his examinations he receives the degree of *Médico Cirujano*, but is not permitted to practise until he has spent one year in rural service. After that year has been completed, he is granted the certificate of National Physician and Surgeon, which is signed by the President of the Republic and entitles its holder to practise anywhere in Bolivia.

Bolivian nationals who hold a foreign medical qualification must have their diploma validated at one of the country's universities by taking an examination and engaging in rural service for a period of one year. Foreigners who hold a foreign medical qualification may practise if reciprocity regarding the recognition of diplomas exists between their country and Bolivia and if their diploma is validated. Foreigners who have taken the medical course in Bolivia and obtained the certificate of National Physician and Surgeon may practise without further formality.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Bolivianos)</i>
Facultad de Medicina de la Universidad Mayor de San Simon Avenida Aniceto Arce COCHABAMBA	1932	82	376 m 20 f	141 m 4 f	39	35 000
Escuela de Medicina de la Universidad Mayor de San Andrés LA PAZ	1834	5 f 29 p	515 m 31 f	97	34	18 000 (nationals); 40 000 (foreigners)
Facultad de Ciencias Médicas de la Universidad Mayor Real y Pontificia de San Francisco Xavier de Chuquisaca Calle Junin 501 SUCRE	1826					

## BRAZIL

### Introductory data\*

Population . . . . .	70 967 000
Number of medical schools . . . . .	30**
Number of physicians . . . . .	26 526†
Number of medical graduates . . . . .	1 528††
Population per medical school . . . . .	2 366 000
Population per physician . . . . .	2 300†

\* 1960 figures.

\*\* Not including the school at Vitória, Espírito Santo, which opened in 1961.

† 1957 figures.

†† Figure supplied by Government.

Medical education in Brazil lasts for six years and leads to the degree of *Doutor em Medicina* (Doctor of Medicine).

### Administration

In December 1961 a new law on national education (*Lei de Diretrizes e Bases*) was promulgated which gives the basic orientation of the policy to be followed in the various spheres of administration. Under Article 70 of this law the Federal Education Council (Conselho Federal de Educação) reserves the right to lay down the curriculum and to fix the length of the courses leading to the qualifications required for the practice of medicine and the other liberal professions. Article 71 provides that the curriculum in each subject shall be drawn up by the professor concerned and approved by all the members of the Faculty Board.

By special arrangements clinical instruction is given in the hospitals but the schools of medicine do not exercise any administrative control over the hospitals.

The academic year consists of two semesters and extends over 180 working days, not including the days covered by the examinations. It runs from the beginning of March to the middle of December.

### Conditions of admission

Article 26 of the same law on national education stipulates that elementary education in the primary schools shall be obligatory from the age of 7 years and shall last from four to six years. It is to be followed by secondary education lasting for seven years and divided into two sections of four and three years respectively. The last year of secondary education may be spent in a university college.

Article 46, paragraph II, of the law stipulates that candidates for medical studies shall have completed the pre-university year, which enables them to sit for the *vestibular* (entrance examination). This competitive examination includes oral and written tests in the subjects studied. Potential medical students are selected on the basis of the results obtained in this examination, their number being limited by the size of the teaching staff and by the physical facilities available.



Foreign students are admitted to medical studies in Brazil if their secondary studies have reached an acceptable level. This is verified by means of examinations in all the relevant subjects held before a board of examiners.

### Curriculum

The new curriculum is to be laid down by the Federal Council of Education. At the present time the Higher Education Committee of this Council is working out a new programme of studies in consultation with the bodies concerned.

The following outline, which is the provisional curriculum of the National School of Medicine of the University of Brazil, Rio de Janeiro, is given as an example:

*First year*: anatomy; general histology and embryology; biophysics; biochemistry

*Second year*: operative technique and experimental surgery; physiology; microbiology; parasitology

*Third year*: clinical medicine; preparatory clinical medicine; clinical psychiatry; morbid anatomy and physiology

*Fourth year*: clinical medicine; preparatory clinical surgery, clinical neurology; clinical dermatology and venereology; clinical otorhinolaryngology; clinical ophthalmology; tropical and infectious diseases clinic; hygiene; clinical psychiatry; forensic medicine

*Fifth year*: clinical medicine; clinical therapeutics; clinical surgery; clinical urology; clinical paediatrics; puericulture and infants' clinic; clinical gynaecology; clinical obstetrics; clinical infantile surgery and orthopaedics

*Sixth year*: this is reserved for practical work in hospitals or for laboratory training in the main subjects. The student may choose one of the following four options:

- (1) exclusive—any subject of the curriculum;
- (2) clinical—including clinical medicine and clinical paediatrics;
- (3) surgery—including clinical surgery and clinical obstetrics;
- (4) surgery—including clinical surgery, clinical medical paediatrics, clinical obstetrics, and a probationary period in a first-aid station.

### Examinations

There are two partial examination during the academic year and one end-of-the-year examination. The partial examinations consist of a written test and an oral examination or practical test, according to the nature of the subject. These examinations take place in June and November (except for the subjects of the 4th, 5th and 6th academic years, which are given in courses of two to four weeks' duration and for which examinations are held after the completion of each course). Candidates who pass the partial examinations with an average of 7 (maximum 10) are exempted from the end-of-the-year examination. Candidates who have an average of between 5 and 7 must undergo the end-of-the-year examination, which consists of a written test and an oral examination. A candidate who has less than 3 cannot be admitted to the end-of-the-year examination. However, if he has

completed half of the practical work and half of the required exercises, he is authorized to sit for the supplementary final examination in February. An average lower than 4 is considered a failure. To calculate this average, the mark obtained in the final examination is added to the average obtained in the partial examinations and the result is divided by two. A student must pass all the examinations to gain admission to the following academic year.

### Qualification and licence to practise

A student who passes all the examinations receives the diploma of *Doutor em Medicina*. The licence to practise is obtained through registration at the Division of Higher Education of the Ministry of Education or at the schools of medicine attached to the federal universities; these two bodies are required to transmit the diplomas thus registered to the national office of the Inspectorate of Medicine of the Ministry of Health, which is responsible for the supervision and discipline of the medical profession. If the law allows, the Inspectorate may require an examination to be passed or a probationary period to be served.

Brazilian nationals who have obtained a diploma abroad and foreigners who hold foreign medical qualifications may practise in Brazil on condition that their medical studies are officially recognized. Nationals of foreign countries who hold a Brazilian diploma may practise after registration with the Ministry of Education.

Medical graduates who desire to make a career in education may study for the higher posts of *Livre-Docente* (university lecturer) and *Professor Catedrático* (university professor), to obtain which a thesis must be submitted.

Medical graduates are under no obligation to serve the State before engaging in private practice.

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees (Cruzeiros)
Faculdade de Medicina de Sergipe Avenida Ivo Prado 612 ARACATÚ, Sergipe	1960	30 p	20 m 9 f	20 m 9 f	—	
Faculdade de Medicina Universidade do Pará Praça Dr Camilo Salgado 1 BELÉM, Pará	1919	84	176 m 63 f	32 m 8 f	26 m 8 f	30
Faculdade de Ciências Médicas de Minas Gerais Avenida Francisco Sales 1219 Caixa postal 1756 BELO HORIZONTE, Minas Gerais	1951	102 p	201 m 6 f	43 m 1 f	36 m	12 000

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Cruzeiros)</i>
Faculdade de Medicina da Universidade de Minas Gerais Avenida Prof. Alfredo Balena, s/n BELO HORIZONTE, Minas Gerais	1911	24 f 140 p	386	80	39 m 4 f	None
Faculdade de Ciências Médicas do Paraná Praça Rui Barbosa 785 CURITIBA, Paraná						
Faculdade de Medicina da Universidade de Paraná Praça Santos Andrada, s/n CURITIBA, Paraná	1915					
Faculdade de Medicina de Santa Catarina Rua Ferreira Lima 26 Caixa postal 205 FLORIANÓPOLIS, Santa Catarina	1959	5 p	56 m 4 f	28	—	560
Faculdade de Medicina da Universidade do Ceará Rua Capitão Francisco Pedro, s/n FORTALEZA, Ceará	1915					
Faculdade de Medicina da Universidade Federal de Goiás Caixa postal 9 GOIÂNIA, Goiás	1960	4	33	33	—	30
Faculdade de Medicina do Paraíba Rua Visconde de Itaparica, s/n JOÃO PESSOA, Paraíba						
Faculdade de Medicina Universidade de Juiz de Fora Rua Catulo Breviglieri, s/n JUIZ DE FORA, Minas Gerais	1952	1 f* 33 p*	134 m* 19 f*		19	
Faculdade de Medicina da Universidade de Alagoas Praça Afrânio Jorge, s/n MACEIÓ, Alagoas	1950	64	143	20	33	40
Faculdade de Medicina do Amazonas Rua Monsenhor Coutinho 734 MANAUS, Amazonas						
Faculdade de Medicina da Universidade do Rio Grande do Norte Avenida Nilo Peçanha 620 NATAL, Rio Grande do Norte	1956	45 f 1 p	81 m 24 f	21	—	25

\* 1961 data.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Cruzeiros)</i>
Escola Fluminense de Medicina Rua Visconde de Morais 101 NITERÓI, Rio de Janeiro						
Faculdade de Medicina de Porto Alegre Rua Sarmiento Leite, s/n PORTO ALEGRE, Rio Grande do Sul	1898					
Faculdade de Ciências Médicas de Pernambuco Rua Benfica 198 RECIFE, Pernambuco	1951	40 p	215 m 38 f	38 m 6 f	42	2500 + fees for laboratory and exa- minations
Faculdade de Medicina da Universidade do Recife Cidade Universitária-Engenho do Meio RECIFE, Pernambuco	1920					
Faculdade de Medicina de Ribeirão Preto Universidade de São Paulo Caixa postal 301 RIBEIRÃO PRETO, São Paulo	1951	111 f 6 p	451 m 31 f	80	54	None
Escola de Medicina e Cirurgia do Rio de Janeiro Rua Frei Caneca 94 RIO DE JANEIRO, Guanabara	1912	70 f 50 p	1035	252	115	
Faculdade de Ciências Médicas Rua Fonseca Teles 121 RIO DE JANEIRO, Guanabara	1936	44	100	58	112	5000
Faculdade Nacional de Medicina da Universidade do Brasil Avenida Pasteur 458 RIO DE JANEIRO, Guanabara	1808	435	1226	150-200	286	
Escola Bahiana de Medicina e Saúde Pública da Universidade Católica do Salvador Praça Conselheiro Almeida Couto, s/n SALVADOR, Bahia	1953	124	232	47	35	50
Faculdade de Medicina da Universidade de Bahia Praça 15 de Novembro 1 SALVADOR, Bahia						

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Cruzeiros)</i>
Faculdade de Medicina de Santa Maria Universidade de Rio Grande do Sul Rua Floriano Peixoto 1184 SANTA MARIA, Rio Grande do Sul		18 p	308 m* 14 f*		34	
Faculdade de Ciências Médicas de Maranhão Rua Barão de Itapary 227 SÃO LUIS, Maranhão						
Escola Paulista de Medicina Rua Botucatu 720 SÃO PAULO, São Paulo	1933	14 f 104 p	42 m 351 f	61	59	360
Faculdade de Medicina da Universidade de São Paulo Avenida Dr Arnaldo, s/n Caixa postal 2921 SÃO PAULO, São Paulo	1913	55 f 85 p	519	80	79	150-360
Faculdade de Medicina de Sorocaba Pontifícia Universidade Católica de São Paulo Rua Claudio Manoel da Costa 57 SOROCABA, São Paulo	1951	2 f 115 p	262 m 34 f	56	28	
Faculdade de Medicina do Triângulo Mineiro Praça Manoel Terra, s/n UBERABA, Minas Gerais	1954	24 f 90 p		50	49	50
Escola de Medicina do Espírito Santo Avenida Maruípe, s/n Caixa postal 780 VITÓRIA, Espírito Santo	1961					

\* 1961 data.

## BULGARIA

## Introductory data\*

Population . . . . .	7 867 000
Number of medical schools . . . . .	2
Number of physicians . . . . .	11 051
Number of medical graduates . . . . .	**
Population per medical school . . . . .	3 934 000
Population per physician . . . . .	710

\* 1960 figures.

\*\* Data not available.

Medical education in Bulgaria consists of a six-year course, given in institutes of medicine. These institutes are owned by the State and are operated by the Ministry of Health and Social Welfare.

The academic year runs from September to June.

Students who wish to embark on medical studies must first complete a course of secondary education. Until 1956, the selection of candidates was determined by the results of an entrance examination.

The first three years of the medical course are devoted to pre-medical and pre-clinical subjects. Clinical subjects are introduced during the third year, and their study continues throughout the fourth and fifth years of the course. The sixth year is exclusively devoted to practical work on basic clinical and public health subjects. At the end of the sixth year, the student takes the State examination, the passing of which entitles him to practise medicine.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Pavlov Higher Institute of Medicine PLOVDIV	1945					
Faculty of Medicine of the Červenko Higher Institute of Medicine SOFIA	1918					

## BURMA

### Introductory data\*

Population . . . . .	20 662 000
Number of medical schools . . . . .	2
Number of physicians . . . . .	1 962**
Number of medical graduates . . . . .	141
Population per medical school . . . . .	10 331 000
Population per physician . . . . .	11 000

\* 1960 figures.

\*\* Comprising 1400 "graduate physicians" and 562 "licentiate medical practitioners".

Medical training in Burma lasts for seven years, including two years of pre-medical studies. The degrees conferred are those of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.), which are recognized by the General Medical Council of the United Kingdom as entitling their holder to registration on the British Medical Register (Foreign List).

### Administration

The Universities of Mandalay and Rangoon are Government-owned institutions, operated under the jurisdiction of the Ministry of Education. Their faculties of medicine are each headed by a Dean.

The academic year begins in June and ends in March. The language of instruction is English.

### Conditions of admission

In order to be admitted to the faculty of medicine, a student must have passed the matriculation examination of the university, or its equivalent, on completion of his secondary-school studies. He must then attend a two-year pre-medical course, regarded as part of the seven-year curriculum. The subjects covered during the pre-medical period are English, Burmese, chemistry, physics, and biology. The examination held at the end of this two-year course is known as the First M.B., B.S. Examination (Intermediate Science Examination). To pass this examination it is necessary for a candidate to obtain at least 50 % marks, both in written and in practical examinations, in each of the three subjects chemistry, physics and biology, and to score at least 50 % marks in the aggregate of all subjects. Successful candidates are then admitted to the medical course proper.

As far as the admission of foreigners is concerned only the sons and daughters of persons deputed by foreign governments to serve in Burma temporarily or the sons and daughters of persons engaged by the Government of the Union of Burma on a temporary contract may be admitted to the medical course. But this is condi-

tional on their having passed an examination equivalent to the Intermediate Science Examination, in the same subjects and at the same level.

### Curriculum and examinations

The stage of the curriculum leading to the Second M.B., B.S. Examination covers two years (that is, the third and fourth years of the training period), and is devoted to organic chemistry and physical chemistry, anatomy, and physiology. A student is not allowed to begin the fourth year of the medical course until he has passed an examination in organic chemistry. Biochemistry and histology are taught under the heading of physiology.

The third period of studies (that is, the fifth year of the medical course) covers materia medica, pharmacology and, in addition, general pathology, bacteriology, and medical zoology. The examination held at the end of this period is known as the Third M.B., B.S.

The Final M.B., B.S. Examination, which is taken after a further two-year course of study (a student's sixth and seventh year at the medical course), is held in two parts. Part I covers general and special pathology (including morbid anatomy and morbid histology); forensic medicine (including medico-legal post-mortem examinations); and hygiene and public health. Preparation for Part II consists of: (1) lectures in systematic medicine (including tropical diseases, diseases of children, tuberculosis, dietetics, physiotherapy, electrotherapy, vaccines and sera); (2) lectures in systematic surgery (including orthopaedics, diseases of children and venereal diseases); (3) lectures in systematic obstetrics and gynaecology; (4) lectures in applied anatomy and physiology; (5) out-patient clerkships; (6) in-patient ward clerkships; (7) instruction in ophthalmology, otorhinolaryngology, venereology and dermatology, and phthisiology; (8) hospital work in anaesthesiology, radiology, post-mortem examination, operative surgery, mental diseases (with attendance at mental hospital), fevers (with attendance at contagious diseases hospital), dental surgery; and (9) hospital work in maternal and child health.

### Qualification and licence to practise

The award of the degrees of M.B., B.S. entitles their holder to practise in Burma. No further examinations need be taken. Before setting up in private practice, however, holders of the M.B., B.S. degrees must serve the State for twelve months as house surgeons in one of the following hospitals: Rangoon General Hospital; Rangoon Dufferin Hospital; Base Military Hospital, Rangoon; Base Military Hospital, Maymyo; and Mandalay General Hospital.

Nationals and foreigners in possession of diplomas from countries with which Burma has established reciprocity regarding the recognition of medical diplomas are admitted to practice. Holders of medical qualifications (either nationals or foreigners) that have been obtained in a foreign country with which there is no reciprocity are permitted to sit for an examination before a special Board of Examiners, provided the Burma Medical Council is satisfied with their qualifications. Only on passing this examination are such persons permitted to register under the Burma Medical Act.



Foreigners who have qualified in the Union of Burma are permitted to register under the Burma Medical Act.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Kyats)</i>
Faculty of Medicine University of Mandalay MANDALAY	1954	18 f 23 p	108 m 25 f	33	2 m 1 f	31 647
Faculty of Medicine University of Rangoon RANGOON	1924	58 f 31 p	862 m 354 f	141	138	180

## CAMBODIA

## Introductory data\*

Population . . . . .	4 952 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	183**
Number of medical graduates . . . . .	30†
Population per medical school . . . . .	4 952 000
Population per physician . . . . .	27 000

\* 1960 figures.

\*\* Including 127 *officiers de santé*, who work as general practitioners.

† Comprising 25 *officiers de santé* and 5 *docteurs en médecine*.

Medical education in Cambodia lasts for seven years (including the pre-medical year and leads to the degree of *Docteur en Médecine* (Doctor of Medicine).

## Historical background

The first institution in Cambodia devoted to medical education was that established at Phnom Penh in 1946 under the name of *Ecole des Officiers de Santé du Cambodge* (Cambodian School for Health Technicians). Its purpose was the training of *officiers de santé* (health technicians) who would assist, or act for, qualified physicians, particularly in rural areas. Students enrolled at that school received basic medical training during a four-year course, part of which was also devoted to more general education, including such subjects as literature, history, geography, psychology, philosophy, moral sciences, sociology, and French. In 1953, the *Ecole des Officiers de Santé* was officially constituted as the present *Faculté royale de Médecine du Cambodge*. For various reasons, however, the Faculty did not begin to function until 1955, when it inaugurated its first pre-medical, or P.C.B. (physics, chemistry and biology), course under the auspices of the Faculties of Medicine and Science of the University of Paris.

In September 1961 the fifth year of the course for the Doctorate of Medicine was to be opened, and the first theses for the Cambodian Doctorate of Medicine were due for submission to the Faculty of Medicine of Phnom Penh at the beginning of 1963. Theses may be submitted by former health technicians, who, after obtaining their *baccalauréat* or completing their time as *assistants*, may now continue their studies at Phnom Penh and are no longer obliged to go to Paris, as well as by regular students of medicine who hold the *baccalauréat* and the P.C.B., after having completed six years of medical studies at the Royal Faculty of Medicine.

The original four-year course for the training of health technicians, which was subsequently extended to five years, continues as formerly. This will make it possible to train *officiers de santé* until the number of physicians turned out by the Royal Faculty of Medicine is sufficient to cover the country's needs. Thus,

for some years to come, the old and the new courses will be conducted side by side.

### Administration

The school is owned and operated by the Government, under the direction of a Dean. Arrangements have been made with the Faculty of Medicine of the University of Paris to send professors and lecturers to the Royal Faculty of Medicine to give short courses, ranging from three to six months, in their respective subjects. The language of instruction is French.

### Conditions of admission

In order to be eligible for admission to the full medical course given at the Royal Faculty of Medicine students must have obtained the *baccalauréat* (after seven years of secondary education) and, moreover, must have completed the one-year pre-medical (P.C.B.) course.

Candidates for admission to the training course for health technicians must hold the diploma of the B.E.P.C. (*baccalauréat études primaires complémentaires*) and pass a special competitive examination for recruitment.

Foreign students who hold the full French language *baccalauréat* and the P.C.B. are also admitted.

### Qualification and licence to practise

When the first class of the Royal Faculty graduates, they will receive the degree of *Docteur en Médecine*, which will entitle them to practise in Cambodia. Up to now only Cambodian citizens holding the French State diploma of Doctor of Medicine have been permitted to practise.

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees
Faculté royale de Médecine Moha Vithei Préah Bat Monivong PHNOM PENH	1946	31	264	60	25* 5**	None

\* Officiers de santé.

\*\* Docteurs en médecine.

## CANADA

### Introductory data\*

Population . . . . .	17 909 000
Number of medical schools . . . . .	12**
Number of physicians . . . . .	19 700
Number of medical graduates . . . . .	874
Population per medical school . . . . .	1 492 000
Population per physician . . . . .	910

\* 1960 figures.

\*\* Not including the medical school at the University of Sherbrook, Quebec, which was scheduled to open in 1962.

Medical studies in Canada lead to the degree of Doctor of Medicine (M.D.). The duration of these studies varies, ranging from four to six years. This difference in the time-table may be accounted for in part by the fact that some of the schools provide for one or two years' pre-medical work before the actual medical studies begin, whereas others require that a student should have completed his pre-medical training (which is almost always taken at the same university as the medical course) before being admitted to the medical school. Some schools require, in addition, that a period of internship be completed before a degree is conferred.

### Administration

All the Canadian medical schools are associated with universities, from which they draw most of their financial support. Some of these universities are government-supported, and derive their funds from the government of the province in which they are located. Others are privately operated and financed. Some financial assistance is available for needy students.

The academic year begins in September and ends in June. The language of instruction is English, except at Montreal and Laval Universities, where it is French.

### Conditions of admission

After finishing his secondary studies, a candidate for admission to a medical school must complete at least three years of higher education in a college or university, studying natural and physical sciences, social sciences and humanities, languages, mathematics, and general cultural subjects.

In the province of Quebec, primary studies cover a period of seven years, at the end of which those students seeking an academic education enter a classical college for an eight-year course, from which they graduate with the *baccalauréat* (secondary-school certificate).

Owing to the fact that some of the Canadian medical schools themselves arrange pre-medical courses under their own auspices, whereas others consider

that a student should be versed in pre-medical subjects before entering medical school, admission requirements vary considerably. Those schools where medical subjects only are taught insist that a student should have had a minimum of two years of pre-medical training in arts and sciences at university level. Those schools providing pre-medical courses under their own auspices require that a student should have completed his secondary-school studies before admission. At Montreal and Laval Universities the requirement for admission is possession of the *baccalauréat*, which is equivalent to both a secondary-school education and the pre-medical courses in the other universities.

In general, the pre-medical years, wherever they are spent, comprise the study not only of the basic sciences (i.e., chemistry, physics and biology), but also of several subjects of broader cultural value, such as history, anthropology, and languages.

In both types of school, considerable attention is paid to the personality of the candidate and his general suitability for a medical career, as well as to his academic record. Admission to the medical schools is limited, since there are more applicants than vacancies, and some schools therefore require that applicants pass the Medical College Admission Test, held twice yearly and administered by the Psychological Corporation, New York, USA. In general medical schools do not allow students to begin their medical studies before they have reached the age of 18 or after they have attained the age of 30. However, this is not a hard and fast rule, particularly in those schools offering pre-medical training along with the regular medical studies.

Most medical students are citizens of Canada, but a small number of vacancies are available for students from other countries of the Commonwealth, from the United States of America, as well as for students coming under an external programme. The conditions under which such foreign students obtain entry to Canadian medical schools vary in minor respects, but, in general, medical schools will accept a foreign student if the admitting authority is satisfied that he has a bachelor's degree that would be considered equivalent to the bachelor of science degree, given by the university to which application has been made, or alternatively pre-medical qualification at a comparable level. Some schools may require a student to take a year in arts and science in the university concerned before he is admitted to the faculty of medicine, but this is not to be regarded as a general condition.

## Curriculum

Although there is no officially established universal curriculum for the Canadian medical schools, a general pattern is observable. During the first two years of the medical course, devoted in the main to the pre-medical subjects, instruction in the several schools is on roughly the same lines. Anatomy and physiology are generally covered during the first and second years of the course, whereas histology, embryology, and biochemistry are taught during the first year, when, quite frequently, introductory courses in the psychological and social aspects of medicine are also given. Studies during the second year of the course include the subjects of pathology, pharmacology and bacteriology, as well as an introduction to internal medicine and surgery.

The clinical subjects are studied during the third, fourth and, where required, fifth year of the course. During the clinical period, a student gains first-hand experience of internal medicine, surgery, obstetrics and other branches of medicine in the wards and clinics of the teaching hospital, as well as acquiring theoretic knowledge through lectures. The order in which courses are arranged during the clinical period differs in the various hospitals. In general, however, the third year is taken up with paediatrics, ophthalmology, preventive medicine, otorhinolaryngology, radiology, and psychiatry, as well as medicine, surgery, and obstetrics. During the fourth year, a candidate studies therapeutics, forensic medicine, orthopaedics, dermatology, gynaecology, medical ethics and economics and, lastly, anaesthesiology, while continuing his practical work in medicine, surgery, and obstetrics. In the event of a fifth year's being required, the curriculum comprises further courses in the various subjects already covered, but with greater emphasis on their practical aspects.

In summary, the final years are now largely clinical clerkship years in which the clinical specialties are studied; lectures are progressively reduced in importance, and bedside clinics, group conferences and similar forms of teaching exercises, in which the students have increasing individual participation, are emphasized.

### Examinations

Examinations are held at the end of each academic year and cover the subjects studied during that period. Some of the medical schools hold final coincident examinations that both qualify the student for his degree and satisfy the examination requirements of the Medical Council of Canada.

### Qualification and licence to practise

The registration of medical practitioners is a provincial rather than a national responsibility and every province has a medical council authorized to decide on the suitability of candidates for such registration. The Medical Council of Canada was established to examine professionally, on behalf of the provincial medical councils, persons certified by the latter as eligible for examination. Such certification usually requires the applicant to have served one year's internship in a hospital approved by the province in which he seeks a licence to practise.

The examinations of the Medical Council lead to enrolment on the Canadian Medical Register as Licentiate of the Medical Council of Canada and consequent eligibility for registration as a practitioner by the provincial medical council sponsoring the candidate's admission to examination, or by any other provincial medical council or territorial registration authority regarding him as suitable for such registration.

Nationals with foreign diplomas may be admitted to practice on submitting to the provincial licensing body proof of satisfactory pre-medical education, possession of a diploma from a foreign medical school of recognized standing, possession of the Licentiate of the Medical Council of Canada Certificate (the acquisition of which usually implies having served one year's internship in a hospital approved by the province), and evidence of satisfactory personal character.

Foreigners who have qualified in Canada are generally subject to the same conditions for admission to practice as Canadian citizens qualifying in Canadian medical schools. In two provinces a Declaration of Intention of becoming a Canadian citizen is required and in one other Canadian citizenship is mandatory.

Foreigners with foreign qualifications may be admitted to practice generally under the same conditions. Additionally, however, in one province two years' internship (one in the province) is required, in two others a Declaration of Intention of becoming a Canadian citizen is required and in one other Canadian citizenship is mandatory.

Six provinces have established reciprocity with the General Medical Council of the United Kingdom, permitting those on the Home or General List who can produce a Certificate of Good Standing to apply for registration without further examination. In one of these provinces such registration also includes those on the Commonwealth and Foreign Lists of the General Medical Council, but in the others, with some specified exceptions, the latter Lists are excluded.

As a general rule medical graduates are under no obligation to serve the State (or province) in any way before they set up in private practice. In a few provinces undergraduates may receive financial aid, particularly in their final years, provided they agree to make return of service over an equivalent period in the province concerned. The Armed Services also have a programme of assistance for medical students covering the final four years of their training, for which three years' subsequent service in the Forces is required.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (\$Dollars)</i>
Faculty of Medicine University of Alberta EDMONTON, Alberta	1913	75 f 225 p	214	65	52	425-525
Faculty of Medicine Dalhousie University University Avenue HALIFAX, Nova Scotia	1867	36 f 151 p	254 m 15 f	60 m 5 f	49	544.50 (R) 744.50 (NR)
Faculty of Medicine Queen's University KINGSTON, Ontario	1854	49 f 63 p	294 m 36 f	64	52	425-550
Faculty of Medicine University of Western Ontario 346, South Street LONDON, Ontario	1881	39 f 112 p	218 m 24 f	60	54	675
Faculté de Médecine de l'Université de Montréal 2900, boulevard du Mont-Royal MONTRÉAL, Québec	1843	27 f 273 p	485 m 53 f	122	109	525-300

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
Faculty of Medicine McGill University 3640, University Street MONTREAL 2, Quebec	1829	42 f 72 p	414	110	95	600
Faculty of Medicine University of Ottawa OTTAWA, Ontario	1945	32 f 141 p	188 m 26 f	70	48	595
Faculté de Médecine de l'Université Laval QUÉBEC, Québec	1853	20 f 216 p	520 m 29 f	125	140	500
College of Medicine University of Saskatchewan SASKATOON, Saskatchewan	1926	87 f 121 p	115 m 12 f	39	28	480-530
Faculty of Medicine University of Toronto TORONTO 5, Ontario	1843	100 f 460 p	746 m 100 f	170	139	700
Faculty of Medicine University of British Columbia VANCOUVER 8, British Columbia	1950	67 f 295 p	184 m 21 f	58	55	551
Faculty of Medicine University of Manitoba Bannatyne Avenue WINNIPEG, Manitoba	1883	45 f 280 p	175 m 13 f	54	53	540-550



## CEYLON

## Introductory data\*

Population . . . . .	9 896 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	2 201
Number of medical graduates . . . . .	101
Population per medical school . . . . .	9 896 000
Population per physician . . . . .	4 500

\* 1960 figures.

Medical education in Ceylon lasts for six years, including a one-year preparatory course for the First or Pre-medical Examination, and leads to the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.). These degrees are recognized by the General Medical Council of the United Kingdom as qualifying for registration in the Medical Register (Commonwealth List).

## Administration

The University of Ceylon is an autonomous body, receiving an annual grant from the Ceylon Parliament. The Faculty of Medicine is headed by a Dean, who is elected by the teaching staff of the faculty from among heads of departments of instruction of the Faculty. He holds office for three years and is eligible for re-election. The Faculty consists of fifteen departments of instruction, each headed by a professor. These departments are (1) Anatomy, (2) Physiology, (3) Pharmacology, (4) Pathology, (5) Forensic Medicine, (6) Public Health, (7) Medicine, (8) Surgery, (9) Obstetrics and Gynaecology, (10) Dental Surgery, (11) Prosthetic Dental Surgery, (12) Bacteriology, (13) Parasitology, (14) Biochemistry, and (15) Paediatrics.

The academic year begins in June and ends in March. The language of instruction is English.

## Conditions of admission

In order to be admitted to the Faculty of Medicine, a student must have passed the Ceylon Government Senior School Certificate Examination (obtained after five years of secondary education, preceded by six years of primary school), with credit passes in five approved subjects, including English, or an equivalent examination, as well as a Combined First M.B. and Preliminary Examination consisting of a test in four subjects—namely, chemistry, physics, botany and zoology—and a general paper including an essay in Sinhalese, Tamil, or English.

Foreign students are admitted on the same basis as Ceylon students.

### Curriculum and examinations

The first eighteen months are devoted to anatomy and physiology, and end with the Second M.B. Examination in these subjects.

During the third and fourth years, the course includes: Part I, Pharmacology; Part II, Pathology and Bacteriology; and Part III, Public Health, Parasitology, and Forensic Medicine. The Third Examination covers all these three parts, which may be taken separately or together.

The Final Examination covers medicine, surgery, midwifery and gynaecology. The prescribed courses leading to this examination are held during the third, fourth and fifth years of the curriculum, and include (in addition to lectures and ward work in medicine, surgery, and midwifery) instruction in the following: infectious diseases, paediatrics, dental surgery, tuberculous diseases, ophthalmology, otorhinolaryngology, dermatology, venereal diseases, leprosy, psychological medicine, anaesthetics, and vaccination. During these last three years of the course, students must perform clerkships and dresserships in the clinical subjects.

### Qualification and licence to practise

Those students who pass the final examination receive the degrees of M.B., B.S. These entitle their holder to be provisionally registered as a medical practitioner in Ceylon. Full registration is granted after one year's internship in an approved hospital, and a subsequent period of five years' State service is required. Nationals with foreign diplomas may be permitted to practise in Ceylon provided they are eligible for registration by the General Medical Council of the United Kingdom. Foreigners with foreign qualifications may be permitted to practise in Ceylon, but there are restrictions on the issue of visas. Foreigners who qualify in Ceylon may practise in the country provided they are granted the necessary visa.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Faculty of Medicine University of Ceylon COLOMBO 3	1870	86 f 105 p	745 m 222 f	287	101	None

## CHILE

## Introductory data\*

Population . . . . .	7 627 000
Number of medical schools . . . . .	4
Number of physicians . . . . .	4 250
Number of medical graduates . . . . .	280
Population per medical school . . . . .	1 906 000
Population per physician . . . . .	1 800

\* 1960 figures.

Medical education in Chile lasts for seven years and leads to the degree of *Médico Cirujano* (Physician and Surgeon).

## Administration

All four Chilean schools of medicine provide the full seven-year curriculum, but only the State-owned University of Chile, which is administered by a Rector and a University Council, is empowered to hold national examinations and to deliver the final degree. The other two are private universities, but receive some financial support from the State. The medical faculties are headed by deans, elected by the professors.

The academic year begins in March and ends in December.

## Conditions of admission

Candidates for admission to a school of medicine must hold the *bachillerato* (obtained after six years of secondary education, preceded by six years of primary school) with special mention in biology, and are also required to take a written entrance examination. There are invariably three to four times more candidates than vacancies, and selection is therefore made on the basis of marks obtained during the last three years at secondary school, in the examination for the *bachillerato*, and in the entrance examination itself. The latter examination is a contest based on questions of knowledge in biology, physics and chemistry; a test covering other subjects of general education is also given.

The Faculty of Medicine of the University of Chile admits ten foreign students each year. Candidates for admission must first satisfy the conditions of entry for a school of medicine in their home country and, secondly, forward in advance statements showing the qualifications obtained in their earlier studies. Only the best candidates are admitted.

## Curriculum

The curriculum is divided into three periods, as follows:

*Pre-medical period* (first and second years): chemistry; physics; biology (including statistics); anatomy; histology; embryology; physiology and biochemistry

*Pre-clinical period* (third year): general pathological anatomy; physiopathology; bacteriology; parasitology; pharmacology; semeiology or physical diagnosis.

In these first three years, teaching is by lectures, seminars in small groups, practical work, research projects, and field work.

*Clinical period* (fourth to seventh years): pharmacology; special pathological anatomy; medicine; surgery; obstetrics; paediatrics; preventive medicine; psychiatry; and specialty subjects.

A student attends clinical instruction in hospital for five hours each day, and is given progressive responsibility, under supervision, for the care and follow-up of a few patients. On four afternoons each week he has to do theoretical and practical work in psychiatry, neurology, preventive medicine, otorhinolaryngology, ophthalmology, orthopaedics, phthisiology and dermatology.

The period of clinical instruction described above extends over the full three years. The fourth year is devoted entirely to work as an intern and during this period the student who is no longer receiving theoretical instruction must devote all his time to the care of hospital patients or clinical out-patients under the supervision of members of the teaching staff of the hospital.

## Examinations, qualification and licence to practise

Examinations are held at the end of each academic year and cover all the subjects studied. They include a practical and a written examination. Students cannot sit for the written examination unless they have succeeded at the practical examination. They cannot begin a new year of study until they have passed the final examinations of the preceding year's course.

At the end of their internship students have to sit for an examination in medicine, surgery, paediatrics and obstetrics. This examination is oral and practical, and candidates are examined by the teacher responsible for their respective courses. Students who have passed these four examinations also have to pass a final examination to obtain the diploma of Physician and Surgeon. This is held before a board of five professors, the chairman of which is the Dean of the Faculty of Medicine of the University of Chile—the only institution authorized to confer the degree. Students from private universities may also sit for this examination if they wish to obtain the diploma of Physician and Surgeon, which entitles them to practise medicine in Chile.

Chilean nationals who hold a foreign medical degree must spend a year as interns and pass the Chilean final examinations to secure its recognition. Foreign nationals who hold a foreign degree are entitled to work only in hospitals, if they are engaged by the Government. If, however, they take Chilean nationality, as they are entitled to do after five years' residence in the country, recognition of their qualifications may be granted on the same conditions as those applying to

Chilean nationals who have graduated at a foreign university. Foreigners who hold the diploma of Physician and Surgeon of the University of Chile may practise medicine in Chile.

Graduates in medicine are under no obligation to serve the State before engaging in private practice unless they wish to enter the Government medical service. In that case they must practise for the first five years after graduation in the hospitals of towns with less than 200 000 inhabitants.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Escudos)</i>
Facultad de Medicina de la Universidad de Concepción Casilla 127 CONCEPCIÓN	1924	20 f 70 p	182 m 30 f	68	38	15
Facultad de Medicina de la Universidad Católica de Chile Casilla 114-D SANTIAGO	1930	60	180	35	21	44.50
Facultad de Medicina de la Universidad de Chile Santos Dumont 999, 5° piso SANTIAGO	1833	30 f 420 p	840	150	221	15
Facultad de Medicina de la Universidad de Chile VALPARAÍSO	1957	8	25	25	—	15

## CHINA (TAIWAN)

## Introductory data\*

Population . . . . .	10 612 000
Number of medical schools . . . . .	4
Number of physicians . . . . .	6 901
Number of medical graduates . . . . .	401
Population per medical school . . . . .	2 653 000
Population per physician . . . . .	1 500

\* 1960 figures.

## Historical background

While some form of medical training has existed in China for hundreds of years, medical education did not begin to develop on modern scientific lines until late in the nineteenth century. Among the pioneering medical institutions, the National Peiyang Medical College was inaugurated in 1893, and its predecessor, the Viceroy's Hospital Medical School, in 1881.

After the founding of the Republic in 1912, the number of medical schools—national, provincial and private—grew steadily. Most of them were established and administered by foreign medical missionaries. Each pursued its own system, modelled on an Anglo-American, German-Japanese, or French pattern, using different languages in teaching. The length of the course varied from four to seven years.

In 1913 the Rockefeller Foundation sent a medical education mission to China to make a general survey of the medical situation in the country. As a result of the recommendation of the mission, the Peking Union Medical College was established and organized after the best United States pattern of medical education. The curriculum consisted of three years' pre-medical studies and a five-year medical course including a one-year hospital internship. The College also operated a School of Nursing to prepare students primarily for teaching and administration in nursing. Apart from the undergraduate courses in medicine and nursing, the College and its teaching hospitals offered post-graduate training not only in basic medical sciences but also in clinical medicine to prepare teachers and specialists. Its influence has been enormous and nation-wide. It did much to raise the standards of medical and nursing education and medical care as well as to promote public health work in the country.

In 1928, when the country was unified, the National Government in Nanking decided to take steps to improve medical education. As a result of efforts made by the Ministries of Education and Health, a six-year standard course was introduced. The Chinese language was recommended as the main medium of instruction and medical terms were standardized in that language. The four-year course that had already been adopted by some schools was given only temporary

recognition and was later abandoned or modified. In addition, many institutes were gradually developed for post-graduate training.

During the Sino-Japanese War of 1937-45, most of the medical teaching institutions were either destroyed or badly damaged. By the end of 1948, however, some forty-four medical schools were restored and were again in operation.

### Introduction

In Taiwan there are four medical colleges. Of these the National Taiwan University College of Medicine carries out a seven-year programme, including a two-year pre-medical course, while the other three follow the original six-year system. The students of the National Defense Medical Center are required to undergo military training for six months before taking the regular course.

### Administration

With the exception of the National Defense Medical Center, belonging to the Ministry of National Defense, the medical teaching institutions of Taiwan are under the supervision of the Ministry of Education, which is in charge of their improvement.

A college of medicine in a university is headed by a dean, who is responsible to the president of the university. An independent medical college is administered by a director, responsible to his own board and to the Minister of Education.

### Conditions of admission

Primary and secondary education each last six years. To be admitted to a medical college, the applicant must have graduated from a recognized senior middle school or its equivalent and have passed the entrance examination, which is held annually in the latter part of July. In Taiwan, entrance examinations of national medical colleges are usually held collectively with those of all the other State colleges and universities.

Foreign students may enter the medical course if sent by international cultural or educational organizations, under arrangements made with the Ministry of Education through the embassies or consulates of the Republic of China, and upon application and presentation of transcripts, diplomas and photographs. Such students should have a knowledge of the Chinese language.

### Curriculum

The student is required to take a pre-medical course, lasting one or two years, during which he studies physics, chemistry (general, organic and analytical), mathematics, biology, general psychology, humanities, and languages.

He then follows a two-year course in the basic medical subjects: biochemistry, histology, embryology, anatomy, physiology, pathology, bacteriology, parasitology, pharmacology, and medical psychology.

The subsequent clinical period (of two years' duration) is taken up with the study of clinical diagnosis, internal medicine, surgery, obstetrics, and gynaecology,

paediatrics, ophthalmology, otorhinolaryngology, dentistry, dermatology and venereology, urology, neurology and psychiatry, forensic medicine, geriatrics, radiology, and public health. (Nowadays, increasing emphasis is being given to public health and preventive medicine.)

The final year of the medical course is spent in a "rotating" internship at the teaching hospital or at one of the other affiliated hospitals.

### Examinations and qualification

All four schools give regular examinations, which are written, oral, practical, or a combination of all three, according to the nature of the subject.

After having completed the prescribed courses, passed the graduation examination and presented a thesis, the student is awarded the degree of Bachelor of Medicine or of Bachelor of Science in Medicine. In addition to the degree, the National Defense Medical Center confers a military rank on its graduates. A master's degree may be obtained after an additional two-year course in one of the research institutes.

### Licence to practise

Graduates from the National Defense Medical Center, who receive six and a half years of free medical education, are obliged to serve the State for ten years. Graduates from other medical colleges have no such obligations. However, upon graduation, every male physician—like all other male citizens—is required to serve in the army for eighteen months.

Nationals with foreign diplomas from recognized medical colleges may be permitted to practise in Taiwan upon presentation of their diplomas. They must then apply to the Ministry of Examination for a medical qualification certificate, which is exchanged for a professional certificate from the Ministry of Interior.

Foreigners with foreign qualifications may be permitted to practise under the same conditions as nationals with foreign diplomas, or they may present their medical licences issued by foreign governments and apply to the Ministry of Interior for a recognition certificate. Thereafter they apply to the Ministry of Examination for a medical qualification certificate and exchange this for a professional certificate from the Ministry of Interior.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (New Taiwan dollars)</i>
Kaohsiung (Takau) Medical College Shih Chuan I Road KAOHSIUNG	1954	71 f 37 p	717 m 75 f	158	127	5040
College of Medicine National Taiwan University No. 1, Jen Ai Road, 1st section TAIPEI	1945	130 f 36 p	590 m 81 f	97	69	600



<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (New Taiwan dollars)</i>
National Defense Medical Center P.O. Box 7432 TAIPEI	1902	187 f 36 p	802 m 282 f	220	205	None
Taipei Medical College No. 250, Lane 3, Section II Keelung Road TAIPEI	1960	22 f 13 p	47 n. 3 f	47 m 3 f	—	

## COLOMBIA

### Introductory data\*

Population . . . . .	14 132 000
Number of medical schools . . . . .	7
Number of physicians . . . . .	5 970
Number of medical graduates . . . . .	442
Population per medical school . . . . .	2 019 000
Population per physician . . . . .	2 400

\* 1960 figures.

Medical education in Colombia lasts for six years and leads to the degree of *Doctor en Medicina y Cirugía* (Doctor of Medicine and Surgery).

### Administration

The National Government is wholly responsible for the financial support of the National University of Colombia and also contributes financially towards the operation of the five provincial universities. Administration follows more or less the same pattern in the National and provincial universities. Each is administered by a Governing Council (*Consejo Directivo*), which determines policy, and an Academic Council (*Consejo Académico*), which has advisory functions and makes recommendations to the Governing Council. The Dean of the Faculty of Medicine of the National University is appointed for one year by the Governing Council from a short list of three names submitted by the Rector of that University. The deans of the faculties of the provincial universities, all of whom serve part time, are appointed for indefinite periods by the governors of the respective provinces.

At the Javeriana University, major policy is determined by the Rector, the Vice-Rector, and the Provincial—that is, the head of the Jesuit Order in the province. Each faculty has its own Advisory Council, consisting of the Rector of the University, the Vice-Rector, the Dean of the Faculty, the Secretary of the Faculty and two titular professors.

The academic year runs from October to June or July at some of the universities, and from February to November or December at the others.

### Conditions of admission

In order to be admitted to medical studies, a student must hold the *bachillerato superior* (obtained after six years of secondary education, preceded by five years of primary school) and must pass an entrance examination.

Foreign students may be admitted to medical studies in Colombia on condition that their secondary studies have been completed to the satisfaction of the Colom-

bian Ministry of Education and that they pass an entrance examination for the medical school in question.

### Curriculum

The curriculum is arranged as follows:

*First year*: anatomy; histology and embryology; biochemistry; medical physics; medical drawing

*Second year*: anatomy; physiology; bacteriology; parasitology; general pathology

*Third year*: morbid anatomy; clinical semeiology; medicine; tropical medicine

*Fourth year*: clinical and tropical medicine; clinical dermatology and syphilology; surgical pathology; operative surgery and experimental surgery; pharmacology and therapeutics

*Fifth year*: obstetrics; clinical surgery; ophthalmology; otorhinolaryngology; urology; forensic medicine; medical ethics; diagnostic radiology

*Sixth year*: clinical obstetrics and gynaecology; clinical paediatrics; clinical orthopaedics and traumatology; clinical neurology; psychiatry and psychosomatic medicine; hygiene and public health; phthisiology.

### Examinations and qualification

Examinations in each subject are held at the end of the pertinent course. With a few exceptions, these examinations are written.

The degree obtained after success in the final qualifying examination, held at the end of the sixth year of the course, is that of *Doctor en Medicina y Cirugía*.

### Licence to practise

Licence to practise is granted to national and foreign medical graduates who are holders of the Colombian degree of *Doctor en Medicina y Cirugía*, after fulfilment of one of the following conditions:

(1) completion of one year's service as resident medical officer in a health centre or medical station designated by the Ministry of Public Health;

(2) completion of one year's service in a health campaign organized by the Ministry of Public Health or by a faculty or school of medicine or by the Directorates and Departments of the Ministry of Public Health and approved by the Ministry;

(3) completion of two additional years' service as intern in a university, departmental, municipal or private hospital, such hospital to be duly registered and approved by the Ministry of Public Health;

(4) completion of one year's medical practice in a population centre of less than 10 000 inhabitants, with permanent residence in the locality;

(5) completion of at least two years' specialized studies or basic specialization training in some branch of medicine, or teaching duties in a university hospital or faculty of medicine.

Colombian nationals with foreign diplomas obtained in schools of medicine in countries with which Colombia has reciprocal agreements or conventions

concerning university degrees may practise after a period in the public health services as indicated above.

Colombian nationals with foreign medical diplomas obtained in countries with which Colombia has no reciprocal agreements relating to university degrees may be accepted in the public health service if the Colombian Association of Medical Faculties recognizes the competence of the medical school in which the diploma was obtained. Otherwise the person concerned must pass a qualifying examination and work for a period in the public health service before being entitled to practise.

Foreigners holding diplomas obtained in foreign medical schools recognized as competent by the Colombian Association of Medical Faculties must take the qualifying examination and serve in the public health service.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pesos)</i>
Facultad de Medicina de la Pontificia Universidad Javeriana Carrera 7a, 40-62 BOGOTÁ, Cundinamarca	1942	212	564	100	80	2000
Facultad de Medicina de la Universidad Nacional de Colombia Ciudad Universitaria Apartado 400 BOGOTÁ, Cundinamarca	1827	48 f 168 p	882	100	192	1510
Facultad de Medicina de la Universidad del Valle Cali, Valle	1950	93 f 85 p	266	44	18	80-8000
Facultad de Medicina de la Universidad de Cartagena CARTAGENA, Bolívar	1846	22 f 53 p	296 m 11 f	50	62	2000
Facultad de Medicina de la Universidad de Caldas MANIZALES, Caldas	1950	18 f 48 p	148	50	18	222 (minimum)
Facultad de Medicina de la Universidad de Antioquia Apartado postal 205 MEDELLÍN, Antioquia	1871	74 f 28 p	436 m 14 f	70	55	120-1000
Facultad de Medicina de la Universidad del Cauca Calle 5a, 4-10 POPAYÁN, Cauca	1949	23 p	192 m 14 f	—	17	—

## CONGO (LEOPOLDVILLE)

## Introductory data\*

Population . . . . .	14 139 000
Number of medical schools . . . . .	2
Number of physicians . . . . .	223
Number of medical graduates . . . . .	6**
Population per medical school . . . . .	7 070 000
Population per physician . . . . .	63 000

\* 1960 figures.

\*\* 1962 figures.

Medical education in the Congo (Leopoldville) lasts for seven years and leads to the diploma of *Docteur en Médecine, Chirurgie et Accouchements* (Doctor of Medicine, Surgery and Midwifery).

## Administration

The Faculty of Medicine at Leopoldville is part of the Lovanium University, a private institution financed out of public and private funds. The University does not depend on any ministerial department. At its head there is a Rector, assisted in the exercise of his functions by the Rectorial Council, which includes the Rector, Vice-Rector, Secretary of the University, deans of faculties, heads of institutes, directors of the University clinics and director of students' accommodation.

Each faculty is administered by a Faculty Board composed of all the ordinary and extraordinary professors and of all the lecturers. The Board takes decisions on all questions concerning the faculty. It grants exemptions from courses of instruction and from practical work and authorizes the admission of students who may attend lectures but do not sit for degrees. The Board chooses from among its members the Dean and the Secretary. The Dean is elected by the faculty professors for a period of two years. The University clinics have their own administrative staffs and their own technical units.

The diplomas awarded by the University are recognized in Belgium by the Belgian Law of 14 July 1959 and are equivalent to the diplomas awarded by Belgian universities.

The official University of Elisabethville, set up by decree of October 1955, also includes a Faculty of Medicine, which was opened in October 1956.

The academic year lasts for thirty weeks and runs from October to July. The language of instruction is French.

## Conditions of admission

For admission to the Faculty of Medicine, candidates must either hold an approved certificate attesting that they have followed the full six-year secondary

course (sections: classics; Latin and mathematics; or Latin and science), or must pass an examination before a central board of examiners. Only those students who have followed a complete course of at least six years' study (but whose diplomas have not been approved) are eligible for this examination. There is no special entrance examination and the number of students is not in principle restricted. A medical certificate is not required.

In addition to those awarded by the Government, scholarships are made available to suitable students, both from the Congo (Leopoldville) and from the neighbouring countries of Central Africa, by the United States Agency for International Development and other bodies.

### Curriculum

During the first year studies are pursued at the Faculty of Science; the last year is essentially devoted to *stages* (probationary periods in the various clinical units). The curriculum is arranged as follows:

*First year* : rudiments of philosophy (logic); experimental physics (I); general biology (zoology); general biology (botany); general chemistry; elements of mathematics applied to biology; practical exercises in physics; practical exercises in general biology (zoology); practical exercises in general biology (botany); practical exercises in general chemistry; exercises in mathematics

*Second year* : rudiments of philosophy (psychology); experimental physics (II); elements of embryology (I); systematic human anatomy (I); general and special histology; experimental general physics including biophysics; medical entomology; practical exercises in physics; demonstrations in anatomy; practical exercises and microscopic demonstrations in histology; demonstrations and practical exercises in physiology; demonstrations and practical exercises in physiological chemistry; practical exercises in medical entomology

*Third year* : rudiments of philosophy (ethics); systematic human anatomy (II) and comparative anatomy; topographic human anatomy; special experimental physiology including comparative physiology; elements of embryology (II); physiological chemistry; helminthology; elements of mineralogy, geology and physical geography (optional); demonstrations in anatomy; demonstrations and practical exercises in physiology; practical exercises in physiological chemistry; practical exercises in helminthology

*Fourth year* : physiopathology and general therapeutics; pharmacology and pharmacodynamics (I); morbid anatomy; special pathology and therapeutics of internal diseases (I); general surgical pathology and therapeutics (I); special surgical pathology and therapeutics (I); bacteriology, virology and parasitology; medical propaedeutics and elements of radiodiagnosis of internal diseases; medical propaedeutics and elements of radiodiagnosis of surgical conditions; clinical medicine; clinical surgery; protozoology; microscopic exercises in morbid anatomy; post-mortem examinations; practical exercises in bacteriology and parasitology; practical exercises in medical propaedeutics; practical exercises in protozoology

*Fifth year* : clinical medicine; clinical surgery; special pathology and therapeutics of internal diseases (II); tropical medicine; tropical diseases clinic;

special surgical pathology and therapeutics; theory of obstetrics; clinical obstetrics; elements of neurology; clinical neurology; pharmacodynamics (I); practical exercises and demonstrations in pharmacology; exercises in medical propaedeutics; exercises in surgical propaedeutics

*Sixth year* : clinical medicine; clinical surgery; clinical obstetrics; elements of gynaecology; clinical gynaecology; gynaecological polyclinic (clinical stage); elements of paediatrics; clinical paediatrics; paediatric polyclinic (clinical stage); elements of ophthalmology and clinical work; pathological polyclinic (clinical stage); elements of otorhinolaryngology and clinical work; otorhinolaryngological polyclinic (clinical stage); elements of dermatology and clinical work; dermatological polyclinic (clinical stage); elements of psychiatry and clinical work; exercises in radiodiagnosis; theory and practice of surgical operations; elements of dentistry; clinical dentistry; medical laboratory exercises.

(At the Faculty of Medicine of the Lovanium University the students have also to follow either a course in religious knowledge or a course in ethics.)

*Seventh year* : dentistry; hygiene; forensic medicine; physiotherapy; clinical stage.

### Examinations

There are two examination sessions: in July and September. There is an oral examination and, where appropriate, a practical examination in each subject taught, at the end of the year. The examinations are controlled by the university. No candidate may sit for the fourth examination of the doctoral course at the close of the seventh year of studies unless he proves by certificate that he has passed a regular stage of four months at least in each of the three principal clinics and of four months in one or more ancillary clinics. Two stages cannot be followed at the same time. The stages of medicine and surgery may not coincide.

In case of failure a student may sit again at the three following sessions extending over the next two years; with the authorization of the Rector he may enter for a fifth time.

### Qualification

A student who has passed all the examinations obtains the diploma of Doctor of Medicine, Surgery and Midwifery. After confirmation by the Government the diploma confers the right to practise medicine without any additional examination.

The Faculty of Medicine of the Lovanium University awards specialist diplomas in the following subjects after stages of varying duration: internal medicine, surgery, and gynaecology and obstetrics. Specialist candidates may in certain circumstances be allowed to spend part of their stages abroad.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Francs)</i>
Faculté de Médecine de l'Université officielle d'Elisabethville ELISABETHVILLE	1956				—	*
Faculté de Médecine de l'Université Lovanium Kimuenza LÉOPOLDVILLE	1954	13	80		*	2000

\* Six students were due to graduate in 1962.



## COSTA RICA

## Introductory data\*

Population . . . . .	1 171 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	458
Number of medical graduates . . . . .	—
Population per medical school . . . . .	1 171 000
Population per physician . . . . .	2 600

\* 1960 figures.

Medical education in Costa Rica lasts for five years, not including a two-year pre-medical course, and leads to the degree of *Médico Cirujano* (Physician and Surgeon).

## Administration

The Faculty of Medicine is part of the University of Costa Rica. The relationship of the Faculty to the University is established by the Basic Statutes of the University (Estatuto Orgánico de la Universidad de Costa Rica), by the School Regulations (Reglamento Interno de la Escuela), and by an agreement issued by the University Council (Consejo Universitario), whose members are the deans of the eleven faculties forming the University. The University Council and the University Assembly (Asamblea Universitaria) are the responsible authorities of the Faculty of Medicine, of which the chief executive officer is the Dean.

The Faculty of Medicine is financed by the University, which is governed by the law of financial administration of the State. The budget of the University is established by the Ministry of Finance (Departamento de Contaduría), then submitted to the University Council, to be reviewed and given final approval by the Comptroller-General (Controlaría General de la República). The income of the University is established by the Constitution of the Republic, which states that the University of Costa Rica is autonomous in regard to the management of its funds.

The academic year begins in March and ends in November.

## Conditions of admission

To qualify for admission to the medical school a student must be at least 18 years of age and not older than 35 years. He must satisfy the general requirements for admission to the University of Costa Rica—that is, be in possession of the *bachillerato* (secondary-school certificate), obtained after six years of secondary school (preceded by a six-year primary course); in addition he must follow a two-year pre-medical course in biological sciences at the Faculty of Science and Arts. A complete medical examination and vaccinations against smallpox and typhoid fever are also required.

At present the number of students admitted to the first year is limited to forty. These are selected on the basis of: (a) a health examination, both physical and mental; (b) marks obtained in the pre-medical course; (c) a test of professional aptitude given by the Department of Welfare and Orientation; and (d) an interview before the Commission of Admission of the Faculty of Medicine.

Students coming from foreign universities whose studies are incomplete and who wish to pursue the medical course at the Faculty of Medicine of the University of Costa Rica must fulfil the above requirements. The credits they obtained elsewhere are evaluated and, if necessary, they have to pass a validation examination. To this effect a Commission is named for the relative subjects and at the appropriate level.

Foreign students may enter the medical course under the same conditions as Costa Rican citizens. Since the number of places available is restricted, however, the number of foreigners admitted to the first year is limited to five.

### Curriculum

Pre-medical studies of two years' duration are given at the Faculty of Science and Arts and cover the following subjects:

*First year* : Spanish; philosophy; cultural history; sociology; general chemistry; general biology; mathematics

*Second year* : organic chemistry; chemistry, analytical qualitative; chemistry, analytical quantitative; general physics; zoology; general botany.

The medical curriculum proper extends over five years and consists of three parts—pre-clinical, clinical and internship. The first two are each of two years' duration; internship occupies the fifth year. The curriculum is arranged as follows:

*First year* : anatomy; biochemistry; physiology; medical orientation; medical library

*Second year* : medical orientation; microbiology; parasitology; pharmacology; pathological anatomy; physiopathology and propaedeutics; clinical laboratory; biostatistics; medical psychology; preventive medicine; introductory surgery

*Third year* : preventive medicine; medicine; surgery; paediatrics; obstetrics; gynaecology; psychiatry; radiology

*Fourth year* : preventive medicine; medicine; surgery; paediatrics; obstetrics; gynaecology; psychiatry; legal medicine

*Fifth year* : deontology; history of medicine; internship.

The teaching, which is both theoretical and practical, is organized in such a way that the subjects are not taught separately but *en bloc*; thus, for example, the first semester (March-June) of the first year is devoted exclusively to anatomy, macroscopical and microscopical (histology), neuro-anatomy, and embryology. Physiology, biochemistry, medical orientation and medical library occupy the second semester. Regular attendance at courses is compulsory.

### Examinations

There are two sessions of examinations: regular, which covers all subjects studied during the academic year, and supplementary, for students who fail in the regular session. If a student fails in one or more subjects in the supplementary

session, he must repeat the year in those subjects (both theory and practical work). He cannot proceed to the next year of the course unless he has succeeded in all the required examinations for the current year.

### Qualification and licence to practise

Students who complete the whole medical course and pass all the examinations obtain the degree of *Médico Cirujano*. This degree confers the right to practise. By law all medical graduates must serve one year in a rural health centre, designated by the Ministry of Health.

Nationals with foreign diplomas may be authorized to practise after an examination before the College of Physicians and Surgeons (Colegio de Médicos y Cirujanos). (In future this examination will be held by the University.) In addition, they must serve one year in a rural zone.

Foreigners with foreign qualifications may be authorized to practise medicine in Costa Rica if they come from countries with which the relevant reciprocity has been established (Spain, Colombia and all Central American countries). Foreigners coming from other countries must take citizenship (for which five years' residence in Costa Rica is required) before applying to sit for the examination qualifying them to practise.

Foreigners who have qualified in Costa Rica must become citizens of Costa Rica and serve for one year in a rural health centre before the licence to practise is granted.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Colones)</i>
Facultad de Medicina Universidad de Costa Rica Ciudad Universitaria SAN JOSÉ	1960	7 f 29 p	14	14	—	1.45 per subject; 4.25 laboratory fees

## CUBA

## Introductory data\*

Population . . . . .	6 797 000
Number of medical schools . . . . .	1**
Number of physicians . . . . .	6 609
Number of medical graduates . . . . .	335
Population per medical school . . . . .	6 797 000
Population per physician . . . . .	1 000

\* 1960 figures.

\*\* Not including the school at Santiago, which opened in 1962.

Medical education in Cuba lasts for six years and leads to the degree of *Doctor en Medicina* (Doctor of Medicine).

## Administration

Cuban universities are autonomous institutions, subsidized by the National Government. The highest authority in the university system is the Governing Board (Junta Superior de Gobierno), which is composed of four members of the teaching staff and four students. One of the said teaching staff acts as Chairman and Rector, another as Vice-Chairman and Vice-Rector; the technical and administrative Secretary of the university acts as Secretary to the Board. The specific functions of the Board are as follows:

(1) To ensure that the university is run in such a way that it may achieve its aims, and to supervise all its activities.

(2) To exercise authority over and co-ordinate the academic, technical and administrative personnel, the Board to be responsible for appointments and dismissals in accordance with the present University Statutes and applicable directives.

(3) To veto decisions of the Curriculum Committee (Comisión Superior de Docencia) when such decisions are considered inequitable. In such cases the challenged decision may be referred back to the said Committee, which may again adopt it; when this happens the Governing Board may finally cancel the decision by a second veto.

(4) To propose to the Universities Council (Consejo Superior de Universidades) the subjects on which publications should be issued for university use.

(5) To convene the General Assembly (Claustro General) of the university, as it may deem necessary, to consider subjects of common interest to the university.

(6) To propose to the Universities Council those changes which, in the light of experience and of recommendations by university bodies, may be deemed desirable for the better functioning of the university.

The Rector is the highest executive authority in the university; he represents the university with respect to all official acts and is responsible for the co-ordination of the activities of the various university bodies.

Each faculty is under the immediate authority of its Governing Board (Junta de Gobierno de la Facultad), which is composed of three professors and two students. One of the professors acts as Chairman of the Board and Dean; another acts as Vice-Dean, replacing the Chairman in his absence; the others are voting members. The Administrative Secretary of the faculty acts as Secretary to the Board; he attends the Board meetings and is entitled to speak but not to vote.

The Board supervises the operation of the schools without encroaching upon the competence of their directors and curriculum committees; it settles all conflicts concerning the administrative aspects of the teaching, co-ordination of the work of the faculty personnel, utilization of lecture rooms, museums and laboratories, class time-tables, etc., which may arise between the schools of the faculty. Settlement of disputes concerning the content of the teaching programme is the responsibility of the Curriculum Committee, to which such disputes are referred by the Governing Board of the faculty. The Board administers the funds allocated to the faculty and its schools and departments from the university budget; maintains academic discipline among faculty and technical personnel as well as among the faculty's students; supervises and directs the faculty's administrative staff in co-ordination with the university services and administrative authorities; convenes the General Assembly of the faculty (Claustro de la Facultad), which meets at least once a year at the end of the course to evaluate the general results of the said course and discuss the development of academic activities. The Assembly meets on other occasions, whenever this may be deemed necessary, for the discussion of important subjects of common interest to the faculty.

The Dean, who is the highest executive authority of the faculty, is responsible for the co-ordination of the activities of the various faculty bodies.

The Faculty of Medical Sciences at the University of Havana comprises two schools—namely, the School of Medicine and the School of Stomatology. In 1962 a second medical school was opened within the University of Oriente at Santiago. Steps have been taken to provide hospital facilities in Santa Clara and to prepare the necessary teachers so that a school of medicine may be set up within the University of Las Villas.

The academic year begins in October and ends in June.

### Conditions of admission

To qualify for admission to the medical course the candidate must be at least 17 years of age and have obtained the Cuban *bachillerato en ciencias*, or a recognized foreign equivalent. The *bachillerato* requires eight years of primary and five years of secondary education. In addition to the *bachillerato*, the candidate must pass a competitive entrance examination.

Foreigners are admitted provided they have completed adequate pre-university studies. Their enrolment is subject to the approval of the Governing Board of the faculty.

### Curriculum

In 1962 a reform of higher education in Cuba came into force and the new curriculum has been implemented. It is so designed that a new type of physician

is trained, capable of solving the problems of preventive and curative medicine, aware of the direct relation of health to economic underdevelopment, and conscious of his role in a socialist society. Physicians are required to have a sound clinical basis and be adequately trained in fundamental branches of the profession. In order to attain this objective, medical students from the first semester onwards are trained by means of active and co-ordinated measures and procedures.

The curriculum covers six years, the first three being devoted to the so-called basic and pre-clinical subjects, and the last three to clinical medicine. Emphasis is laid on practical work, and the sixth year is devoted entirely to work and study in the hospitals, in direct contact with the patients.

The curriculum is arranged as follows:

#### *First year*

*First semester* : embryology (I); histology (I); anatomy (I); biochemistry (I); dialectical and historical materialism (I); foreign languages (I)

*Second semester* : embryology (II); histology (II); anatomy (II); biochemistry (II); dialectical and historical materialism (II); foreign languages (II)

#### *Second year*

*First semester* : anatomy (III); physiology (I); statistical methods; dialectical and historical materialism (III); political economics (I)

*Second semester* : pharmacology (I); physiology (II); general radiology; medical psychology; political economics (II)

#### *Third year*

*First semester* : pharmacology (II); clinical propaedeutics (I); pathological anatomy (I); microbiology (I); clinical laboratory

*Second semester* : parasitology; clinical propaedeutics (II); pathological anatomy (II); microbiology (II); organization of public health services; history of medicine

#### *Fourth year*

*First semester* : internal medicine (I); psychiatry; dermatology; hygiene (I)

*Second semester* : surgery (I); orthopaedics and traumatology; obstetrics and gynaecology; hygiene (II)

#### *Fifth year*

*First semester* : internal medicine (II); paediatrics (I); forensic medicine; ophthalmology

*Second semester* : surgery (II); paediatrics (II); otorhinolaryngology; urology

Attendance at courses and practical exercises is obligatory.

*Sixth year.* This is occupied by internship, and consists of hospital work and study in direct contact with patients, in accordance with the scientific methods of preventive and curative medicine. Students work under the supervision of the faculty staff especially designated by the schools' Curriculum Committee. Students must perform satisfactorily all the tasks entrusted to them in all the services in which they work, and attend practical demonstrations, meetings and seminars. The practical work comprises work in various services on a rotational basis and specialized work.

Sixth-year students are provided with board and lodging, are exempt from fees and receive a salary of 50 pesos per month. Students with family responsibilities receive adequate remuneration.

For the internship of the "rotating" type, students are divided into groups and assigned for three months to each of the following departments: medicine, paediatrics, surgery, and obstetrics and gynaecology. Each of these departments submits to the Curriculum Committee, for its approval, the study and work programme for each student during his period in the department, including work in the out-patient clinic, and care of emergency cases when on emergency duty.

A second type of internship—viz., "sixth-year specialization" (*sexto año especializado*)—has been created provisionally, and will remain in force as long as the following conditions exist:

(1) There are students who, owing to the system prevailing before the introduction of the reform, have worked mainly in a specialized service, thus acquiring a higher level of theoretical and practical (fundamentally practical) knowledge than their co-students (principally in anaesthesiology, orthopaedics, neurosurgery, obstetrics and gynaecology, and paediatrics, although there are isolated cases with other specialties).

(2) There are students who have been specifically trained as assistants in practical work courses in the various basic sciences and who have worked as such.

(3) There is a relative shortage of certain specialists, taking into consideration the plans made by the Ministry of Public Health.

(4) There is a shortage of teachers in the basic sciences at the schools of medicine of the Universities of Havana and Oriente, and at the school to be created at Las Villas.

The specialties and basic sciences covered during this internship period, and the number of students allowed to take the respective courses, are fixed by the Ministry of Public Health and the medical schools. The curricula and work of the sixth-year specialization course are established by the respective departments and submitted to the schools' Curriculum Committees for approval.

### Examinations

Examinations follow the general rule established by the Universities Council, and the Governing Boards of the universities decide, on the advice of the Curriculum Committees, what steps are to be taken with regard to subjects that do not lend themselves to the application of this general rule.

The marks for evaluation of students' work, as determined by the general rule, range from 0 to 100 (under 70 failure, 70-79 pass, 80-89 proficient, 90-100 outstanding). The semester evaluation is based on: (a) theoretical and practical tests held with or without notice during the semester, and (b) the student's work in a particular subject done outside the university under the guidance of a member of the faculty staff.

The Curriculum Committee may authorize any examination at the end of the semester to enable professors to obtain additional information concerning the student's mastery of the subject. However, in no case should such an examination count for more than 20 of the total marks.

If authorized, general examinations are held ten days from the day following the end of the respective course. In case of sickness, or some other serious reason

for absence from a general examination, the student should notify the Curriculum Committee, which verifies the student's statement. Any student found to have made a false declaration loses the whole course. In exceptional circumstances the Governing Board of the faculty may, in accordance with the general rule, authorize special examination of a student in a particular subject, at the proposal of the professor concerned, but in such cases approval must be obtained from the school's Curriculum Committee after consultation with the Co-ordination Committee.

The conditions for promotion to the next year's course are: (a) the student must not have failed in any of the basic subjects of the year; (b) the student must not have failed in more than one of the non-basic subjects of the year; and (c) the student must have passed in all subjects taken for the second time. Students whose arithmetical average in the first year is less than 50 are definitely eliminated from the medical course.

If, at the end of a year, the student has not fulfilled all the necessary conditions for promotion to the next year, he may repeat the same year (with the curriculum fixed for him) provided he has not previously repeated more than one year. In no case may a student enrol for more than the normal length of the complete course plus two years.

The Universities Council determines which are to be considered the basic subjects for each year in each school; it also determines how the time is to be allotted when a student, in addition to the normal course for the year, is taking a subject from the previous year again. The Curriculum Committee of the school decides on subject priorities.

Evaluation of the sixth year (internship) is as follows. Professors and assistant professors report on the students assigned to them. Elements to be taken into account are: (a) scientific interest; (b) theoretical knowledge; (c) practical and laboratory work; and (d) civic sense. The marks given are "excellent", "good", "fair", and "deficient". Each professor evaluates the above-mentioned elements by personal observation and not through examination, and awards marks for each element separately every month. At the end of the rounds in the respective departments the completed evaluation forms are submitted to the director of the department concerned, who in turn passes them on to the Curriculum Committee.

### Qualification and licence to practise

Candidates who have successfully completed the internship are awarded the qualifying degree of *Doctor en Medicina*. No student who has been absent for more than 20 % of the course or who has received the over-all mark of "deficient" in any department obtains the degree. Such cases are studied by the Curriculum Committee, which reports each case to the Governing Board, through the faculty. The Governing Board, on the advice of the Curriculum Committee, decides in each case what extra work must be done in order to enable the student to qualify.

Possession of the degree constitutes the licence to practise. However, before setting up in private practice medical graduates must work for one year in rural service. This condition was put into effect in 1960. It does not apply to physicians who graduated before that date, nor to holders of foreign medical qualifications.



Citizens of Cuba and foreigners with foreign medical qualifications may practise provided their diploma has been validated by the Governing Board of a faculty of medicine. Foreigners who have qualified in Cuba may practise under the same conditions as nationals.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Facultad de Medicina de la Universidad de la Habana LA HABANA (HAVANA)	1728	122 f 96 p	2795 m 581 f	631	335	None
Escuela de Medicina Universidad de Oriente SANTIAGO	1962	11	53	53	—	None

## CZECHOSLOVAKIA

## Introductory data\*

Population . . . . .	13 654 000
Number of medical schools . . . . .	9
Number of physicians . . . . .	22 006**
Number of medical graduates . . . . .	1 136
Population per medical school . . . . .	1 517 000
Population per physician . . . . .	620

\* 1960 figures.

\*\* Not including 1991 holders of the degree of Doctor of Medicine Specialized in Dentistry.

Medical education in Czechoslovakia lasts for six years and leads to the degree of *Promovaný Lékař* (Medical Practitioner).

In addition to the seven general medical faculties, two specialized faculties are established in Prague; one of these is devoted to paediatrics and the other to hygiene.

## Administration

All medical schools in Czechoslovakia operate under the authority of the Ministry of National Education and Culture and receive financial support from the Government. The State awards monthly bursaries, the amount of which is determined by the aptitude and progress of the student concerned, as well as by his parents' income.

The academic year begins in October and ends in June. The language of instruction is Czech at Brno, Hradec Králové, Olomouc, Plzeň and Prague, and Slovak at Bratislava and Košice.

## Conditions of admission

The basic admission requirement for the medical course is possession of the *maturita* (secondary-school certificate). The *maturita* is obtained after twelve years of schooling, which consists of two grades, the first of eight years' and the second of four years' duration. Entrants are selected mainly on the basis of their scholastic achievements, state of health and character.

Foreign students are admitted to Czechoslovak faculties of medicine on the basis of cultural agreements or under the terms of an offer made by the Czechoslovak Government to the United Nations as part of assistance to developing countries.

### Curriculum

The first three years of the curriculum are given over to the basic sciences and pre-clinical subjects, no matter what specialty is later to be studied. After this the student enters the clinical stage, attending lectures, where he witnesses practical demonstrations with patients, and performing practical clinical work. During this period emphasis is given to the subject in which the student intends to specialize, although he continues to receive tuition in all the basic medical subjects.

### Examinations, qualification and licence to practise

Examinations are held at the end of every semester. At the end of the entire course, the student sits for a State examination. If he passes it he receives the degree of Medical Practitioner, which permits him to practise medicine in Czechoslovakia.

Except for the academic staff of the faculties of medicine and for some eminent specialists, all medical practitioners are in government service. Those who wish to devote themselves to scientific research may, after submitting and defending a thesis, obtain the degree of Bachelor or of Doctor of Medical Sciences.

Czechoslovak citizens who hold a foreign medical degree are entitled to practise in Czechoslovakia on condition that their degree is officially recognized. They may, however, obtain special permission to enable them to practise before the actual formalities of recognition are completed.

Foreigners who hold a foreign medical degree are entitled to practise on condition that they have a residence permit and that their degree is officially recognized. Foreigners who have obtained the degree of Medical Practitioner at a Czechoslovak medical faculty may practise on condition that they are authorized to reside in Czechoslovakia.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Lékařská Fakulta Univerzita Komenského (Faculty of Medicine, Komenský University) Ul. čsl. armády č. 52 BRATISLAVA	1919	286	1691	347	195	None
Lékařská Fakulta Univerzita J.E. Purkyně (Faculty of Medicine, J.E. Purkyně University) BRNO	1919	295	639 m 838 f	301	202	None

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Lékařská Fakulta Karlova Universita (Faculty of Medicine, Charles University) Šimkova 870 HRADEC KRÁLOVÉ	1945	168	627	159	67	None
Lékařská Fakulta Safaříkova Universita (Faculty of Medicine, Safařík University) KOŠICE	1949	134	443 m 439 f	225	68	None
Lékařská Fakulta Palackého Universita (Faculty of Medicine, Palacky University) Lidická 8 OLOMOUC	1576*	212	497 m 635 f	295	125	None
Lékařská Fakulta Karlova Universita (Faculty of Medicine, Charles University) Leninova 13 PLZEŇ	1945	162	373 m 433 f	180	76	None
Fakulta Dětského Lékařství Karlova Universita (Faculty of Paediatrics, Charles University) Sokolská 2 PRAHA 2	1951	110	558	110	86	None
Fakulta Všeobecného Lékařství Karlova Universita (Faculty of General Medicine, Charles University) Kateřinská 2 PRAHA 2	1349	504 f 71 p	1048 m 1204 f	665	245	None
Lékařská Fakulta Hygienická Karlova Universita (Faculty of Hygiene, Charles University) robárova 48 PRAHA 10	1952	107 f 48 p	320	130	72	None

\* Year of foundation; reopened in 1946.

## DENMARK

## Introductory data\*

Population . . . . .	4 581 000
Number of medical schools . . . . .	2
Number of physicians . . . . .	5 850
Number of medical graduates . . . . .	241
Population per medical school . . . . .	2 291 000
Population per physician . . . . .	780

\* 1960 figures.

Medical education in Denmark lasts for seven years, followed by a compulsory one-year period of hospital internship, and leads to the degree of *Candidatus Medicinae et Chirurgiae*.

## Administration

Each medical faculty is headed by a Dean, who is elected yearly by his faculty. He is eligible for re-election.

The academic year begins in September and ends in June.

## Conditions of admission

Most medical students are drawn from *gymnasia* (secondary schools) in which emphasis is given to mathematics and science. (Two other types of *gymnasia* exist, where the emphasis is on classical languages and literature and on modern languages and literature respectively.) The average age when medical studies begin is 18 or 19 years, secondary education having lasted for five years and primary for seven.

The only requirement for admission to medical school is that a candidate should have passed the *studentereksamen*, taken at the end of the secondary-school course. Certificates of equivalent examinations, such as the final examination of the Technical University of Denmark and of certain military schools, may also be accepted. There is no *numerus clausus*, and no further selection process. Because accommodation is limited foreign students are not admitted to medical studies.

## Curriculum

The curriculum is divided into two parts, as follows:

The pre-clinical period (two and a half to three and a half years) is devoted to philosophy, chemistry, physics, genetics, anatomy (including histology and embryology), physiology, and biochemistry. Teaching is by way of lectures and practical work in the laboratory.

The clinical period (four years) is given over to bacteriology, morbid anatomy, pharmacology, medicine, and the specialties. In addition, students are required to perform clinical work in the wards in medicine, surgery, obstetrics, paediatrics, and in the special clinical subjects.

Attendance is not compulsory at lectures and demonstrations but is required at practical courses and clinical work.

### Examinations

The two examinations that are held correspond to the two main parts of the curriculum.

The first of these examinations is held at the end of the pre-clinical period. The subjects covered are chemistry, anatomy, physiology and biochemistry. This examination, which is written, oral and practical, must be passed before a student may go on to the clinical part of the curriculum.

The second and final examination covers the subjects studied during the clinical period, and is written, oral and clinical.

These examinations take place during December-January and May-June respectively. Not more than three attempts at each examination are allowed. A student who fails three times has to leave the faculty.

### Qualification and licence to practise

A student who has passed the final examination receives the university degree of *Candidatus Medicinae et Chirurgiae*, as well as a certificate from the National Health Service, which admits him to limited (that is, supervised) medical practice as a *Læge*, or Medical Practitioner. One year of internship is then required before a certificate authorizing independent medical practice may be issued. This latter certificate is then issued without there being any further examination by the National Health Service.

Nationals and foreigners with foreign diplomas may, under certain conditions, be permitted to practise in Denmark. Generally they are obliged to pass an examination with a view to bringing their qualification up to special Danish requirements.

The university degree of *Doctor Medicinae* (Dr. Med.) may be obtained by writing a thesis, which must contain the results or original research and be publicly presented. If the thesis is accepted by the faculty, the candidate must publicly defend his work, in the course of a *viva voce* examination, against two *opponenter* (critics) appointed by the faculty. The degree is then conferred by the faculty. Few of these higher degrees are awarded, but possession of a degree of this type is almost a prerequisite for appointment to high academic, scientific or clinical posts.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Det Laegevidenskabelige Fakultet Aarhus Universitet AARHUS	1931	107	984	128	86	None
Det Laegevidenskabelige Fakultet Københavns Universitet Frue Plads KØBENHAVN (COPENHAGEN)	1479	184	1832	345	155	None

## DOMINICAN REPUBLIC

### Introductory data\*

Population . . . . .	3 014 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	442**
Number of medical graduates . . . . .	85
Population per medical school . . . . .	3 014 000

\* 1960 figures.

\*\* Only physicians working in establishments under the authority of the Ministry of Health.

Medical education in the Dominican Republic lasts for six years and leads to the degree of *Doctor en Medicina* (Doctor of Medicine).

### Administration

The University of Santo Domingo, founded in 1538, was one of the first universities to be established in the Western Hemisphere. A faculty of medicine has been attached to the University since the end of the sixteenth century.

The University is a State institution enjoying legal autonomy. It is administered by a Council, which is headed by a Rector. The Faculty of Medicine is headed by a Dean and an assistant dean.

The academic year begins in October and ends in July.

### Conditions of admission

In order to be admitted to the Faculty of Medicine, a student must hold the *bachillerato* (a certificate obtained after four years of secondary school, preceded by six years of primary education) and have completed pre-medical studies in physics, chemistry, and biology. In addition, he must submit a certificate of good conduct, delivered by his secondary school, as well as a health certificate.

Foreign students may be admitted to medical studies provided they hold the equivalent of the *bachillerato* and have completed pre-medical studies.

### Curriculum

The curriculum is arranged as follows:

*First year* : medical chemistry; medical physics; descriptive anatomy; embryology

*Second year* : descriptive anatomy; physiology; parasitology; bacteriology; dissection

*Third year* : general pathology; medical pathology; histology; surgical patho-



logy; medical anatomy, surgical anatomy and operative medicine; medical semeiotics and propaedeutics; obstetrics

*Fourth year* : surgical diagnosis; morbid anatomy; hygiene; forensic medicine and toxicology; medical pathology; surgical pathology; materia medica and pharmacology

*Fifth year* : paediatrics; materia medica and pharmacology; therapeutics; urology; psychiatry; dermatology; ophthalmology; otorhinolaryngology; medical pathology

*Sixth year* : clinical medicine; clinical surgery; midwifery; gynaecology; tropical medicine; radiology; history of medicine.

### Examinations, qualification and licence to practise

Examinations are oral, written, and practical, and are held yearly. In addition to passing these examinations, a student must submit a thesis, which has to be approved before the degree of *Doctor en Medicina* is conferred. One year of internship in an approved hospital or in a rural centre is then compulsory before a licence to practise can be issued.

Nationals and foreigners holding foreign diplomas are permitted to practise after revalidation of their diplomas. In certain circumstances revalidation of the diploma is not required of citizens of the Dominican Republic who have graduated from a university of recognized standing. Foreigners who have qualified in the country are permitted to practise.

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees (Pesos)
Facultad de Medicina de la Universidad de Santo Domingo CIUDAD TRUJILLO	1538	73 p	678 m 96 f	143	85	75

## ECUADOR

### Introductory data\*

Population . . . . .	4 317 000
Number of medical schools . . . . .	3
Number of physicians . . . . .	1 656
Number of medical graduates . . . . .	**
Population per medical school . . . . .	1 439 000
Population per physician . . . . .	2 600

\* 1960 figures.

\*\* Data not available.

Medical education in Ecuador lasts for seven years and leads to the degree of *Doctor en Medicina y Cirugía* (Doctor of Medicine and Surgery).

### Administration

In accordance with legislative provisions contained in the Constitution of the Republic, the universities in Ecuador are autonomous institutions and do not come under the jurisdiction of the Ministry of Public Education. They are, however, financially dependent on the State, and an administrative link with the State is accordingly maintained through the presence on each University Council (Consejo Universitario) of a delegate of the Ministry of Public Education.

Each of the universities is administered by a University Council, composed of the Rector, the Vice-Rector, the delegate of the Ministry of Public Education, a delegate of the University Assembly, the deans of the various faculties, and a representative of the students of each faculty. A University Assembly, composed of all the professors and all the representatives of the students, acts in an advisory capacity. Each of the faculties is administered by a Governing Council (Consejo Directivo) and a Dean.

The academic year at the Universities of Cuenca and Quito runs from October to July; at the University of Guayaquil it runs from April to January.

### Conditions of admission

A candidate for admission to a faculty of medical sciences in Ecuador must hold the *bachillerato* (a certificate obtained after six years of secondary school, preceded by six years of primary education); in addition, he must pass a faculty entrance examination in physics, chemistry and biology.

### Curriculum

Although the curriculum is not identical for all the medical faculties, the following outline will serve to give a general idea of the arrangement of subjects:

*First year* : inorganic chemistry; biology; physics; anatomy; histology

*Second year* : organic chemistry; anatomy; parasitology

*Third year* : topographic anatomy; physiology; biochemistry; morbid anatomy; bacteriology

*Fourth year* : general pathology; medicine; surgery; hygiene; preventive and social medicine; psychology

*Fifth year* : medicine; clinical medicine; tropical medicine; ophthalmology; otorhinolaryngology; orthopaedics; traumatology; paediatric surgery; hygiene; toxicology

*Sixth year* : clinical medicine; surgery; paediatrics; neurology; phthisiology; therapeutics; surgical techniques; radiology; physiotherapy

*Seventh year* : obstetrics and gynaecology; urology; dermatology; psychiatry; therapeutics; forensic medicine.

Teaching is by way of lectures, practical work in the laboratories, and clinical work in the hospital, according to subject. Hospital work begins in a student's third year.

### Examinations, qualification and licence to practise

Examinations are held at the end of each academic year in the subjects studied during that period. These examinations are oral and, where appropriate, practical or clinical. A student who fails in an end-of-the-year examination may present himself for re-examination three months later.

The final examination, held at the end of the seventh year of the curriculum, covers clinical medicine, surgery, obstetrics, paediatrics, and therapeutics. Before sitting for this examination, however, a student must first present a thesis, which must deal with an original topic and must not yet have been published. If the dean of the faculty approves the subjects chosen, he appoints a thesis director—that is, a professor of the faculty teaching in a field related to the subject of the thesis—and a jury of three faculty professors. On the appointed day, a candidate appears before the jury for the *sustentación* of his thesis (i.e., its defence in the course of a *viva voce* examination). If a student fails in his *sustentación*, he may, at the discretion of the jury, present his thesis again after an interval of six months. If he fails again, he must select another topic, but the second thesis may not be presented until one year later.

After his thesis has been accepted, a student becomes eligible to sit for the clinical part of the final examinations. Should he fail in these, he must wait six months before re-examination. Once a student has passed the clinical examinations he receives the degree of *Doctor en Medicina y Cirugía*, which also constitutes his licence to practise in Ecuador.

A student who has successfully completed the seventh year of the curriculum is eligible to compete for the post of *interno de hospital* (hospital intern). Examinations for internships are written and clinical; the subjects vary according to whether a candidate aims at a post in a general hospital, a maternity hospital, a children's hospital, or a psychiatric hospital.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Facultad de Ciencias Médicas de la Universidad de Cuenca CUENCA	1867					
Facultad de Ciencias Médicas de la Universidad de Guayaquil Casilla 471 GUAYAQUIL	1877					
Facultad de Ciencias Médicas de la Universidad Central Quito	1827					

## EL SALVADOR

### Introductory data\*

Population . . . . .	2 612 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	483
Number of medical graduates . . . . .	29
Population per medical school . . . . .	2 612 000
Population per physician . . . . .	5 400

\* 1960 figures.

Medical education in El Salvador lasts for six years (not including one year of pre-medical studies and one year of social service) and leads to the degree of *Doctor en Medicina* (Doctor of Medicine).

### Administration

The School of Medicine is a component unit of the University of El Salvador, which is an academically autonomous institution under the financial and administrative control of the State.

The academic year begins in May and ends in February.

### Conditions of admission

Candidates for admission to the medical school must have completed their five-year secondary-school course (preceded by six years of primary education) and have obtained the *bachillerato en ciencias y letras* (secondary-school certificate in science and letters). They must also pass an entrance examination and submit a certificate of good health.

At the present time an average of 225 candidates sit for the entrance examination each year, and from among them 45 students are selected to enter the first year of pre-medical studies. Of those selected, 40 receive scholarships awarded by the Government that exempt them from payment of the tuition fees and the remaining 5 pay the full fees for registration, examinations and teaching.

Approximately 10 % of the annual intake are foreign students; they must previously have complied with the immigration requirements of El Salvador, and their secondary-school studies and certificate must have been recognized as equivalent by the Ministry of Education. They must also comply with the other conditions, described earlier for citizens of El Salvador.

### Curriculum

The curriculum is divided into a pre-medical year, two pre-clinical years, three clinical years, and one year of internship of intensive hospital practice.

During this last year students work under the supervision of tutors and professors in the medical, surgical, obstetrical and paediatric departments of the hospital. They must also pass examinations in each of these departments.

### Examinations, qualification and licence to practise

The ordinary final examinations take place in March, the special examinations for referred candidates in April.

Upon completion of his studies, the student is called upon to perform one year's service in a district assigned to him by the Ministry of Public Health and Social Assistance, preferably in an area which has no resident medical practitioner. At the end of this period, the student presents his thesis, which, if accepted, entitles him to the degree of *Doctor en Medicina*. In order to practise he must have his name inscribed on the register of the Public Health Board (Consejo Superior de Salud Pública).

Nationals of El Salvador who hold a foreign medical qualification must have their degree recognized by the Higher Board of the University (Consejo Superior Universitario), after having been favourably recommended by the school or faculty of medicine in which they have passed a qualifying examination, and after having spent one year in a hospital and one year in the social service (as is required of medical practitioners who have graduated in El Salvador). Their names must also be entered in the relevant register of the Public Health Board. Foreigners who hold a foreign medical degree are authorized to practise medicine in El Salvador if they comply with the immigration requirements in force and with the above-mentioned requirements laid down for nationals of El Salvador who have qualified abroad. Foreign nationals who have qualified in El Salvador are authorized to practise if they have complied with the immigration requirements and fulfilled the conditions required of nationals of El Salvador.

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fee. (Colones)
Facultad de Medicina Universidad Nacional del Salvador Calle Arce 1439 SAN SALVADOR	1847	26 f 119 p	218 m 41 f	45	29	200

## FEDERATION OF RHODESIA AND NYASALAND<sup>1</sup>

Medical education in the Federation of Rhodesia and Nyasaland lasts for six years and leads to the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.) of the University of Birmingham, England.

### Administration

The Faculty of Medicine is a faculty of the University College of Rhodesia and Nyasaland. The University College is an autonomous institution and the medical school is not attached to a department of government. The Faculty buildings are financed by the College's own funds, while the Federal Government is building a special teaching hospital adjacent to the Faculty buildings. The Federal Government also provides grants for recurrent expenses.

The Dean of the Faculty is in charge of the Faculty of Medicine and the Principal is in charge of the University College.

The academic year begins in the middle of March and ends at the beginning of December.

### Conditions of admission

A candidate for admission to the Faculty of Medicine must pass the examination for the General Certificate of Education of the United Kingdom (G.C.E.) or an approved equivalent. The G.C.E. examination is taken after six years of primary and six or seven years of secondary education. Entrance requirements include passes in at least two subjects at the advanced level and also passes in at least three other subjects, including English, at the ordinary level of the G.C.E. examination. Furthermore a candidate must satisfy the requirements of the United Kingdom Northern Universities Joint Matriculation Board, normally by means of passes in subjects that include at least three selected from the following list, of which at least two must be at the advanced level. At least one of the advanced level subjects must be selected from the group numbered (1)–(6).<sup>2</sup>

- |               |                                     |
|---------------|-------------------------------------|
| (1) biology   | (6) zoology                         |
| (2) botany    | (7) geography                       |
| (3) chemistry | (8) mathematics (pure)              |
| (4) geology   | (9) mathematics (applied)           |
| (5) physics   | (10) mathematics (pure and applied) |

There is no entrance examination. The school was opened in March 1963. The number of first-year students is at present limited to about twenty-five,

<sup>1</sup> The information in this chapter refers to a later period than the academic year 1960/61, since the medical school concerned was opened only in 1963. It has been included in the present edition of the Directory in the interests of comprehensiveness.

<sup>2</sup> It should be noted that (1) may not be counted with (2) or (6), and (10) may not be counted with (8) or (9).

though it is intended that this number should be increased to fifty as soon as the medical school is ready for occupation in 1965.

The school admits students of all races. There are no special requirements concerning health examination or vaccination for residents of the Federation of Rhodesia and Nyasaland. Residents of other territories must comply with immigration requirements.

### Curriculum

The curriculum is based on the Second Report of the Medical School Planning Committee, except for anatomy, where the curriculum follows the pattern set by the University of Birmingham.

First-year courses comprise biological sciences and physical sciences. Second- and third-year courses include anatomy, physiology (with biochemistry and pharmacology) and psychology.

### Examinations

The first University examination in physical and biological sciences will be held at the end of the first academic year. The second University examination, in anatomy and physiology, will be held in the third academic year. The final professional examinations will be held in the fifth and sixth academic years.

The examinations are controlled by the University of Birmingham. Candidates may repeat an examination once only.

### Licence to practise

Licence to practise is granted by the General Medical Council of the United Kingdom. After obtaining the M.B., Ch.B. degrees of the University of Birmingham, graduates must spend a further year in specified appointments in recognized hospitals before they can apply for full medical registration.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Faculty of Medicine University College of Rhodesia and Nyasaland Private Bag 167H SALISBURY, Southern Rhodesia	1963					



## FIJI

### Introductory data\*

Population . . . . .	3 585 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	603**
Number of medical graduates . . . . .	10
Population per medical school . . . . .	3 585 000
Population per physician . . . . .	5 900

\* 1960 figures. The medical school in Fiji serves a number of other territories (see the text); the population figures, etc., for the territories concerned have therefore been added to those of Fiji for the purpose of the present table.

\*\* Including 280 Assistant Medical Practitioners.

Medical education in Fiji lasts for five years and leads to the diploma of Assistant Medical Officer.

### Historical background

In 1878 a number of Fijian youths were trained to carry out vaccinations and simple quarantine measures because of acute needs due to immigration. In 1886 it was decided to develop this idea further by giving suitable young men three years of training, leading to a certificate of Native Medical Practitioner. In 1928 the school used for the training of these native practitioners became the Suva Central Medical School and its classes were opened to students from other Pacific islands. Three years later the course was extended to four years, and divided into a junior period of one and a half years (chemistry, physics, biology, anatomy, and physiology), and a senior period of two and a half years (medicine, surgery, and obstetrics). In 1951 medical and dental students were transferred from Guam following the closure of the United States Navy School of Medical Assistants on that island. A five-year curriculum was instituted in 1952, and the last of the four-year students therefore graduated in 1955. Since 1957 all graduates have been known as Assistant Medical Officers and the school is now called the Fiji School of Medicine.

### Administration

The Fiji School of Medicine is a Fijian institution, financed by the Fijian Government. It is administered by a Principal under the direction of the Director of Medical Services.

Approximately one-third of the students newly admitted in 1961 came from Fiji, and the remaining two-thirds from the following territories: American Samoa, British Honduras, British Solomon Islands, Cook Islands, Gilbert and Ellice Islands, Nauru, New Hebrides, Niue, Pacific Islands under United States trustee-

ship, Papua and New Guinea, Tokelau Islands, West Irian and Western Samoa.

Students receive free tuition, board, lodging, clothing and books, as well as a personal allowance. The Fijian Government is reimbursed in respect of these costs by the governments of those non-Fijian territories whose students attend the Fiji School of Medicine.

The academic year begins in February and ends in December. The language of instruction is English.

### Conditions of admission

Fijian and Fijian-Indian candidates for admission to the school are expected to have acquired secondary education up to the Senior Cambridge Certificate standard (a four-year course); they are then admitted without further entrance examination. Candidates with a lower standard of secondary education must take an entrance examination. Those candidates who fail in that examination are placed in a preparatory class, conducted by the Fiji School of Medicine, for one to two years' further tuition.

Candidates who have had less than two years of satisfactory secondary education are required to take a preliminary examination in their home territory before they are allowed to sit for the School entrance examination. Candidates not considered sufficiently qualified for medical or dental studies may be diverted to one of the other training courses, such as those for health inspectors, laboratory assistants, pharmacists or X-ray technicians.

Students from the territories which the Fiji School of Medicine serves may enter the medical course by application of the government of the territory concerned.

### Curriculum

The present five-year curriculum consists of a one-year pre-medical period, a one-year pre-clinical period, and a three-year clinical period.

The pre-medical period is devoted to chemistry, physics, and biology, and special emphasis is given to those aspects which have a direct bearing on future medical training.

The pre-clinical period is devoted to anatomy and physiology. Instruction given is both theoretical and practical. In anatomy classes the whole body is dissected. Histology is taught along with anatomy. Physiology and biochemistry are taught in close relationship to each other, and practical work is undertaken in both these subjects.

The clinical period is divided between theoretical instruction in the School and practical work in the wards of the 300-bed Colonial War Memorial Hospital, the 300-bed Tuberculosis Hospital, and the 700-patient leprosy settlement at Makogai. Theoretical and practical instruction is given in pathology, bacteriology, materia medica, medicine, surgery, obstetrics, paediatrics, ophthalmology, dietetics, anaesthetics, public health, and forensic medicine. Students serve as clerks or dressers in medical and surgical wards and, for shorter periods, in the ophthalmic out-patient department, the general out-patient department, the dispensary, and the operating theatre. A Department of Social and Preventive

Medicine, established in 1959 with the assistance of a grant from the Nuffield Foundation, deals with the teaching of this subject, both undergraduate and post-graduate.

### Examinations

Examinations are written and oral and, where appropriate, practical and clinical. Class examinations take place during the various courses, and qualifying examinations are held at the end of each course. Each qualifying examination is conducted by two examiners, one of whom is the School lecturer in the subject.

### Qualification

Candidates successful in the final examination receive the diploma of Assistant Medical Officer. This qualification entitles its holders to appointment to the government medical and health services. It is not a qualification registrable with the General Medical Council of the United Kingdom and does not allow its holders to engage in private practice.

Courses in dentistry are also given. There are a number of courses for auxiliary health workers. Post-graduate instruction is given in medical subjects and the school grants a Certificate of Public Health to those who complete the relevant course successfully.

### Licence to practise

Assistant Medical Officers, graduates of the Fiji School of Medicine, may be registered only for employment in the government services. Graduates of the school who come from other territories may be registered to practise in Fiji. Nationals and foreigners who hold foreign medical degrees may be allowed to practise if their qualifications are registrable with the General Medical Council of the United Kingdom.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (£F)</i>
Fiji School of Medicine SUVA	1928	15	114	35	10	420

## FINLAND

### Introductory data\*

Population . . . . .	4 467 000
Number of medical schools . . . . .	3
Number of physicians . . . . .	2 827
Number of medical graduates . . . . .	168
Population per medical school . . . . .	1 489 000
Population per physician . . . . .	1 600

\* 1960 figures.

Medical education in Finland lasts for six years, followed by a period of compulsory internship, and leads to the degree of Licentiate in Medicine.

### Administration

The Medical Faculty at Helsinki is part of a State university and is wholly subsidized by the Government. However, it has considerable autonomy in planning its curriculum and in managing its internal affairs. Professors are appointed by the President of the Republic on the recommendation of the University.

The University of Turku is supported partly by State subsidies and partly by funds from private sources. The professors of the Medical Faculty are appointed by the Chancellor of the University on the Faculty's recommendation.

As part of a State university, the Medical Faculty of the University of Oulu is supported by the Government; it is, however, comparatively autonomous. Professors are appointed by the President of the Republic on the recommendation of the University.

The academic year runs from September to May. It consists of an autumn and a spring semester, each of about four months' duration.

Teaching at Helsinki is carried out in both Finnish and Swedish, whereas at Turku and Oulu it is entirely in Finnish.

### Conditions of admission

Requirements for admission are a matriculation certificate (obtained after eight years of secondary school) and success in an entrance examination, which covers physics, chemistry, and biology. As the number of applicants is invariably greater than the number of vacancies, the entrance examination is, in fact, tantamount to a selection process. First-year students may be admitted to either of the two semesters.

Foreign candidates may be admitted to medical studies in Finland. They must, in the first place, obtain the university authorities' permission to apply for admission to a medical faculty. If the candidate is accepted as eligible both by the

university and by the Medical Faculty, he must participate in the entrance examination together with all other applicants.

### Curriculum

The curriculum consists of an introductory, or pre-medical, period of two semesters, a pre-clinical period of three semesters, and a clinical period of seven semesters—that is, six years in all. However, as the final examinations and the required period of internship usually take up one year, the average time needed for graduation does, in fact, amount to seven years.

The introductory, or pre-medical, period is devoted to physics, chemistry, and biology.

The pre-clinical period covers anatomy and histology, embryology, physiology, and biochemistry.

The clinical period begins in the sixth semester of the course with introductory teaching in medicine and surgery, physical diagnosis, laboratory methods, pathology, bacteriology, and pharmacology. During the seventh semester, a student continues with the study of pathology and bacteriology, and commences that of dermatology and venereology. The eighth semester is devoted almost entirely to internal medicine, including virology, neurology, and radiology, whereas the ninth semester is in the main given over to surgery. Obstetrics and gynaecology, as well as social medicine, are studied during the tenth semester; otorhinolaryngology, ophthalmology, and psychiatry in the eleventh; and paediatrics, hygiene, and forensic medicine in the twelfth semester.

During the holidays, at some time after the seventh semester, a student must also perform one month's practical work in a dental clinic.

In the course of their clinical training, students are required to examine patients, to write up case histories and present these during the professor's clinical lesson. Assistant teachers hold demonstrations and discussions for small groups, mainly in connexion with the problems of diagnosis and treatment. Senior nurses give instruction in certain aspects of bedside care.

### Examinations and qualification

Examinations are both written and oral. They fall into three groups, corresponding to the three stages of the medical course and the subjects covered in each period. Upon passing the second examination, held at the end of the pre-clinical period, a student obtains the title of Candidate in Medicine. Examinations in the subjects studied during the clinical period may be taken at the end of each course and, together with a written test in Finnish or Swedish, constitute the final examinations.

A student must then work full-time as *amanuensis* (i.e., resident house-officer) in certain approved hospitals for a period ranging from six months to one year before he receives the degree of Licentiate in Medicine from the University.

Medical graduates who wish to acquire the university degree of Doctor of Medicine must write and present a printed thesis in the form of a monograph.

### Licence to practise

Licence to practise is granted to the holders of the degree of Licentiate in Medicine by the State Medical Board. As a rule medical graduates are under no obligation to serve the State before they set up in private practice. However, there is the following exception. To alleviate the shortage of physicians in Finland, since 1960 between fifty and seventy Finnish medical students have been sent each year to Swiss, Danish and, to a very limited extent, British medical schools. Their studies are financed by means of very advantageous State loans. To ensure that these students return to Finland after having finished their studies, the loans are granted on condition that their recipients bind themselves to stay in the service of the Government, of individual communes or of communal hospital federations for at least four years. A few State-sponsored scholarships are also available from year to year for specialization studies abroad. They are awarded on condition that the applicant agrees to work in the public services for at least two years.

A foreigner who has qualified in Finland must apply to the State Medical Board for the right to practise in the country. He may be admitted to practice on special grounds, and for as long a period, to such an extent and on such conditions as are deemed suitable by the State Medical Board. He is not eligible for a public position.

The conditions on which a foreign physician may be allowed to practise medicine in Finland are determined by the Law on the Practice of Medicine in Finland of 23 February 1925. This law stipulates that among those to whom the right to practise may be granted are foreign citizens who enjoy unlimited rights to practise medicine in their own country, and who have, after demonstrating their competence, obtained the certificate of qualification of the University of Helsinki. To obtain this certificate the candidate must submit a written application to the Medical Faculty of the University of Helsinki, give evidence of his knowledge of languages, in particular, of his proficiency in Finnish or Swedish—and pass such examinations that the Faculty deems necessary. The licence to practise is granted to the foreigner who has passed the required examinations, on application, by the State Medical Board only on special grounds and for as long a period, to such an extent and on such conditions as are deemed suitable by the State Medical Board separately in each case. No foreigner is eligible for an official position in Finland.

Regarding nationals with foreign qualifications, the procedure is exactly the same as in the case of a foreigner with foreign qualifications, except that a Finnish citizen can be granted unlimited and unconditional rights to practise in Finland. He can also be appointed to an official position. The nationals who have graduated abroad under the official scheme mentioned above are, however, exempted from these conditions. They obtain the right to practise without any formalities.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Markkaa)</i>
Lääketieteellinen Tiedekunta Helsingin Yliopisto (Faculty of Medicine, University of Helsinki) HELSINKI	1640	161	1222	180	118	10 000
Lääketieteellinen Tiedekunta Oulun Yliopisto (Faculty of Medicine, University of Oulu) OULU	1960	14 f 6 p	100	50*	—	**
Lääketieteellinen Tiedekunta Turun Yliopisto (Faculty of Medicine, University of Turku) TURKU	1943	56	672	80	50	6 000

\* First admissions in September 1960. Pending completion of the University buildings, the Faculty will work in co-operation with the University of Turku, where the pre-clinical teaching of these students will take place for three semesters. After having completed the examination for the title of Candidate in Medicine the students will return to Oulu for their clinical studies.

\*\* So far no tuition fee has been fixed.

FRANCE<sup>1</sup>

## Introductory data\*

Population . . . . .	45 540 000
Number of medical schools . . . . .	24
Number of physicians . . . . .	48 285**
Number of medical graduates . . . . .	†
Population per medical school . . . . .	1 898 000
Population per physician . . . . .	940

\* 1960 figures.

\*\* Excluding 909 stomatologists.

† Data incomplete.

Medical education in France lasts for six years and leads to the diploma of *Docteur en Médecine* (Doctor of Medicine).

## Administration

There are two types of faculty of medicine in France, each headed by a Dean. These are the four *facultés de médecine*, or faculties of medicine proper, and the eight *facultés mixtes de médecine et de pharmacie*, or combined faculties of medicine and pharmacy. The distinction between the two is administrative, and the medical courses in both of them are the same. The diplomas issued are likewise identical, and the complete six-year medical course can be taken at any of the twelve faculties.

In addition to these faculties, there are the *écoles nationales de médecine et de pharmacie* (national schools of medicine and pharmacy), of which there are eleven. These schools offer full medical training, except for some that do not yet provide for the fifth and sixth years of the course.

Finally, there is at Lille a *Faculté libre de Médecine et de Pharmacie*—a non-governmental institution which provides the full medical course. Examinations must, however, be taken at one of the State faculties.

The State universities and, therefore, the faculties of medicine that are attached to them, are under the jurisdiction of, and administered by, the Ministry of Education. For administrative purposes, schools of medicine are attached to universities, but not always necessarily in the same city, or bearing the university's name. The examinations of the first five years are held at the headquarters of the national schools of medicine and pharmacy. The board of examiners includes professors of the faculty to which the school is attached and professors of the school itself. Academically, each school of medicine is affiliated with a faculty of medicine.

<sup>1</sup> It is regretted that no information is available on the *Faculté mixte de Médecine et de Pharmacie* de l'Université d'Alger (2, rue Michelet, ALGER, Algérie), which, in the Second Edition of the Directory, was included in the chapter on France.



The academic year in all the faculties and schools of medicine runs from 1 October to the end of June.

### Conditions of admission

There is a fresh *inscription* (or registration) at the beginning of each year for candidates for the diploma of Doctor of Medicine. At the time of the first *inscription* they must produce evidence that they have obtained the *baccalauréat* (secondary-school certificate, obtained after twelve years of primary and secondary education), or the *diplôme d'Etat* of *Docteur ès Sciences* (Doctor of Science), *Docteur ès Lettres* (Doctor of Letters) or *Docteur en Droit* (Doctor of Law), or the degree of *Agrégé de l'Enseignement secondaire*.

Candidates who are French nationals or nationals of the States that composed the former Community may be exempted from the *baccalauréat* on condition that they pass a special entrance examination for the faculties of medicine. Candidates who are at least 21 years of age on 1 January of the year of the examination and who have not sat for the *baccalauréat* during the three preceding years are allowed to enter for this examination.

Foreigners are admitted to medical studies in France provided their secondary-school diploma is recognized. The diploma awarded them after the completion of the course is the *diplôme d'université*, which does not entitle the holder to practise medicine in France.

All medical students are required to undergo a physical examination, including a chest X-ray and a tuberculin test, on admission, and annually thereafter.

### Curriculum

The reform of the system of studies and examinations for the doctorate of medicine (Decree No. 60-759 of 28 July 1960) provides that the instruction shall cover a period of 42 weeks each year and shall be given in university-hospital centres<sup>1</sup> except for some first-year teaching that is carried out in the science faculties.

The Minister of Education may, after consultation with the Council of Higher Education and on the joint proposal of the Assembly of the faculty of the school of medicine and of the Assembly of the faculty of sciences concerned, decide that all first-year instruction shall be entrusted to the faculty or school of medicine.

The studies leading to the diploma of Doctor of Medicine are obligatory. They include theoretical, practical, and clinical instruction. The professors and lecturers are responsible for theoretical instruction. From the sixth semester onwards instruction in medicine is given in the form of integrated teaching. This teaching calls for the help of the academic staff in all the clinical or biological disciplines concerned, in regard to both general problems and clinical cases. Practical instruction is given in the laboratories. It is co-ordinated with the theoretical instruction. For each period of practical work the student receives a mark, which is noted in his record of study.

<sup>1</sup> A consolidation of faculties or schools of medicine and the hospital in university towns—i.e., medical care centres about which medical and paramedical studies are organized.

Clinical instruction, on the lines of the tutorial, is given to groups of about twenty-five students; it consists of review exercises and broadening of the knowledge already gained by the students, not merely of *ex cathedra* lectures.

In addition to the teaching of clinical diagnosis during the fourth and fifth semesters, instruction is also given in clinical paediatrics, clinical surgery, clinical obstetrics and specialized branches. This teaching is given during the *stages*, or probationary periods, which the students spend in hospital departments.

The instruction is spread over the six years of study as follows:

#### *First year*

*First semester*: introduction to medical studies; psychology; mathematics; chemistry; physics; biology; anatomy; histology and embryology

*Second semester*: biology; biophysics; biochemistry; physiology; anatomy; histology and embryology

#### *Second year*

*First semester*: biochemistry; biophysics; physiology; anatomy; histology and embryology

*Second semester*: Mornings: elementary medical care; two mornings a week of clinical instruction (tutorials); clinical diagnosis (four mornings a week of practical diagnosis). Afternoons: clinical biochemistry; physical diagnosis; radiological diagnosis; physiopathological tests of function; microbiology (immunology, bacteriology, virology, parasitology, haematology); social medicine

#### *Third year*

*First semester*: Mornings: two mornings a week of clinical instruction (tutorials); elementary clinical diagnosis and pathology: four mornings a week of practical diagnosis. Afternoons: clinical biochemistry; physical diagnosis; radiological diagnosis; physiopathological tests of function; microbiological diagnosis (immunology, bacteriology, virology, haematology, parasitology); social medicine

*Second semester*: Mornings: work in the wards and clinical instruction (tutorials); clinico-biological or clinico-social conferences. Afternoons: pathology; integrated instruction in medicine (medicine, surgery or obstetrics, physiopathology and experimental medicine, biochemistry, applied physics, microbiology, medico-surgical anatomy, applied histology and cytology, psychological and social aspects of disease); clinical instruction (tutorials)

#### *Fourth year*

The two semesters are identical and comprise: Mornings: work in the wards and clinical instruction (tutorials); pathology (post mortem); clinico-biological or clinico-social conferences. Afternoons: pathology; integrated instruction in medicine (medicine, surgery or obstetrics, physiopathology and experimental medicine, biochemistry, applied physics, microbiology, medico-surgical anatomy, applied histology and cytology, psychological and social aspects of disease); clinical instruction (tutorials)

#### *Fifth year*

The two semesters are identical and comprise: Mornings: work in the wards and clinical instruction (tutorials); pathology (post mortem); clinico-biological or clinico-social conferences. Afternoons: pharmacology and

pharmacodynamics; therapeutics; social medicine (hygiene and preventive medicine, forensic medicine, occupational medicine); biological or clinical instruction (optional)

#### *Sixth year*

*First or second semester* : Mornings: work in the wards and clinical instruction (tutorials); pathology (post mortem); clinico-biological or clinico-social conferences, or (optional) biological instruction and a *stage* in the laboratory. Afternoons: clinics

*First or second semester* : *stage* in a hospital. (Students working as *externes* or *internes* are exempted from this *stage*.)

In addition, students must complete a three-week *stage* of elementary medical care in the hospital departments of a university-hospital centre, during the second semester of the second year, and, from the third year onwards, they must undertake the following *stages* :

- (1) two six-month *stages* in a general medical department;
- (2) a five-month *stage* in a general surgical department;
- (3) a five-month *stage* in a paediatric department and a one-month *stage* in an obstetrics department, during which the student must do turns of hospital duty;
- (4) two six-month *stages* in specialized departments or biological departments designated by the Dean. Dispensation from these *stages* is granted to *externes* in university-hospital centres.

During these different *stages* the students are assigned various turns of duty in hospital, and in the course of each they are interrogated by the head of the department to which they are assigned.

In exceptional circumstances and with the authorization of the Faculty Board the sixth-year *stage* may be spent in institutions other than those approved for this purpose, either in France or abroad.

If there has been any legitimate interruption in the course of the academic year part of the *stages* may be performed during the vacations, on application by the student and after authorization by the Dean.

#### **Examinations**

To be allowed to sit for the examinations for the diploma of Doctor of Medicine, candidates must have satisfied scholastic requirements. The examinations are held yearly or half-yearly and for the first two years include written and oral questions and practical tests and for the following years written questions, or written and oral questions, on the subjects taught during the academic year. Two sessions are held for each examination: at the end of the teaching semester and again in September. Candidates who fail at the first session may enter again for the September session. If they fail a second time, they must repeat the whole course and sit again for the examinations corresponding to their year of studies. They are excluded definitively from medical studies if they fail four times in the annual examinations; however, only two failures in any one year are the maximum that can be allowed in computing these four failures.

At the end of the sixth year the student has to pass the clinical examinations, which include examinations in medical, surgical and obstetrical clinical practice. If he fails in any one of these clinical examinations, the candidate must undertake a further *stage* of two months.

### Externat and internat

Under the reformed system of medical education the categories of *externat* and *internat* (and the corresponding titles) are maintained in the French hospital system, of which they are the basic structure. The selection requirements have, however, been modified. *Externes* are no longer appointed after a special competitive examination but according to a rating set at the end of the fifth semester, based on the results of written examinations covering the basic sciences and semeiology. In most faculties or schools the tests consist of multiple-choice questions. Under the supervision of *internes*, *externes* perform work which includes admission of patients, history-taking, physical examination, maintenance of records, analyses, lumbar punctures, dressings, and such like.

The *internes* in university hospitals and the hospitals of the main cities of France are selected after a competitive examination among holders of *externat* appointments. This competitive examination generally consists of written papers in anatomy, physiology, medicine and surgery, and of oral tests in medicine and surgery or obstetrics. *Internes* are appointed for four years, during which they work in at least four different *services*,<sup>1</sup> changing every year or every six months, with more time being given to the branch in which the student expects to make his career. An *interne* is responsible for the day-to-day functioning of the *service* and for direction of the work of the *externes*; he also deals with emergency cases under the supervision of the *chef de service*. As a rule it is during his four years of *internat* that the future physician prepares his thesis. *Internes* are remunerated according to seniority, and in addition are given an annual allowance. Moreover, they enjoy the social advantages granted to wage-earners.

Competitive examinations for the post of *interne* elsewhere than in a university-hospital centre are usually held on a regional basis and the requirements are similar to those for the normal *internat* examination.

Foreigners may be allowed by the Ministry of Health to sit for the *internat* examinations. If successful, such candidates may be placed in a special category and admitted to hospitals on a supernumerary basis. They carry out the same work and are entitled to the same benefits as *internes* of French nationality.

Those students heading the list of unsuccessful candidates are appointed *internes provisoires*. These provisional, or alternate, candidates act as replacements for *internes* who may be sick or on leave. To achieve full status, however, such candidates must succeed in passing a subsequent competitive examination.

### Qualification and licence to practise

Students who have passed the clinical examinations are admitted to defend a thesis. The subject of the thesis, which must be in the French language, has to be communicated to the secretariat of the faculty at least six months in advance and approved by the Dean. The board of examiners includes four members designated by the Dean; its chairman must be a professor of the faculty of medicine.

<sup>1</sup> A *service* consists of a team of assistants, *chefs de clinique* (clinical tutors), *internes* and *externes* under the direction of a head physician or surgeon, and is comparable to a "firm" in a hospital in the United Kingdom.

The French universities confer two types of medical degree or diploma. The first of these, the *diplôme d'Etat* (State diploma), authorizes the holder to practise medicine anywhere in French territory. Foreigners too may obtain the State diploma if they meet all the requirements in force for French citizens. Those candidates, both foreigners and French citizens, who hold foreign medical diplomas and desire to obtain the French State diploma may be exempted from the first three years of the medical course, and the first three examinations, but must still obtain the French *baccalauréat* or pass the special entrance examination. Naturalized French citizens who hold the State diploma may practise medicine in French territory on conditions that they have fulfilled certain obligations with respect to military service.

The second type of diploma, known as the *diplôme d'université* (university diploma), is awarded to foreigners only. Its value is scientific and academic, and it does not in itself entitle the holder to practise medicine in French territory. The studies and examinations required to obtain the *diplôme d'université* are exactly the same as those required for the State diploma, except that equivalent foreign examinations may be accepted instead of the French *baccalauréat*. A foreign student may be exempted from certain courses and examinations if he has already attended and passed their equivalent in his own country. Foreigners who already hold the medical diploma of their own country but wish to obtain the French *diplôme d'université* in addition may also be exempted from the first three years of the medical course and the first three examinations at most.

The conditions under which the *diplôme d'université* may be transformed into a *diplôme d'Etat* have been amended for naturalized French citizens (Decree of 12 April 1960). On condition that they have passed the *baccalauréat* or the special entrance examination for the medical faculties, they may, for the purpose of obtaining the *diplôme d'Etat*, be exempted from the whole course of study and all the examinations passed in a French faculty, except for the sixth-year clinical examinations, which they must pass again.

French nationals who hold a foreign medical diploma are only entitled to practise medicine in France if they come within the scope of the temporary exemptions made necessary by the circumstances resulting from two wars or the special exemptions resulting from exceptional events that have obliged French nationals to leave the countries in which they were practising medicine.

In the case of foreigners holding a foreign medical diploma, Article L. 356 of the Public Health Code provides that each time "a foreign State grants to French medical practitioners, dental surgeons or midwives, whether native-born or naturalized, the right to practise their profession in its territory, the nationals of that State shall be entitled to practise their profession in France provided that a convention exists." Article 357 of the same Code has made provision for an exemption in favour of foreign medical practitioners legally practising their profession in France on 3 September 1959.

Medical graduates are under no obligation to serve the State before engaging in private practice.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (New francs)</i>
Ecole nationale de Médecine et de Pharmacie 18, place Saint-Michel AMIENS, Somme	1806				—	
Ecole nationale de Médecine et de Pharmacie d'Angers 16, boulevard Daviers ANGERS, Maine-et-Loire	1433	11 f 48 p	287	45	—	40
Ecole nationale de Médecine et de Pharmacie Université de Besançon 4, place Saint-Jacques BESANÇON, Doubs	1841	11 f 30 p	101 m 30 f	40	—	58
Faculté mixte de Médecine et de Pharmacie de l'Université de Bordeaux Place de la Victoire BORDEAUX, Gironde	1874	37 f 50 p	1159 m 245 f	245	274	73
Ecole nationale de Médecine et de Pharmacie Université de Caen 1, rue Vaubénard CAEN, Calvados	1432	60	243	100	—	40
Faculté mixte de Médecine et de Pharmacie Université de Clermont-Ferrand 34, avenue Carnot CLERMONT-FERRAND, Puy-de-Dôme	1841	39 f 38 p	356	83	80*	10
Ecole nationale de Médecine et de Pharmacie de Dijon 16, rue de l'Hôpital DIJON, Côte-d'Or	1840	23 f 53 p	238		—	40
Ecole nationale de Médecine et de Pharmacie Université de Grenoble 21, rue Lesdiguières GRENOBLE, Isère	1339	30 f 28 p	480	50	—	73
Faculté libre de Médecine et de Pharmacie Université catholique de Lille 56, rue du Port LILLE, Nord	1876	45	122 m 62 f	17 m 18 f	9	300
Faculté mixte de Médecine et de Pharmacie de l'Université de Lille Cité hospitalière LILLE, Nord	1877	36 f 51 p	1657 m 566 f	240 m 141 f	142 m 91 f	45

\* Both medicine and pharmacy.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (New francs)</i>
Ecole nationale de Médecine et de Pharmacie 11, rue François-Chénieux LIMOGES, Haute-Vienne						
Faculté mixte de Médecine et de Pharmacie Université de Lyon 8, avenue Rockefeller LYON, Rhône	1877*	42 f 76 p	1367 m 360 f	375	270	45
Faculté mixte de Médecine et de Pharmacie de Marseille Université d'Aix-Marseille Boulevard d'Alès MARSEILLE 5 <sup>e</sup> , Bouches-du-Rhône	1818	79 f 109 p	1172 m 352 f	288	142	45
Faculté de Médecine de Montpellier Rue de l'Ecole-de-Médecine MONTPELLIER, Hérault	1220	28 f 48 p	2000 m	150	310	50
Faculté de Médecine de l'Université de Nancy 30, rue Lionnois NANCY Meurthe-et-Moselle	1872	28 f 31 p	881 m** 286 f**	159	69 m 7 f	85
Faculté mixte de Médecine et de Pharmacie 16, quai Moncousu NANTES, Loire-Atlantique	1956		516 m 321 f		73	40
Faculté de Médecine de l'Université de Paris 12, rue de l'Ecole-de-Médecine PARIS 6 <sup>e</sup> , Seine	1253					
Ecole nationale de Médecine et de Pharmacie 17, rue de l'Hôtel-Dieu POITIERS, Vienne	1430	47	176	74	—	43
Ecole nationale de Médecine et de Pharmacie 51, rue Simon REIMS, Marne	1550	25 f 60 p	264 m 147 f	363 m 192 f		43
Faculté mixte de Médecine et de Pharmacie 16, boulevard Laënnec RENNES, Ile-et-Vilaine	1956	85	625 m 167 f	151	48	40

\* Date of transformation of the School of Medicine, which was founded in the Middle Ages, into the Medical Faculty.

\*\* Including post-graduate students (*certificats d'Etudes spéciales*).

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (New francs)</i>
Ecole nationale de Médecine et de Pharmacie Université de Caen Hôtel-Dieu ROUEN, Seine-Maritime	1844	21 f 13 p	208 m 77 f	55 m 21 f	—	73
Faculté de Médecine de de l'Université de Strasbourg 1, place de l'Hôpital STRASBOURG, Bas-Rhin	1621	159	1250	190	75	58
Faculté mixte de Médecine et de Pharmacie de l'Université de Toulouse 37, allées Jules-Guesde TOULOUSE, Haute-Garonne	1229	86	1864	405	331	40
Ecole nationale de Médecine et de Pharmacie de Tours 2 bis, boulevard Tonnellé TOURS, Indre-et-Loire	1841	60	692	120	—	58



## GERMANY : DEMOCRATIC REPUBLIC<sup>1</sup>

Medical education in the German Democratic Republic lasts for six years,<sup>2</sup> including periods of professional practical training (*Berufspraktika*).

The academic year begins in September and ends in May.

### Conditions of admission

Before being admitted to medical studies, the student must have attended either a secondary school or a workers' and peasants' college, and have obtained the *Abitur* (school-leaving certificate). In some cases he may be required to sit for a university entrance examination.

### Curriculum

The syllabus is the same in all medical faculties and schools and is in line with the curriculum established by the Department of Higher Education.

Attendance at the lectures and practical courses prescribed in the curriculum is obligatory. In addition, there are optional lectures and practical courses. Participation in sports is compulsory throughout the whole period of study.

During the course of his studies, every student must show that he has a knowledge of at least two foreign languages—one of them being Russian and the other, usually, English.

The first five semesters are devoted to pre-clinical studies with the aim of providing a background in the natural sciences, i.e., physics, chemistry, biology, anatomy, embryology, histology, physiology, and biochemistry. During this period the students also attend lectures on Marxism-Leninism, philosophy, political economy, and political science.

After the fifth semester—or after the fourth, in the case of the more gifted students—clinical studies commence in the following subjects: pathology, pharmacology, parasitology, epidemiology and serology, preliminary instruction (propaedeutics) in hygiene and medicine, surgery, paediatrics, obstetrics and gynaecology.

In subsequent semesters the students attend clinical lectures on internal medicine, surgery, obstetrics and gynaecology, paediatrics, orthopaedics, psychiatry and neurology, otorhinolaryngology, ophthalmology, etc. In addition, social hygiene and occupational health are taught during the final year. Gradually, increasing emphasis is placed on practical instruction in hospitals and clinics.

<sup>1</sup> It is regretted that data on the number of physicians and number of medical graduates are not available.

<sup>2</sup> Three medical schools, which were opened in 1954, give only the clinical part of the training—i.e., the last three years of the course.

### Professional practical training

A characteristic of medical education in the German Democratic Republic is the professional practical course, known as the *Berufspraktikum*. Such work is carried out during lecture-free intervals in the summer and winter. During the pre-clinical period this time is devoted to nursing, while in the clinical period, which lasts six semesters, every student must spend a total of one year working as an assistant in the following branches: internal medicine, surgery, obstetrics, preventive medicine, and one other field which he may choose himself.

### Examinations and qualification

The pre-clinical examination (*Physikum*) is taken at the end of the fourth or fifth semester. The State examination takes place during the twelfth semester; it comprises eighteen tests and must be passed within five months.

Before the candidate receives a licence to practise independently (*Approbation*), he must engage in medical activities, under supervision, as an intern (*Pflicht-assistent*) for one year after passing the State examination.

The academic degree of *Dr. med.* is awarded to physicians who have submitted a satisfactory dissertation and have passed an oral examination in several subjects.

The award of the higher scientific degree of *Dr. med. habil.* requires further successful experience as a medical scientist.

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees
Medizinische Fakultät der Humboldt-Universität Unter den Linden 6 BERLIN C 2	1810					None
Medizinische Akademie "Carl-Gustav Carus" Fetscherstrasse 76 DRESDEN A 16	1954					None
Medizinische Akademie Erfurt Nordhäuserstrasse 74 ERFURT	1954					None
Medizinische Fakultät der Universität Greifswald GREIFSWALD	1456					None
Medizinische Fakultät der Martin-Luther-Universität HALLE	1502					None

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Medizinische Fakultät der Friedrich-Schiller-Universität Siegmühlengeweg 1 JENA	1548					None
Medizinische Fakultät der Karl-Marx-Universität Härtelstrasse 16/18 LEIPZIG C 1	1416					None
Medizinische Akademie Magdeburg Leipzigerstrasse 44 MAGDEBURG	1954					None
Medizinische Fakultät der Universität Rostock ROSTOCK	1419					None

## GERMANY : FEDERAL REPUBLIC

## Introductory data\*

Population . . . . .	55 426 000
Number of medical schools . . . . .	19
Number of physicians . . . . .	82 633**
Number of medical graduates . . . . .	†
Population per medical school . . . . .	2 917 000
Population per physician . . . . .	670

\* 1960 figures, including those for West Berlin.

\*\* Excluding 3897 physicians not in practice.

† Data incomplete.

Medical education in the Federal Republic of Germany lasts for five and a half years.<sup>1</sup> After a student has passed the final qualifying examination, he must acquire two years' practical experience in a hospital before he is granted the licence to practise, known as *Bestallung als Arzt*.

## Administration

Most universities, as well academies, in the Federal Republic are government institutions. They are administered and financially supported by the government of the *Land* (province) in which they are situated, but follow federal regulations laid down for medical education. Each faculty, and each hospital attached to a university, prepares its own budget, which is then submitted with that of the university as a whole to the *Land* minister of education and, finally, to the *Land* parliament.

Professors are appointed by the *Länder* ministers of education upon the recommendation of the faculties concerned. Deans of faculties are elected each year by professors of faculties from among their own number. A professor is not eligible for re-election to serve a second term of office as dean.

The academic year is divided into two semesters, running from November to February and from May to July. During the remaining five months of the year, a student is expected to pursue his studies or to spend a period of clinical clerkship as a *Famulus* in a hospital.

## Conditions of admission

School education consists of four years at primary school (average age 6-10), and nine years at secondary school (average age 11-19). There are three types of secondary school in the Federal Republic: the *altsprachliches Gymnasium*, devoted

<sup>1</sup> In contrast to the university faculties proper, the academy at Düsseldorf provides the clinical part of the curriculum only.

mainly to classical studies; the *neusprachliches Gymnasium*, devoted in the main to modern languages; and the *naturwissenschaftliches Gymnasium*, mainly concerned with scientific subjects. Attendance at any one of these secondary schools, success in the final examination (*Abitur*), and a satisfactory knowledge of Latin entitle the candidate to enter the medical course.<sup>1</sup>

There is no *numerus clausus*. Foreign students are eligible for admission. If they are not in possession of the German secondary-school certificate (*Reifezeugnis, Abitur*), a secondary-school certificate obtained elsewhere may exceptionally be accepted, provided it is recognized by the ministry of education of a German *Land* as equivalent to the German secondary-school certificate.

### Curriculum

The curriculum and the examination requirements are laid down by the Federal Regulations of 1953, and are the same for all medical schools. The curriculum is divided into a pre-clinical period of two and a half years, totalling five semesters, and a clinical period of three years, totalling six semesters.

The subjects to be studied during the pre-clinical period are anatomy (three semesters, with two semesters of dissection), chemistry, physics, physiology, biochemistry (each two semesters, with one semester of practical work), botany, zoology, histology, and embryology (each one semester with practical work in histology only).

During the clinical period, the student must attend clinical demonstrations for two semesters each in medicine, surgery, midwifery, and paediatrics, and for one semester each in ophthalmology, otorhinolaryngology, psychiatry and neurology, dermatology and venereology, orthopaedics, dentistry, and the care of medical and surgical out-patients. While attending these demonstrations, he is known as a *Praktikant*. The compulsory practical courses that the student attends include: practical classes in pathology (one in dissection and one in histology), pharmacology, hygiene and microbiology, clinical chemistry, a vaccination course, and courses in clinical diagnosis in internal medicine, obstetrics, gynaecology, otorhinolaryngology, and ophthalmology. In addition, he must attend lectures in pathology, topographic anatomy, forensic medicine, physiotherapy, social medicine, occupational health, radiology, pharmacology, hygiene, and history of medicine. At some time during the clinical course, but not during the academic term, the student must work for at least three months as a clinical clerk (*Famulus*) in an approved hospital.

Clinical demonstration is one of the chief teaching methods used. Attendance is compulsory at the lectures, practical classes and clinical demonstrations in nearly all the subjects of the curriculum and must be certified before the student is admitted to examinations. Since the curricula of all the schools are practically the same, students may move from one school to another. Although the official curriculum lasts five and a half years, most students take six years to complete the course and to pass all the examinations.

<sup>1</sup> In addition, a recent regulation requires the student to perform eight weeks in nursing practice before admission to the course.

## Examinations

Three examinations are held—namely, the examination in natural science, known as the *Naturwissenschaftliche Vorprüfung*, the pre-clinical examination (*Ärztliche Vorprüfung* or *Physikum*) and the clinical or qualifying examination, known as the *Ärztliche Prüfung*. The examination in natural science, which covers chemistry, physics, botany and zoology, may be taken after the student has satisfactorily attended at least two semesters. The examination is oral and has to be passed in its entirety, including any re-examinations, within a period of six months. If a student fails in more than one subject, he must repeat the whole examination. If he fails at the second attempt, he is not allowed to continue his medical studies.

The pre-clinical examination is taken after the student has passed the examination in natural science and satisfactorily completed at least three semesters of medical studies. The examination covers anatomy, physiology, and biochemistry and is both oral and practical. The regulations governing failure and re-examination are the same as those for the examination in natural science.

The clinical examination may be taken after the student has satisfactorily completed at least eleven semesters—that is, six after passing the pre-clinical examination. The subjects of the clinical examination are pathology, pharmacology, hygiene (including bacteriology, serology, and social medicine), forensic medicine, medicine, surgery, obstetrics and gynaecology, paediatrics, dermatology and venereology, ophthalmology, otorhinolaryngology, psychiatry, and neurology. The clinical examination lasts up to ten weeks, and may be taken at any time during the academic year.

The examinations are oral, clinical and practical, but not written. During the clinical examinations in medicine, surgery and paediatrics, a candidate has to examine a patient in the presence of the examiners, and to write down his findings (history, diagnosis, prognosis, recommended therapy), which are then countersigned by the examiners. Subsequently, a candidate has to prepare and write up a critical report on the case, which he hands to the examiners on the following morning. In obstetrics, he is required to follow a patient before delivery and for 48 hours afterwards and to write a report, which must include the treatment advised for both mother and child.

The regulations governing failure in the clinical examination and re-examination are the same as those for the pre-clinical examination, except that students must take the re-examination within twelve months of the first attempt.

Successful completion of the course does not lead to a university degree, but does give the right to the title *Medizinalassistent*.

## Qualification and licence to practise

Of the two-year internship which must be performed before a licence to practise is granted, six months must be devoted to medicine, and four months each to surgery and obstetrics. The *Medizinalassistent* may, within certain limits, choose for himself how to spend the remaining ten months. He may decide to devote part of that time to working in a health department; or in physiological, pharmacological, pathological or microbiological laboratories; or with a general practitioner. Any part of the internship that is not satisfactorily performed must be repeated.

After the period of internship has been completed, the *Bestallung als Arzt* is issued by the health department of the *Land* in which the final qualifying examination in medicine was passed. It entitles the holder, now known as *Arzt* (Physician), to practise in any of the *Länder* of the Federal Republic.

A graduate who has completed the medical course may subsequently obtain the degree of *Doctor medicinae* (Doctor of Medicine) by submitting a thesis containing the results of original research or observation.

Nationals and foreigners with foreign diplomas and foreigners who have qualified in the Federal Republic may, in individual cases and on application, obtain the licence to practise. Applicants in the first category must show evidence that the medical studies that they have completed abroad led to the authorization to practise medicine. A temporary licence to practise may be granted to applicants in both categories who can show evidence that they have successfully completed their medical studies. This authorization, subject to withdrawal, is granted only for a limited period and may be restricted to certain activities. In all other respects the persons concerned have the same rights and duties as German physicians qualified in the Federal Republic.

Medical graduates are under no obligation to serve the State before engaging in private practice.

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees (D. Marks)
Medizinische Fakultät der Freien Universität Berlin Krankenhaus Westend, Haus II Spandauer Damm 130 I BERLIN 19 (Charlottenburg)	1948	40 f 98 p	1514 m 1020 f	122 m 104 f	131	
Medizinische Fakultät der Rheinischen Friedrich-Wilhelms-Universität Am Hof 1B BONN, Nordrhein-Westfalen (North Rhine-Westphalia)	1818	86 f 48 p	1515 m 513 f	300	165	420-480
Medizinische Akademie in Düsseldorf Strümpellstrasse 4 DÜSSELDORF, Nordrhein-Westfalen (North Rhine-Westphalia)	1923	139	594	168	105	30
Medizinische Fakultät der Universität Erlangen Kollegienhaus ERLANGEN, Bayern (Bavaria)	1743					
Medizinische Fakultät der Johann- Wolfgang-Goethe-Universität Ludwig Rehnstrasse 14 FRANKFURT-AM-MAIN, Hessen	1914	35 f 111 p	885 m 396 f	296* 90**	110	500-600

\* 1960 summer semester.

\*\* 1960-61 winter semester.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (D. Marks)</i>
Medizinische Fakultät der Albert-Ludwigs-Universität Belfortstrasse 11 FREIBURG-IM-BREISGAU, Baden- Württemberg	1460	93 f 29 p	1614 m 971 f	536	249	600
Medizinische Fakultät der Justus-Liebig-Universität Bismarckstrasse 22 GIESSEN, Hessen	1607					
Medizinische Fakultät der Georg-August-Universität GÖTTINGEN, Niedersachsen (Lower Saxony)	1734					
Medizinische Fakultät der Universität Hamburg Martinistrasse 52 HAMBURG 20, Hamburg	1919	108 f 79 p	1097 m 544 f	410	190	400
Medizinische Fakultät der Universität Heidelberg Grabengasse 1 HEIDELBERG, Baden-Württemberg	1390					
Medizinische Fakultät der Universität des Saarlandes HOMBURG, Saarland	1946					
Medizinische Fakultät der Christian-Albrechts-Universität Ohlshausenstrasse 40 KIEL, Schleswig-Holstein	1665	71 f 34 p	2079 m 763 f	158 m 66 f	72 m 25 f	250
Medizinische Fakultät der Universität Köln KÖLN, Nordrhein-Westfalen (COLOGNE, North Rhine- Westphalia)	1919	79 f 23 p	1161 m 420 f	186 m 75 f	62 m 24 f	200
Medizinische Fakultät der Johannes-Gutenberg-Universität Saarstrasse MAINZ, Rheinland-Pfalz (Rhineland-Palatinate)	1477					
Medizinische Fakultät der Philipps-Universität Emil Mannkopffstrasse 2 MARBURG/LAHN, Hessen	1527	73 f 21 p	626 m 344 f plus 148 f 8 f foreigners	248	89	90 per course + labor- atory fees



<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (D. Marks)</i>
Medizinische Fakultät der Ludwig-Maximilians-Universität Pettenkoferstrasse MÜNCHEN, Bayern (MUNICH, Bavaria)	1472					
Medizinische Fakultät der Westfälischen Landes-Universität Westring 24 MÜNSTER, Nordrhein-Westfalen (North Rhine-Westphalia)	1925	76 f 66 p	1486 m 689 f	787	119	235
Medizinische Fakultät der Eberhard-Karls-Universität Schollplatz TÜBINGEN, Baden-Württemberg	1477	50 f 75 p	923 m 479 f	400	87	ca 450
Medizinische Fakultät der Julius-Maximilians-Universität Sanderring 2 WÜRZBURG, Bayern (Bavaria)	1582	103	1549	315	58	110

## GREECE

### Introductory data\*

Population . . . . .	8 327 000
Number of medical schools . . . . .	2
Number of physicians . . . . .	10 400
Number of medical graduates . . . . .	424
Population per medical school . . . . .	4 164 000
Population per physician . . . . .	800

\* 1960 figures.

Medical education in Greece lasts for six years, not including a period of internship, and leads to the *Ptychion iatrikes* (Diploma of Medicine).

### Administration

The Greek universities are State institutions, under the jurisdiction of the Ministry of Education, and are financed through government subsidies. Curricula, the form and standards of examinations, the number of professors in each faculty, and so on, are laid down by law. Within the limits set by their charters, the universities administer their affairs through their rectors and senates.

Each faculty is administered by a Dean and a Faculty Council. The latter, composed of all the professors of the faculty, elects each year one of its members as Dean. He holds office for one year and is eligible for re-election.

Professors receive their appointments by decree of the Ministry of Education, after election by the Faculty Council. Full professors hold permanent appointments, and retire at the age of 70.

The academic year begins in October and ends in June.

### Conditions of admission

A candidate for admission to a medical school must have completed the five-year secondary-school course (preceded by six years of primary education) and must pass the university entrance examination, which covers Greek, physics, chemistry, and anthropology-biology. In addition, he must show a knowledge of either English or French and must undergo a physical examination.

Foreign students are admitted to medical studies provided that they pass the competitive entrance examination on the same terms as Greek students.

### Curriculum

The six-year curriculum is arranged as follows:

*First year* : chemistry; physics; botany; zoology; anatomy; physiology

*Second year* : organic chemistry; anatomy (including histology, embryology, and anthropology); physiology (including biochemistry)

*Third year* : morbid anatomy; pharmacology; microbiology; pathological physiology; surgery and clinical surgery; topographic anatomy and operative technique

*Fourth year* : morbid anatomy; obstetrics and gynaecology; clinical medicine; surgery and clinical surgery; hygiene; radiology

*Fifth year* : clinical medicine; clinical surgery; clinical paediatrics; ophthalmology; otorhinolaryngology; urology; forensic medicine and toxicology; orthopaedics; dermatology and venereology

*Sixth year* : clinical medicine; psychiatry and neurology; phthisiology; clinical therapeutics. During the sixth year of the course, a student is required to spend three months in each of three clinics, for internal medicine, surgery, and obstetrics.

### Examinations, qualification and licence to practise

An examination is held at the end of each academic year—i.e., in the month of June—on the subjects studied during that period. A final examination is devoted to the main clinical subjects. Examinations are oral, written, practical, and clinical. A student who fails in any subject or subjects in the June examination may take them again in October. If he fails again, he may try once more in January. If he fails a third time, he must obtain special approval from his faculty to continue his studies.

A student who is successful in the final examination receives the *Ptychion iatrikes* (literally, "scroll" or "diploma" of medicine) from his university. Candidates who have obtained medical degrees abroad and wish to practise in Greece sit for the same final examinations as the students already attending universities in Greece and receive the same diploma.

A medical graduate must serve one year of internship in an accredited hospital before he is granted a licence to practise.

The doctorate in medicine is a higher academic degree, which requires the presentation of a thesis containing the results of original research. This higher degree is taken chiefly by graduates interested in an academic career.

Foreigners who hold a Greek diploma are authorized to practise if the relevant reciprocity exists between their country and Greece. Foreigners who hold a foreign diploma are authorized to practise if their qualifications are recognized as equivalent and if reciprocity exists.

Apart from the period of internship mentioned above, medical graduates are under no obligation to serve the State before engaging in private practice.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Drachmas)</i>
Faculty of Medicine National University of Athens ATHENS	1837	126*	1810	600	300	3000
Faculty of Medicine University of Thessaloniki THESSALONIKI	1942	109**	1500	300	124	2500

\* Includes 26 professors.

\*\* Includes 19 professors.

## GUATEMALA

### Introductory data\*

Population . . . . .	3 765 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	730**
Number of medical graduates . . . . .	30
Population per medical school . . . . .	3 765 000
Population per physician . . . . .	4 900**

\* 1960 figures.

\*\* 1958 figures.

Medical education in Guatemala lasts for eight years, including a period of internship, and leads to the degree of *Licenciado en Ciencias Médicas* (Licentiate in Medical Sciences).

### Administration

The Faculty of Medicine is part of a Government-owned university, an entirely autonomous institution. It is headed by a Dean, assisted by a Faculty Board.

The academic year consists of two semesters of five months each, running from mid-January to mid-June and from mid-July to mid-December.

### Conditions of admission

In order to be admitted to the Faculty of Medicine, a candidate must hold the *bachillerato* (a certificate obtained after five years of secondary school, preceded by six years of primary education) or its equivalent. The *bachillerato* should indicate the marks obtained in all subjects. Candidates must also pass an examination held by the vocational guidance section of the Students' Welfare Service of the University. Moreover, they must pass an entry examination held by the Admission Committee in the following subjects: (1) Spanish; (2) natural sciences (anatomy, physiology, physics and general chemistry); (3) mathematics; and (4) English or another modern language. Each candidate has a personal interview with the members of the Admission Committee.

Foreign students are admitted to medical studies in Guatemala on condition that they comply with the entry requirements of the Admission Committee and pass the entry examination on the same terms as Guatemalan students.

### Curriculum

The curriculum is divided into pre-medical, pre-clinical and clinical periods, and is arranged as follows:

The subjects of the first, or pre-medical, year are chemistry, physics, biology, mathematics, and English. These courses are at present being taught in the Faculty of Medicine.

The second and third, or pre-clinical, years are devoted to anatomy, histology and embryology, physiology, biochemistry, pathology, bacteriology, parasitology, and psychology, taught by way of lectures and practical work.

Study of the clinical subjects begins in the fourth year of the course and continues for five years. It consists of theoretical instruction by way of lectures and of practical instruction given in hospitals. Theoretical instruction is given in medicine, surgery, obstetrics and gynaecology, psychiatry and neurology, ophthalmology, otorhinolaryngology, dermatology and venereology, pharmacology and therapeutics, radiology, anaesthesiology, forensic medicine, preventive and social medicine, and the history of medicine. Practical instruction is given in the wards, and is followed by periods of medical and surgical internships of twelve months each, as well as a six-month internship in one of the specialized departments. Instruction in the clinical subjects is given, whenever possible, at the bedside to small groups of students, and professors in different subjects—for example, pathology and medicine—often teach together.

#### Examinations, qualification and licence to practise

After a student has passed the final examinations and has presented a thesis, he is awarded the degree of *Licenciado en Ciencias Médicas*. This constitutes the licence to practise in Guatemala, and no further examinations are required.

Both foreigners and Guatemalan nationals who hold a foreign medical degree may obtain permission to practise if they comply with the regulations laid down by the Government and university authorities. They must also become members of the Guatemalan Association of Physicians and Surgeons.

Medical graduates have not in the past been obliged to work in government service, but a proposal has been under consideration for introducing a one-year period of compulsory rural service. (This was scheduled to begin in 1962.)

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees (Quetzales)
Facultad de Ciencias Médicas de la Universidad de San Carlos de Guatemala 2ª Avenida Sur 44 GUATEMALA	1681	99	784	65	30	38

## HAITI

## Introductory data\*

Population . . . . .	4 156 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	120**
Number of medical graduates . . . . .	41
Population per medical school . . . . .	4 156 000

\* 1960 figures.

\*\* 1957 figures; only physicians in government service.

Medical education in Haiti lasts for five years, not including the pre-medical year. The fifth year of the course is devoted to internship, after which successful candidates are awarded the degree of *Docteur en médecine* (Doctor of Medicine).

## Administration

The Medical Faculty is a unit of the Ministry of Health (Ministère de la Santé), but close co-operation is maintained with the University proper, which is under the jurisdiction of the Ministry of Education (Ministère de l'Éducation nationale).

The Faculty is administered by a Council of professors and a Dean. The latter is selected by the President of the Republic from among candidates suggested by the Council and the Ministry of Health.

The academic year begins in October and ends in July.

## Conditions of admission

A Haitian student who seeks admission to medical studies must produce the following documents: (1) an identity card, if he is of age, or an authorization signed by his legal representative, if he is a minor, accompanied by two photographs; (2) a certificate stating that he has committed no criminal offence; (3) a certificate of vaccination against infectious diseases (smallpox, typhoid, diphtheria, etc.); (4) a recent health certificate; (5) his birth certificate or, if this is not available, an extract from the registers; (6) a full certificate of secondary studies (classical branch). (This is obtained after seven years of secondary education in a *lycée*, preceded by six years in primary school.)

Any foreign student who desires to secure admission to the Faculty of Medicine of the University of Haiti must also submit: (1) his residence permit; (2) his university diplomas; (3) a translation in French of the documents he has submitted, attested by the consulate of his country; (4) if no identity card is produced, a certificate of identification with photograph certified by his consul.

In view of limitations of space the number of foreign candidates admitted must not exceed forty; when more than this number seek admission those admitted

must be selected by competitive examination. The minimum mark required is 65 %.

The one-year pre-medical period, known as the P.C.B. course, which a student must attend before beginning his medical studies proper, is held under the auspices of the Faculty of Medicine, in close co-operation with units of the Faculty of Science. The course, in the main, covers physics, chemistry, and biology, but part of the curriculum is also devoted to botany, zoology, and embryology.

### Curriculum

The five-year medical curriculum is arranged as follows:

*First year* : chemistry; anatomy; histology; physiology; biochemistry; bacteriology; medical symptomatology

*Second year* : organic chemistry; anatomy; physiology; biochemistry; pathology; bacteriology; serology; parasitology; medical symptomatology; surgical symptomatology; medical ethics

*Third year* : pathology; pharmacology; therapeutics; medicine; surgery; operative surgery; traumatic diseases; paediatrics; dermatology; radiology; otorhinolaryngology; orthopaedics; physical medicine; tropical medicine; urology; forensic medicine

*Fourth year* : pathology; therapeutics; toxicology; medicine; surgery; operative surgery; obstetrics; gynaecology; radiology; ophthalmology; dermatology; urology; forensic medicine; preventive medicine

*Fifth year* : includes a period of internship at the General Hospital, during which two months are devoted to medicine and two months to obstetrics; surgery, orthopaedics, paediatrics, urology, dermatology, laboratory work, and otorhinolaryngology are also covered, one month being devoted to each. This is followed by an additional month's service at the Tuberculosis Hospital. Moreover, fifth-year students attend a course known as *actualités médicales* (topical medical subjects), in which each professor discusses the latest discoveries and developments in his own particular field.

### Examinations

End-of-the-year examinations are written, oral, practical and clinical, according to subject. They are held in July, with a supplementary examination in September for those students who fail in July. Oral examinations are held by an examining board of three, one of whom is the professor responsible for the subject covered.

### Qualification and licence to practise

After a student has passed all his examinations and has completed his year of internship, he is awarded the *diplôme d'Etat* (State diploma) of *Docteur en Médecine* (Doctor of Medicine). In accordance with the Law of 3 September 1951, which lays down the manner in which resident service in rural areas and in hospitals is to be performed, the right to practise medicine is dependent on completion of a full year's *stage*, or probationary period (as part of a rural or preventive medicine programme), in a community designated by the Division of



Population of the Ministry of Health under the supervision of the district health administrator; after this *stage* in rural practice, there follows a hospital *stage* that lasts for two years.

Foreigners who hold a Haitian diploma and who have complied with the provisions of the law concerning the *stage* in a hospital, or in a rural medicine programme, or in the medical service of the Haitian Army, are entitled to receive a permit authorizing them to practise medicine.

A Haitian national who holds a medical diploma conferred by a foreign university must, before being allowed to practise, ensure that his degree is recognized as equivalent to a Haitian degree. He is then subject to the same obligations as a graduate of the Faculty of Medicine of Haiti—that is, he must perform three years of State-assigned duties; however, he may be exempted from this if he holds a specialist diploma approved by the Board of Professors of the Faculty.

A foreigner who holds a foreign medical diploma may be admitted to practice only if he obtains recognition of the equivalence of his qualifications. In applying for this, he must produce the following documents: (1) his birth certificate or other document in lieu thereof; (2) the diploma for which recognition is sought; (3) official documents setting forth the programme of the faculty or school which awarded the diploma; and (4) one or more character testimonials issued by the competent authorities of the area or areas where the applicant has practised during the two years immediately preceding his arrival in Haiti; (5) a residence permit and identity card, obtained in Haiti; and (6) one or more certificates issued by the Haitian Police Department stating that the applicant has been resident in Haiti for an uninterrupted period of at least two years. The documents mentioned under (1), (2), (3) and (4) must be duly legalized and, if need be, translated into French by a sworn translator appointed by the competent Haitian authority.

This application for the recognition of equivalence of diplomas must be submitted for consideration to a special Board composed of the Dean and professors of the Faculty of Medicine, which decides by absolute majority whether the applicant is required to sit for the legally prescribed examination.

However, the number of foreign physicians and physicians of foreign origin with Haitian citizenship who are permitted to practise in Haiti is limited to five. The President of the Republic may nevertheless permit any foreign medical worker of renown or any specialist who is passing through Haiti to practise medicine on conditions to be laid down in each case. Such authorization may be revoked at any time.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Faculté de Médecine et de Pharmacie de l'Université d'Haiti Rue Oswald Durand PORT-AU-PRINCE	1830	1 f 54 p	246 m 54 f	75	41	None

## HONDURAS

### Introductory data\*

Population . . . . .	1 953 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	365**
Number of medical graduates . . . . .	34
Population per medical school . . . . .	1 953 000
Population per physician . . . . .	4 800**

\* 1960 figures.

\*\* 1957 figures.

Medical education in Honduras consists of a five-year course plus one year of internship and one year of medico-social service. Students who have completed this seven years' training and passed private and public examinations are awarded the degree of *Doctor en Medicina y Cirugía* (Doctor of Medicine and Surgery).

### Administration

According to Law No. 170 of 30 April 1958 the University of Honduras is an autonomous institution. It is governed by a Joint Board (Claustro Pleno), a Supreme Council (Consejo Superior), and a Rector, who is the chief administrative officer of the University. Each faculty is administered by a Governing Board (Junta Directiva), in which the student body is represented. Heads of the departments and professors are appointed by the Governing Board of the faculty, and approved by the Supreme Council.

The academic year begins in May and ends in January.

### Conditions of admission

In order to be admitted to the medical course, a student must have completed five years of secondary education and hold the *bachillerato en ciencias y letras* (certificate of secondary education in science and letters), or a recognized equivalent. In addition he must complete a one-year course in natural sciences and humanities at the University's Department of General Studies. During this course he undergoes a medical examination.

Not more than three foreign students are admitted annually to the medical course. They must comply with the admission requirements.

### Curriculum

The curriculum is arranged as follows:

*First year*: anatomy; histology and embryology; biochemistry; biostatistics and medical psychology

*Second year*: physiology; microbiology; parasitology; pharmacology; preventive and social medicine; introduction to medicine and surgery

*Third year* : surgery: (a) nosology, (b) clinical surgery; medicine (I): (a) nosology, (b) clinical medicine; pathological anatomy; surgical technique and topographic anatomy; radiology (complementary to clinical medicine and surgery); psychopathology

*Fourth year* : medicine (II): (a) nosology, (b) hospital practice; preventive and social medicine; psychiatry: (a) nosology, (b) clinical psychiatry

*Fifth year* : clinical therapeutics; paediatrics: (a) nosology, (b) clinical paediatrics and hospital practice; forensic medicine and toxicology; preventive and social medicine; history of medicine and medical deontology; ophthalmology; dermatology and syphilology; urology; otorhinolaryngology.

### Examinations and qualification

Written, oral, practical and clinical examinations are held at the end of each academic year and cover the subjects studied during that period. Supplementary examinations are held for those students who fail in the end-of-the-year examinations, but no student may be re-examined in more than two subjects. A student who fails to obtain pass-marks in more than two subjects must repeat the whole year's course.

During the last year of the course, and under the guidance of a professor, a student must prepare and submit a thesis, which he must then defend before a Board of Examiners in the course of a *viva voce* examination.

### Licence to practise

The degree of *Doctor en Medicina y Cirugía* entitles the holder to practise.

Citizens of Honduras who have qualified at foreign universities, if they wish to practise in Honduras, must perform one year of medico-social service as determined by the Governing Board of the Faculty of Medicine, and thereafter register at the Faculty of Medicine.

Foreigners who are holders of foreign medical degrees are permitted to practise in Honduras provided that they present their diploma, a character testimonial and evidence of a sufficient knowledge of Spanish, and sit for an examination, the form and time of which are determined by the Governing Board. Only physicians who are political refugees may obtain immediate authorization to practise upon presentation of their documents.

Foreigners who obtain the medical degree conferred by the Faculty of Medicine of Honduras are subject to the same licensing regulations as Honduran graduates.

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees
Facultad de Medicina y Cirugía de la Universidad Nacional Autónoma de Honduras TEGUCIGALPA	1882	56	201	35	34	None

## HONG KONG

### Introductory data\*

Population . . . . .	3 075 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	1 001
Number of medical graduates . . . . .	45
Population per medical school . . . . .	3 075 000
Population per physician . . . . .	3 100

\* 1960 figures.

Medical education in Hong Kong lasts for five years and leads to the university degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.). Hospital internship for one additional year is compulsory before the practice of medicine is authorized.

### Administration

The head and principal officer of the University is the Chancellor, a position invariably held by the Governor of Hong Kong. The Vice-Chancellor is the chief administrative officer.

Each faculty is administered by a Dean and a Faculty Board. The Dean is elected by the Faculty Board from among faculty members for a three-year period and is eligible for re-election. Full-time members of the staff of the grade of assistant lecturer and above are members of the Faculty Board.

The University's funds are derived from annual and capital grants from the Government of Hong Kong, occasional *ex gratia* grants from the United Kingdom Treasury, private donations and endowments, and students' fees.

The academic year runs from September to June and is divided into three terms of approximately three months each. English is the official language of the University and the medium of teaching in the Faculty of Medicine, although contact with patients in clinical practice is frequently in the Chinese language.

### Conditions of admission

Minimum qualifications for admission to the University of Hong Kong are attainment of the age of 17, a satisfactory health examination, and success in the University of Hong Kong Matriculation Examination (taken after a five-year secondary-school course) or a recognized equivalent.

### Curriculum

The five-year curriculum is divided into three periods—namely, pre-clinical (one year and two terms), introductory clinical (two terms), and clinical (two years and two terms). Details are as follows:

*Pre-clinical period* (first year and first two terms of second year)

The subjects studied during this period are organic chemistry, anatomy, physiology, biochemistry, embryology, and histology.

*Introductory clinical period* (last term of second year and first term of the third year)

This course serves as an introduction to the study of medicine and surgery. It consists of lectures and demonstrations on clinical methods, together with periods of practical application in the wards. Instruction in pathology, pharmacology and bacteriology is also given.

*Clinical period* (third to fifth years)

In the third year, the subjects studied are pathology, bacteriology, parasitology, preventive medicine, medicine and surgery. The curriculum for fourth- and fifth-year students covers medicine, surgery, obstetrics and gynaecology, preventive and social medicine, forensic medicine, pathology, paediatrics, orthopaedics, ophthalmology, otorhinolaryngology, venereology, anaesthetics, infectious diseases, dermatology, neurology, psychiatry, and radiology.

### Examinations

Three university examinations for the degrees of M.B., B.S. are held, and a student must pass each of these before he may proceed to the next period of studies.

The First University Examination is in two parts. Part I, in organic chemistry, is held at the beginning of the second term of the first year. Part II is in anatomy, physiology, and biochemistry, and is held at the end of the second term of the second year—that is, at the end of the pre-clinical period.

The Second University Examination is held in three parts, namely: Part I, pharmacology; Part II, pathology and bacteriology; and Part III, preventive and social medicine. This examination is taken during a student's third and fourth years; the parts may be taken separately and in any order.

The Third University Examination covers the three clinical subjects—medicine, surgery, and obstetrics and gynaecology—and their related specialties. It is held twice yearly, in May and November, and students normally must sit for all three subjects at the same time. In certain circumstances, students who pass in two subjects may be permitted to hold these and enter for the third subject at a subsequent examination.

The examinations are written, oral, practical and clinical. Class examinations are held at intervals during each term, and admission to University Examinations may be conditional on satisfactory results in the class examinations.

### Qualification and licence to practise

After passing the Third University Examination, a student receives the university degrees of Bachelor of Medicine and Bachelor of Surgery. He must then complete one year of satisfactory service as a member of the resident medical staff of an approved hospital, after which he is entitled to register as a medical practitioner with the Medical Council, and to practise in Hong Kong. Holders of the M.B., B.S. of the University of Hong Kong who obtained these degrees

after 1 January 1953 and are registered as medical practitioners with the Medical Council of Hong Kong are eligible for registration in the Commonwealth List of the Medical Register of the United Kingdom.

Medical graduates are under no obligation to serve the State before engaging in private practice.

Foreigners who have qualified at the Faculty of Medicine, University of Hong Kong, may be permitted to practise in Hong Kong on completion of twelve months' internship. Nationals and foreigners with foreign qualifications may be permitted to practise if they are registrable with the General Medical Council of the United Kingdom.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (\$HK)</i>
Faculty of Medicine University of Hong Kong HONG KONG	1887	53 f 45 p	284 m 27 f	68	45	1320

## HUNGARY

### Introductory data\*

Population . . . . .	9 984 000
Number of medical schools . . . . .	4
Number of physicians . . . . .	14 398**
Number of medical graduates . . . . .	795
Population per medical school . . . . .	2 500 000
Population per physician . . . . .	690

\* 1960 figures.

\*\* Not including 1300 Doctors of Dental Medicine.

Medical education in Hungary lasts for six years and one month and leads to the diploma of Doctor of Medicine.

### Administration

The universities of medical sciences are autonomous institutions under the jurisdiction of the Ministry of Health and financed by the State. Each university consists of one or more of the following three faculties: general medicine, stomatology and pharmacy. At the head of each university is a Rector and at the head of each faculty is a Dean.

The academic year is of ten months' duration, beginning on 1 September and ending on 30 June. The length of the course, including the examination period, is thirty weeks.

### Conditions of admission

To be eligible for admission to the medical course students must be not less than 18 years of age. They must have behind them eight years of primary schooling and four years of secondary school and must have obtained the certificate of secondary studies. Each candidate must also pass an entrance examination and must at the same time undergo a medical examination, since a candidate's state of health is also taken into consideration in deciding whether he shall be admitted to the faculty. As all boys and girls in Hungary are vaccinated against various diseases (tuberculosis, smallpox, diphtheria, whooping-cough, tetanus, typhus, poliomyelitis) between the ages of 6 and 14 at primary school, no special vaccination is required for admission to the university.

Foreign students may, if they so desire, be admitted to the medical course but are required to obtain an authorization from the Ministry of Culture.

### Curriculum

The curriculum is arranged as follows:

*First year*

*First semester* : medical physics; medical chemistry; medical biology; anatomy; philosophy; Russian language; physical culture

*Second semester* : medical physics; medical chemistry; medical biology; anatomy; histology and embryology; philosophy; Russian language; physical culture

A course in Latin is given for those who have not studied Latin in secondary school.

*Second year*

*First semester* : anatomy; histology and embryology; physiology; biochemistry; philosophy; Russian language; physical culture

*Second semester* : anatomy; histology and embryology; physiology; biochemistry; Russian language; physical culture

*Third year*

*First semester* : pathological physiology; morbid anatomy; microbiology and parasitology; medical and surgical pathology; political economy

*Second semester* : pathological physiology; morbid anatomy; microbiology and parasitology; internal medicine; general surgery; radiology; political economy

*Fourth year*

*First semester* : general surgery; pharmacology; internal medicine (infectious diseases); anatomy and surgical techniques; obstetrics and gynaecology; dermatology and venereology; orthopaedics; scientific socialism (history of the international workers' movement)

*Second semester* : general surgery; pharmacology; internal medicine (infectious diseases); anatomy and surgical techniques; obstetrics and gynaecology; dermatology and venereology; scientific socialism (history of the international workers' movement)

*Fifth year*

*First semester* : internal medicine (infectious diseases); hygiene and epidemiology; social medicine (history of medicine); paediatrics (infectious diseases of childhood); neurology and psychiatry; ophthalmology; urology; forensic medicine; scientific socialism (history of the international workers' movement)

*Second semester* : internal medicine (infectious diseases); hygiene and epidemiology; phthisiology; paediatrics (infectious diseases of childhood); neurology and psychiatry; otorhinolaryngology; stomatology; forensic medicine

*Sixth year*

This consists of a period of obligatory clinical practice lasting 12 months. During this year students pass three months in each of the four following departments: internal medicine (two weeks of this period being devoted to out-patient clinics in neurology); surgery (one month out of the three being spent in a traumatology unit and two weeks each in otorhinolaryngology and stomatology units); obstetrics and gynaecology; and paediatrics (including two weeks in the infectious diseases unit).



Apart from their obligatory studies students are recommended to follow a foreign language course. At the University of Budapest one foreign language is compulsory in the third and fourth years.

After completing the third-year course students of medicine must spend four weeks in an internal medicine unit of a hospital. On completing the fourth year of study they must similarly spend four weeks in a surgical unit.

### Examinations

Examinations are both oral and practical, and take place at the end of each semester or at the end of the academic year. During the sixth year—that is, the year of clinical work—four examinations are held, one after each of the four three-month periods mentioned above. The examinations are organized by the university; a representative of the State is present only at the examination for the State diploma. This examination covers the following subjects: hygiene and epidemiology, social medicine, forensic medicine, and philosophy.

A student who fails at one examination may sit for it again two months later. If he again fails he has to repeat the entire year or is obliged to leave the university. No student is allowed to repeat an academic year more than once as the result of a failure.

### Qualification and licence to practise

A holder of the diploma of Doctor of Medicine is entitled to practise. For two years, however, his place of work and medical activities are determined by the State. Nationals holding a foreign diploma may be authorized to practise if the diploma is recognized. If a foreigner holding a foreign diploma wishes to practise medicine in Hungary he must submit proof that he is authorized to stay for a long period in the country. Degrees obtained in Hungary entitle their holders to practise medicine in Hungary without other formalities.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Forint)</i>
Orvosi Fakultás Tudományegyetem (Faculty of Medicine, University of Science) Ulloi Ut. 26 BUDAPEST VIII	1769	808	2372	320	388	2000
Orvosi Fakultás Tudományegyetem (Faculty of Medicine, University of Science) Sztálin körút 76 DEBRECEN	1912	327	916	160	138	2000

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Förint)</i>
Orvosi Fakultás Pécsi Tudományegyetem (Faculty of Medicine, University of Science of Pécs) Rákóczi Ut. 80 PÉCS	1912	288	947	180	116	2000
Orvosi Fakultás Szegedi Orvostudományi Egyetem (Faculty of Medicine, University of Medical Sciences of Szeged) Dugonics Tér 13 SZEGED	1940	293	941	160	153	2000

## ICELAND

### Introductory data\*

Population . . . . .	176 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	230**
Number of medical graduates . . . . .	20
Population per medical school . . . . .	176 000
Population per physician . . . . .	750**

\* 1960 figures.

\*\* 1959 figures.

Medical education in Iceland lasts for seven years and leads to the university degree of *Candidatus Medicinæ et Chirurgiæ*.

### Administration

The University of Iceland is a State institution under the supervision of the Minister of Education, and derives its financial support entirely from government sources. The chief executive and administrative officer of the University is the Rector Magnificus, who is elected by the professors for a three-year term of office. The University is administered by the Consistorium, which is composed of the Rector Magnificus and the deans of the various faculties.

Each faculty has its Faculty Council, composed of the full-time professors, which elects the Dean for one year from among its own members.

The academic year consists of two semesters; it begins on 15 September and ends on 15 June.

### Conditions of admission

Entrance to the Faculty of Medicine is open to all students who have obtained the secondary-school certificate from a recognized school. (Secondary education lasts for four years and primary for six.) The Faculty has the power to restrict admission if it deems it necessary. The medical course is also open to foreigners.

### Curriculum

The seven-year curriculum of the Faculty of Medicine is divided into three parts, and is arranged as follows:

*Part I* (first to third years) covers chemistry, anatomy (including embryology and histology), physiology, and biochemistry.

*Part II* (fourth and fifth years) covers pathology (including bacteriology), and pharmacology. Clinical training in hospital begins during this period.

*Part III* (sixth and seventh years) is devoted to medicine, surgery, obstetrics and gynaecology, psychiatry, specialties (ophthalmology, otorhinolaryngology, radiology), hygiene, and forensic medicine. Clinical training continues throughout the period.

### Examinations

Examination for the medical degree is held in three parts, as follows:

*Part I*, in chemistry at the end of the first year, and in anatomy, physiology, and biochemistry at the end of the third year;

*Part II*, in pathology and pharmacology at the end of the fifth year; and

*Part III*, in the clinical subjects, hygiene, and forensic medicine at the end of the seventh year.

The examination in clinical medicine and surgery is written, oral, and clinical. Examinations in the other subjects are oral.

### Qualification and licence to practise

After passing *Part III* of the examination for the medical degree, a student receives the degree of *Candidatus Medicinae et Chirurgiae*, usually abbreviated to *Cand. Med. et Chir.* or simply *Cand. Med.* After graduation, he must complete one year's "rotating" internship at a recognized hospital and serve as assistant or *locum tenens* to a district doctor for six months. He then receives his *ius practi-candi*, or licence to practise, which is granted by the Ministry of Health.

Icelanders who have obtained their medical degree abroad and who wish to practise in Iceland must have their degree validated. Foreigners who have qualified abroad and who wish to obtain the *ius practi-candi* must become citizens of Iceland and have their degree validated. Those foreigners who possess the Icelandic medical degree must also acquire Icelandic citizenship in order to obtain the licence to practise in Iceland.

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees
Læknadeild Háskóla Íslands (Faculty of Medicine, University of Iceland) REYKJAVÍK	1876	9 f 15 p	177 m 12 f	48	20	None

INDIA<sup>1</sup>

## Introductory data\*

Population . . . . .	431 698 000
Number of medical schools . . . . .	60
Number of physicians . . . . .	84 686**
Number of medical graduates . . . . .	3 119†
Population per medical school . . . . .	7 195 000
Population per physician . . . . .	5 000**

\* 1960 figures.

\*\* 1959 figures. Of the number of physicians stated 40 400 are holders of the M.B., B.S. degrees and 39 056 are Licentiates (see text); the qualifications of a further 5230 are unknown.

† Figure supplied by Government.

Medical education in India consists of a course lasting from five to five and a half years, according to the college at which it is taken. In addition, two years of pre-medical studies must be undertaken. The degrees conferred are those of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.). These degrees entitle the holder to be registered in the Indian Medical Register and therefore to practise medicine in India.

## Historical background

The first medical colleges in India were established and administered by provincial governments at Calcutta and Madras in 1835, and at Bombay in 1845. The first Indian universities—those of Bombay, Calcutta, and Madras—were inaugurated in 1857 and were modelled on the University of London, which, at that time, was a purely examining body. For many years Indian universities confined their activity to examining candidates sent up by their affiliated collegiate institutions, but towards the early part of the twentieth century, a movement was inaugurated in favour of unitary teaching universities.

In the last quarter of the nineteenth century, it was realized that medical education of university standard could not provide a sufficient number of doctors to meet the people's needs, and medical schools, giving a shorter course of training than medical colleges, were accordingly set up in association with civil hospitals. The medical practitioners so produced were known as Licentiates. In 1946, there were nineteen such schools, admitting about a thousand students each year, but the existence of two standards of medical education was regarded as unsatisfactory. A process of conversion and closure was therefore begun at that time and, as a result, only one medical school of the Licentiate type still continues to exist. Provision has also been made for a "condensed M.B., B.S. course" for

<sup>1</sup> See also the section on Goa, page 147.

the benefit of Licentiates now in practice so as to enable them to take a university degree in medicine.

Although the ancient Tibbi-Unani, Ayurvedic, and homeopathic systems of indigenous medicine have flourished in the Indian sub-continent, and while most of the state governments have legislation for the registration of practitioners of the Ayurvedic and Unani systems of medicine, the homeopathic system has been accorded recognition so far only in the former State of Bombay,<sup>1</sup> and in the States of Uttar Pradesh, Madhya Pradesh and Bihar. The laying down of a general policy in this matter by the Government of India awaits the recommendations of a Committee appointed by the Government for this purpose.

Recent reports suggest that there is a demand for pre-clinical training in the basic sciences; the extent to which the modern sciences are compatible with the theories of indigenous medicine remains to be determined, but there can be no doubt that a considerable part of the population at present depends on practitioners of such systems.

### Administration

India has at present forty-four universities, which are autonomous bodies established or incorporated under a Central Act, Provincial Act or State Act. Twenty-nine of these universities are teaching and affiliating institutions, twelve are residential and teaching, and the remainder are teaching and federal. The relationship between the parent universities and their affiliated colleges varies, but the former's functions are mainly limited to the holding of examinations and the conferring of degrees and diplomas. Before a college is accepted for affiliation by a university, the latter must be satisfied as to those responsible for operating the institution, teaching staff, provision made for the residence of students, equipment, financial resources, fees, etc. Affiliated colleges must comply with requests by the university for information, must submit themselves to inspection, and must take the action recommended as a result of such inspection.

In addition, there are in the country a number of higher technological institutes that have university status. There is also an All-India Institute of Medical Sciences, set up in New Delhi under an Act of Parliament in 1956 and empowered to award undergraduate and post-graduate degrees in medical sciences.

Preliminary qualifications for the study of medicine, the period of study, the subjects of study, and examinations are regulated by the All-India Medical Council, which is empowered to lay down the minimum standards required. The actual administration of most of the medical colleges is the responsibility of the health departments of the governments of the states in which they are situated.

The academic year at some of the universities consists of two terms, running from June or July to October and from November to April. At others, it is divided into three terms, running from July to September, from October to December, and from January to March. New students, as a rule, enter in June or July.

At present, the language of instruction and examination at all medical colleges in India is English.

<sup>1</sup> Now the States of Gujarat and Maharashtra.

### Conditions of admission

The basic requirement for admission to an Indian university is the school-leaving or matriculation certificate obtained at the end of the secondary stage of education. Overseas certificates, such as the General Certificate of Education awarded by United Kingdom examining bodies, are also accepted as entrance qualifications.

Before an applicant may be admitted to medical studies he must study chemistry (including organic and physical chemistry), physics, and biology over a period of two years at a university. If he is successful in the examination held at the end of that two-year course he becomes eligible for entry to a medical college. Since there are generally more applicants than vacancies, a selection is made on the basis of marks obtained at the examination or by competitive entrance examinations. Interviews, and reference to confidential school reports, also form part of the selection process.

A number of places are reserved in the medical colleges for foreign students admitted under the General Scholarship Scheme of the Government of India. Places left unfilled by such students are offered on merit to students of Indian origin domiciled abroad.

### Curriculum

The curriculum lasts from five to five and a half years, according to the medical college attended, and is divided into a pre-clinical period of two years, and a clinical period covering the remaining years.

The pre-clinical period is devoted to anatomy (including embryology), physiology (including biochemistry, biophysics, and applied physiology), elementary normal psychology, introduction to general pathology and bacteriology, introduction to pharmacology, and the elements of clinical methods.

The clinical period is devoted to the study of general pathology, bacteriology, and parasitology, pharmacology, hygiene and public health, forensic medicine and toxicology, medicine, therapeutics, surgery, obstetrics and gynaecology, ophthalmology, otorhinolaryngology, and dentistry. Special pathology and the clinical application of the basic sciences are taken up with each subject throughout the course.

Teaching is by way of lectures, lecture-demonstrations, and work in hospitals and out-patient clinics. Attendance at lectures and practical classes is compulsory. The order in which the various subjects are taught varies from one medical college to another, but the broad lines of the curriculum are the same.

### Examinations and qualification

Examinations are conducted by the universities, each having a panel of examiners, who may be drawn from any part of India. Examinations are written, oral, practical and clinical. The number of professional examinations, and the subjects included in any one of these, may vary from one university to another, but in general the pre-clinical subjects are grouped together. The examination in pharmacology is held at the end of the second year at certain universities,

and at the end of the third or fourth year at others. Examinations in pathology, bacteriology and parasitology, hygiene and public health, forensic medicine and toxicology are generally held at the end of the fourth year; at some universities, however, forensic medicine and toxicology are taken with the final examination at the end of the fifth year.

At all the Indian universities, the final professional examination covers medicine, surgery, obstetrics, gynaecology, and ophthalmology. Otorhinolaryngology and dental diseases are included with surgery or with ophthalmology, or taken separately. Infant hygiene is considered along with obstetrics, while the subject of paediatrics is taken up partly in connexion with medicine and partly in connexion with surgery.

In addition to the professional examinations, end-of-term class examinations are held which a student must pass before being admitted to the professional examinations in the subjects concerned. A student who fails any professional examination must undertake further study in the subject or groups of subjects throughout the whole period preceding the next examination.

After passing the final examination, a student receives the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.).

### Licence to practise

No all-India register containing the names of all registered medical practitioners in the country is maintained at present. The Indian Medical Council Act, 1956, however, lays down that the Medical Council of India shall cause to be maintained in the prescribed manner a register of medical practitioners to be known as the Indian Medical Register, which shall contain the names of all persons who are for the time being enrolled on any state medical register and who possess any of the recognized medical qualifications. This Register is in the process of compilation. So far only the government of the former State of Bombay and the governments of Gujarat and Kerala States have enacted laws prohibiting the practice of medicine by unregistered persons.

The Indian Medical Council Act, 1956, mentioned above, lists qualifications which are recognized under the Act, irrespective of the nationality of the holders. These qualifications, included in Schedules I, II and III (Part I), are: (a) medical qualifications granted by universities or medical institutions in India (Schedule I); (b) medical qualifications granted by medical institutions outside India (Schedule II); (c) qualifications granted by medical institutes not included in Schedule I (Schedule III, Part I). In addition, the foreign medical qualifications included in Schedule III (Part II) are also recognized under the Act but this is restricted to citizens of India only.

The requirements governing State service after graduation from the medical course vary from state to state and there is no uniformity in this respect. In most states, however, candidates are admitted to medical colleges for the undergraduate course without their being under any obligation to serve the state government after qualifying.



<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Rupees)</i>
<b>ANDHRA</b> Guntur Medical College Andhra University GUNTUR	1946	90	547 m 178 f	30	56	240
Gandhi Medical College Osmania University HYDERABAD	1954	65 f 11 p	282 m 31 f	54 m 31 f	19 m* 5 f*	240
Osmania Medical College Osmania University HYDERABAD	1926					
Shree Rangaraya Memorial Medical College Andhra University KAKINADA	1959				—	1000
Kurnool Medical College Tirupati University KURNOOL	1957				—	
Sri Venkateswara Medical College Tirupati University TIRUPATI	1960	8	—	—	—	240
Andhra Medical College Andhra University Maharani Pet P.O. VISAKHAPATNAM 2	1923	128 f	687	125	115	240
Medical College Osmania University WARANGAL	1959	21 f	92 m 8 f	100	—	240
<b>ASSAM</b> Assam Medical College Gauhati University DIBRUGARH	1947					
Medical College Gauhati University GAUHATI	1960	18	97 m 3 f	97 m 3 f	—	144
<b>BIHAR</b> Darbhanga Medical College Bihar University LAHERIASARAI	1946	71	542 m 105 f	115 m 33 f	77 m 10 f	165

\* 1961 data.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Rupees)</i>
<b>BIHAR (continued)</b>						
Prince of Wales Medical College Patna University PATNA	1925					
Medical College and Hospital Bihar University RANCHI	1960	17	150	150	—	150
<b>DELHI</b>						
All-India Institute of Medical Sciences NEW DELHI 16	1956	98 f	218 m 50 f	50	—	320
Lady Hardinge Medical College for Women and Hospital for Women and Children NEW DELHI	1916	85	339 f	80 f	45 f	200
Maulana Azad Medical College NEW DELHI	1958	47 f 30 p	159 m 39 f	72	—	240
<b>GUJARAT</b>						
B.J. Medical College Gujarat University Asarwa AHMEDABAD 16	1946	38 f 34 p	466 m 196 f	120	171	175-200 per term
Medical College Baroda University BARODA	1949					
M.P. Shah Medical College Gujarat University Bedi Road JAMNAGAR	1955	42 f	196 m 38 f	100	—	350
<b>JAMMU AND KASHMIR</b>						
Medical College SRINAGAR	1959	10 f	128 m 50 f	112	—	300
<b>KERALA</b>						
Medical College Kerala University Kozhikode CALICUT 8	1957	97 f	280 m 95 f	155	—	ca 325
Medical College Kerala University TRIVANDRUM	1951	109 f 3 p	578 m 180 f	160	87	264
<b>MADHYA PRADESH</b>						
Gandhi Medical College Vikram University BHOPAL	1955					

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Rupees)</i>
<b>MADHYA PRADESH (continued)</b>						
Gajra Raja Medical College Vikram University GWALIOR	1946	78	464	107	70	120
Mahatma Gandhi Memorial Medical College INDORE	1948	65	538	136	81	120
Medical College Jabalpur University JABALPUR	1955	53 f 1 p	280 m 95 f	40 m 40 f	35	200
<b>MADRAS</b>						
Kilpauk Medical College MADRAS 10	1960	43 f	75	75	—	240
Madras Medical College Madras University MADRAS 3	1835	199 f 7 p	1293 m 319 f	103 m	112 m 40 f	240
Stanley Medical College Madras University MADRAS 1	1838	119 f 10 p	713 m 188 f	125	111	263
Madurai Medical College MADURAI	1954					
Medical College THANJAVUR	1959	19 f	122 m 24 f	75	—	240
Christian Medical College VELLORE	1918	84 f	162 m 158 f	50	50	540
<b>MAHARASHTRA</b>						
Medical College and Civil Hospital Marathwada University AURANGABAD	1956	26 f 1 p	142 m 25 f	60	—	201.50
Grant Medical College Bombay University Byculla Parel BOMBAY 8	1845	53 f 93 p	449 m 222 f	150	135	175 per term
Seth Gordhandas Sunderdas Medical College Bombay University Parel BOMBAY 12	1925	49	302 m 190 f	85	92	350
Topiwala National Medical College Dr A.L. Nair Road Byculla 8 BOMBAY 8	1921	23 f 64 p	191 m 124 f	62	69	425

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Rupees)</i>
<b>MAHARASHTRA (continued)</b>						
Medical College and Hospital Nagpur University NAGPUR	1947	94 f 3 p	573 m 175 f	104 m 43 f	116	175 per term
Byramjee Jeejeebhoy Medical College POONA	1946	52 f 37 p	613	150	109	175 per term
<b>MYSORE</b>						
Bangalore Medical College Mysore University Sri Krishnarajendra Road Fort BANGALORE 2	1955		537 m 134 f	154	8	400
Karnatak Medical College Karnatak University HUBLI	1957	73 f 1 p	426 m 68 f		—	400
Kasturba Medical College Karnatak University Udipi Taluk MANIPAL	1953	116 f 8 p	675 m 74 f	198	151	1500 (pre-med. course); 2954 (I med. course); 4560 (II med. course)
Government Medical College Mysore University MYSORE	1924	71 f	733	150	91	400
<b>ORISSA</b>						
Sriram Chandra Bhanj Medical College Utkal University CUTTACK	1875					
Burla Medical College and Hospital Utkal University SAMBALPUR	1959	15 f 2 p	81 m 18 f	50	—	120
<b>PONDICHERRY</b>						
Medical College PONDICHERRY	1823	94 f	166 m 45 f	50		222
<b>PUNJAB</b>						
Medical College Punjab University AMRITSAR	1943	122	406 m 95 f	100	85	202

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Rupees)</i>
<b>PUNJAB (continued)</b>						
Arya Medical School Punjab State Medical Faculty Civil Lines LUDHIANA	1934	26 f 7 p	120 m 41 f	35	39	300
Christian Medical College Punjab University LUDHIANA	1894	73	168 m 150 f	26 m 24 f	55	450
Government Medical College Punjab University PATIALA	1953	99	494	132	47	144
<b>RAJASTHAN</b>						
Medical College Rajasthan University BIKANER	1959	24 f 10 p	151 m 28 f	72 m 13 f	—	240
Sawai Man Singh Medical College Rajasthan University JAIPUR	1947	113 f	498 m 146 f	123	86	240
<b>UTTAR PRADESH</b>						
Sarojini Naidu Medical College Agra University AGRA	1854	73 f 2 p	354 m 86 f	100	63	130
G.S.V. Memorial Medical College Lucknow University KANPUR	1955	85	445 m 140 f	116 m 38 f	50 m 18 f	200
King George's Medical College Lucknow University LUCKNOW	1911	130 f 7 p	719 m 159 f (M.B., B.S. course); 134 m 5 f (B.D.S. course)	125 m 25 f (M.B., B.S. course); 25 (B.D.S. course)	145 m 30 f (M.B., B.S. course); 18 (B.D.S. course)	200
College of Medical Sciences Banaras Hindu University VARANASI 5	1960	45 f 3 p	35 m 4 f	40	—	316
<b>WEST BENGAL</b>						
Bankura Sammilani Medical College Calcutta University BANKURA	1924*	4 f 45 p	223	50	—	372

\* Upgraded to status of College in 1956.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Rupees)</i>
WEST BENGAL ( <i>continued</i> )						
Calcutta National Medical Institute Calcutta University 32, Gorachand Road CALCUTTA 14	1948	36 f 61 p	582 m 84 f	109 m 25 f	94 m 11 f	250
Medical College Calcutta University 88, College Street CALCUTTA 12	1822	95 f 42 p	874	106	144	200
Niratan Sircar Medical College Calcutta University 138, Lower Circular Road CALCUTTA 14	1948	119 f 1 p	665	105	152	200
R.G. Kar Medical College Calcutta University I, Belgachia Road CALCUTTA	1886	102 f	646 m 82 f	111		100 per term

## Goa (Goa, Damão and Diu)

### Introductory data\*

Population . . . . .	626 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	378**
Number of medical graduates . . . . .	19
Population per medical school . . . . .	626 000
Population per physician . . . . .	1 700

\* 1960 figures.

\*\* Data for Goa only.

Medical education in Goa lasts for five and a half years, the last six months consisting of a period of compulsory hospital internship. It leads to the certificate of *Médico-Cirurgião* (Physician and Surgeon).

### Administration

Medical education in Goa goes back to the sixteenth century, although it was not formally organized until 1842, when the present School of Medicine and Surgery was founded as an annex to the Department of Health. In 1946 the School was separated from the Department of Health and became an administratively autonomous institution, although still under the supervision of, and financially supported by, the Government. The chief executive officer of the School is the Dean.

The academic year begins in June and ends in February. The language of instruction is Portuguese.

### Conditions of admission

Applicants for admission must hold the secondary-school certificate, showing that they have satisfactorily completed seven years of secondary education, with specialization in scientific subjects, or an Intermediate Science degree from any Indian university. The number of students entering the school each year is limited, and selection is made on the basis of their academic record.

### Curriculum

The curriculum is arranged as follows:

*First year* : descriptive and topographic anatomy (I); histology and embryology

*Second year* : descriptive and topographic anatomy (II); general and special physiology; physiological chemistry; bacteriology and medical zoology; history of medicine

*Third year* : general pathology; pathological anatomy; pharmacology; medical propaedeutics; surgical propaedeutics

*Fourth year* : operative surgery; laboratory diagnosis; climatology; hygiene and epidemiology; tropical medicine, dermatology and mycology; medical and surgical pathology

*Fifth year* : forensic medicine and medical ethics; clinical medicine and radiological diagnosis; clinical paediatrics; clinical surgery and orthopaedics; obstetrics and gynaecology

*Final half-year* : internship in a hospital, two months being devoted to medicine, two to surgery, and two to obstetrics (including paediatrics).

### Examinations

Examinations are held at the end of each academic year to cover the subjects studied during that period. They are written, oral, practical, and clinical, according to subject. In clinical medicine, for example, a student's reports on two cases handled during the year are discussed, and he is further questioned at the bedside of two patients, one of whom was first shown to him four hours before the examination, and the other at the time of the examination itself.

If a student fails in one of the basic subjects, such as anatomy, medical and surgical propaedeutics, medical and surgical pathology, clinical medicine and surgery or operative medicine, he is required to take another year's course in that subject before he is allowed to go on to the next stage of the curriculum. If he fails in one of the non-basic subjects of an examination only, he is allowed to go on to the next stage of the curriculum, but must first pass a re-examination before sitting for examinations in new subjects.

### Qualification

After a student has passed the final examination and has satisfactorily completed the period of internship he receives the certificate of *Médico-Cirurgião*. This diploma enables him to practise medicine, both in a private and in an official capacity, in India.

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees (Rupees)
Escola Médico-Cirúrgica de Gôa Avenida da República Gôa	1842	10	106 m 11 f	34	19	60 per subject



## INDONESIA

### Introductory data\*

Population . . . . .	93 506 000
Number of medical schools . . . . .	6
Number of physicians . . . . .	1 938
Number of medical graduates . . . . .	303
Population per medical school . . . . .	15 584 000
Population per physician . . . . .	48 000

\* 1960 figures.

At present, the duration of the medical course is seven years in all Indonesian faculties of medicine, except that of Djakarta, where a six-year curriculum is now being followed on an experimental basis.

### Administration

The academic year begins in August and ends in May. Teaching is usually carried out in the Indonesian language, but some of the faculty members are of foreign nationality and lecture in English or Dutch.

### Conditions of admission

The basis admission requirement is possession of the secondary-school certificate, granted after an examination and upon satisfactory completion of six years of secondary education (preceded by six years of primary).

### Curriculum and examinations

The curriculum is similar to that in the Netherlands, and is divided into four stages, as follows:

(1) *Pre-medical* (first year): chemistry, physics, botany, and zoology, ending with Part I of the *Candidaatsexamen*.

(2) *Pre-clinical* (second and third years): anatomy, histology, physiology, biochemistry, pharmacology, pathology, bacteriology, and parasitology, ending with Part II of the *Candidaatsexamen*.

(3) *Theoretical-clinical* (fourth and fifth years): clinical demonstrations in medicine, surgery, paediatrics, neurology, psychiatry, ophthalmology, otorhinolaryngology, dermatology and radiology; lectures in pathology, bacteriology, hygiene, pharmacology, paediatrics; practical instruction in clinical laboratory procedures and in obstetrics. The fourth year ends with Part I, and the fifth year with Part II, of the *Doctoraalexamen*.

(4) *Practical-clinical* (sixth and seventh years): This period is given over to practical work in the hospital wards. A student attends ward rounds, takes patients' histories, keeps their case notes, and carries out simple clinical pathological work, routine dressings and minor operations. The sixth year is devoted to such work in medicine, paediatrics, neurology and psychiatry, and pharmacy, and ends with Part I of the *Artsexamen*. The seventh year is given over to surgery, obstetrics and gynaecology, ophthalmology, otorhinolaryngology, dermatology and syphilology, forensic medicine, radiology, and stomatology, and ends with Part II of the *Artsexamen*.

### Qualification and licence to practise

Part II of the *Artsexamen* constitutes the final examination, and the diploma awarded to those students who pass it entitles the holder to practise medicine in Indonesia. Every new graduate must serve the State for three years before he can embark on private practice.

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees (Rupiah)
Faculty of Medicine University of Indonesia 6, Salemba DJAKARTA	1851	370	1863	206	153	240
Faculty of Medicine Gadjah Mada University DJOKJAKARTA	1946	43 f 15 p	1031 m 123 f		61	240 + 25 for each practical course
Faculty of Medicine Hasan Udin University MAKASSAR	1956					
Faculty of Medicine University of North Sumatra 30, Djalan Djogja MEDAN	1952	26	356	107		240
Faculty of Medicine Andalas University PADANG	1955	4 f 29 p	154 m 42 f	32 m 11 f	—	270
Faculty of Medicine Airlangga University 47, Djalan Darma Husada SURABAYA	1948	277 f 11 p	1078 m 148 f	121	75 m 14 f	240

## IRAN

## Introductory data\*

Population . . . . .	20 182 000
Number of medical schools . . . . .	6**
Number of physicians . . . . .	5 264
Number of medical graduates . . . . .	493
Population per medical school . . . . .	3 364 000
Population per physician . . . . .	3 800

\* 1960 figures.

\*\* Not including the School of Medicine, National University of Iran, Teheran, which opened in 1961.

Medical education in Iran lasts for seven years and leads to the degree of Doctor of Medicine.

The following data refer primarily to the Faculty of Medicine at the University of Teheran, but in all essentials, particularly in respect of curriculum and examinations, they are equally applicable to the other schools.

## Administration

The University of Teheran enjoys a large measure of autonomy, although it operates under the general supervision of the Ministry of Education, to which a statement of income and expenditure must be submitted annually. The University derives most of its funds from government subsidy. Endowments, donations and medical students' fees are but a minor source of income.

The chief executive officer of the University is its Chancellor, elected by the University Senate. He receives his appointment, which is subject to the approval of the Minister of Education, by imperial charter, and holds office for a period of three years. The Senate consists of the Chancellor, the Vice-Chancellor, and the deans and at least one other professor of each faculty. It is responsible for both administrative and academic policy.

Each faculty is administered by a Council, composed of the Dean, the sub-dean, and the full professors of the faculty. The Dean is elected by the Council from among its members, and is appointed by the Minister of Education on the Chancellor's recommendation. He holds office for three years and is eligible for re-election.

The four provincial faculties are under the direction of the Ministry of Education but must follow the curriculum and regulations applicable to the Teheran faculty, which periodically sends out professors on visits of inspection. Most of the professors have been trained in Europe or in the USA.

The academic year begins in September and ends in June.

### Conditions of admission

In order to be admitted to a faculty of medicine in Iran, a student must hold the secondary-school certificate (obtained after six years at secondary school, preceded by six years of primary education) in the natural science or mathematics section, or an equivalent certificate. A competitive entrance examination is held when there are more applicants than vacancies. All first-year students are vaccinated against smallpox, typhoid, and tuberculosis (BCG).

A foreign student may enter the medical course if: (a) he or she holds the Iranian sixth-grade high-school diploma in mathematics or natural science, or a certificate considered equivalent by the High Council of Education; (b) he or she participates in and passes the entrance examination; (c) he or she has a residence permit to stay in Iran.

### Curriculum

The seven-year curriculum, consisting of theoretical teaching, practical work in the laboratories and clinical work at the hospitals affiliated to the university, is as follows:

*First year* : botany; zoology; chemistry; physics; psychology; a foreign language

*Second year* : anatomy; histology and embryology; physics; chemistry; preventive medicine; comparative anatomy; a foreign language

*Third year* : anatomy; physiology; pathology; bacteriology and serology; parasitology; preventive medicine

*Fourth year* : pathology; pharmacology; internal medicine; theoretical surgery; hygiene and preventive medicine

*Fifth year* : internal medicine; surgery; experimental medicine; general pathology; tropical medicine; pathological anatomy; hygiene and preventive medicine; obstetrics and paediatrics

*Sixth year* : internal and specialized medicine; general and specialized surgery; obstetrics and paediatrics; therapeutics; tuberculosis; forensic medicine; radiology; common diseases; hygiene and preventive medicine; history of medicine

*Seventh year* : internship in hospitals for twelve months.

### Examinations

An examination is held at the end of each of the first six academic years in the subjects studied during the year. The examinations are of four kinds: written (anatomy only), oral (all subjects), practical (first- to fourth-year subjects), and clinical (fourth- and fifth-year subjects). In the clinical examinations, the candidate is assigned one or two patients and, in the presence of an examiner, takes a clinical history and performs a physical examination. He then submits a paper giving his diagnosis and suggestions for treatment. An additional examination at the end of the sixth year determines the choice of hospital in which the student will serve his seventh-year internship.

No student is admitted to any year of the medical course unless he has passed in all the previous year's subjects and has attended the appropriate laboratories and hospitals for the stipulated number of hours. A student who fails in one

or more subjects in the June examination must attend courses organized by the faculty during the summer recess and repeat the examination in September. If he fails again, he must repeat the entire year's course.

In addition to passing their examinations, students must also prepare a thesis on a subject chosen during their sixth year. The thesis has to be submitted to a special board composed of three members of the teaching staff of the faculty, one of whom must be a full professor.

### Qualification and licence to practise

A student who has passed the final examination, has completed his year's internship, and whose thesis has been accepted, is awarded the university degree of Doctor of Medicine. A licence to practise must then be obtained from the Ministry of Education.

If they are Iranian citizens, holders of foreign medical qualifications wishing to practise medicine in Iran must have their diploma evaluated by the High Council of Education, which must confirm its adequacy.

Foreigners with foreign medical qualifications must obtain a residence permit, in addition to the above-mentioned evaluation and confirmation of their diplomas. If such persons are in governmental employment, a working permit will be obtained for them. If, on the other hand, they are working independently they must apply for the working permit personally.

Foreigners who have qualified in Iran may be permitted to practise if they comply with the general conditions governing the practice of medicine in Iran, and obtain residence and working permits.

Medical graduates are under no obligation to serve the State. In accordance with the law, however, graduates are required to practise for a period of time in a town other than Teheran before they are issued with an authorization to engage in private practice in the capital.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Rials)</i>
Faculty of Medicine AHWAZ	1957	10 f	164 m 15 f	50	—	3300
Faculty of Medicine ISFAHAN	1950	51 p	430 m 21 f	60	52	720
Faculty of Medicine MESHEH	1948	9 f 35 p	373 m 55 f	80	39	2400
Faculty of Medicine Avenue Zande SHIRAZ	1947	23	235	40	30	900

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Rials)</i>
Faculty of Medicine TABRIZ	1947	66	487	190	115	915
School of Medicine National University of Iran TEHERAN	1961					
Faculty of Medicine University of Teheran Shahreza Avenue TEHERAN	1918	74	1596	300	257	None

## IRAQ

### Introductory data\*

Population . . . . .	7 085 000
Number of medical schools . . . . .	2
Number of physicians . . . . .	1 257
Number of medical graduates . . . . .	108
Population per medical school . . . . .	3 543 000
Population per physician . . . . .	5 600

\* 1960 figures.

Medical education in Iraq lasts for six years and leads to the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.).

### Administration

There are two medical colleges in the University of Baghdad, each administered by its own separate Faculty Council, formed by the heads of the different departments and presided over by the Dean, who is the Chief Executive Officer. Most of the heads of departments are Iraqis, but there are a few foreign professors, especially in the pre-clinical subjects.

The academic year begins in October and ends in May. At present, the language used for formal teaching and at examinations is English, but it is intended to make Arabic the official language of instruction at some future date. Thus far, however, only forensic medicine and medical ethics are taught in Arabic.

### Conditions of admission

Students are admitted to medical school on completion of their five-year secondary-school course (preceded by six years of primary education), with the proviso that they must have passed the national examination with a high average. Students are interviewed, and their potentialities assessed by an interview committee. Every applicant must undergo a thorough medical examination as well as psychological assessment by the interview method.

The student's age on admission must be not less than 17 and not more than 25 years.

Foreign students are admitted to the medical course provided that they fulfil the admission requirements and that there are vacancies.

### Curriculum

The curriculum is arranged as follows:

*First year* : biology; chemistry; physics

*Second year* : anatomy; biochemistry; micro-anatomy; physiology (including experimental and applied)

*Third year*: anatomy; biochemistry; micro-anatomy; physiology (including experimental and applied)

*Fourth year*: pharmacology (including materia medica and dispensing); bacteriology and parasitology; pathology (including clinical pathology and morbid anatomy); medicine; surgery; orthopaedic surgery

*Fifth year*: public health and social medicine; forensic medicine and medical ethics; psychiatry; otorhinolaryngology; therapeutics; gynaecology and obstetrics; medicine; surgery; dermatology and venereology; paediatrics; ophthalmology

*Sixth year*: therapeutics; anaesthesia; gynaecology and obstetrics; medicine; surgery; neurology; radiology; paediatrics.

During the sixth year of the medical course, the student completes his training in the hospital wards, three months being devoted to medicine and three months to surgery. Two weeks of the practical and clinical part of the course on gynaecology and obstetrics are given over to midwifery.

### Examinations, qualification and licence to practise

Class examinations are held at the end of each semester and professional examinations on completion of each specific course. After completing the prescribed six years of study, and after having passed a final comprehensive examination, a candidate is awarded the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.). The higher degree of Doctor of Medicine (M.D.) can only be obtained after special examinations have been passed. Both these degrees are recognized as licences to practise in Iraq.

Every male graduate must serve in the Armed Forces for a period of twelve months. On completion of his national service, he must undertake to serve the Health Service, under the direction of the Minister of Health, for a period of six years, having regard to the country's need for doctors, particularly in the provinces.

Nationals with foreign qualifications are allowed to practise in Iraq provided that the qualifications are recognized by the Iraq Medical Association. Foreigners with foreign qualifications are allowed to practise (a) in the service of the Iraq Government, or (b) privately, if the relevant reciprocity exists between their country and Iraq. Foreign students qualifying in Iraq are allowed to practise under the same conditions of registration as Iraqis.

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees
Faculty of Medicine Baghdad University BAGHDAD	1927	28 f 72 p	1044	203	108	None
College of Medicine Baghdad University MOSUL	1959	13 f 3 p	102 m 56 f	46 m 24 f	—	None



## IRELAND

## Introductory data\*

Population . . . . .	2 834 000
Number of medical schools . . . . .	5
Number of physicians . . . . .	2 921**
Number of medical graduates . . . . .	271
Population per medical school . . . . .	567 000
Population per physician . . . . .	1 000**

\* 1960 figures.

\*\* 1951 figures.

Medical education in Ireland lasts for six years, including a one-year pre-medical period. The course is similar to that in the United Kingdom, after which it was originally patterned. The degrees and diplomas obtainable in Ireland also permit holders to register, and thereby to practise, in the United Kingdom.

## Administration

Four of the Irish medical schools belong to universities, and through the latter receive substantial subsidies from the Government. The Royal College of Surgeons in Ireland is an autonomous institution. All schools have complete freedom in the organization of studies.

The academic year is divided into three terms of ten to eleven weeks each, running from October to December, from January to March, and from April to June. The language of instruction is English in the medical schools of the National University of Ireland; Irish-born students are required to have a working knowledge of Irish.

## Conditions of admission

Before being admitted to the study of medicine, a student must pass a university entrance examination or its equivalent. In addition to the recognized Irish examinations for admission to medical schools, other educational certificates of a standard considered at least equivalent to the university entrance examination are accepted by all medical schools. The limitation of facilities at the schools has made it necessary to adopt a selection process.

Admission of foreign students is restricted. Before a foreign student is allowed to take up residence his entry is subject to the approval of the immigration authorities.

## Curriculum and examinations

The curriculum is similar to that of the United Kingdom, and begins with a pre-medical year devoted to chemistry, physics, botany, and zoology.

The pre-clinical period of five terms covers the second and third years and the first half of the fourth year of the curriculum and is devoted to anatomy, physiology, and biochemistry, taught by lectures, dissection, and practical work. It is followed by a transitional term (the second half of the fourth year) designed to facilitate the transition from theoretical to clinical training, in the course of which a student is introduced to clinical methods and procedures and receives elementary instruction in pathology, bacteriology, and pharmacology.

The study of clinical subjects begins in the fifth year of the course and continues for the remainder of the curriculum. It consists of theoretical instruction by lectures and of clinical instruction in hospital. Lectures are given in pathology and bacteriology, pharmacology and therapeutics, hygiene and preventive medicine, medical jurisprudence, medicine, surgery, obstetrics and gynaecology, paediatrics, ophthalmology, otorhinolaryngology, psychology, psychiatry, and radiology. On the clinical side, the student must spend six months as a medical clerk and six months as a surgical dresser. He must attend a six-month course of practical obstetrics and gynaecology, with at least two months' residence, and conduct under supervision a specified number of deliveries.

Major university examinations are held at the end of the pre-medical and pre-clinical periods, at intervals during the clinical course, and at the end of the sixth year. A student who fails to pass an examination at the proper time may repeat it six months or one year later. The arrangement and content of curricula and the order and content of examinations may vary from one medical school to another.

### Qualification and licence to practise

The medical degrees or diplomas awarded entitle their holder to provisional registration. One year's service as resident house officer in an approved hospital is required before full registration and licence to practise are granted. The qualifications registrable in the Medical Register of Ireland are the same as those registrable in the Medical Register of the United Kingdom.

Irish nationals with foreign medical qualifications, before being permitted to practise, must have their names entered in the Irish Medical Register. To obtain registration in this Register a person must: (a) possess, *inter alia*, a specified qualifying diploma granted as a result of having passed a qualifying examination in Ireland, or (b) be registered in the Medical Register of the United Kingdom otherwise than as a foreign or Commonwealth medical practitioner, or (c) be registered in foreign countries in which standards for qualification are similar to those in Ireland and with which reciprocal arrangements have been made.

As to (a) above, possession of a foreign academic degree in medicine may lead to exemption from a certain amount of the normal undergraduate medical course and from the requirement to undergo an intern year.

A person registering under one of the reciprocal arrangements referred to under (c) above is exempted from the intern year if he can show that he has had comparable experience abroad after registration.

Foreigners with foreign medical qualifications and foreigners who possess the Irish medical degree are permitted to practise in Ireland provided they are fully registered. In addition such persons must obtain the approval of the immigration

authorities and the permission to engage in gainful employment delivered by the Department of Industry and Commerce.

Medical graduates are under no obligation to serve the State before engaging in private practice.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pounds)</i>
Faculty of Medicine University College National University of Ireland CORK	1849	21 f 38 p*	122 m 38 f	31	40**	97.6.0
Faculty of Medicine University College National University of Ireland Earlsfort Terrace DUBLIN	1784	34 f 65 p	458 m 138 f	186	80	85
Royal College of Surgeons in Ireland 123, St Stephen's Green DUBLIN	1854	48 f	450 m 150 f	70 m 30 f	75	135
School of Physic Trinity College University of Dublin DUBLIN 2	1591	46 f 43 p	276 m 70 f	60	57	95
Faculty of Medicine University College GALWAY	1849	10 f 21 p	159 m 41 f	52	19	48-60

\* Including 7 clinical tutors.

\*\* Including higher degrees.

## ISRAEL

## Introductory data\*

Population . . . . .	2 114 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	5 225**
Number of medical graduates . . . . .	64
Population per medical school . . . . .	2 114 000
Population per physician . . . . .	400

\* 1960 figures.

\*\* Including 124 holders of temporary licence.

Medical education in Israel lasts for seven years, including periods of pre-medical studies and internship, and leads to the degree of Doctor of Medicine.

### Historical background

The Medical School, established in 1949, is the Faculty of Medicine of the Hebrew University, and is a joint undertaking of the Hebrew University and of the Hadassah Organization. The Hebrew University itself was founded in 1925. Hadassah—the Women's Zionist Organization of America—is a private voluntary organization that has done pioneer work in the field of health and social work since it was founded in 1912. In 1936 the two bodies agreed jointly to set up a medical centre at Jerusalem, each contributing to the capital outlay. The Medical School is part of that centre; it was, in fact, completed in 1939, but classes could not begin until ten years later.

### Administration

The Medical School, along with the Schools of Dentistry and Pharmacy, is administered by a Board of Management and a Faculty Board. General policy is formulated by the Board of Management, which is composed of representatives of the University, of Hadassah, of the teaching staff, and of the Government. The Faculty Board, composed of the Dean and the teaching staff, deals with matters relating to instruction.

The Dean, elected by the Faculty Board, holds office for a period of two years, and may be re-elected. He is a senior member of the teaching staff, and devotes only part of his time to the administration of the Medical School. The assistant dean is a permanent full-time official, appointed by the Board of Management.

The academic year runs from October to July, and is divided into three trimesters in the pre-medical and pre-clinical years.

### Conditions of admission

Candidates for admission to the Medical School who submit proof of satisfactory secondary education, of good health, and of a working knowledge of the

Hebrew language, are admitted to a written entrance examination. An admission committee then selects not more than sixty students on the basis of their scholastic record, performance in the examination, and a personal interview. Overseas candidates must fulfil the same requirements as Israelis.

### Curriculum

The seven-year medical course is divided into four periods—namely, pre-medical, pre-clinical, clinical, and internship. Particular emphasis is given to laboratory work, bedside teaching, and clinical clerkship. A certain amount of time is given over to lectures, but the main teaching method used is that of small groups and seminars.

The pre-medical period (three semesters) is taken at the Faculty of Science of the Hebrew University. The first year is devoted to chemistry, physics, botany, and zoology, and the third semester to biochemistry, physical chemistry, general physiology, and psychology. In addition, there are courses in genetics, sociology, mathematics, and English.

The pre-clinical period (five semesters) is devoted to anatomy, physiology, biochemistry, bacteriology, parasitology, pathology, and pharmacology. The final term of the pre-clinical period is given over to instruction in physical diagnosis and to introductory teaching in medicine, and is designed to prepare students for the transition from pre-clinical to clinical training. Introductory courses in social medicine and in psychiatry are also given and a special course in nursing has been arranged.

During the first clinical year (fifth year of the course) students work in hospital wards as clinical clerks. The teaching method employed provides for bedside instruction and seminars, and practical work in the wards alternates with lectures. Part of the time is also devoted to medicine, surgery, obstetrics and gynaecology, paediatrics, and preventive and social medicine.

During the second clinical year (the sixth year of the course) students spend most of their time in the out-patient departments, and work in rotation in the various sections, such as medicine, surgery, paediatrics, gynaecology, neurology, psychiatry, dermatology, ophthalmology, radiology, and physiotherapy. In addition to dealing with the clinical subjects, students receive training in preventive and social medicine as part of the clinical "rotation" programme, which also provides for a period of work in a community health centre.

A student's period of internship (the seventh year of the course), which begins after he has passed all his final examinations, is spent in certain recognized hospitals. It lasts for thirteen months and consists of two periods of six months, one devoted to medicine, the other to various branches of surgery and to obstetrics, and one month during which every intern must engage in independent work in the field of preventive medicine. This period of internship is compulsory and is performed under the control of the Faculty. During his internship, a student prepares his doctor's thesis under the supervision of the departmental head of the hospital in which he serves. The subject of a thesis must first be approved by the Curriculum Committee of the Faculty.

### Examinations

Examinations are held at the end of each academic year, and cover the subjects studied during that period. Examinations in subjects taught during part of the year only are held at the end of the relevant courses. The final examinations at the end of the sixth year (oral and clinical) are held in the following subjects: medicine, surgery, paediatrics, gynaecology and obstetrics, neurology, psychiatry, ophthalmology, and dermatology. A student may sit once for re-examination in any subject in which he fails to pass. If he fails once again, he may sit for a third examination only if special permission to do so is granted by the Dean.

### Qualification and licence to practise

After a student has completed his internship, and after his thesis has been accepted by the Faculty, he receives the degree of Doctor of Medicine, which entitles him to a licence to practise medicine in the State of Israel.

All Israeli citizens (excluding Arabs) on reaching the age of 18 are drafted for two and a half years' compulsory military service. Practically all medical students have their draft deferred till after graduation; this enables them to serve as medical officers. Medical graduates are under no other obligation to the State before setting up in private practice.

Nationals with foreign diplomas may be permitted to practise if they prove to the satisfaction of the Director-General of the Ministry of Health that they are of honest character, have graduated from a medical school with a curriculum of at least five years and have been awarded a diploma recognized by the Director-General.

Foreigners with foreign qualifications and foreigners having qualified in Israel are issued temporary licences to practise (for six months, with possible prolongation), and are otherwise subject to the same conditions as above.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (LI)</i>
The Hebrew University-Hadassah Medical School P.O. Box 1172 JERUSALEM	1949	125 f 41 p	444	60	64	450

## ITALY

## Introductory data\*

Population . . . . .	49 361 000
Number of medical schools . . . . .	21**
Number of physicians . . . . .	66 165†
Number of medical graduates . . . . .	3 270
Population per medical school . . . . .	2 350 500
Population per physician . . . . .	750

\* 1960 figures.

\*\* Not including the Facoltà di Medicina e Chirurgia della Università Cattolica del Sacro Cuore di Milano in Rome, which opened in 1961.

† Excluding about 15 000 physicians practising dentistry.

Medical education in Italy lasts for six years and leads to the university degree of *Laurea in Medicina e Chirurgia*.

## Administration

The universities in Italy are owned and operated by the State, which provides the greater part of their financial support. Responsibility for the curriculum, the system of examinations, and the distribution of financial grants rests with the Ministry of Education. The statutes of each university, however, assure some measure of autonomy, both in teaching and in administration. Academic policy is decided by the Senate, which is composed of the deans of the various faculties. The head of the university and chairman of the Senate is the Rector, who is elected for three years by the teaching staff and is directly responsible to the Ministry.

The full professors of each faculty constitute the Faculty Council, which is presided over by the Dean. He is elected by that council, holds office for three years, and is eligible for re-election.

The academic year begins in November and ends in July.

## Conditions of admission

The basic requirement for admission to a medical faculty is possession of either the *maturità classica* or the *maturità scientifica* certificate, obtained after five years of higher secondary education in a *lyceum*. There is no further selection process and no *numerus clausus*.

Foreign students who possess a foreign certificate of secondary education may be admitted to the medical course provided that their certificate is recognized by the competent Italian authorities.

## Curriculum

The six-year curriculum is determined by law and is divided into three two-year periods. The subjects covered are listed below; they are the same in all faculties, although the order of presentation may differ.

*First period* (first and second years): chemistry; physics; biology; anatomy; histology; embryology; physiology; biochemistry; microbiology; introduction to medicine

*Second period* (third and fourth years): physiology; history of medicine; parasitology; surgery; medicine; psychology; pathology; otorhinolaryngology; pharmacology; radiology; semeiology; urology; surgical anatomy and techniques

*Third period* (fifth and sixth years): pathology; hygiene; industrial medicine; infectious diseases; forensic medicine; genetics; phthisiology; anthropology; as well as clinical work in medicine, surgery, nervous and mental diseases, dermatology and syphilology, ophthalmology, odontology, tropical and subtropical diseases, orthopaedics, obstetrics, gynaecology, and paediatrics.

Instruction during the clinical period is by way of lectures, clinical demonstrations, visits to the wards and bedside teaching. Organized instruction provided at university teaching hospitals and clinics may be supplemented, on a student's own initiative, by attendance at demonstrations given by members of the teaching staff.

## Examinations

Examinations are held at the end of each academic year and cover the subjects studied during that time. A student may not proceed to the next two-year period of the curriculum until he has successfully completed the appropriate examinations.

Courses and examinations for the *Laurea* taken at any one Italian university are recognized by any other, and students may therefore move freely from one university to another.

The final examination includes clinical examinations, two oral dissertations on subjects selected by the Faculty, and an original thesis written under supervision.

## Qualification and licence to practise

After passing his final examination, a student receives the *Laurea in Medicina e Chirurgia*. This is an academic degree, and does not authorize its holder to practise medicine. He must first perform six months of practical hospital work in medicine, surgery and obstetrics, after which he sits for the State examination. Once he has passed the State examination, he is granted a licence to practise.

Italian citizens who have graduated in countries with which there is a reciprocal agreement—for example, the Federal Republic of Germany, the United Kingdom, and the United States of America—may obtain a licence to practise in Italy. If they hold medical qualifications from other countries they must pass the State examination, which is, according to law, obligatory for Italian citizens.

Foreigners who have completed their medical studies in Italy and who have obtained the degree of *Laurea in Medicina e Chirurgia* are not, in general, authorized



to practise in Italy. Exception has been made for the citizens of countries with which reciprocal agreements have been concluded; at present practically only the USA, and the Federal Republic of Germany to a limited degree, are concerned. Negotiations are going on between the countries of the European Economic Community to establish a general basis for recognition of the medical profession.

As Italian citizenship is usually required for the licence to practise, foreigners with foreign medical qualifications are not, in general, permitted to practise in Italy. Only citizens of those states with which reciprocal agreements have been concluded, as mentioned above, are registrable in the Professional Register.

Medical graduates are under no obligation to serve the State before engaging in private practice.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Lire)</i>
Facoltà di Medicina e Chirurgia dell'Università di Bari Piazza Umberto I° BARI	1925	20	1203	170	80	55 000
Facoltà di Medicina e Chirurgia dell'Università di Bologna Via Zamboni 33 BOLOGNA	Thirteenth Century	26	1949	258	267	75 000
Facoltà di Medicina e Chirurgia dell'Università di Cagliari Via Università 40 CAGLIARI	1858	22	177	57	36	43 000
Facoltà di Medicina e Chirurgia dell'Università di Catania Piazza dell'Università CATANIA	1434	23	1175	173	121	43 000
Facoltà di Medicina e Chirurgia dell'Università di Ferrara Via Scienze 17 FERRARA	1391	16	549	35	59	50 000
Facoltà di Medicina e Chirurgia dell'Università di Firenze FIRENZE (FLORENCE)	Fourteenth Century	23	761	108	68	
Facoltà di Medicina e Chirurgia dell'Università di Genova Via Balbi 5 GENOVA	1774	28	1075	138	145	48 000
Facoltà di Medicina e Chirurgia dell'Università di Messina MESSINA	1548	22	952	128	96	50 000

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Lire)</i>
Facoltà di Medicina e Chirurgia dell'Università di Milano Via della Passione 12 MILANO	1925	27	2088	335	249	51 500
Facoltà di Medicina e Chirurgia dell'Università di Modena MODENA	Thirteenth Century	17	1243	49	170	65 000
Facoltà di Medicina e Chirurgia dell'Università di Napoli NAPOLI	1224	27	3245	425	796	30 000
Facoltà di Medicina e Chirurgia dell'Università di Padova Via VIII Febbraio PADOVA	1399	22	1610	212	135	53 000
Facoltà di Medicina e Chirurgia dell'Università di Palermo PALERMO	1841	25	950	166	52	45 000
Facoltà di Medicina e Chirurgia dell'Università di Parma Via Università 12 PARMA		21	659	62	90	30 000
Facoltà di Medicina e Chirurgia dell'Università di Pavia Corso Strada Nuova PAVIA	1361	22	929	116	164	100 000
Facoltà di Medicina e Chirurgia dell'Università di Perugia PERUGIA		17	697	69	81	
Facoltà di Medicina e Chirurgia dell'Università di Pisa Via Roma 33 PISA		20	804	107	89	57 500
Facoltà di Medicina e Chirurgia dell'Università Cattolica del Sacro Cuore di Milano Via della Pineta Sacchetti 108 ROMA	1961	—	—	—	—	74 000
Facoltà di Medicina e Chirurgia dell'Università di Roma Città Universitaria ROMA	1303	34	3823	525	333	25 000

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Lire)</i>
Facoltà di Medicina e Chirurgia dell'Università di Sassari SASSARI	1562	17	190	5	25	25 000
Facoltà di Medicina e Chirurgia dell'Università di Siena SIENA		23	550	56	83	
Facoltà di Medicina e Chirurgia del l'Università di Torino Via Po 17 TORINO	1404	23	937	139	131	49 000

## IVORY COAST<sup>1</sup>

Medical education in the Ivory Coast, when the whole cycle of study is complete, will consist of a six-year course leading to the degree of *Docteur en Médecine* (Doctor of Medicine), equivalent to the French *Diplôme d'Etat* (State diploma). The first students were admitted in October 1962.

### Administration

The medical school, together with the schools of law, literature and sciences, is part of the University of Abidjan. The University is sponsored by France, which is financing the proposed university campus, including the medical school. The plans for the school include a 300-bed university hospital where integrated teaching on the lines of the French medical curriculum<sup>2</sup> will be given. In the meantime provisional laboratories are being prepared in the *Ecole normale supérieure*. France will also provide the necessary equipment for the University and the French Ministry of National Education is responsible for the salaries of the teaching and top administrative staff. In addition, the Ministry of National Education paid 75% of the budget for 1962, with 65% participation in the budget for 1964 and 50% in that for 1965.

The official sponsor of the medical school is the Faculty of Medicine of the University of Rennes, which supplies most of the teaching staff. The medical school is headed by a Dean. The executive officer of the University is the Rector.

The academic year consists of two semesters, running from October to the end of January and from February to the end of June.

### Conditions of admission

Candidates for admission must hold the French *baccalauréat* (secondary-school certificate), for which twelve years of education are required. There is no entrance examination. Foreigners are admitted to the medical course under the same conditions as nationals.

### Curriculum and qualification

The six-year curriculum is the same as that newly implemented in France and leads to a degree equivalent to the French *Docteur en Médecine*.

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<sup>1</sup> The information in this chapter refers to a later period than the academic year 1960/61. It has been included in the present edition of the Directory in the interests of comprehensiveness.

<sup>2</sup> See the chapter on France, page 100.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Ecole de Médecine Université d'Abidjan ABIDJAN	1962		33	33	—	

## JAMAICA

### Introductory data\*

Population . . . . .	3 702 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	1 286
Number of medical graduates . . . . .	25
Population per medical school . . . . .	3 702 000
Population per physician . . . . .	2 900

\* 1960 figures, including data for Barbados, British Guiana, the Leeward Islands, Trinidad and Tobago, and the Windward Islands, which are also served by the school.

The medical course at the University College of the West Indies in Jamaica lasts for six years and leads to the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.) of the University of London.

### Administration

The University College is an autonomous institution incorporated by Royal Charter and governed by a Council and a Senate. Financial support is provided in the main by the Governments of Barbados, British Guiana, Jamaica, the Leeward Islands, Trinidad and Tobago, and the Windward Islands. A small part of the College's income is derived from students' fees.

Although the College serves a number of West Indian countries, because of its geographic situation it naturally has closer relations with Jamaica. Several of the government specialists are on the staff as associate or part-time lecturers, and members of the staff from time to time assist in government hospitals. Students attend government clinics in venereal diseases, mental diseases, tuberculosis, etc., as part of their curriculum. Members of the teaching staff are on various committees concerned with the government health services.

Under a (temporary) Rockefeller Grant to the College, members of the Faculty are enabled from time to time to visit other West Indian countries, and medical officers from other territories visit the hospital for post-graduate and specialist experience and training.

The Council—the governing body of the College—is responsible for financial administration, and appoints the academic staff. The academic authority of the College is its Senate. It directs instruction, examinations, research, and the award of diplomas and distinctions. The titular head of the College is the Chancellor, who is appointed by the Crown. The Principal, who is the executive and academic head, is appointed by the Council.

The Dean of the Faculty of Medicine is elected by the members of the Faculty for a three-year term of office. He is eligible for re-election.

The academic year is divided into three terms, one of eleven weeks and two of ten weeks each, running from October to December, January to March, and April to June, respectively.

### Conditions of admission

Applicants for admission to the University College of the West Indies are required to satisfy the minimum entrance requirements of the University of London by passing the examination for the General Certificate of Education (obtained after five or six years of secondary education, preceded by seven years of primary school).

The minimum age for entrance to the College is 17, but most students are 18 or 19 years old on admission. Students originate from all parts of the British West Indies, as well as from British Guiana. A medical certificate of good health must be produced.

Students from other countries are admitted provided they meet the educational requirements for admission to the University.

### Curriculum

The six-year curriculum is arranged as follows:

*First year* : chemistry, physics; biology

*Second and third years*: human anatomy; physiology; biochemistry; pharmacology

*Fourth, fifth and sixth years* : (a) pathology, hygiene, and forensic medicine; (b) medicine, therapeutics, and applied pharmacology; (c) surgery, obstetrics and gynaecology.

### Examinations and qualification

The examinations are held as follows: after the first year of the course, the First Examination; after the third year, the Second Examination; and after the sixth and final year, the Third Examination (in four parts), for the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.). The second M.B. and Final (M.B., B.S.) examinations are held twice a year. Two or more university examiners attend the Second M.B. and four attend the Final Examination.

The University College of the West Indies is in what is termed "special relationship" with the University of London, and degrees are awarded by the latter. The College may enter into discussion with the University and obtain approval for special syllabi and degree courses. Degree examinations are conducted by examiners from the University of London, who act in association with examiners nominated by the College. Both College and University examiners prepare draft examination papers and carry out the first marking of the scripts; the University examiners are responsible for the final form of the examination papers and for the determination of the results of each candidate's attempt.

**Licence to practise**

In order to become eligible for registration as fully qualified medical practitioners, graduates must serve for one year in approved resident appointments in hospitals recognized for this purpose.

Nationals with foreign diplomas may be permitted to practise provided they pass a local examination in surgery, medicine, and obstetrics and gynaecology. Foreigners with foreign qualifications who are approved for domicile in Jamaica by the local immigration authorities may be permitted to sit for the local examination as described above. Foreigners who have qualified at the University of Jamaica and have been accepted for permanent residence by the immigration authorities may be registered for practice on presentation of their diploma to the local Registrar General and on payment of a fee of £BWI 1.

Medical graduates are under no obligation to serve the State in any way unless they are holders of government scholarships, in which case they are required to serve the Government for at least five years.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (£BWI)</i>
Faculty of Medicine University College of the West Indies Moca KINGSTON 7	1948	46 f 11 p	192 m 62 f	35 m 11 f	22 m 3 f	50



## JAPAN

## Introductory data\*

Population . . . . .	93 200 000
Number of medical schools . . . . .	46
Number of physicians . . . . .	99 793**
Number of medical graduates . . . . .	3 200†
Population per medical school . . . . .	2 026 000
Population per physician . . . . .	930**

\* 1960 figures.

\*\* 1959 figures; excluding 1656 physicians not in practice.

† Figure supplied by Government.

Medical education in Japan lasts for six years, including two years of pre-medical studies, and leads to the university degree of *Igakushi* (Bachelor of Medicine). Those students wishing to obtain the higher degree of *Igaku-hakushi* (Doctor of Medicine) are required to take the post-graduate course and pass the prescribed examination.

### Historical background

Before the Second World War there was a dual system of medical education in Japan: the regular university course and a shorter course known as *Semmon-gakko*. In 1947, however, under the terms of the School Education Law this system was abolished in an effort to standardize medical training.

In 1946, a Medical Education Council was set up to reorganize medical education in Japan. Government-owned and private universities, the Ministry of Education, the Ministry of Health and Welfare, and the Japanese Medical Association were represented on this Council. Minimum standards for medical education, based on the draft recommendations of the Council, were devised under the School Education Law. A two-year period of pre-medical university training was introduced; and the four-year medical curriculum, which had been in existence before the Second World War, was restored. Success in the national examination for licensure was made a condition for the practice of medicine in Japan. After an investigation of the facilities, equipment, and organization of teaching staff, those schools which were not of university standard were either put on probation to give them a chance to improve or were closed down altogether and their students transferred to other faculties. Thus, by 1951, all medical education was at university level.

### Administration

In Japan, medical education can be acquired either at medical schools or at university faculties of medicine. To establish a medical school—either public

or private—requires the approval of the Minister of Education according to the provisions of the School Education Law.

At present there are 46 institutions for medical training. Of these, 21 are the faculties of medicine of national universities, which are directly supervised by the Ministry of Education, and 12 are the faculties of medicine of public universities established by local governments (either the municipalities or the provincial governments). The remaining 13 schools are private institutions established by the *Gakko Hojin* (voluntary educational societies). The Government does not support these private schools of medicine directly, but assists them indirectly by granting certain tax exemptions. The total number of students that can be admitted to these schools each year is fixed at 2880.

The academic year begins in April and ends in March.

### Conditions of admission

To gain admission to the pre-medical course, a student must either have completed his school education (six years of primary school, three years of junior high school and three years of senior high school) or show himself to be of equivalent academic standard by passing the national examination. Each university conducts its own entrance examination.

The medical course is open to students who have finished the pre-medical training or who are considered to possess academic knowledge equivalent to that acquired during the pre-medical course.

The number of applicants usually far exceeds the number of vacancies, and the size of entering classes in medical schools is therefore limited in accordance with available facilities for adequate training. Maximum numbers originally established for many schools have now been increased, and about 3200 medical students may be expected to graduate each year under present conditions.

A few vacancies are reserved for foreign students, who may be admitted to the medical course if they have completed twelve years of school education, both primary and secondary, as is required for Japanese students. Those who have completed a two-year pre-medical course in addition to their school education may be admitted to the medical course proper. Foreign students must show a knowledge of the Japanese language before admission.

### Curriculum

Pre-medical studies are undertaken during a two-year university course; they are given in faculties of science and represent essentially general cultural education. The curriculum includes the humanities and the social sciences in addition to such subjects as physics, chemistry, and biology, as well as the study of a foreign language (English, French or German).

The standard curriculum devised for the medical course by the Ministry of Education is followed fairly closely by all the medical schools in Japan. The academic year usually consists of 33-34 weeks, with a total of about 4400 study hours during the four years.

Approximately one half of this time is given over to the pre-clinical subjects—that is, basic medicine. Among these, less time is devoted to anatomy than is

the established practice in many other countries. During the clinical studies more time is given to internal medicine than to surgery.

Great importance is attached to public health and preventive medicine; future doctors are expected to be sufficiently well grounded in the theory and practice of public health to be able to co-operate effectively with national and local public health services.

### Examinations and qualification

Examinations, written or oral, are held at the end of each subject period. In most of the schools, a student who fails in an examination may sit for it again a second or third time; he must, however, pass his examinations in all the pre-clinical subjects before he can proceed to clinical studies. After satisfactory attendance over four academic years and success in all the examinations, a student obtains the university degree of *Igakushi* (Bachelor of Medicine).

Twelve months of "rotating" practical clinical training in an approved general hospital is then required of all graduates as a condition for admission to the national licensure examination, which is given by the Japanese Ministry of Health and Welfare. The national examination is held twice a year. It consists of both written and oral tests on pre-clinical subjects, and is also open to candidates from approved foreign schools. A candidate who has passed the national examination and has been shown to be of good moral character is then granted a licence to practise medicine in Japan.

An advanced degree in the medical sciences, known as *Igaku-hakushi* (Doctor of Medicine), is granted to those candidates who have followed the post-graduate medical course, which lasts for a minimum period of four years. The student must maintain a sufficiently high standard throughout the course, submit a thesis, and pass the final examination. However, post-graduate studies are not absolutely indispensable to the obtaining of this degree, provided that the candidate submits a thesis to the university concerned and passes the prescribed examination.

### Licence to practise

Licence to practise is issued by the Ministry of Health and Welfare to graduates who have passed the national examination. If a national who has qualified abroad wishes to practise medicine in Japan, he must pass the national examination also. The same rule applies both to foreigners with foreign medical qualifications and to foreigners who have qualified in Japan.

Medical graduates are under no obligation to serve the State before engaging in private practice.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Yen)</i>
School of Medicine Chiba University 785 Yahagi-cho CHIBA, Chiba	1874	129 f 25 p	461 m 47 f	82	83	21 600
Faculty of Medicine Kyushu University 1276 Katakasu FUKUOKA, Fukuoka	1903	124 f 40 p	360 m 12 f	85	93	10 000
Fukushima Prefectural Medical College 1 Mikawa-kitamachi FUKUSHIMA, Fukushima	1944	71 f 9 p	236 m 22 f	40	42	18 000
Gifu Prefectural Medical College 40 Tsukasa-cho GIFU, Gifu	1944	127 f 50 p	168 m 12 f	45	43	12 800
Faculty of Medicine Hirosaki University 2 Sagara-cho HIROSAKI, Aomori	1944	60 f 13 p	245 m 19 f	60	63	
Hiroshima University Medical School Kasumi-cho HIROSHIMA, Hiroshima	1948	114 f 12 p	239 m 33 f	43	41	9 000
Faculty of Medicine Kagoshima University 117 Yamashita-cho KAGOSHIMA, Kagoshima	1943	65 f 18 p	288 m 12 f	55	43	41 500
Faculty of Medicine Kanazawa University 15 Tsuchitoriba-naga-machi KANAZAWA, Ishikawa	1870	193 f 35 p	312 m 15 f	76	78	9 000
Nara Prefectural Medical College 840 Oaza-Shijo KASHIWABARA, Nara	1945	147 f 28 p	243 m 20 f	46	37	25 500
Kobe Medical College 12 Kusunoki-cho 7 chome Ikuta-ku KOBE, Hyogo	1944	188 f 8 p	325 m 23 f	88	84	12 000
School of Medicine Kumamoto University Jonaininomaru-cho KUMAMOTO, Kumamoto	1757	133	613 m* 36 f*	28		9 000

\* Including post-graduate course.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Yen)</i>
Faculty of Medicine Kurume University 67 Asahi-machi KURUME, Fukuoka	1928	134 f 12 p	495 m 13 f	88	91	65 200
Faculty of Medicine Kyoto University Konoe-cho, Yoshida, Sakyo-ku KYOTO, Kyoto	1899	110 f 27 p	484 m 26 f	56	93	9 000
Kyoto Prefectural University of Medicine 465 Kajii-cho-agaru, Kawaramachi Kamikyo-ku KYOTO, Kyoto	1872	147 f 54 p	508 m 23 f	86	88 m 4 f	20 000
School of Medicine Gunma University 280 Iwagami-cho MAEBASHI, Gunma	1943	141 f 8 p	235 m 18 f	60	61	9 000
Faculty of Medicine Shinsbu University 109 Asahi-machi MATSUMOTO, Nagano	1944	125 f 17 p	232 m 16 f	61	64	9 000
Kansai Medical College 1 Fumizono-cho MORIGUCHI, Osaka	1929	137 f 18 p	230 m 44 f	41	45	100 000
Iwate Medical University 89 Uchimarui MORIOKA, Iwate	1928	64 f 11 p	248 m 20 f	69	66	100 000
Faculty of Medicine Nagasaki University 1699 Sakamoto-machi NAGASAKI, Nagasaki	1857	167 f 26 p	325 m 5 f	81	82	9 000
Medical School Nagoya City University 1 Tanabe-dori 3-chome Mizuho-ku NAGOYA, Aichi	1948	111 f 5 p	254 m 24 f	40 m 8 f	39 m 5 f	12 000
School of Medicine Nagoya National University 65 Tsurumai-cho Showa-ku NAGOYA, Aichi	1878		305 m 23 f	77	85	ca 36 000

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Yen)</i>
School of Medicine Niigata University Asahi-machi-dori Ichiban-cho NIIGATA, Niigata	1870	210 f 28 p	474 m 19 f	82	79	9 000
Okayama University Medical School 164 Oka OKAYAMA, Okayama	1870	98 f 50 p	309 m 21 f	83	90	9 000
Faculty of Medicine Osaka University 33 Joan-cho Kita-ku OSAKA, Osaka	1843	99 f 58 f	310 m 12 f	81 m 2 f	78 m 4 f	9 000
Osaka City Medical School 29 Asahi-machi 2-chome Abeno-ku OSAKA, Osaka						
Faculty of Medicine Hokkaido University Kita 12, Nishi 5 SAPPORO, Hokkaido	1919	110 f 10 p	657	193	171	9 000
Sapporo Medical College Minami Ichijo, Nishi 17-chome SAPPORO, Hokkaido	1950	239 f 17 p	371 m 15 f	63 m 3 f	61 m 1 f	9 000
Faculty of Medicine Tohoku University 85 Kitayoban-cho SENOAI, Miyagi	1915	100 f 16 p	335 m 16 f	80	88	9 000
Osaka Medical College 350 Oaza-Kosobe TAKATSUKI, Osaka	1927	65 f 15 p	237 m 21 f	58 m 6 f	65	100 000
School of Medicine Tokushima University Kuramoto 2-chome TOKUSHIMA, Tokushima	1943	116 f 39 p	243 m 23 f	68	67	11 000
Faculty of Medicine Juntendo University 1 Hongo 1-chome Bunkyo-ku TOKYO, Tokyo	1943	168 f 12 p	164 m 11 f	44	48	90 000

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Yen)</i>
Faculty of Medicine Nihon University 724 Oyaguchi-machi Itabashi-ku Tokyo, Tokyo	1925	188 f 421 p	591 m 30 f	105	98	120 000
Faculty of Medicine University of Tokyo Hongo-Motofuji-cho 1-chome Bunkyo-ku Tokyo, Tokyo	1858	453 f 64 p	354 m 20 f	90	141	57 000
Medical College of Toho University 62 Omori 5-chome, Ota-ku Tokyo, Tokyo	1925	140 f 5 p	179 m 66 f	61	59	100 000
Nippon Medical School 59 Komagome-Sendagi-cho Bunkyo-ku Tokyo, Tokyo		93 f 21 p	644	141		100 000
School of Medicine Keio Gijuku University 35 Shinano-machi Shinjuku-ku Tokyo, Tokyo	1917	104 f 26 p	326 m 16 f	80	81	70 000
School of Medicine Tokyo Medical and Dental University 1 Yushima 3-chome Bunkyo-ku Tokyo, Tokyo	1928	459 f 33 p	275 m 20 f	46 m 3 f	40 m 2 f	22 000
Showa Medical School 1016 Hiratsuka 6-chome Shinagawa-ku Tokyo, Tokyo	1928	68 f 41 p	391 m 22 f	63		70 000
Tokyo Jikei-Kai School of Medicine 105 Shiba-Aiogo-cho 2-chome Minato-ku Tokyo, Tokyo	1881	198 f 1093 p	294 m 21 f	70 m 2 f	90	100 000
Tokyo Medical University 42 Higashi-Okubo 1-chome Shinjuku-ku Tokyo, Tokyo	1916	244 f 37 p	451 m 7 f	77		100 000
Tokyo Women's Medical College 10 Kawada-cho Shinjuku-ku Tokyo, Tokyo	1900	195 f 21 p	320	63	50	110 000

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Yen)</i>
Faculty of Medicine Mie Prefectural University 11 Ohtani-cho Tsu, Mie	1944	123	163 m 6 f	39 m 2 f	41 m 1 f	13 500
Yamaguchi Prefectural University of Medicine 1090 Shimomiyagi, Oaza-Nakaube UBE, Yamaguchi	1944	90 f 15 p	265 m 12 f	49	41	13 200
Wakayama Prefectural Medical College 5 Misono-cho WAKAYAMA, Wakayama	1945	149	240	40	40	18 000
School of Medicine Yokohama Municipal University 57 Urafune-cho 4-chome Minami-ku YOKOHAMA, Kanagawa	1944	29 f 12 p	151 m 15 f	45	43	18 000
Faculty of Medicine Tottori University 86 Nichi-machi YONAGO, Tottori	1945	123 f	231 m 14 f	60	59	9 000



## REPUBLIC OF KOREA

## Introductory data\*

Population . . . . .	24 665 000
Number of medical schools . . . . .	8
Number of physicians . . . . .	7 064
Number of medical graduates . . . . .	600**
Population per medical school . . . . .	3 083 000
Population per physician . . . . .	3 500

\* 1960 figures.

\*\* Figure supplied by Government.

Medical education in the Republic of Korea lasts for four years, preceded by a two-year pre-medical period, and leads to the degree of *Hak Sa* (Bachelor of Medicine).

## Administration

Although some of the medical schools in the Republic of Korea are owned and operated by private non-profit foundations, all are supervised by the Ministry of Education. The Ministry of Health and Social Affairs gives technical advice, holds the National Board Examination, and grants the licence to practise.

The Government-owned schools are financed through the Ministry of Education, the private schools by endowments and subsidies.

The medical schools are directed by their deans, who are advised by Boards representing various government and community interests. In those medical schools which are affiliated to universities the dean is responsible to the president of the university concerned.

The academic year extends from April to March. The language of instruction is Korean, but English, German and Latin are used in addition.

## Conditions of admission

Applicants for admission to the medical course must hold the secondary-school certificate (obtained after five years of secondary education, preceded by six years of primary school) or its equivalent and have finished a two-year pre-medical course in the college. Previous academic achievement has generally been the most important factor in deciding on the admission of a student to medical school, but other criteria, such as a candidate's general qualifications, his character, and his suitability for the study of medicine, have also been taken into account.

Foreign students may enter the medical course under the same conditions as nationals, but must write and speak the Korean language fluently.

### Curriculum

The two-year pre-medical period is taken at the medical schools, and the subjects covered include chemistry, physics, biology, mathematics, foreign languages and other cultural subjects. A student must pass his examinations in the various pre-medical subjects before he can be admitted to the medical course proper.

The first and second years of the medical course are devoted to pre-clinical subjects, such as anatomy, histology, embryology, physiology, biochemistry, pathology, pharmacology, and bacteriology, whereas the third and fourth years cover clinical subjects.

Instruction is provided by way of lectures, laboratory work, and clinical work in hospitals affiliated to the medical schools. Small groups of students meet their teachers in the wards and in the out-patient departments, and take part in the diagnosis and the treatment of patients. The primary goal of medical education in the Republic of Korea is a student's preparation for general practice, and that objective is reflected to a major extent in the curriculum.

### Examinations

Compulsory, written, oral, practical, or clinical examinations are, as a rule, held at the end of each semester; their number varies among the medical schools. The most important examination is that held at the end of each academic year. A student who has failed in two successive end-of-the-year examinations may no longer continue his medical studies.

### Qualification and licence to practise

After passing his final examination, a student receives the college degree of *Hak Sa* (Bachelor of Medicine). He then sits for a national board examination, conducted by the Ministry of Health and Social Affairs, which covers basic and clinical medicine, surgery, and obstetrics. A student who passes this examination is granted a licence to practise, which is valid throughout the Republic of Korea.

A period of internship is not compulsory, but most newly qualified doctors serve as interns for at least one year before they begin to practise. Most internships are of the "rotating" type, and cover several months' service in medicine, surgery, paediatrics, obstetrics, etc.

Foreigners who have qualified in Korea may be permitted to practise. Nationals and foreigners with foreign medical qualifications may be permitted to practise on passing the National Board Examination.

Medical graduates are under no obligation to serve the State unless so requested by the Minister of Health and Social Affairs in case of emergency.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Hwan)</i>
College of Medicine Chun-Nam National University KWANGJU	1944	46 f 12 p	421	80	80	147 000
College of Medicine Pusan National University PUSAN	1953	31 f 5 p	438	100	53	177 600
College of Medicine Catholic University SEOUL	1954	100 f 13 p	436	60	78	214 400
College of Medicine Ewha Women's University SEOUL	1945	49 f 2 p	509	70	39	176 900
College of Medicine Seoul National University SEOUL	1924	102 f 90 p	515	120		157 800
Severance Medical College Yonsei University SEOUL	1884	105 f 23 p	278	70		200 000
Soo Do Medical College SEOUL	1938	64 f 38 p	947	120	136	198 600
College of Medicine Kyong-Puk National University TAEJU	1923	55 f 21 p	383 m 11 f	80	90	155 400

## LAOS

### Introductory data\*

Population . . . . .	1 805 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	40
Number of medical graduates . . . . .	—
Population per medical school . . . . .	1 805 000
Population per physician . . . . .	45 000

\* 1960 figures.

Medical education in Laos lasts for four years and leads to the diploma of *Médecin-Assistant de l'Ecole Royale de Médecine* (Assistant Doctor of the Royal School of Medicine). After practising for a year these assistant doctors may sit for a competitive examination which enables them to continue their studies in France with a view to obtaining a doctorate.

### Administration

The Royal School of Medicine in Laos is linked with the Faculty of Medicine in Paris. It is not administratively dependent on it but the appointment of the Director of the School has to be approved by the Dean of the Paris Faculty. In addition, a professor of this faculty is appointed each year as chairman of the Board of Examiners.

The Royal School of Medicine in Laos is under the jurisdiction of the Ministry of National Education. For its budget it depends on the Laotian Government and French assistance.

The academic year lasts for nine months.

### Conditions of admission

To be admitted to medical studies candidates must be at least 16 years old; they must have completed their secondary studies and be in possession of the *diplôme de fin d'études du premier cycle de l'enseignement secondaire* (secondary-education certificate), awarded after nine years of study. They must pass an entry examination the subjects of which include Laotian, French, natural sciences and mathematics. Each candidate must submit a medical certificate confirming that he is not suffering from a contagious disease, particularly tuberculosis and leprosy.

The number of students admitted to the first year is limited by government decree.

### Curriculum

The curriculum is arranged as follows:

*First year*: medical physics; general and organic chemistry; physiology;

surgical symptomatology; medical symptomatology; minor surgery; animal biology; descriptive anatomy; French

*Second year*: medical physics; medical chemistry; physiology; medical symptomatology; descriptive anatomy; morbid anatomy and histology; medical pathology

*Third year*: topographic anatomy and operative medicine; forensic medicine; bacteriology; parasitology; obstetrics; medical pathology; tropical medicine; surgical pathology

*Fourth year*: hygiene; epidemiology; ophthalmology; otorhinolaryngology; dentistry; public health and maternal and child welfare; pharmacology and materia medica; obstetrics; therapeutics; medical pathology; tropical medicine; surgical pathology; surgical techniques.

Instruction is given in the form of courses, lectures, practical work and clinical laboratories. Probationary periods in hospital and spells of night duty are obligatory.

### Examinations

The examinations take place at the end of the academic year (May) and cover the subjects taught during the year. In determining the results the marks allotted during the probationary periods are taken into account. The first-year examinations in physiology, physics, chemistry and biology are written examinations. All the others are oral except for the practical work. At the end of the fourth year the candidates must examine two patients and read out their observations to the board of examiners. The examinations are supervised by a representative of the Faculty of Medicine of Paris.

Candidates may re-enter three months after the first examination if they have failed. If they fail again they may repeat the year's study. Thus they have a chance to enter four times for each end-of-the-year examination.

### Qualification

The diploma awarded gives the right to practise without further examination. Most students receive a scholarship, in return for which they undertake to work for the State for five years after obtaining the diploma.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Ecole Royale de Médecine du Laos B.P. 131 VIENTIANE	1957	1 f 16 p	26 m 11 f	9 m 3 f	—	None

## LEBANON

### Introductory data\*

Population . . . . .	1 646 000
Number of medical schools . . . . .	2
Number of physicians . . . . .	1 531
Number of medical graduates . . . . .	74
Population per medical school . . . . .	823 000
Population per physician . . . . .	1 100

\* 1960 figures.

### General Note

Medical education in the Lebanon is provided at the Medical School of the American University, and at the French Faculty of Medicine and Pharmacy within St Joseph's University, both at Beirut. As the origins of these two schools differ, and as teaching is based on different systems of education, they are described separately.

In the Lebanon medical graduates are not obliged to work for the State before setting up in private practice. Lebanese nationals who have obtained a medical degree abroad may practise in the Lebanon on condition that the foreign degree is recognized by the government of the country that awarded it. Foreigners who have obtained the diploma of one or the other of the schools of medicine in Beirut are not entitled to practise in the Lebanon.

### American University of Beirut

#### Historical background

In 1862 American missionaries in Syria decided to found a school of higher learning, which would include a school of medicine. Funds were raised in the USA and in Great Britain, and in 1863 the State of New York granted a Charter for the new school, which was originally known as the Syrian Protestant College. University work began in 1866, and the School of Medicine opened in 1867. The name of the College was changed to "American University of Beirut" in 1920. At present, medical training consists of a five-year course, leading to the degree of Doctor of Medicine (M.D.).

#### Administration

The University is an autonomous foundation supported in part by voluntary contributions, originating chiefly in the USA, where fund-raising efforts and certain administrative functions are handled by the Near East College Association. In this latter organization the American University of Beirut is a participant,

along with a number of other institutions in Greece, Iraq, Lebanon, Syria, and Turkey.

The Division of Medicine—one of five such divisions of the American University of Beirut—is headed by a Dean, and includes Schools of Medicine, Public Health, Pharmacy, and Nursing.

The academic year consists of two semesters, running from October to February and from February to June. The language of instruction is English, but students must acquire a speaking knowledge of Arabic before beginning the third year of the course.

### Conditions of admission

In order to be eligible for admission to the medical course, a student must be at least 18 years of age; he must have completed the third year in the Faculty of Arts and Sciences of the American University, including courses in chemistry, physics, biology, mathematics, English, and courses in any two of the following subjects: philosophy, psychology, sociology; and, lastly, he must have passed an examination of proficiency in the use of the English language.

The Faculty of Arts and Sciences of the American University of Beirut provides a three-year pre-medical curriculum which meets the minimum entrance requirements of the School of Medicine without guaranteeing that a candidate will be accepted. The University grants the degree of Bachelor of Arts to those students who have satisfactorily completed the third-year course at the Faculty of Arts and Sciences, have been in residence during that period, and have passed their examinations at the end of their first year in the School of Medicine.

Annual enrolment in the first-year medical class is limited to forty students, chosen on the basis of personal as well as academic qualifications from among candidates from the Middle East.

### Curriculum

The five-year curriculum is arranged as follows:

*First year* : anatomy; histology; physiology; biochemistry

*Second year* : pathology; bacteriology; parasitology; pharmacology

*Third and fourth years* : medicine; paediatrics; surgery; obstetrics; preventive medicine and the specialties, as well as theoretical and practical work in hospitals and clinics

*Fifth year* : practical work in hospitals, generally corresponding to a "rotating" internship.

### Examinations and qualification

Class examinations are held at varying stages throughout the several courses. A final examination is held after each subject is completed, generally at the end of the year. A student who completes all his subjects with unsatisfactory average marks may be required to pass additional examinations before he is allowed to go on to the next year of the curriculum. Repeat examinations are held in October for those students who have failed in not more than two subjects.

At the end of the fifth year, a student is eligible for the degree of Doctor of Medicine (M.D.). Graduates who wish to qualify for admission to the licensing examinations to practise in the Lebanon or Syria must perform an additional period of "rotating" internship at an approved hospital.

The School of Medicine of the American University of Beirut is subject to the regulations of the Board of Regents of the University of the State of New York, with which the University is affiliated. Its graduates are recognized by that Board. The school also figures on the list of foreign medical schools approved by the American Medical Association.

### **French Faculty of Medicine and Pharmacy, St Joseph's University, Beirut**

#### **Historical background**

St Joseph's University was founded at Ghazir as a College by Jesuit missionaries in 1855 and transferred to Beirut twenty years later. It was granted the status of University by Pope Leo XIII in 1881. In 1883, following an agreement between the French Government and the Jesuit missionaries in Syria, a French School of Medicine was opened within St Joseph's University. That School became a Faculty of Medicine in 1888, and a Faculty of Pharmacy was added to it in 1889, hence the present *Faculté française de Médecine et de Pharmacie* (French Faculty of Medicine and Pharmacy). Medical training consists of a seven-year course, including a pre-medical year, and leads to the *diplôme d'Etat* (State diploma) of *Docteur en Médecine* (Doctor of Medicine).

#### **Administration**

St Joseph's University is a private foundation, owned and operated by the Society of Jesus. In addition to the French Faculty of Medicine and Pharmacy, it includes Faculties of Theology and Law, a Higher School of Engineering, and an Institute of Oriental Letters. Its chief executive and administrative officer is the Rector.

The French Faculty of Medicine and Pharmacy is a *faculté libre* (i.e., non-governmental) within St Joseph's University, under the technical direction of a Higher Council (*Conseil supérieur*) located in Paris. The latter is composed of eminent French medical professors and includes the deans of the Faculties of Medicine and Pharmacy of the Universities of Paris and Lyons. The French Faculty itself is directed by a Chancellor. In addition to the departments of Medicine and Pharmacy, it includes a School of Dental Science, a School of Midwifery, and a School of Nursing.

The academic year is divided into two semesters, running from October to February and from February to June, for the academic part of the studies; and into four terms for the clinical part of the course. The language of instruction is French.

#### **Conditions of admission**

A candidate for admission to the French Faculty of Medicine and Pharmacy must be a national of one of the countries of the Middle East, or be domiciled



in that region; he must hold the French or Lebanese *baccalauréat*, or its officially recognized equivalent; and, lastly, he must pass a competitive written and oral entrance examination in the French language, chemistry, physics, the natural sciences, and mathematics. Not more than fifty students are admitted each year.

### Curriculum, examinations and qualification

By a decree of the French Government of 28 July 1960<sup>1</sup> the total duration of medical studies has been reduced from seven to six years, but at the present time a temporary solution has had to be adopted by the French Faculty of Beirut, and the curriculum of the first year of medicine will still stretch over two years until material conditions enable the new system to be brought into force in its entirety.

Throughout the medical course, the curriculum, as well as the examinations, are the same as those in France. A student begins hospital work in the first year of his medical studies and continues it throughout the course. Students spend the whole of the final year in a hospital as *stagiaires internes*. The end-of-the-year examinations take place in June and October, and clinical examinations are held at the end of the final year by Examining Boards, whose chairman is a professor appointed by the French Ministry of Foreign Affairs.

St Joseph's University awards the French *diplôme d'Etat* of *Docteur en Médecine*, which is in all respects equivalent to that awarded in France. Its holders are entitled to practise in the territory of the French Republic as well as in the Lebanon provided that they satisfy requirements relating to nationality and citizenship.

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees (L.L.)
Medical School American University of Beirut BEIRUT	1867	49 f 60 p	158 m 11 f	40	34	2225
Faculté française de Médecine et de Pharmacie de l'Université Saint-Joseph BEYROUTH	1883		242 m 47 f	50	40	1200

<sup>1</sup> See the chapter on France, page 100.

## MADAGASCAR

### Introductory data\*

Population . . . . .	5 393 000
Number of medical schools . . . . .	1**
Number of physicians . . . . .	644†
Number of medical graduates . . . . .	17
Population per medical school . . . . .	5 393 000
Population per physician . . . . .	8 100†

\* 1960 figures.

\*\* Not including the *Ecole nationale de Médecine et de Pharmacie*, which opened in 1961.

† 1959 figures.

Medical studies in Madagascar are organized at two levels: (1) a five-year course, including a year of pre-medical studies, leading to a local diploma—that of the School of Medicine and Pharmacy of Tananarive; (2) a six-year course, of which the first year is taken in Madagascar and the remaining five years in France, and which leads to the French *diplôme d'Etat* (State Diploma) of *Docteur en Médecine* (Doctor of Medicine).

### Administration

Studies at the local diploma level are carried out at the School of Medicine and Pharmacy of Tananarive. At this School there exists a Board of Higher Studies composed of the Minister of National Education, representatives of the academic services and the Ministry of Public Health, the Director of the Pasteur Institute, the Director of the School of Medicine and the professors of the school. This Board meets at least once a year, fixes the curriculum and the competitive examinations and decides what modifications should be made in the internal running of the school.

Medical studies at the university level are begun at the National School of Medicine and Pharmacy, which is part of the University of Madagascar. Both the School at Tananarive and the University of Madagascar are under the jurisdiction of the National Foundation for Higher Education. The former is financed by the Directorate of University Services, and the latter by the Directorate of Higher Education.

The academic year begins in October and ends in July. The language of instruction is French.

### Conditions of admission

Candidates for admission to medical studies at the School of Medicine and Pharmacy of Tananarive have to pass a competitive examination for admission to the pre-medical year; they must hold the *brevet élémentaire* (primary-school certificate). Candidates who have passed the full *baccalauréat* (secondary-school

certificate) are not required to take the competitive examination. At the end of the year of pre-medical studies all students must pass the competitive examination for admission to the first year of the medical course proper. Candidates for entry to the National School of Medicine and Pharmacy must hold the *baccalauréat* or have passed an equivalent examination. In addition to the admission requirements mentioned above, students of both schools are required to submit a certificate of good health as well as a vaccination certificate.

### Curriculum

At the School of Medicine and Pharmacy of Tananarive the curriculum of the medical course proper is as follows:

*First year*: medical symptomatology; surgical symptomatology; anatomy with practical work in osteology; minor surgery; physiology (theoretical course and practical work); three hours' clinical work in hospital every morning in the general medical and specialized wards

*Second year*: medical pathology; surgical pathology; anatomy; dissection; histology; three hours' clinical work in hospital every morning

*Third year*: medical pathology; surgical pathology; obstetrics; pharmacological therapeutics; clinical ophthalmology and otorhinolaryngology; clinical phthysiology; clinical dentistry; three hours' clinical work in hospital every morning

*Fourth year*: hygiene; epidemiology; bacteriology (theory and practice); parasitology (theory and practice); malariology; rudiments of morbid anatomy; operative medicine; forensic medicine; occupational medicine; psychiatry; maternal and child welfare and health education; meat inspection (theory and practice); administration of the State medical services; clinical medicine, surgery and obstetrics; clinical ophthalmology and otorhinolaryngology; three hours' clinical work in hospital every morning.

As mentioned earlier the National School of Medicine and Pharmacy at the present time provides only the first year of the six-year course leading to the French State diploma of Doctor of Medicine. The subjects studied during this year are as follows:

*First semester*: mathematics; chemistry; physics; biology (taught at the Faculty of Sciences); introduction to medical studies; psychology; anatomy; histology and embryology (taught at the Faculty of Medicine)

*Second semester*: biology; biophysics; biochemistry; physiology; anatomy; histology and embryology.

After completing the first year students continue their studies at the French faculties of medicine.<sup>1</sup>

### Examinations and qualification

Students of the School of Medicine and Pharmacy sit for examinations at the end of each academic year, before passing on to the next year of the course.

<sup>1</sup> For details of the remaining five years of the curriculum, see the chapter on France, page 100.

Each examination covers the subjects studied during that period and includes written, oral and practical tests. A student who fails in a subject in the July session may sit for the examination in that subject again in October. If he fails once more he must repeat the entire course. After a final examination, at the end of the fourth year, a student is awarded the diploma of *Médecin de l'Assistance médicale de Madagascar et Dépendances*, which entitles its holder to practise in Madagascar and the dependencies only. Competitive examinations for posts as hospital *internes* are held each year in order to enable students to work in teaching hospitals under conditions similar to those governing *internats* in France.

The French State diploma of Doctor of Medicine, awarded to students who have passed the examinations at the end of the first year of the course at the National School of Medicine and Pharmacy and the subsequent examinations covering the remaining five years of the course at the French faculties of medicine, authorizes its holder to practise medicine in Madagascar and on the territory of the French Republic, including Réunion and the Comoro islands, subject to conditions of nationality.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (CFA francs)</i>
École de Médecine et de Pharmacie Befelatanana TANANARIVE	1896	16 f 6 p	137 m 8 f	20	17	None
École nationale de Médecine et de Pharmacie Université de Madagascar 17, rue du Docteur Villette TANANARIVE	1961	5 p				3825

## MALTA

## Introductory data\*

Population . . . . .	329 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	337
Number of medical graduates . . . . .	14
Population per medical school . . . . .	329 000
Population per physician . . . . .	980

\* 1960 figures, including those for the island of Gozo.

Medical education in Malta lasts for seven years and leads to the university degree of Doctor of Medicine and Surgery (M.D.).

### Historical background

The University of Malta was constituted and taken over by the Order of St John of Jerusalem in 1769, after having been founded in 1592 as a College of the Society of Jesus. The Medical School itself, originally known as the "School of Anatomy and Surgery," was created in 1674. At the beginning of the nineteenth century, the University became a government institution. During the next 150 years, it gradually achieved an ever-increasing measure of autonomy until, in 1947, it became a completely independent and self-governing body, although it still receives financial support from the Government.

### Administration

The Governor of Malta is *ex officio* Chancellor of the University. The Vice-Chancellor and Rector Magnificus is head of the University in both administrative and academic matters and acts in conjunction with a University Council.

The University Senate consists of the Vice-Chancellor, a representative of each Faculty Board, the deans of the faculties and two members (who must be holders of a university degree) appointed by the Chancellor. The Senate directs and regulates instruction, examinations, and discipline. On other matters it can merely make recommendations.

Each Faculty Board consists of the Vice-Chancellor, the teaching staff of the Faculty and a number of examiners. A Dean is elected for a three-year term of office by the Faculty Board from among the professors.

The academic year begins in October and ends in June. English is the official language of the University and is the medium of teaching in most of the faculties, including the Faculty of Medicine and Surgery. The Maltese language is an obligatory subject in the matriculation examination.

### Conditions of admission

A candidate for admission must pass the matriculation examination, held by the University of Malta in June and September each year, or an equivalent, recognized examination, following completion of secondary education. In addition, Catholic candidates must pass an examination in religious doctrine.

Provided that they satisfy the minimum entry requirements and the Faculty requirements, foreign students are admitted to medical studies.

### Curriculum and examinations

The seven-year medical curriculum consists of a two-year pre-medical, a two-year pre-clinical and a three-year clinical period.

The pre-medical course (first and second year of the curriculum) is taken at the Faculties of Science and Arts. It consists of two years' study of chemistry, physics, biology, and philosophy, and one year of mathematics. Examinations in these subjects must be passed before a student may be admitted to the Faculty of Medicine. Candidates with passes at advanced level in physics, chemistry and biology at examinations held by approved examining bodies are eligible for exemption from the two-year pre-medical course.

The pre-clinical period (third and fourth year of the course) includes two years' study of anatomy, histology and embryology, physiology and biochemistry, and one year of bacteriology and parasitology. Teaching is by lectures and by practical work in the laboratories and dissecting rooms. Attendance in the wards begins in the second half of the pre-clinical period—that is, in the fourth year of the course. Examinations in the subjects covered must be passed before a student may begin the clinical period.

The three years of the clinical period are arranged as follows:

*Fifth year* : pathology; materia medica; pharmacology and therapeutics; systematic and clinical study of medicine, surgery (including anaesthetics), and obstetrics. An examination in materia medica, pharmacology and therapeutics, and a test in the remaining subjects, are held at the end of the year.

*Sixth year* : pathology; gynaecology; ophthalmology; epidemiology and vital statistics, hygiene and preventive medicine, as well as systematic and clinical study of medicine and surgery, including otorhinolaryngology. An examination in pathology, ophthalmology and hygiene and preventive medicine, and a test in the remaining subjects, are held at the end of the year.

*Seventh year* : clinical medicine; surgery; obstetrics and gynaecology; paediatrics; forensic medicine; psychiatry; operative surgery.

In addition to clinical work performed in the general hospital, a student must also carry out clinical work in the tuberculosis hospital, the isolation hospital, and the leprosy hospital.

The final examination covers medicine (including paediatrics), surgery (including operative surgery), obstetrics and gynaecology, psychiatry and forensic medicine.

### Qualification and licence to practise

Success in the final examination leads to the degree of Doctor of Medicine and Surgery (M.D.), which qualifies its holder for a warrant to practise medicine

in Malta. Persons holding this degree are recognized by the General Medical Council of the United Kingdom for registration as Commonwealth practitioners and are therefore entitled to practise in the United Kingdom after completing one year's pre-registration. Reciprocity as regards medical practice has been established with New South Wales and Victoria (Australia) and Pakistan.

In exceptional cases the Medical Council may recommend the grant of the warrant to practise to foreigners who visit the island for a short period. Nationals with foreign diplomas are required to take an examination set by the Medical Council. Competent candidates are then recommended for the warrant.

Provided that no objections are raised by the immigration authorities, British subjects who qualify in Malta may be allowed to practise.

Medical graduates are under no obligation to serve the State before engaging in private practice.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pounds)</i>
Faculty of Medicine and Surgery Royal University of Malta St Paul Street VALLETTA	1674	21	64	32	14	50

## MEXICO

## Introductory data\*

Population . . . . .	34 988 000
Number of medical schools . . . . .	22
Number of physicians . . . . .	20 227
Number of medical graduates . . . . .	1 011**
Population per medical school . . . . .	1 590 000
Population per physician . . . . .	1 700

\* 1960 figures.

\*\* Figure supplied by Government.

Training at the medical schools in Mexico generally consists of a six-year course. It includes a period of internship and of compulsory practice in rural areas and leads to the degree of *Médico Cirujano* (Physician and Surgeon). The only exceptions are the Escuela de Medicina at Pachuca, which provides for the first three years of the curriculum only;<sup>1</sup> the Faculties of Medicine of the Universidad de Nuevo León at Monterrey and of the Universidad Nacional del Sureste at Mérida, where the medical course lasts for seven years; and the Escuela Nacional de Medicina in Mexico City, where the period of training is of six and a half years' duration.

## Administration

The medical schools in Mexico are generally affiliated with universities, which, in turn, are to a large measure supported by the federal and state governments. The schools establish their own curricula, which are generally almost identical, and are also responsible, in the majority of instances, for the programme of internships to be served in hospitals.

The academic year runs from September to June, or from January to November. In some of the schools, it is divided into three terms, whereas in others it consists of two semesters.

## Conditions of admission

In order to gain admission to a medical school, a student must hold the *bachillerato* (a certificate awarded after five years of secondary studies, preceded by six years of primary school). At some of the medical schools, a competitive entrance examination is held in addition. In general, the number of students

<sup>1</sup> In accordance with an agreement between the school and the Universidad Nacional Autónoma de México the students may, if they so desire, continue their studies at the latter University.



to be admitted is not limited in any way. Most of the schools require students to undergo a physical examination before admission. The admission of foreign students is limited at some schools.

### Curriculum

The following is the outline of the new curriculum that came into force in 1960 at the Medical Faculty of the Universidad Nacional Autónoma de México. This curriculum includes five years of academic studies plus a further year of internship covering various fields, for purposes of practical training (*internado rotatorio*).

The first, second and third years of the medical course are devoted to the pre-clinical subjects: anatomy, histology, embryology, physiology, biochemistry, microbiology, parasitology, pathology, and pharmacology.

Subjects covered in the fourth and fifth years include medicine, surgery, obstetrics, paediatrics, medical sociology, preventive medicine and hygiene. Classes are divided into sections which take up each subject in rotation, and students are thus enabled to make more effective use of the available facilities. During the third and fifth years, a student also takes several courses in the clinical specialties.

The fourth and fifth years of the medical course are, in the main, devoted to clinical instruction at a hospital.

During the sixth year medical trainees (*pasantes*) work as interns in the departments of medicine, surgery, obstetrics, paediatrics and morbid anatomy, in rotation.

### Examinations and qualification

Examinations in each of the subjects studied are held at the end of each trimester or semester. Moreover, a student must pass a final, qualifying examination before he is granted a degree. In order to become eligible for the latter, he must spend a period of six months in social service, in accordance with the country's general labour legislation and with the provisions of the Department of Health and Welfare. In addition he must complete a thesis and defend it in the course of a *viva voce* examination attended by members of the faculty. (At the Escuela Nacional de Medicina, the student receives the guidance of a professor during the preparation of his thesis.) Subjects for theses are announced before a student begins his period of internship, but he does not submit his thesis until he has completed all his courses, as well as the periods of internship and rural practice.

### Licence to practise

The degree of *Médico Cirujano*, which is awarded after the final examination has been passed and the thesis accepted, entitles its holder to practise in any of the States of Mexico.

Mexican nationals and foreigners who hold a foreign medical degree are permitted to practise in Mexico provided that the studies they have carried out abroad are approved (validated) and provided that the Department of Labour

gives the requisite authorization. Foreigners who have completed the medical course in Mexico may practise provided that they have complied with the requirements of the country's laws regarding the residence of foreigners and that the Department of Labour has approved (validated) their professional qualifications.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fee. (Pesos)</i>
Escuela de Medicina de la Universidad de Campeche CAMPECHE, Campeche	1959					
Facultad de Medicina de la Universidad de Chihuahua Esq. Degollado y 35a CHIHUAHUA, Chihuahua	1954	6 f 40 p	104	35	10*	240-480
Escuela de Medicina de la Universidad Juárez del Estado de Durango Apartado Postal 229 DURANGO, Durango	1957					
Facultad de Medicina de la Universidad Autónoma de Guadalajara Tolsa 238, GUADALAJARA, Jalisco	1935	4 f 100 p	510	142	27	2525
Facultad de Medicina de la Universidad de Guadalajara Hospital 320 GUADALAJARA, Jalisco	1792	197	623	171	71	80
Escuela de Medicina de León Universidad de Guanajuato 20 de Enero y Cerezo LEÓN, Guanajuato	1945	81*,	152 m* 26 f*	35*	18*	500*
Facultad de Medicina de la Universidad Nacional del Sureste Calle 86-498 Avenida Itzaes MÉRIDA, Yucatán	1833					
Escuela Libre de Homeopatía de México Santa Lucía 6, 8 y 10 MÉXICO 2, D.F.	1912	60	105	28	6	790

\* 1961 data.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pesos)</i>
Escuela Médico Militar Lomas de Sotelo MÉXICO 10, D.F.	1917	3 f 157 p	172 m	60	28	None
Escuela Nacional de Medicina Homeopática del Instituto Politécnico Nacional Gómez Farías 40 MÉXICO 1, D.F.	1896	8 f 46 p	142 m 72 f	67	11	None
Escuela Superior de Medicina Rural del Instituto Politécnico Nacional Prolongación Carpio MÉXICO 17, D.F.	1938	179	553	130	36	None
Facultad de Medicina de la Universidad Nacional Autónoma de México Ciudad Universitario MÉXICO 20, D.F.	1833	1157	7642	1746	621	200
Facultad de Medicina de la Universidad de Nuevo León Apartado Postal 1563 MONTERREY, Nuevo León	1859					
Facultad de Medicina de la Universidad Michoacana de San Nicolás de Hidalgo MORELIA, Michoacán	1830					
Escuela de Medicina y Cirugía de la Universidad "Benito Juárez" de Oaxaca OAXACA, Oaxaca	1827					
Escuela de Medicina del Instituto Científico y Literario Autónomo del Estado de Hidalgo Hospital Civil Pasteur PACHUCA, Hidalgo	1945					
Facultad de Medicina de la Univer- sidad Autónoma de Puebla 4 Sur 104 PUEBLA, Puebla	1834					
Facultad de Medicina de la Universidad Autónoma de San Luis Potosí Avenida V. Carranza 543 Apartado Postal 142 SAN LUIS POTOSÍ, San Luis Potosí	1876	8 f 62 p	182 m 44 f	54	24	490

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pesos)</i>
Escuela de Medicina de la Universidad de Tamaulipas Avenida Hidalgo 501 TAMPICO, Tamaulipas	1950	50	175	54	8	600
Escuela de Medicina de la Universidad Autónoma del Estado de México TOLUCA, Estado de México	1955					
Escuela de Medicina de la Universidad de Coahuila TORREON, Coahuila	1957	32	130	35	—	350
Escuela de Medicina "Miguel Alemán" de la Universidad Veracruzana VERACRUZ, Veracruz	1952	1 f 101 p	325 m 125 f	160	30	537.50

## MOROCCO<sup>1</sup>

Medical education in Morocco consists, since the beginning of the academic year 1962/63, of a first-year course designed according to the French system so that it covers a part of the old P.C.B. course (physics, chemistry, biology). This course is given at the Faculty of Medicine in Rabat. In addition there is a fifth-year theoretical training course, given at the Ecole d'Application de Médecine (School of Applied Medicine) in Casablanca; practical work of the fifth and sixth years of medical studies is performed in hospitals of the same town. Moreover, there are recognized hospitals in the principal towns of Morocco where students may take the internship (sixth year).

### Administration

The Faculty of Medicine and the School of Applied Medicine are part of the Rabat University. The Faculty is headed by a Dean, the School by a Director. Teaching is carried out by professors of the Faculty of Sciences, *professeurs agrégés*, and lecturers attached to the various French faculties of medicine.

The academic year begins in October and ends in June; the language of instruction is French.

### Conditions of admission

When the complete course of study is set up in 1966 (by which time the Faculty of Medicine of Rabat and the School of Applied Medicine of Casablanca will be merged) the Faculty of Medicine of Rabat will grant a Moroccan medical diploma. The Faculty admits to the first year of studies candidates of all nationalities who are holders of the French *baccalauréat* (secondary-school certificate, for which 12 years of school education are required), or an equivalent certificate. In accordance with a cultural agreement between France and Morocco, the School of Applied Medicine admits, for their fifth and sixth years, candidates who are already entered with one of the French faculties of medicine as regular students.

Students with a Moroccan Government grant are generally required to take their last two years in the School of Applied Medicine, which also accepts foreign students.

### Curriculum

The Faculty of Medicine was opened in November 1962 and offers, during the first semester, the former P.C.B. course, at the end of which students have to sit for the examination A (French system). The second semester is devoted to theoretical and practical teaching of basic medical sciences.

<sup>1</sup> The information in this chapter refers to a later period than the academic year 1960/61. It has been included in the present edition of the Directory in the interests of comprehensiveness.

The School of Applied Medicine was opened in November 1959. It admits fifth-year students who are holders of four valid *inscriptions* (according to the new French system). The subjects covered are: hygiene, forensic medicine, therapeutics, hydrology, pharmacology and pharmacodynamics (for students who have not studied these subjects during the previous four years of medical training).

As regards the fifth-year compulsory hospital course and the sixth-year internship period, students enrolled at the School of Applied Medicine may be exempted from these if they have been appointed as hospital interns after the competitive examination organized each year by the Minister of Public Health or if they have been assigned to act as hospital interns at the end of the said competitive examination. The examination is held every year for all Moroccan hospitals.

### Examinations and qualification

In June 1963 the Faculty of Medicine was scheduled to hold the first end-of-the-year examination B; in 1964 that of the second year will be held.

The School of Applied Medicine in Casablanca awards a certificate of examination to students who pass the examination at the end of the fifth year of the medical course. There are two sessions of examination—in June and in October. The examinations are held before a Board of Examiners, selected by the Dean of the Faculty of Medicine from among the teaching staff of the School of Applied Medicine. The marks obtained are entered in the records of students' original faculties.

At the end of the sixth year, students are required to undergo a "recapitulation" (so-called "clinical") examination in their original French faculty, and to present a thesis.

In 1966 the Faculty of Medicine at Rabat will close the study cycle and thus students will be able to take their clinical examinations in, and present their theses to, this Faculty.

### Licence to practise

According to the *Dahir* 1-59-367 of 19 February 1960 licence to practise is granted to: (1) physicians who are citizens of Morocco and holders of a medical degree from medical faculties of all countries recognized by the Secretary General of the Government; (2) all foreigners who are holders of a medical degree that authorizes them to practise in their country of origin or in any other country. However, the medical qualifications concerned must be verified by the Secretary General of the Government, following the advice of the Minister of Public Health.

Applicants must be at least 25 years of age; Moroccan citizens must have worked for not less than two years in the public health service.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
School of Applied Medicine Rabat University CASABLANCA	1959					
Faculty of Medicine Rabat University RABAT	1962					

## NETHERLANDS

## Introductory data\*

Population . . . . .	11 480 000
Number of medical schools . . . . .	6
Number of physicians . . . . .	12 809**
Number of medical graduates . . . . .	610
Population per medical school . . . . .	1 913 000
Population per physician . . . . .	900

\* 1960 figures.

\*\* Excluding 1245 physicians not in practice.

Medical education in the Netherlands lasts for seven years and leads to the diploma of *Arts* (Physician), which is awarded after a candidate has passed the *Artsexamen*, the final medical examination.

## Administration

At the State universities—that is, at Groningen, Leiden and Utrecht—administrative matters are dealt with by a College of Curators responsible to the Minister of Education. Its members are appointed by the Crown, and are not on the university staff. The academic body is the University Senate; it is composed of the professors of the faculties and is presided over by the Rector Magnificus. The latter holds office for four years, on appointment by the Crown, and may be reappointed for another four years at the maximum. The universities' funds are almost entirely provided by the Government, the budget being submitted through the Minister of Education. The remainder is derived from students' fees and special funds.

At the University of Amsterdam (a municipal institution) the College of Curators consists of eight members, of whom the mayor of Amsterdam (by virtue of his office) is the president; the alderman of education is also a member. The other members are appointed partly by the Crown and partly by the City Council. Academic affairs are handled by the College of Rector and Assessors, composed of the Rector Magnificus and at least four professors of the faculties. Ninety-five per cent of the funds are provided by the State; the remainder is derived from a subsidy provided by the city of Amsterdam and from students' fees. Appointments to academic and administrative posts are made by the College of Curators. Although these are not Crown appointments, they must be approved by the Minister of Education and by the monarch.

The denominational universities are directed by governing boards. Ninety-five per cent of their income is derived from State subsidies and the remainder from private sources. Professors are appointed by the governing boards on the recommendation of the faculty.



The academic year in all universities consists of three terms of about ten weeks each, running from September to December, from January to March, and from April to July.

### Conditions of admission

The basic requirement for admission to a medical faculty is possession of the secondary-school certificate in science. (There are three types of secondary school—namely, the *gymnasium* (a grammar school), the *hogere burgerschool* (a modern secondary school), and the *lyceum* (usually a combination of a grammar school and a modern secondary school). These schools differ, in the main, in the relative emphasis given to classical, scientific, commercial, or modern-language subjects.) Latin is not compulsory. There is no *numerus clausus*.

Foreign students wishing to study medicine at a Dutch university generally need the permission of the Minister of Education, to whom they should apply, giving a brief outline of their studies and photostat copies of their diplomas, lists of marks, etc. In addition, holders of leaving certificates from secondary schools are required to produce a statement from an authoritative source (e.g., the ministry of education of their country) certifying that they are eligible to study medicine in their own country. The decision on an application for admission to a Dutch medical faculty is made in consultation with the Dutch university of the candidate's choice. If an applicant has already studied medicine and has passed examinations at a foreign medical school he may be wholly or partially exempted from examinations. Special admission requirements have been made for United States students who possess a bachelor's degree, after having followed the pre-medical training with sufficient grades in the basic medical course (about B average) at an accredited college or university in the USA. For these students application forms are available from the Dutch Ministry of Education.

### Curriculum

The seven-year curriculum is divided into four periods, as follows:

*Pre-medical* (one year). Although there is some variation as to the subjects taught in this period, it is devoted largely to broadening the student's knowledge of chemistry, physics, and biology, both by way of lectures and by laboratory work. At several of the universities these subjects are taken in a faculty of science, whereas at others they are studied in the faculty of medicine. In the latter case, some instruction in the pre-clinical subjects may be included as well.

*Pre-clinical* (two years). This period covers anatomy, embryology, histology, physiology, biochemistry, pharmacology, and pathology. In the third year some of the faculties run introductory courses in medicine and psychology. Teaching is by way of lectures and through practical work.

*Theoretical-clinical* (two years). During this period, lectures are given on pathology, bacteriology, parasitology, hygiene, social medicine, pharmacology, medicine, surgery, obstetrics and gynaecology, orthopaedics, paediatrics, neurology, psychiatry, ophthalmology, otorhinolaryngology, dermatology, and radiology. These lectures, during which patients are demonstrated, are given in the amphitheatres of the teaching hospitals, but at this stage students do not as yet

work in the wards. Moreover, practical classes are held in bacteriology, parasitology, pharmacology, and morbid anatomy.

*Practical-clinical* (two years). During this period, students are admitted to clinical work in hospitals. They help with routine work in the wards and outpatient departments as "co-assistants", and receive practical bedside instruction during visits to the wards by physicians and surgeons. During the first year of the practical-clinical period, co-assistants are undertaken in medicine, paediatrics, neurology, psychiatry, and hygiene. There is also a course in pharmacy and prescription-writing, as well as lectures in the subjects in which the student performs his practical work. In the final year co-assistants are undertaken in surgery, obstetrics and gynaecology, ophthalmology, otorhinolaryngology, and dermatology and venereology, and lectures are attended in addition.

Although the curriculum is specifically outlined, the student is not compelled to follow an over-rigid programme of studies. Attendance is compulsory at certain classes, such as the practical laboratory and clinical sessions, but the same does not apply to some of the lectures. However, a student is required to pass course examinations and tests at frequent intervals.

### Examinations

Three major examinations are held. The first of these is the *Candidaatsexamen*, which covers the subjects studied during the pre-medical and pre-clinical periods. This is followed by the *Doctoraalexamen*, which covers the theoretical-clinical period, and the *Artsexamen* (the final qualifying examination), which covers the practical-clinical period. Each of these examinations consists of oral and practical work but, at times, a written test is likewise required before a student is allowed to sit for the oral and practical portions.

Part I of the *Candidaatsexamen*, which covers chemistry, physics and biology, is held at the end of the first year of the medical course. Part II, devoted to anatomy, histology, physiology, biochemistry, and pathology, is held at the end of the pre-clinical period—that is, at the end of the third year of the course.

Examinations in the various subjects may be taken one at a time, but a student must sit for them within a specified number of days. A student who fails in any one subject may be re-examined at the discretion of the examining board. However, he may not proceed to the next stage of his studies until he has passed the *Candidaatsexamen*.

The *Doctoraalexamen* is held at the end of the fifth year of the course—that is, at the end of the theoretical-clinical period. Part I of this examination covers pathology, bacteriology, hygiene, and pharmacology. Part II, to be taken not less than three weeks later, covers medicine, surgery, obstetrics and gynaecology, psychiatry, and neurology. Both parts of the examination must be taken at the same faculty. A student failing in any one subject must repeat the whole examination in the part in which that subject is included, but not before three months have elapsed.

Part I of the *Artsexamen*, also known as the *Semi-artsexamen*, constitutes the first part of the final medical examination. It is held at the end of the sixth year of the medical course, and covers medicine, neurology, psychiatry, and paediatrics. Part II is held at the end of the seventh, and final, year of the course,

and is devoted to surgery, obstetrics and gynaecology, ophthalmology, otorhinolaryngology, dermatology and venereology. Examinations are oral and clinical. A candidate is called upon to examine a patient, to make his diagnosis and prognosis, and to suggest treatment. Part I (the *Semi-artsexamen*) must be completed before a student is allowed to sit for the final part of the *Artsexamen*.

It is up to the examining board to decide how many times, and at what intervals, a student may repeat an examination, and to notify the other institutions concerned of its decision. Although some students may be able to complete the course within the seven-year period, most of them, in fact, require eight or nine years to pass all their examinations.

### Qualification and licence to practise

No university degree is conferred after the *Artsexamen* has been passed. However, the names of successful candidates are reported to the Ministry of Health and inserted on a register of persons authorized to practise medicine.

In order to obtain the university degree of Doctor of Medicine candidates must submit a thesis containing the results of original research, defend it in public during a *viva voce* examination, and have it accepted by a faculty of medicine. Preparation of a thesis calls for at least two years' study and research. Any student who has passed the *Doctoraalexamen*, held at the end of the fifth year of the curriculum, is eligible to prepare for the degree of Doctor of Medicine, and some students therefore interrupt their medical studies at that stage to prepare their theses. Acquisition of the doctorate in medicine does not, however, constitute the right to practise medicine. A student who wishes to practise must first complete the final two years of the curriculum, pass the *Artsexamen*, and then be registered by the State.

Foreigners who have qualified in the Netherlands are freely admitted to practice. Nationals and foreigners who, by means of examination, have obtained full rights to practise medicine in another country may obtain the authorization to practise in the Netherlands from the Ministry of Social Affairs and Public Health on certain conditions. Such authorization may be revoked at any time.

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees (Guilder)
Faculteit der Geneeskunde Universiteit van Amsterdam Oudemanshuispoort 4 AMSTERDAM	1828	107 f 235 p	878 m 298 f	129 m 37 f	151	210
Faculteit der Geneeskunde Vrije Universiteit te Amsterdam Keizersgracht 162 AMSTERDAM	1880	26	330 m 90 f	80	161	200

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Gulders)</i>
Medische Faculteit Rijksuniversiteit te Groningen Broerstraat 5 GRONINGEN	1614	98 f 19 p	791	125	74	210 + 50 (laboratory fees)
Medische Faculteit Rijksuniversiteit te Leiden Zonneveldstraat 18a LEIDEN	1575	28 f 13 p	935 m 290 f	104 m 40 f	77 m 19 f	210
Faculteit der Geneeskunde Roomsche-Katholieke Universiteit te Nijmegen Kapittelweg 40 NIJMEGEN	1951	35	738 m 117 f	126	21	210
Faculteit der Geneeskunde Rijksuniversiteit te Utrecht Achter den Dom 7 UTRECHT	1636	39 f* 7 p	920 m 249 f	129 m 48 f	107	210

\* Including teaching staff in the dental school, which is part of the medical faculty.

## NEW ZEALAND

## Introductory data\*

Population . . . . .	2 372 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	3 396
Number of medical graduates . . . . .	100
Population per medical school . . . . .	2 372 000
Population per physician . . . . .	700

\* 1960 figures.

Medical education in New Zealand lasts for six years and leads to the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.) of the University of Otago. This qualification is recognized by the General Medical Council of the United Kingdom, and its holders are therefore entitled to registration as Commonwealth practitioners under the Medical Acts of the United Kingdom.

## Administration

The Medical School is a faculty of the University of Otago. The academic year runs from March to November, and is divided into three terms of three months each.

## Conditions of admission

Before admission to the Medical School, a student must have satisfactorily completed a course of secondary education (preceded by seven years of primary school) and have passed the University Entrance Examination.

Foreign students may be admitted to the first year of the medical course if they satisfy the requirements of the University for admission *ad eundem*. Because of the limited number of vacancies in the second year of the course entry is not possible to that year, but there is provision for admission of a limited number at the third and subsequent years if the above requirement for admission can be complied with. All applications for admission *ad eundem* at other than entrance stage must be approved also by the Medical Council of New Zealand.

## Curriculum and examinations

The six-year curriculum consists of a pre-medical course of one year and a professional course of five years. The various stages of the curriculum are marked by examinations, as follows:

The *Medical Intermediate Examination*, in chemistry, physics, and zoology, is prepared for by the one-year pre-medical course. After passing this examination in all subjects, a candidate is admitted to the professional course. Since, in recent

years, the number of students desiring admission to the professional course has been greater than the number of vacancies, a selection process, based on merit in the Intermediate Examination, has become necessary.

The *First Professional Examination* covers anatomy (including histology), physiology, and biochemistry. The course of study in these subjects lasts for five academic terms.

The *Second Professional Examination* covers pathology, bacteriology, pharmacology and therapeutics. The course of study lasts for four academic terms.

The *Third Professional Examination* is in preventive and forensic medicine.

The *Final Professional Examination* covers medicine, surgery, and obstetrics and gynaecology.

### Qualification and licence to practise

A compulsory one-year period of internship, following graduation and before entering medical practice, was introduced recently by the Medical Council of New Zealand. This service is performed in hospitals and institutions approved for the purpose by the Ministry of Health. The Council grants conditional registration to medical graduates for this period. After satisfactory completion of the period of internship, which includes six months in medicine and six months in surgery, with the option of substituting six months in obstetrics for one or the other, graduates receive full registration entitling them to enter medical practice.

Foreigners with the New Zealand degrees are admitted to practice in the same way as nationals.

The conditions under which both nationals and foreigners who are holders of foreign medical qualifications are authorized to practise are the following. The Medical Council of New Zealand can conditionally register the holder of a foreign diploma, approved by the Council, gained after a course of not less than six years' study, except that the Council may refuse to approve any diploma unless New Zealand graduates are, without examination, entitled to registration in the country granting this diploma. The Council may require the holder of a foreign diploma to attend a course and to pass an examination in medicine and surgery conducted by the University. Any person conditionally registered may practise only in an approved hospital or institution. Registration as a medical practitioner which is free of this restriction may be granted after a period of conditional registration.

Other than the one-year period of service mentioned earlier medical graduates are under no obligation to serve the State before engaging in private practice.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fee (ENZ)</i>
Medical School University of Otago Great King Street DUNEDIN C.1	1875	61 f 92 p	506 m 53 f	120	100	50

## NICARAGUA

## Introductory data\*

Population . . . . .	1 477 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	524
Number of medical graduates . . . . .	22
Population per medical school . . . . .	1 477 000
Population per physician . . . . .	2 800

\* 1960 figures.

Medical education in Nicaragua lasts for eight years, including a final year devoted to practical medical service, and leads to the degree of *Doctor en Medicina y Cirugía* (Doctor of Medicine and Surgery).

## Administration

The National University of Nicaragua is autonomous and is administered in accordance with its Organic Law by an Academic Board (Junta Universitaria) composed of the Rector, the Vice-Rector, the deans of the faculties, a representative of the Ministry of Education, a representative of the student body and the Secretary-General. The Faculty of Medicine is administered by a Governing Board (Junta Directiva) composed of six members, among whom are the Dean, Vice-Dean, and the Secretary.

The academic year begins on 1 June and ends on the last day of February.

## Conditions of admission

A candidate for admission to the medical course must hold the *bachillerato en ciencias y letras* (a certificate obtained after five years of secondary education, preceded by six years of primary school) and pass the entrance examination.

Foreigners are admitted if they hold the Nicaraguan *bachillerato* or a diploma recognized as equivalent to the *bachillerato* by the Ministry of Education. They must also pass the entrance examination.

## Curriculum

The curriculum is arranged as follows:

*First year* : biology (theoretical and practical); zoology and botany; medical physics (theoretical and practical); medical chemistry (theoretical and practical); mathematics

*Second year* : descriptive anatomy (I); dissection (I); parasitology (theoretical and practical); histology (theoretical and practical)

*Third year* : descriptive anatomy (II); dissection (II); physiology (theoretical and practical); medical ethics and history of medicine

*Fourth year* : clinical surgery; clinical medicine; surgical pathology (I); medical pathology (I); morbid anatomy (theoretical and practical); pharmacology

*Fifth year* : surgical pathology (II); medical pathology (II); operative medicine (I); hygiene and preventive medicine; therapeutics (I); forensic medicine and toxicology

*Sixth year* : paediatrics; clinical surgery (I); clinical medicine (I); operative medicine (II) and experimental surgery; obstetrics; gynaecology; therapeutics (II); tropical diseases (theoretical and practical); dermatology and venereology

*Seventh year* : psychiatry; radiology; otorhinolaryngology; ophthalmology; clinical surgery (II); clinical medicine (II); clinical obstetrics; clinical gynaecology; clinical paediatrics; surgical and medical first-aid.

### Examinations and qualification

There are intermediate and final examinations. The intermediate examinations are held three times during the academic year—in August, October and December. The average marks obtained in them count for 50 % in the assessment of the final examination, the other 50 % being derived from the results of that examination. Examinations are practical and theoretical; the latter may be written or oral according to the decision of the professor. After a student has completed the seventh year of the medical course, he must spend a year's internship in a hospital and must pass what is known as the "private general examination", which is divided into a practical and theoretical section, and the "public general examination", in which he defends a published thesis. He is then awarded the degree of *Doctor en Medicina y Cirugía*.

### Licence to practise

After the award of the degree the graduate is at once registered at the Ministry of Public Health, and may engage in private practice forthwith.

Citizens of Nicaragua and foreigners who hold a foreign diploma may engage in practice if they complete the necessary formalities; these consist in recognition of the equivalence of the diploma by the Ministry of Education and registration of the holder at the University of Nicaragua. Foreigners holding the Nicaraguan medical qualification are permitted to practise in the country.

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees (Córdobas)
Facultad de Medicina y Cirugía de la Universidad Nacional de Nicaragua LEÓN	1814	50	307	30	22	6.30



## NIGERIA

### Introductory data\*

Population . . . . .	35 091 000
Number of medical schools . . . . .	1**
Number of physicians . . . . .	1 079†
Number of medical graduates . . . . .	19
Population per medical school . . . . .	35 091 000
Population per physician . . . . .	33 000

\* 1960 figures.

\*\* A second medical school was opened in Lagos in 1962.

† Including physicians no longer practising in the country.

Medical education in Nigeria, including pre-medical studies, lasts for six years.

### Administration

The University College at Ibadan is an autonomous institution whose chief source of income is an annual grant from the Nigerian Government. Its financial management is in the hands of a Council, which is representative of both the United Kingdom and Nigeria. Teaching and research are the responsibility of a Senate, of which the heads of all departments are members. The Faculty of Medicine is directed by a Dean.

Within the next year or two, the College will apply for a charter, giving it full university status and the right to confer degrees; it will then become an independent university. In the meantime, students are prepared for degrees awarded by the University of London under a Scheme of Special Relationship, whereby that University awards degrees and reserves its right to determine examination standards and the assessment of candidates.

All pre-clinical students live in College. There are three halls of residence for men and one for women. A student health service has been established under the direct supervision of two medical officers, who also look after the health of the staff. All students in residence during term are provided with free medical treatment.

The academic year consists of three terms of ten weeks each, running from October to December, from January to March, and from March to May. The language of instruction is English.

### Conditions of admission

A candidate for entrance to the University College must either: (1) pass the College Entrance Examination, to which he is admitted if he holds one of the following qualifications: (a) the Cambridge School Certificate with passes at credit standard in five subjects, including English language and elementary mathematics; (b) an educational qualification deemed by the University of London to be equi-

valent to one or other of the above (e.g., the General Certificate of Education in equivalent subjects); or (2) be eligible for direct entry to degree courses of the University of London, in which case he may be exempted from the Entrance Examination.

### Curriculum and examinations

The one-year pre-medical course is devoted to chemistry, physics, and biology, and is taken in the Faculty of Science. Students then take the Preliminary Examination in Science.

The next two, pre-clinical, years are devoted to anatomy, embryology, microscopic anatomy, physiology (including histology, organic chemistry, and biochemistry), and pharmacology. The courses in anatomy and physiology both last six terms, and include lectures, dissection, demonstrations, and practical work. The course in pharmacology consists of about twenty hours of lectures introducing the general principles of the subject.

At the end of the pre-clinical period, students take the Second Examination for Medical Degrees of the University of London. This examination is in anatomy, physiology, and pharmacology and is written, oral, and practical. It is conducted by examiners of the University of London, who act in association with the examiners nominated by the University College of Ibadan.

Students who have passed equivalent examinations in another university may apply, through the University College, for exemption from the pre-medical course and the Preliminary Examination in Science, in whole or in part, and from the pre-clinical years of study, in whole or in part. All applications are considered on their merit. No exemption is granted from the Second Examination for Medical Degrees or from part of the clinical course.

Clinical instruction is given in the wards and clinics of the University College Hospital — a modern, well-equipped 500-bed hospital situated on the outskirts of Ibadan, about five miles from the College proper. During their three years of clinical studies, students are accommodated in a modern hostel on the hospital site but are still able to maintain a link with the social life of the College and also to make use of its library of 115 000 books, including an excellent medical section.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (£BWA)</i>
Faculty of Medicine University College IBADAN	1948	50	213	60	19	161.10.6- 261.10.6
Medical School University of Lagos LAGOS	1962	25	28*	28	—	70-260

\* Pre-clinical students; it is planned to double this number within two years.

## NORWAY

## Introductory data\*

Population . . . . .	3 585 000
Number of medical schools . . . . .	2
Number of physicians . . . . .	4 213
Number of medical graduates . . . . .	118
Population per medical school . . . . .	1 793 000
Population per physician . . . . .	850

\* 1960 figures.

Medical education in Norway lasts for six years and leads to the certificate of *Candidatus Medicinæ* (Candidate in Medicine). A period of one and a half years' practical training is required before a licence to practise is issued.

## Administration

The universities in Norway are owned and financially supported by the State. They prepare their annual budget for approval by the Ministers of Education and Finance. Tuition fees represent but a small part of the annual income of a university. Some students obtain stipends to help with their living expenses. The Government also offers loans to needy and deserving students.

The chief administrative officer of each university is the Rector, who is elected by the teaching staff from among the professors for a term of three years. The deans of the faculties are elected by the staffs of their faculties from among the faculty professors for terms of three years. They may be re-elected. The Academic Senate exercises general control over all university affairs. It consists of the Rector (chairman), the Vice-Rector, the deans of the various faculties (six), one representative of the non-professorial staff (the lecturers, etc.), and one representative of the students. The Director of the University acts as Secretary. Although the faculties must adhere to certain general regulations, they enjoy considerable autonomy in administration and academic affairs.

The academic year begins in August and ends in June.

## Conditions of admission

Candidates for the medical course must have passed the *examen artium* (an examination held after five years of secondary studies, preceded by seven years of primary school) with a major in science. Owing to the limited capacity of the medical schools, only a limited number of candidates are admitted. At the present time 130 freshmen are enrolled annually (90 in Oslo and 40 in Bergen). Admission is based on marks obtained in the *examen artium*, no other educational qualification being taken into consideration. The average age of students on admission to medical school is 18 or 19 years.

As Norwegian citizenship is not mandatory for admission to the medical faculty of a university in Norway, foreign students may compete for admission on equal terms with Norwegian students, provided they have passed the *examen artium*.

### Curriculum

The curriculum is divided into three periods: a pre-clinical period of two and a half years, and two clinical periods of two and a half years and of one year respectively.

The pre-clinical period, provided at Oslo only, is in two parts. The first, of one year's duration, has chemistry as its main subject, with anatomy, psychology, biochemistry, biology, biostatistics, Latin (medical terminology), and philosophy as subsidiary subjects. The second part lasts one and a half years and is devoted entirely to anatomy, physiology, and biochemistry.

The first clinical period, lasting for two and a half years, is divided into eight terms of about thirteen weeks each. In the first term, which is known as the propaedeutic term and differs from the others in that it lasts for nine weeks only, clinical examination methods and the principles of clinical medicine are taught. In addition practical courses are given in general pathology, and psychology and social medicine are also taught. The eighth term is reserved for examinations. The remaining terms are devoted to pathology, bacteriology and serology, pharmacology and toxicology, medicine, surgery, dermatology and venereology, ophthalmology, otorhinolaryngology, neurology, anaesthesiology, and social medicine.

The second clinical period, lasting for one year, is divided into three terms. These are devoted to obstetrics and gynaecology, paediatrics, psychiatry, radiology, hygiene, social medicine, and forensic medicine.

### Examinations

Written, oral and clinical examinations are held at the end of each main stage of the curriculum and cover the subjects studied during that period. The first examination is held in two parts, thus corresponding to the way the pre-clinical period is divided. The other two examinations, devoted to the first and second clinical periods respectively, are undivided. In order to be admitted to examinations, students must have followed the practical and clinical courses in the subjects concerned. Attendance at the lectures, however, is not compulsory.

### Qualification and licence to practise

After a student has passed all the examinations, he receives the certificate of *Candidatus Medicinae* (Candidate in Medicine). No degree is awarded.

In 1950 a period of one and a half years' post-graduate training following the final examination was established by an amendment and a shortening of the curriculum. Six months of that period has to be spent by the graduate in the department of medicine of a hospital, six months in the department of surgery of a hospital, and six months as assistant to a district public health officer, both in his public health work and in his general practice. On completion of this service

a graduate receives his licence to practise, which is issued by the Minister of Social Affairs on the recommendation of the Director-General of Health Services.

The higher degree of Doctor of Medicine is conferred only after a graduate has completed an independent research project and has submitted an acceptable thesis. It is not required for the licence to practise.

In accordance with regulations introduced by a Royal Decree of 30 January 1959, Norwegian citizens who have graduated from foreign medical schools must take additional education at a Norwegian medical school before they can be recognized as holding qualifications equivalent to the Norwegian certificate. They are obliged to take certain courses for a full semester at a Norwegian medical school and in some cases to do practical service and to pass tests. A clinical examination in internal medicine, surgery, or paediatrics is obligatory. Additional tests to be taken depend on the country in which the candidate has studied and partly on the marks he has gained. Before authorization to practise is granted, a period of twelve months as an intern and six months as assistant to a district public health officer must be served, as is the case with Norwegian nationals. Medical graduates from Dutch universities are only required to serve the six months' assistantship.

In accordance with the Law of Physicians' Privileges and Obligations of 29 April 1927, paragraph 1, No. 2, foreigners with foreign medical degrees may be granted permission to serve as subordinate physicians in hospitals. The Medical Faculty of the University of Oslo evaluates their qualifications in each case. Under the aforementioned Law, foreign physicians are sometimes granted unrestricted permission to practise medicine in Norway, though this is more difficult to obtain and usually requires service in a hospital in a subordinate capacity for some time. Moreover, foreign candidates are usually obliged to pass part of the examinations required of Norwegian candidates, even when holding a degree from a medical school with a curriculum similar to that of the Norwegian schools. Foreign candidates must also prove their knowledge of Norwegian.

Any candidate upon whom has been conferred the qualification of *Candidatus Medicinae* by a Norwegian university, or who has taken additional courses and passed the examination required of candidates with recognized foreign degrees, is in a position to request authorization to practise medicine in Norway, provided he has completed the obligatory period of internship in a hospital and of assistantship to a district public health officer. In addition the candidate must be of good conduct and sign an undertaking to practise medicine within the dictates of his honour, conscience and the laws of the country. Authorization may be denied only under conditions similar to those under which an authorization may be revoked. These regulations are not dependent on citizenship. The privilege to practise medicine may be revoked by a court of law if the physician concerned is considered unfit to practise because of mental illness or mental deficiency or because of an addiction to alcohol or narcotic drugs.

Apart from military service, medical graduates are under no obligation to serve the State.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Kroner)</i>
Medisinske Fakultet Universitetet i Bergen BERGEN	1946	24 f 50 p	250 m 31 f	40	56	40
Medisinske Fakultet Universitetet i Oslo OSLO	1814	90 f 70 p	480	90	62	100

## PAKISTAN<sup>1</sup>

### Introductory data\*

Population . . . . .	92 578 000
Number of medical schools . . . . .	15
Number of physicians . . . . .	10 693**
Number of medical graduates . . . . .	†
Population per medical school . . . . .	6 172 000
Population per physician . . . . .	8 700

\* 1960 figures.

\*\* Includes both holders of the M.B., B.S. degrees and holders of the Licentiate diploma (see text).

† Data incomplete.

Medical education in Pakistan is provided at medical colleges, which are affiliated to universities, and at medical schools. The course at the medical colleges lasts for five years, not including two years of pre-medical studies, and leads to the university degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.). The course at the medical schools lasts for four years and leads to the diploma of Licentiate of Medical Faculty (L.M.F.).

### Administration

The universities of Pakistan are statutory bodies, based on Acts of the provincial and central legislatures. In each university, authority is vested in the Senate and in the Executive Council or Syndicate. The income of these universities is derived from students' fees and from grants by the provincial and central governments. Functions performed by the universities with regard to their affiliated institutions are almost entirely limited to the holding of examinations and to the conferring of degrees and diplomas.

All the medical colleges are basically State-owned, although the precise degree of dependence shows some variation. Each college has its constitution, an agreed establishment, and a budget within which the provincial government,<sup>2</sup> the principal of the college, and the college council can function fairly freely in matters of administration and policy. Matters concerning medical education are within the province of the Pakistan Medical Council, which lays down the minimum standards required for the teaching and training of medical students, although this does not interfere with the freedom and prerogatives of the universities. Day-to-day management and much of the developmental work of the colleges are in the hands of the principals or deans, who may also act as professors in their own

<sup>1</sup> The reader is also referred to the chapter on India, as certain similarities exist between medical education in Pakistan and India, particularly with respect to its historical aspects.

<sup>2</sup> The governmental agency dealing with these matters is known as the Directorate General of Health, Karachi, and the Directorate of Health Services, Dacca and Lahore.

special subjects. The college councils are composed of professors and departmental heads, and certain of their members sit on regional committees made up of medical educators.

At the Universities of Dacca, Karachi and Sind, the academic year runs from July to April, whereas at the University of the Punjab it runs from October to June.

All formal instruction and all examinations are conducted in English. Urdu or another of the national languages is, however, frequently used informally, and conversation with patients is almost entirely in the language of the district.

### Conditions of admission

The minimum requirement for admission to a university in Pakistan is that a candidate should have passed the matriculation examination, or its recognized equivalent. The matriculation examination is taken on completion of secondary-school studies, and is conducted by the universities. Students are generally about 15 or 16 years of age when taking this examination. In order to pass it, candidates must have a knowledge of one of the national languages (Bengali, Punjabi, Urdu, etc.), of English, and of other subjects of general education, such as mathematics and natural sciences.

After passing the matriculation examination, a future medical student must study chemistry, physics, biology, and English at a faculty of science for a period of two years, and then sit for an intermediate examination in science. If he passes that examination, he is eligible for admission to a medical college. Since the number of applicants usually exceeds the number of vacancies, selection is made on the basis of background, academic distinction, personal interview, and regional recruitment needs. At all the colleges, 25 %-30 % of the vacancies are open to women. The Fatima Jinnah Medical College in Lahore admits women only.

The minimum entrance requirement for admission to the medical schools is the matriculation examination of a Pakistani university, or its recognized equivalent. However, in actual practice, a number of students who have passed their first science examination, but have not entered a medical college, are also admitted.

Forty places are reserved for candidates from foreign countries in the medical colleges in Pakistan. The countries for whose nationals the places are reserved are informed in advance through Pakistani missions. The candidates must submit their applications to the Government of Pakistan through Pakistani missions in their respective countries. They are required to send the following documents with their applications: (1) certificate showing marks obtained in an examination equivalent to the intermediate examination in science (I.Sc. (Medical Group)) of the Pakistani universities (seven copies of educational certificate and syllabus of courses should also be sent); (2) birth certificate, together with the attestation of the parents or guardians confirming the date of birth; (3) testimonials of conduct and character from the head of the institution in which the candidate last studied and from two other responsible persons; (4) certificate of domicile attested by the Pakistani mission concerned, showing that the candidate is a citizen and resident of the country; (5) parent's or guardian's certificate stating annual income, certified by the Pakistani mission concerned; (6) health (physical fitness) certificate delivered by a government medical officer; (7) written declaration to the effect that the candidate will return to his country after the completion of his studies



in Pakistan; (8) two passport-size photographs; and (9) English translation of the certificates.

All expenses connected with travel, studies, accommodation, etc., are borne by the candidates themselves and the Government of Pakistan accepts no financial liability on their account. Since the teaching is conducted in English candidates should be proficient in that language. Foreign students may not transfer from one medical college to another.

### Curriculum

The duration of the medical course at the medical colleges is five years, divided into two years of pre-clinical and three years of clinical studies. Thus the student comes into contact with patients during his third year of study, although at that stage part of his time is still occupied by lectures and by laboratory work in the basic subjects. During the fourth year of the course, attendance in the wards and out-patient departments accounts for about half of the syllabus, the remainder being spent on theoretical instruction in the principles of medicine, surgery, obstetrics, pathology, hygiene, and forensic medicine. The final year is occupied almost entirely by clinical work.

### Examinations

Four statutory, or professional, examinations are held—namely, the First, taken after a student has completed the second year of the curriculum, and covering anatomy and physiology; the Second, held at the end of the third year, and covering pharmacology and materia medica; the Third, held at the end of the fourth year, covering pathology (including morbid anatomy, bacteriology, and parasitology), public health, and forensic medicine; and the Fourth, or Final examination, held at the end of the fifth year of the course, and covering medicine, surgery, and obstetrics.

At all universities, the results of class examinations, together with attendance records and so on, are used as the basis to determine a student's eligibility to sit for the professional examinations. At these examinations at least one internal and one external examiner are generally present—that is, one examiner from a student's own college and one from outside. Responsibility for the professional examinations lies wholly in the hands of the university authorities, who appoint the examiners and arrange details of the examinations in accordance with requirements prescribed by the Pakistan Medical Council.

### Qualification and licence to practise

After passing the final examination at a medical college a student receives the university degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.). This qualification entitles him to registration in the Medical Registers maintained by the Pakistan Medical Council and the Provincial Medical Councils, and thus constitutes his licence to practise medicine in Pakistan. The Pakistan Medical Council has decided that after passing the final examination, but before a licence to practise has been granted, every graduate should serve for twelve

months as an intern in a hospital approved by the Council. This decision is to be implemented in the near future.

Graduates of medical schools, having obtained the Licentiate diploma, are eligible for registration with the Pakistan Medical Council and the Provincial Medical Councils for private practice or for government service. They may take a further course, of two years' duration, at a medical college, after which they may sit for the examination that leads to the M.B., B.S. degrees.

There is no bar on medical practice for those possessing foreign qualifications registrable with the Pakistan Medical Council. Persons possessing qualifications not registrable with the Pakistan Medical Council are allowed to set up in private practice, but are required to obtain permission from the Central Government of Pakistan to prescribe certain dangerous drugs and to perform surgical operations.

Medical graduates are under no obligation to serve the State before engaging in private practice.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Rupees)</i>
Chittagong Medical College CHITTAGONG, East Pakistan	1957	24	276 m 13 f	69 m 5 f	—	200-300
Dacca Medical College Dacca, East Pakistan	1946	64	667 m 80 f	82 m 16 f	148	200-300
Mitford Medical College Dacca, East Pakistan	1889*					
C.M.S. Medical School ** HYDERABAD, West Pakistan	1953					
Liaquat Medical College HYDERABAD, West Pakistan	1885	50 f 3 p	471	100	72	144
Dow Medical College KARACHI, Federal Capital Area	1945	51 f 33 p	609 m 170 f	130	154	217.50
Fatima Jinnah Medical College for Women Queens Road LAHORE, West Pakistan	1948	42 f 10 p	550	100	79	300
King Edward Medical College Nila Gumbad LAHORE, West Pakistan	1860	61 f 9 p	595 m 59 f	88 m 12 f	119	295
Punjab Medical School ** LAHORE, West Pakistan	1954					

\* Upgraded to College status in 1962.

\*\* No fresh admissions in 1960/61; schools started closing in 1959.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Rupees)</i>
Nishtar Medical College MULTAN, West Pakistan	1951	47 f 7 p	546 m 59 f	100	82	307
Lytton Medical College MYMENSINGH, East Pakistan	1924*					
Khyber Medical College PESHAWAR, North-West Frontier Province	1955	38 f 6 p	309	60	20 m 8 f	
Aminuddin Medical School ** QUETTA, West Pakistan	1953	17 f 6 p	210	—	29	5326
Rajshahi Medical College RAJSHAHI, East Pakistan	1958	41	124 m 8 f	47 m 3 f	—	200-300
Sylhet Medical College SYLHET, East Pakistan	1948*	13 f 1 p	159 m 26 f	40 m 4 f	7	120

\* Upgraded to College status in 1962.

\*\* No fresh admissions in 1960/61; school started closing in 1959.

## PANAMA

### Introductory data\*

Population . . . . .	1 079 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	401
Number of medical graduates . . . . .	20
Population per medical school . . . . .	1 079 000
Population per physician . . . . .	2 700

\* 1960 figures.

Medical education in Panama lasts for four years and leads to the degree of *Doctor en Medicina* (Doctor of Medicine).

### Administration

The course is held at the Faculty of Medicine of the University of Panama. The academic year begins in May and ends in February.

### Conditions of admission

In order to be eligible for admission to medical studies, an applicant must have performed three years of pre-medical work at university level. (Previous school education consists of six years of primary school and six years of secondary, leading to the school-leaving certificate of *bachillerato en letras* (humanities) or *bachillerato en ciencias* (science).) Moreover, a candidate must undergo a professional aptitude test, which helps to evaluate his suitability for the study of medicine, as well as pass an entrance examination.

Foreigners are admitted under the same conditions as nationals.

### Curriculum

The curriculum is similar to that in United States medical schools, in that the main emphasis during the first and second years of the course is on the study of the pre-clinical subjects, whereas the third and fourth years of the course are principally devoted to clinical instruction in hospitals.

### Examinations and qualification

Examinations are held at the end of the period of study of each subject. After the final examination, at the end of the fourth year, successful candidates are awarded the university degree of *Doctor en Medicina*.

**Licence to practise**

Medical graduates must complete one year of internship in an approved hospital and one year of social service in a public health institution.

Panamanian nationals who have graduated in Spain or Brazil, if they desire to practise in Panama, must have their diploma validated by means of an examination.

Foreigners who have obtained the diploma of *Doctor en Medicina* of the University of Panama must become citizens of Panama before they are permitted to practise. Likewise, foreigners holding foreign medical qualifications must become citizens of Panama, and, in addition, must have their diploma validated.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Facultad de Medicina de la Universidad de Panamá PANAMÁ	1951		100	30	20	

## PARAGUAY

### Introductory data\*

Population . . . . .	1 768 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	983**
Number of medical graduates . . . . .	97†
Population per medical school . . . . .	1 768 000
Population per physician . . . . .	1 800

\* 1960 figures.

\*\* Including physicians no longer in practice.

† 1961 figure.

Medical education in Paraguay lasts for six years and leads to the degree of *Doctor en Medicina y Cirugía* (Doctor of Medicine and Surgery).

### Administration

The Faculty of Medicine, headed by a Dean, is part of the National University of Asunción, which is an autonomous institution.

The academic year begins in April and ends in October.

### Conditions of admission

In order to be admitted to the Faculty of Medicine a student must hold the *bachillerato* (a certificate obtained after six years of secondary education, preceded by six years of primary school) and pass an entrance examination.

Foreign students are eligible for medical studies if they are admitted under cultural agreements and if they have passed the entrance examination.

### Curriculum

The curriculum is arranged as follows:

*First year* : descriptive anatomy; histology and embryology; biophysics

*Second year* : microbiology; physiology; biochemistry

*Third year* : medical pathology; surgical pathology; operative medicine and topographic anatomy; morbid anatomy

*Fourth year* : medical pathology; surgical pathology; medical symptomatology; surgical symptomatology

*Fifth year* : clinical obstetrics; otorhinolaryngology; ophthalmology; dermatology and syphilology; urology; radiology; therapeutics; pharmacology and toxicology; clinical medicine; clinical surgery

*Sixth year* : phthisiology; gynaecology; hygiene and epidemiology; paediatrics; clinical medicine; clinical surgery; orthopaedics and traumatology; neuro-

psychiatry; forensic medicine and medical ethics; public health and preventive medicine.

### Examinations

There are three examinations during the year: the supplementary examination in March, the qualifying examinations in July, and the final examinations in December. A failed student may take the same examination four times; after the fourth failure he is excluded from further studies.

### Qualification and licence to practise

A student who passes the final examination at the end of the sixth year of the medical course is eligible for the degree of *Doctor en Medicina y Cirugía*, which also constitutes his licence to practise. Only candidates for higher degrees who intend to follow a teaching career are required to present a thesis.

Paraguayan nationals who hold medical degrees from countries with which reciprocal cultural agreements exist may practise in Paraguay. Foreigners who hold the Paraguayan degree are authorized to practise, as are foreigners who hold a foreign medical diploma, provided they are admitted under cultural agreements and have passed an examination confirming their qualifications.

Medical graduates are under no obligation to serve the State.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Guarantes)</i>
Facultad de Medicina de la Universidad Nacional de Asunción Av. Dr Montero y Lagerenza ASUNCIÓN	1892	108*	420	36	97*	610

\* 1961 data.

## PERU

### Introductory data\*

Population . . . . .	10 857 000
Number of medical schools . . . . .	3**
Number of physicians . . . . .	5 061
Number of medical graduates . . . . .	†
Population per medical school . . . . .	3 619 000
Population per physician . . . . .	2 100

\* 1960 figures.

\*\* Not including the Facultad de Medicina "Cayetano Heredia", in Lima, which opened in 1962.

† Data incomplete.

Medical education in Peru lasts for seven years, including one year of internship, and leads to the degree of *Médico Cirujano* (Physician and Surgeon).

### Administration

The Universidad Nacional Mayor de San Marcos at Lima is a State University, controlled by the Ministry of Education. Its Faculty of Medicine is headed by a Dean, and is administered by a Board (Junta) composed of all the full professors and of six of the associate professors.

The academic year is of nine months' duration.

### Conditions of admission

Candidates for admission to the Faculty of Medicine must have completed the five-year secondary-school course (preceded by seven years of primary education), must have taken a two-year pre-medical course, and must pass an entrance examination.

### Curriculum

The curriculum is arranged as follows:

*Second year:* physiology; pharmacology; morbid anatomy; bacteriology; parasitology

*Third year:* physiopathology; introductory clinical medicine; radiology; history of medicine

*Fourth year:* systematic and clinical medicine; therapeutics; systematic surgery (I); introduction to clinical surgery; clinical work in tropical diseases; infectious and parasitic diseases; phthisiology; otorhinolaryngology



*Fifth year* : systematic surgery (II); clinical surgery; systematic medicine; clinical medicine; dermatology and syphilology; obstetrics and gynaecology

*Sixth year* : paediatrics; clinical paediatrics; ophthalmology; psychiatry; neuropathology; urology; hygiene; forensic medicine and toxicology

*Seventh year* : internship.

### Qualification

After a student has successfully completed the first five years of the medical course, he obtains the diploma of *Bachiller en Medicina* (Bachelor of Medicine). After completion of the seventh year of the course, the degree of *Médico Cirujano* is awarded; this constitutes the licence to practise medicine in Peru. A graduate who submits a thesis may qualify for the higher degree of *Doctor en Medicina* (Doctor of Medicine).

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees
Facultad de Medicina de la Universidad Nacional de San Agustín Apartado 714 AREQUIPA						
Facultad de Medicina "Cayetano Heredia" de la Universidad Peruana de Ciencias Médicas y Biológicas Jirón de la Unión 1146 LIMA	1962					
Facultad de Medicina de San Fernando de la Universidad Nacional Mayor de San Marcos LIMA	1856	356	1863	216	176	
Facultad de Medicina de la Universidad de la Libertad TRUJILLO						

## PHILIPPINES

### Introductory data\*

Population . . . . .	27 792 000
Number of medical schools . . . . .	7
Number of physicians . . . . .	3 949**
Number of medical graduates . . . . .	1010
Population per medical school . . . . .	3 970 000

\* 1960 figures.

\*\* Only physicians in government service.

Medical education in the Philippines lasts for five years, including a period of one year's service in an internship, and leads to the degree of Doctor of Medicine.

### Administration

The Cebu Institute of Technology, the Southwestern University, the Far Eastern University, the Manila Central University and the University of the East are privately owned institutions, supported through fees paid by the students. The University of Santo Tomás derives its income from like sources and, in addition, obtains funds through its religious affiliations. The University of the Philippines is a Government-supported institution.

The chief administrative officer in each medical faculty is the Dean. He is appointed by, and responsible to, the officials of the university of which the medical school is part.

The academic year begins in June and ends in March. The language of instruction is English, although contact with patients is generally in one of the local languages.

### Conditions of admission

As a rule, the minimum requirement for admission to the medical course is completion of two years of general university studies, including courses in physics, chemistry, biology, and mathematics. However, preference is given to those candidates who have completed three or even four years of general university studies. Thus, students who have completed four years of such studies already hold a bachelor's degree before beginning the medical course. At the University of the Philippines, a minimum period of three years of university studies is required for admission to the medical course.

A certificate, known as the Medical Students Entrance Certificate, is issued to those potential medical students who have met these minimum entrance requirements by the Board of Medical Examiners, a governmental body composed of three physicians. The medical faculties and colleges in the Philippines consider

for admission only those students who hold this certificate, although its possession does not necessarily guarantee that the holder will, in fact, be accepted. Students who have attended the pre-medical course of one university are, of course, eligible for admission to the medical school of another. The University of the Philippines requires validation examinations.

Foreign students who meet the above-mentioned requirements are eligible for admission to medical studies, provided the schools concerned are agreeable to their enrolment.

### Curriculum

The pre-clinical subjects are studied during the first and second years of the medical course, while the third and fourth years are devoted to the clinical subjects. In addition to attending lectures and classroom sessions, students also perform laboratory work in the respective sciences during the first and second years of the course and, later on, work part time in hospital wards and clinics as clinical clerks. The fifth—i.e., the internship or clerkship—year is spent full time in the hospital, where students are given ever-increasing responsibilities. Instruction is on a "rotating" basis—that is, students spend several months in each of a number of hospital departments. Each faculty or college has its own teaching hospital and, in addition, uses the clinical facilities in other private and government hospitals.

### Examinations and qualification

There is no system of external examiners in the Philippines; each institution and each professor determine the methods of assessing a student's progress. At the end of the medical course, those students who have passed their examinations in all the subjects are awarded the degree of Doctor of Medicine. In one faculty an oral examination is also required.

### Licence to practise

Before a graduate is allowed to practise, he must apply to sit for, and pass, examinations held by the Board of Medical Examiners. These examinations are held in February, May, August and November of each year, and consist of written and/or oral tests covering anatomy, histology, physiology, biochemistry, bacteriology, pathology, hygiene, symptomatology and general diagnosis, surgery, obstetrics, tropical medicine, gynaecology, paediatrics, forensic medicine, neurology, ophthalmology, otorhinolaryngology. After a candidate has successfully completed all these examinations, he receives a physician's certificate of registration, issued by the Bureau of Civil Service, and may then enter private practice.

Foreigners who wish to practise in the Philippines are eligible to sit for the requisite Board examinations provided they hold the degree of Doctor of Medicine, or its equivalent, conferred by a medical school duly recognized by the Department of Education, and provided they submit competent and conclusive documentary evidence, confirmed by the Department of Foreign Affairs, showing that their

country's existing laws permit citizens of the Philippines to practise medicine under the same rules and regulations governing its own citizens.

The certificate of registration is not required of the following persons, who are granted a limited licence to practise:

(1) Physicians and surgeons from other countries called in consultation only and exclusively in specific and definite cases, or those attached to international bodies or organizations assigned to perform certain definite work in the Philippines, provided they limit their practice to the specific work assigned to them and provided further they secure previous authorization from the Board of Medical Examiners.

(2) Commissioned medical officers of the United States Armed Forces stationed in the Philippines, while rendering service as such only for the members of the said Armed Forces and within the limit of their own respective territorial jurisdiction.

(3) Foreign physicians employed as exchange professors in special branches of medicine or surgery whose services may, at the discretion of the Board of Medical Education, be required.

Medical graduates are under no obligation to serve the State before engaging in private practice.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pesos)</i>
College of Medicine Cebu Institute of Technology CEBU CITY	1957	21 f 23 p	237 m 204 f	161	—	870
College of Medicine Southwestern University CEBU CITY	1947	20 f 34 p	1200	300	80	700
College of Medicine Manila Central University Balintawak, Caloocan, Rizal MANILA	1947	10 f 91 p	1257 m 894 f	537	200	800
College of Medicine University of the Philippines 547, Herran Street MANILA	1907	108 f 115 p	591	141	98	346.50
Faculty of Medicine and Surgery University of Santo Tomás España Street MANILA	1871	72 f 289 p	2271 m 1961 f	593 m 401 f	408	750-880

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pesos)</i>
Institute of Medicine Far Eastern University Morayta Street MANILA	1952	50 f 191 p	1317 m 1098 f	672	173	866
College of Medicine University of the East Aurora Boulevard QUEZON CITY	1956	87 f 145 p	468 m 309 f	225	51*	984

\* 1961 data.

## POLAND

### Introductory data\*

Population . . . . .	29 703 000
Number of medical schools . . . . .	10
Number of physicians . . . . .	27 569
Number of medical graduates . . . . .	2 856
Population per medical school . . . . .	2 970 000
Population per physician . . . . .	1 100

\* 1960 figures.

Medical education in Poland lasts for six years and leads to the diploma of *Lekarz* (Physician).

### Historical background

During the years of the Second World War, Poland's medical manpower was reduced to half of its former strength. This fact, coupled with changes in the country's political structure and social and economic conditions, led to certain modifications in medical education. When the war ended in 1945, the medical schools were re-opened and several new ones were established, bringing the total number to ten. One of the new schools was designed to conduct a planned experiment in modern approaches to medical training. The successful outcome of this experiment led, in 1950, to a reorganization of medical education. Along with changes in emphasis and orientation, medical schools were removed from the jurisdiction of universities and set up as separate institutions, known as medical academies.

### Administration

The medical academies are government institutions, supervised by the Ministry of Health and Social Assistance. Each academy is headed by a Rector, and Academic Senate, the deans and departmental boards.

The Rector directs the academy with the assistance of the Senate, of which he is the chairman. Each academy includes one or two faculties (medicine and/or pharmacy). The faculty of medicine in some academies also includes a stomatology section and a paediatrics section. At the present time there are ten faculties of medicine and seven faculties of pharmacy in Poland. In some academies special importance is given to those branches of medicine which are of special interest to the regions concerned, such as industrial hygiene and occupational health in mining and textile centres or the hygiene of seafarers in ports.

The academic year consists of two semesters, each of about fifteen weeks' duration, running from October to February and from February to June.

### Conditions of admission

The basic condition for admission to a medical academy is possession of the secondary-school certificate (obtained after four years of secondary education, preceded by seven years of primary school). Candidates are also required to pass an entrance examination. The number of annual admissions to each faculty is laid down by the Ministry of Public Health and Social Assistance in accordance with estimated future needs for medical personnel.

The conditions under which foreign students are admitted to medical studies have been laid down by international agreements either with various countries or with social institutions, or even as a result of individual applications. As the main condition of admission to higher education in Poland is possession of a school-leaving certificate, a foreign candidate must present such a certificate, which would give him access to university studies in the country in which he has completed his secondary-school course. Foreign candidates must also write, read and speak fluently at least one of the following languages: Polish, English, French, German, Russian. Foreigners are admitted to the medical academies without being obliged to sit for the entrance examination. If they do not know Polish, they must follow a year's preparatory course specially organized for them and pass an examination at the end of the course.

### Curriculum

Students of medicine, of paediatrics, and of stomatology follow the same curriculum for the first three years of the course. The subjects studied during that period include chemistry, medical physics, biology, anatomy, histology and embryology, physiology, biochemistry, general pathology, morbid anatomy, microbiology, clinical propaedeutics, operative surgery and topographic anatomy, military medicine, foreign languages (Russian, English, French or German).

During the fourth and fifth years of the medical course, faculties of medicine make provision for courses in hygiene, public health organization, medicine, surgery (including urology), paediatrics, communicable diseases and epidemiology, dermatology and venereology, neurology, radiology, obstetrics and gynaecology, otorhinolaryngology, psychiatry, forensic medicine, ophthalmology, stomatology, phthisiology, and pharmacology.

In addition to performing clinical work in teaching hospitals during the course, a student must also devote four weeks of the summer vacation of both of the last two years to practical training in medical establishments.

During the sixth year students must perform an obligatory internship in the four main departments (internal medicine, surgery, paediatrics, obstetrics and gynaecology), lasting for ten weeks in each branch with seven hours of work daily. In addition, during these ten weeks they do four turns of day and night duty under the supervision of a responsible physician.

### Examinations

Credit for a semester is conditional upon regular attendance at classes and success in an end-of-semester examination. A student who fails to achieve credit

for a semester may, with the Dean's permission, repeat this period of studies. However, a student who fails the first-year examination must abandon further study of medicine.

After obtaining credits for the full course, a student is admitted to the final examination. This consists of oral and clinical tests in medicine, surgery, obstetrics, gynaecology, and paediatrics, and oral tests in hygiene, epidemiology, psychiatry, forensic medicine, ophthalmology, orthopaedics, and military medicine. The examination should be taken before 31 December of the fifth year of studies and the student continues to receive his scholarship during this period. The extreme limit for the final examination is 30 June of the following year.

### Qualification and licence to practise

After passing the final examination, the student performs a forty-week internship, as described above. This period covers the sixth year. He is then awarded the diploma of *Lekarz* (Physician), but before being authorized to practise medicine he must work for one year either in a hospital clinic or in a rural hospital. Half of this period is spent in the internal medicine department and the other half in the obstetrics and gynaecology department. Students of paediatrics, after obtaining their diploma, pass immediately to specialized medical practice lasting eighteen months, after which they receive a degree in paediatric medicine together with a certificate of "first grade specialist".

The higher degree of *Doktor Nauk Lekarskich* (Doctor of Medical Sciences) is awarded after the successful completion of special examinations and the submission of a thesis, based on research work, which has to be defended in public. Possession of this degree is a requirement for obtaining a teaching post.

Polish nationals who hold a foreign medical diploma are authorized to practise after obtaining official confirmation of their diploma. By an ordinance of the Ministry of Public Education and the Ministry of Health and Social Assistance of 10 May 1950 concerning the recognition of the equivalence of higher studies in the USSR, the medical diploma of the latter country is recognized *ipso facto*. Similarly, medical practitioners who completed their medical studies in schools of the former German Reich before 9 May 1945, and who have been recognized as Polish citizens, are by decree of the Ministry of Public Education exempted from official confirmation of their diploma.

Foreigners who hold a foreign medical diploma and foreigners who have obtained the Polish medical degree may be authorized to practise in Poland. This authorization, in accordance with the Law of 28 October 1950 concerning the medical profession, is granted by the Ministry of Public Health and Social Assistance. The duration of the permit depends on this authorization.

All doctors in Poland work in the State health services but may also practise privately outside their official hours. In some exceptional cases they may obtain authorization from the Ministry of Health and Social Assistance to practise privately only.



<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Akademia Medyczna Ul. Kilińskiego 1 BIAŁYSTOK	1951	203 f 42 p	586 m 632 f	250	131	None
Akademia Medyczna Ul. Curie-Skłodowskiej 3a GDAŃSK (DANZIG)	1945	621	2070	373	358	None
Akademia Medyczna Ul. Sw. Anny 12 KRAKÓW	1410	58	2822	370	340	None
Akademia Medyczna Kościuszki Nr. 4 ŁÓDŹ	1945		2365*	390	247	None
Akademia Medyczna Ul. Cicha 6 LUBLIN	1944	652	684 m 1038 f	318	221	None
Akademia Medyczna Wydział Lekarski Ul. Fredry 10 POZNAŃ	1921	456	1679	300	384	None
Pomorska Akademia Medyczna im. gen. K. Świerczewskiego Ul. Rybacka Nr. 1 SZCZECIN (STETTIN)	1948	348 f 20 p	1679	330	134	None
Akademia Medyczna Wydział Lekarski Ul. Filtrowa 30 WARSZAWA (WARSAW)	1950	85	1936	210	460	None
Akademia Medyczna WROCŁAW	1945	522 f 40 p	952 m 1570 f	165 m 281 f	107 m 175 f	None
Śląska Akademia Medyczna im. Ludwika Waryńskiego Ul. Karola Marksa 19 ZABRZE	1948	40	1142 m 1391 f	310	299	None

\* In Faculties of Medicine, Stomatology, and Pharmacy.

## PORTUGAL

### Introductory data\*

Population . . . . .	8 921 000
Number of medical schools . . . . .	3
Number of physicians . . . . .	6 701**
Number of medical graduates . . . . .	318
Population per medical school . . . . .	2 974 000
Population per physician . . . . .	1 300

\* 1960 figures.

\*\* Excluding 374 stomatologists.

Medical education in Portugal lasts for six years and ten months, including a period of internship, and leads to the diploma of *Licenciatura em Medicina* (Licentiate in Medicine).

### Administration

The universities, which are situated in Coimbra, Lisbon and Oporto, are State institutions, financed by the Government and administered by the Ministry of Education. Each university is headed by a Rector, and each faculty by a Director. The Governing Body of a university is its Senate, composed of a Rector, a Vice-Rector, directors of faculties, and representatives of the professors.

Appointments to Chairs in the faculties of medicine are made by public competitive examination, open only to those candidates who hold the higher degree of *Doutorado em Medicina* (Doctorate in Medicine).

The academic year consists of two semesters, running from October to February and from March to June.

### Conditions of admission

A candidate for admission to a faculty of medicine must have passed the secondary-school examination (taken after seven years of secondary education, preceded by four years of primary), as well as the faculty entrance examination in chemistry, physics, and biology. (However, students who obtain at least 14 credits in these subjects in the secondary-school final examinations are not required to take the entrance examination.) No limit is placed on the number of medical students admitted each year.

Foreign students are eligible for enrolment, there being no special conditions governing their admission.

### Curriculum

The curriculum is established by law and is the same at all the three faculties of medicine in Portugal. Each professor is required to submit his programme

of study to the governing board of his faculty for approval, and each faculty must publish its study programmes at least once every three years. Directors of faculties are responsible for ensuring that the syllabi in the three faculties are the same in their general outlines.

The subjects covered during the six-year curriculum are arranged as follows:  
*First year* : medical biology; medical chemistry; medical physics; descriptive anatomy (I)

*Second year* : descriptive anatomy (II); topographic anatomy; histology and embryology; physiology; physiochemistry

*Third year* : bacteriology and parasitology; general pathology; morbid anatomy; pharmacology; psychology

*Fourth year* : introduction to medicine and surgery; therapeutics; radiology; hygiene and social medicine; history of medicine; medical ethics; orthopaedics

*Fifth year* : medicine; clinical medicine; surgery; clinical surgery; clinical obstetrics; gynaecology; dermatology; ophthalmology; neurology

*Sixth year* : clinical medicine; communicable diseases; clinical surgery; urology; otorhinolaryngology; clinical paediatrics; forensic medicine and toxicology; psychiatry.

Teaching is by way of lectures, practical work in laboratories and dissecting rooms, and clinical work in the wards of teaching hospitals. Practical and clinical work is compulsory, but attendance at lectures is optional.

### Examinations

Examinations are held at the end of each year (June-July); they are oral, written, practical and clinical, according to the nature of the subjects covered. A student must pass these examinations before he is allowed to attend the next year's course. If a student fails in part of an examination, he is re-examined (in October) only in those subjects in which he has failed. If he fails in one subject only, he may be granted permission to attend the courses of the following year pending his fulfilling certain conditions. A student who fails the same examination three times has to leave the medical faculty.

### Qualification and licence to practise

After passing all his examinations, a student must spend ten months as an intern in a hospital. He works in the wards and the out-patient departments of the medical, surgical, obstetrical, and paediatric departments. On completing his period of internship, he must submit a thesis containing the results of original laboratory or clinical research undertaken, generally, during his hospital service. Upon acceptance of his thesis by the faculty, a student is awarded the diploma of *Licenciatura em Medicina*. Possession of this diploma constitutes the licence to practise medicine in Portugal.

Medical graduates who desire to take the higher academic degree of *Doutorado em Medicina* must pass a special examination and submit an additional thesis.

Portuguese nationals holding a foreign medical diploma are authorized to practise in Portugal after an examination in one of the country's faculties of

medicine. Foreigners holding a foreign medical diploma are authorized to practise if they become naturalized Portuguese citizens and after an examination in a Portuguese faculty of medicine. In certain special circumstances foreign physicians who retain their nationality may be authorized to practise. Foreigners holding a Portuguese national diploma in medicine may practise in Portugal if such practice is in the interest of public health, medical research or teaching, or is at the request of a patient or his or her representative. In this last-mentioned case, authorization is only granted as an exception.

Medical graduates are under no obligation to serve the State before engaging in private practice.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Escudos)</i>
Faculdade de Medicina de la Universidade de Coimbra COIMBRA	1290	72	733 m 139 f	95 m 23 f	80	
Faculdade de Medicina de la Universidade de Lisboa Avenida 28 de Maio LISBOA	1911	114	1129	188	120	1200
Faculdade de Medicina de la Universidade do Pôrto PÔRTO	1825	78 p	759 m 195 f	139 m 39 f	118	1200

## ROMANIA

## Introductory data\*

Population . . . . .	18 403 000
Number of medical schools . . . . .	5
Number of physicians . . . . .	23 358**
Number of medical graduates . . . . .	1 735†
Population per medical school . . . . .	3 681 000
Population per physician . . . . .	790

\* 1960 figures.

\*\* Excluding 1626 stomatologists.

† Figure supplied by Government; as of 1 October 1960.

Medical education in Romania lasts for six years and leads to the diploma of *Medic* (Physician).

### Administration

Medical education in Romania began a century ago with the establishment of medical schools, which later became medical faculties affiliated with universities. In 1948 medical education was reorganized, and the faculties were transformed into independent institutes of medicine, or of medicine and pharmacy.

These institutes are Government-owned and operate under the jurisdiction of the Ministry of Education and Culture and of the Ministry of Health and Social Welfare. Each institute includes faculties of general medicine, stomatology and paediatrics, as well as a faculty of pharmacy in some instances. A faculty or department for the specialized training of medical practitioners and pharmacists is also attached to each institute.

Each institute is headed by a Rector, who is directly responsible to the Ministry of Culture and the Ministry of Health and Social Welfare. He is assisted by two Vice-Rectors, who are responsible for the co-ordination of didactic teaching and scientific activities in the institutes. This includes the arrangement of courses, practical work, internship, seminars, examinations, etc., in conformity with programmes of study.

The Dean of each faculty controls and directs the instruction and the progress made by the students. He is assisted in his task by the Scientific Board of the faculty, composed of the professors.

The academic year is divided into two semesters, running from September to January and from February to June.

The language of instruction is Romanian in all the institutes except that at Tîrgu-Mureş, where Hungarian is used.

### Conditions of admission

Admission of candidates to medical studies is based on a competitive examination. Candidates who have completed their secondary studies and hold the

secondary-school certificate, obtained after eleven years of study (including primary school), may sit for this examination. The annual number of admissions is determined by the Government; it depends on the country's need for medical personnel and on the number of vacancies.

Foreign students are admitted to medical studies on the basis of cultural agreements between Romania and their respective countries, or as a result of individual application.

### Curriculum

The curriculum in the faculties of general medicine is arranged as follows:

*First year* : medical physics; medical chemistry; biology; descriptive anatomy; physiology; social sciences

*Second year* : biochemistry; descriptive and topographic anatomy; physiology; histology; social sciences

*Third year* : microbiology and inframicrobiology; morbid anatomy; physio-pathology; medical symptomatology; surgical symptomatology

*Fourth year* : clinical medicine; clinical surgery; pharmacology; clinical radiology; clinical neurology; clinical psychiatry; general, community, and food hygiene

*Fifth year* : clinical medicine; clinical surgery; clinical stomatology; clinical dermato-venereology; communicable diseases; epidemiology; clinical ophthalmology; occupational medicine

*Sixth year* : clinical medicine; clinical paediatrics; clinical obstetrics and gynaecology; clinical otorhinolaryngology; forensic medicine; organization of health protection; history of medicine.

For the first three years, the curriculum is generally the same at all the institutes of medicine. However, from the fourth year of the course onwards, the programme is somewhat modified to take into account the study of the specialties (paediatrics and stomatology).

The student's practical instruction consists of practical work, clinical *stages*, or probationary periods, and demonstrations in health units. With regard to training in preventive medicine special attention is given to the organization of *stages* both in policlinics and in rural health units (health districts, epidemic control centres, etc.). Performance of practical work and clinical *stages* is compulsory. Practical training is completed by six-week *stages*, at the end of the second, third and fifth years, which the student spends at health units.

Engagements as externs and interns for probationary periods in various specialized units are another aspect of medical training. These last for six months and the students receive a remuneration, since they have definite tasks to fulfil in the medical service. Externships last in all for two years and internships for three years. To be admitted to the former the students must have completed at least three years of studies and have passed a competitive examination. After the externship the student may work as an intern.

### Examinations, qualification and licence to practise

Examinations in the subjects dealt with are given during each course, and end-of-the-year examinations are held in June in respect of the subjects studied

throughout the academic year. A student must pass these end-of-the-year examinations before he is admitted to the next year of the medical course.

After completing the final year of study the student has to undergo a State examination to obtain the degree of *Medic*, which entitles him to practise as a general practitioner. In order to become a specialist he must, after at least three years' general practice, sit for a further competitive examination. He may then follow a course of three years' specialization. The degree of Specialist Medical Practitioner is obtained at the end of this period if the candidate is successful in the examinations.

The highest grade in the medical hierarchy is represented by the degree of Chief Physician, which can be obtained by competitive examination by specialists after at least ten years' practice, of which eight must have been spent in a specialist branch. General practitioners may obtain by examination the following degrees: Principal District Physician (after six years' work) and Chief District Physician (after ten years' work).

On the scientific side medical practitioners whose work is outstanding may on submission of a thesis obtain the degree of Candidate of Medical Sciences and later that of Doctor of Medical Sciences.

Romanian citizens and foreigners who hold a foreign medical degree are entitled to practise medicine in Romania if their degrees have been recognized as equivalent by the Ministry of Education and Culture and approved by the Ministry of Health and Social Welfare. Foreigners who hold a Romanian medical degree are entitled to practise under the same conditions as Romanian medical practitioners.

All medical practitioners in Romania work for the Government; none of them are in private practice.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Institutul de Medicină și Farmacie Str. Dionisie Lupu BUCUREȘTI (BUCHAREST)	1857	2242	7825	1797	1522	None
Institutul de Medicină și Farmacie CLUJ	1919	458	1694	366	398	None
Institutul de Medicină și Farmacie IAȘI (JASSY)	1858					None
Institutul de Medicină TIMIȘOARA	1945					None
Institutul de Medicină și Farmacie TÂRGU-MUREȘ	1945					None

## SENEGAL

### Introductory data\*

Population . . . . .	2 973 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	140**
Number of medical graduates . . . . .	—
Population per medical school . . . . .	2 973 000
Population per physician . . . . .	21 000

\* 1960 figures.

\*\* 84 physicians with French State diploma and 56 with local diploma.

Medical education in Senegal lasts for six years, not including the one-year pre-medical course in physics, chemistry and biology (P.C.B. course), and leads to the degree of *Docteur en Médecine* (Doctor of Medicine).

### Historical background

In 1918 the African School of Medicine and Pharmacy was established at Dakar for the purpose of training auxiliary health workers in several disciplines, such as medicine, pharmacy and midwifery. This school served French West Africa until 1944. After that date it was opened to students from the French Cameroons and French Equatorial Africa as well. In 1950, however, it was considered that full professional training was henceforth indicated and the school for the training of auxiliaries was closed in favour of the national *Ecole préparatoire de Médecine et Pharmacie* (Preparatory School of Medicine and Pharmacy), which prepared students for the French *diplôme d'Etat* (State diploma). The school provided only the first three years of medical training, and for the remainder of the curriculum—the clinical year—the student had to go to France; the last year of medical studies, devoted to a *stage*, or probationary period in hospital, was again spent in Dakar. The Preparatory School of Medicine and Pharmacy formed part of a group of academic institutions—the Institute of Higher Studies of Dakar—which was linked with the Universities of Paris and Bordeaux. In 1957 the University of Dakar was created, and the Preparatory School of Medicine and Pharmacy was transformed in 1960 into a joint Faculty of Medicine and Pharmacy of the University. The teaching it provides covers the full medical curriculum.

### Administration

The University of Dakar and the institutes of which it is composed follow the legislative provisions and the rules in force in the universities of France and in their corresponding institutes, particularly with regard to the conditions governing registration, examinations and the conferring of degrees.



The University of Dakar maintains the closest relations with the two sponsoring universities of the former Institute of Higher Studies of Dakar—namely, the Universities of Paris and Bordeaux. It also collaborates with other scientific institutions in France.

The University is presided over by a Rector, who is Chairman of the University Council. Each faculty is administered by a Dean.

Detailed programmes of medical instruction are drawn up by the professors of the Faculty of Medicine and Pharmacy and fixed by the Faculty Board. A general report to the Rector on the organization of teaching and the curriculum for the new academic year is submitted in outline by the Dean, who is then responsible for ensuring that these programmes are put into effect.

The academic year begins in October and ends in July. The language of instruction is French.

### Conditions of admission

To be eligible for medical studies, students are required to produce a diploma showing that they have passed the first and second parts of the *baccalauréat* (obtained after seven years of secondary education, preceded by five years of primary school), or an official attestation from a faculty certifying that they have done so; or, in the absence of the *baccalauréat*, to submit a state diploma of *Docteur ès Sciences* (Doctor of Science), *Docteur ès Lettres* (Doctor of Letters) or *Docteur en Droit* (Doctor of Law), or the degree of *Agrégé de l'Enseignement secondaire*, or the *diplôme de fin d'études secondaires* or the *diplôme complémentaire d'études secondaires*. Candidates who do not possess any of the above qualifications must pass a special entrance examination. For this they must be at least 21 years of age; if they have failed the *baccalauréat*, they must be at least 25 years of age.

At the first *inscription* students should submit the P.C.B., P.C.N. or S.P.C.N. (certificate in physics, chemistry and biology; in physics, chemistry and natural sciences; or higher certificate in physics, chemistry and natural sciences), or a diploma in veterinary science or pharmacy, or a certificate showing that they are eligible for entry to the oral examinations for the *Ecoles normales supérieures* (higher teachers training colleges) (Ulm and Sèvres), science section, group II. Candidates must also submit a vaccination certificate and a certificate proving that they have had no police convictions. The upper age limits for entry to medical studies are determined in each case by the Minister of National Education, Youth and Sports.

Medical students at the University of Dakar may, if they so desire, go on to the Faculty of Medicine in Paris.

Foreign students are eligible for enrolment if they produce diplomas or certificates such as are required of nationals, or if they prove that they hold a qualification equivalent to the French *baccalauréat*. A list of diplomas, degrees and certificates recognized in any given foreign country as entitling the holders to access to higher studies has been drawn up by decree of the Minister of National Education, and is available on application to the Secretary of the Faculty. In addition, foreign students must produce a residence permit.

The University of Dakar has funds available for the award of scholarships for higher education to students registered at the University.

## Curriculum

Candidates for the degree of *Docteur en Médecine* receive the following instruction during their course of study: (a) theoretical teaching covering all the branches of knowledge required by the future physician; (b) co-ordinated technical, theoretical and practical teaching given in the laboratories (practical work); and (c) clinical teaching given in the hospitals.

The curriculum is arranged as follows:

*First year* : anatomy; histology and embryology; physiology; medical physics; medical chemistry; *stage* in general medicine and general surgery

*Second year* : anatomy; histology and embryology; physiology; medical chemistry; *stages* in general medicine and general surgery

*Third year* : medical pathology; surgical pathology; morbid anatomy; bacteriology; parasitology; obstetrics; experimental medicine; *stages* in general medicine and surgery; *stages* in obstetrics and specialized branches; *stage* (optional) in phthisiology

*Fourth year* : medical pathology; surgical pathology; medico-surgical anatomy and operative medicine; hygiene; forensic medicine and medical ethics; therapeutics and hydrology; pharmacology; *same stages* as in the third year plus *stages* in specialized branches such as dermatology and syphilology, psychiatry and neurology and paediatrics

*Fifth year* : medical pathology; surgical pathology; *same stages* as in the third and fourth years

*Sixth year* : medical pathology; surgical pathology; obligatory *stage* as a hospital intern.

Medical students performing the sixth-year *stage*, or probationary period, are styled *stagiaires hospitaliers*. In view of the services thus rendered to the hospital they receive some remuneration and certain material advantages. At the end of the *stage* their supervisor is required to send to the Dean of the Faculty a detailed report on their work, together with an appreciation of their abilities. These *stages* may be spent in approved hospital units within the sphere of each faculty, a list of which is supplied annually by the Dean to the Minister of National Education (Directorate of Higher Education) and to the other faculties.

The regulations governing the competitive examination for *externats* and *internats* at the Hôpital central A. Le Dantec, Dakar, and its annexes are determined by decrees of 29 August 1952 and 25 January 1956 respectively.

## Examinations and qualification

The examinations on which the conferment of the degree of *Docteur en Médecine* depends are of two kinds:

(1) five end-of-the-year examinations for the first five years;

(2) three clinical examinations, including three separate examinations in clinical medicine, clinical surgery and clinical obstetrics; these examinations are to be passed after the sixth annual *inscription*.

The end-of-the-year examinations cover the subjects taught during the year; for the first and second years they include written and oral theoretical examinations,

and practical examinations; for the third, fourth and fifth years they include oral theoretical examinations and practical examinations. All these examinations take place in the presence of a board consisting of three or four examiners.

The first examination session is in June-July of each year, the second in October-November. Except for the clinical examinations no individual examination may take place outside these two regular sessions. Only candidates who have been referred at the first session, or authorized not to sit for it, are admitted to the October-November session.

After four failures at the same examination (end-of-term or clinical) a candidate is excluded from further attempts. The fourth failure can only be confirmed by a special meeting of the board of examiners after consideration of the candidate's academic record. There is no appeal against such decisions.

For the clinical examinations the boards are composed of three members drawn from the teachers of medicine, surgery and obstetrics. One of the members may be chosen from among the representatives of specialty clinics. Candidates may only sit for the clinical examinations after confirmation that the obligatory *stage* has been completed and after conclusion of the course of study. These clinical examinations may be taken in any order chosen by the candidate. Each of the three clinical examinations includes, first, a *stage* in the clinical units of the faculty or in hospital units designated for that purpose, and, secondly, a recapitulatory examination held at the faculty headquarters. A candidate referred at one of these clinical examinations may present himself again only after a further *stage* of two or three months, according to the circumstances.

After passing all the clinical examinations the candidate defends a thesis written in French, the subject of which has been previously approved by the chairman of a four-member board of examiners.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (CFA francs)</i>
Faculté mixte de Médecine et de Pharmacie Université de Dakar DAKAR	1950	44	160	60	—	2400

## SINGAPORE

## Introductory data\*

Population . . . . .	1 634 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	640
Number of medical graduates . . . . .	81
Population per medical school . . . . .	1 634 000
Population per physician . . . . .	2 600

\* 1960 figures.

Medical education in Singapore lasts for six years and leads to the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.), which are recognized by the General Medical Council of the United Kingdom as qualifying for registration in the Commonwealth List of the Medical Register.

### Historical background

Medical education in Singapore began in 1905 with the opening of the Straits Settlements and Federated Malay States Government Medical School which, later on, became the King Edward VII College of Medicine. In 1949, the University of Malaya was formed by amalgamation of the King Edward VII College of Medicine, which became the Faculty of Medicine, with the former Raffles College, which became the Faculties of Arts and Science. A proposal to establish a second medical school in the Federation of Malaya is now under active consideration.<sup>1</sup>

### Administration

The University of Malaya is an autonomous body, managing its own finances. It is headed by a Chancellor, Pro-Chancellors and a Vice-Chancellor. The last named is the executive officer of the University. The Dean of each faculty is elected by its professors and lecturers from among themselves for a term of office of three years.

The academic year, which begins in October and ends in June, is divided into three terms of about ten weeks each. The language of instruction is English.

### Conditions of admission

In order to be admitted to the medical course, a candidate must have passed, at a sufficiently high level, the Higher School Certificate Examination of the Cambridge University Syndicate, or its equivalent. (The Higher School Certificate Examination is taken at the end of a two-year pre-university course subsequent to four years of secondary education.) Candidates must also have reached the age of 17 years and have passed a medical examination.

<sup>1</sup> A new school was established in Kuala Lumpur in 1963.

## Curriculum

The curriculum is arranged as follows:

*First year* : chemistry; physics; botany; zoology

*Second and third years* : anatomy (including histology); physiology; bio-chemistry

*Fourth year* : materia medica and pharmacy (including practical dispensing); parasitology; bacteriology; pathology (including attendance at, and performance of, post-mortem examinations); pharmacology

*Fifth and sixth years* : medicine; surgery; obstetrics and gynaecology; paediatrics; social medicine and public health; forensic medicine; radiology; venereal diseases; otorhinolaryngology; ophthalmology; infectious diseases; dermatology; psychological medicine.

In addition to attending lectures, students also have to perform laboratory work in the pre-clinical subjects, and to attend hospital wards and clinics during the fourth, fifth and sixth years of the course. Additional periods of practical work are undertaken after the third, fourth, and fifth years.

## Examinations

The Preliminary Examination is held at the end of the first year of the course and covers the subjects studied during that period.

The First Professional Examination, covering anatomy, physiology, and biochemistry, is held during the last term of the third year.

The Final Professional Examination is in three parts—namely, Part I, which covers pathology, bacteriology and parasitology, and pharmacology; Part II, which covers social medicine and public health, as well as forensic medicine; and Part III, which covers medicine, surgery, and obstetrics and gynaecology. Normally, Part I and II are taken before Part III, but any parts of the final examination may be taken together.

## Qualification

Upon passing the Final Professional Examination, a student becomes eligible for the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.), which also constitute his licence to practise medicine in Singapore, after he has satisfactorily completed one year's internship in an approved hospital.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Straits \$)</i>
Faculty of Medicine University of Malaya Sepoy Lines SINGAPORE 3	1905	64 f 39 p	456 m 74 f	129	81	585

## SOUTH AFRICA

### Introductory data\*

Population . . . . .	15 822 000
Number of medical schools . . . . .	5
Number of physicians . . . . .	7 939**
Number of medical graduates . . . . .	299
Population per medical school . . . . .	3 164 000
Population per physician . . . . .	2 000

\* 1960 figures.

\*\* Including physicians not working in the country.

In South Africa the medical curriculum extends over a period of six years at all faculties of medicine, except that of the University of Natal, where the course includes an additional "preliminary" year. Successful students receive the university degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.Ch. or M.B., Ch.B.). One year of internship in a hospital approved by the Medical and Dental Council is then required before authority to practise is granted.

### Administration

South African universities are autonomous institutions receiving financial support from the Central Government. Government grants for general purposes are calculated according to a formula based mainly on the number of students and the subjects and the courses taken by the students. For purposes of capital expenditure either a rand-for-rand grant or an interest and redemption grant amounting to 40 % of the annual interest and redemption payable on approved loans is made.

The chief administrative officer of a university is its Principal or Rector, who is responsible to a Council, the members of which generally include a number of Government-appointed representatives. A University Senate deals with academic rather than administrative matters.

Each faculty is headed by a Dean, who is assisted by a Faculty Board. Such a Board usually comprises the professors and lecturers of the faculty and other persons who are nominated from time to time by the Council on the recommendation of the Senate. The Faculty Board submits recommendations to the Senate concerning syllabi, courses of study and examinations in respect of each department of the faculty.

The academic year, in general, runs from February to November. The language of instruction is English at the medical faculties of the Universities of Cape Town, Natal, and the Witwatersrand, and Afrikaans at the medical faculties of the Universities of Pretoria and Stellenbosch.

### Conditions of admission

In order to be admitted to university studies in South Africa, the matriculation certificate of the Joint Matriculation Board, or a certificate of exemption issued

by that Board, is required. For candidates seeking admission to the faculties of medicine, the following selection of subjects for the matriculation examination (taken after five years of secondary education, preceded by seven years of primary school) is recommended by the South African Medical and Dental Council: English, Afrikaans, mathematics (compulsory), a modern language and/or a classical language, history or geography, biology and/or physical science.

The admission of foreign students to the medical course in South Africa lies within the discretion of the universities concerned. If admitted, the students have to comply with the same requirements as nationals.

### Curriculum

Specifications for a minimum curriculum, recommended by the South African Medical and Dental Council, have been prescribed by order of the State President and must be followed by all medical schools, which are required to furnish the Council with full particulars of their curricula as put into effect.

These specifications include the following subjects: chemistry; physics; zoology; botany; anatomy; physiology; the elements of normal psychology in its application to physical and mental health; pathology; pharmacology; psychological medicine; preventive and social medicine; forensic medicine and toxicology; legal and ethical obligations of registered interns and medical practitioners; medicine; surgery; and obstetrics and gynaecology.

Special subjects related to the last-mentioned three subjects are also studied: child health; acute infectious diseases; diseases of the skin; anaesthetics; radio-diagnosis and radiotherapy, with emphasis on the use and hazards of ionizing radiations; diseases of the eye; diseases of the ear, nose and throat; urology; thoracic surgery; neurosurgery; orthopaedics; and physical medicine. It is the responsibility of the university to ensure that the teaching programme in these special subjects is co-ordinated with those of the main clinical subjects.

Each university must make adequate arrangements for the effective correlation of the several subjects of study throughout the curriculum. The actual allocation of parts of subjects among the different departments is left to the discretion of the universities. Instruction in the basic sciences, anatomy, physiology and pathology is continued throughout the clinical years and must be correlated with the clinical teaching.

Each medical school is free to arrange its own curriculum, based on these minimum requirements. In general, pre-medical work occupies the first year, and pre-clinical subjects the second and third years, whereas the remaining three years of the course are devoted to clinical subjects. Attendance at courses is compulsory in all faculties.

### Examinations

Examinations are conducted in accordance with certain regulations as recommended to the Government by the Medical and Dental Council. Five, and sometimes six, Professional Examinations are held which cover the specific subjects dealt with during the immediately preceding academic period. The examination

in each subject is conducted by at least two examiners; one of them must be an external examiner—that is, he must not have taken part in teaching the subject to the candidate.

### Qualification and licence to practise

After passing the final examination, a student receives the degrees of Bachelor of Medicine and Bachelor of Surgery. Thereafter he is required to serve a one-year internship.

Conditions under which various qualifications in medicine are recognized by the South African Medical and Dental Council for the purpose of registration as medical practitioner in South Africa are listed under the regulations promulgated under Government Notice No. 321 of 24 February 1956, as amended. According to these regulations "unrestricted registration" is granted to medical graduates, irrespective of nationality or citizenship, who are holders of degrees for which the course of study in professional subjects covered a period of at least five academic years. However, the last three years of the professional study for admission to the examination for such degrees must have been taken at a university or medical school in the country or state in which the degree was granted. In addition, holders of medical degrees must have undergone training as interns for at least twelve months after graduation. This provision does not apply to any medical qualification obtained prior to 1 November 1948.

Exemption from the registration requirements may be granted to persons engaged solely in medical or pharmaceutical research work, or in post-graduate work under the control or direction of any university in South Africa, to persons engaged in missionary medical practice, to persons engaged by universities and scientific institutions approved by the Council, and to persons employed in a full-time capacity by the State, otherwise than by any provincial administration or by the Administration of South-West Africa.

An applicant for registration as a medical practitioner who does not possess a qualification that entitles him to registration would have to repeat at least the last three years of professional study leading to the medical degree, and to serve a subsequent period of twelve months' internship.

Holders of the medical degrees of the universities of South Africa are eligible for registration in the Foreign List of the Medical Register of the United Kingdom, such registration conferring the same privileges as registration in the British List.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Rand)</i>
Faculty of Medicine University of Stellenbosch P.O. Box 53 BELLVILLE	1956	20 f 54 p	257	106	—	112-170



<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Rand)</i>
Faculty of Medicine University of Cape Town Rondebosch CAPE TOWN	1911	107 f 167 p	659 m 114 f	188	81	232-240
Faculty of Medicine University of Natal DURBAN	1951	38 f 69 p	190 m 23 f	41	16	121-151
Medical School University of the Witwatersrand Hospital Hill JOHANNESBURG	1919	87	502 m 96 f	138	75 m 9 f	242
Faculty of Medicine University of Pretoria P.O. Box 667 PRETORIA	1943	34 f 60 p	857	177	118	180

## SPAIN

### Introductory data\*

Population . . . . .	30 128 000
Number of medical schools . . . . .	10
Number of physicians . . . . .	29 232**
Number of medical graduates . . . . .	1 498
Population per medical school . . . . .	3 013 000
Population per physician . . . . .	1 000

\* 1960 figures.

\*\* Excluding 5798 physicians not in practice.

Medical education in Spain lasts for six years and leads to the university degree of *Licenciado en Medicina y Cirugía* (Licentiate in Medicine and Surgery).

### Administration

The Spanish universities are Government-owned and are under the jurisdiction of the Ministry of National Education. The executive officer of each university is its Rector, who is assisted by a Governing Board. The deans of the various faculties are members of that Board. Each faculty is administered by a Dean, a Vice-Dean, and a Secretary, all of whom hold Chairs in the faculty. A Faculty Board assists them in an advisory capacity.

The academic year begins in October and ends in June. It is divided into three terms of about eleven weeks each.

### Conditions of admission

The minimum requirement for admission to a faculty of medicine is possession of the *bachillerato*, a certificate obtained after seven years of secondary education, preceded by five years of primary school.

### Curriculum

The new medical curriculum, established by Decree No. 1742/1959, of 23 September (*B. O. del Estado*, No. 244 of 12 October 1959), is the same for all the faculties. It is arranged as follows:

*First year* : general embryology and histology; general physiology and biochemistry; human anatomy (general, locomotor and circulatory systems); anatomical techniques (I)

*Second year* : descriptive and topographic anatomy; anatomical techniques (II); special physiology; microbiology and parasitology; psychology

*Third year* : general pathology and propaedeutics; morbid anatomy; pharmacology and general therapeutics; general physical therapeutics

*Fourth year* : clinical medicine and pathology (I); clinical surgery and pathology (I); obstetrics and gynaecology (I); ophthalmology

*Fifth year* : clinical medicine and pathology (II); clinical surgery and pathology (II); obstetrics and gynaecology (II); paediatrics and puericulture; otorhinolaryngology; psychiatry

*Sixth year* : clinical medicine and pathology (III); clinical surgery and pathology (III); public health and hygiene; forensic medicine; history of medicine; dermatology and venereology.

In addition to the subjects enumerated above, students are given instruction in religious knowledge, political affairs and physical education during the second, third and fourth years of the curriculum. Foreign students are not required to take the courses in these subjects.

### Examinations

Examinations take place at the end of each academic year, and a final examination is held at the end of the course. The first year of the *Licenciado* course is regarded as a selective and formative period; no student may be promoted to the second year without passing the first-year examinations, which are organized in collaboration with the Ministry of National Education and in accordance with the Ministry's regulations. Students must have passed their examinations in all subjects in the first four years of the *Licenciado* course before taking an examination in any of the subjects in the fifth or sixth years.

The final examination is held before a jury composed of three holders of university Chairs. It consists of an oral and theoretical test in which questions are taken from a standard questionnaire on fundamental concepts, as well as of a practical test.

The end-of-the-year examinations are held in June. Those students who fail may take the examination again in September. If they fail once more in September, they must repeat the entire course.

### Qualification

After passing the final examination, a student receives the university degree of *Licenciado en Medicina y Cirugía*, which also constitutes the licence to practise.

By attending certain courses, and by writing a thesis acceptable to the faculty, a graduate may become eligible for the higher degree of *Doctor en Medicina y Cirugía* (Doctor of Medicine and Surgery).

According to the Law of 20 July 1955 two years of specialization are required to obtain the degree of *Especialista* (Specialist). Thirty-two specialties are recognized in Spain.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pesetas)</i>
Facultad de Medicina de la Universidad de Barcelona BARCELONA	1340		1846 m 151 f		91 m 5 f	
Facultad de Medicina de Cádiz CÁDIZ	1748		679 m 30 f		15 m	
Facultad de Medicina de la Universidad de Granada Carretera de Jaén GRANADA	1531		1393 m 87 f	146	139 m 11 f	3000
Facultad de Medicina de la Universidad de Madrid Ciudad Universitaria MADRID	1843		4703 m 613 f		393 m 11 f	
Facultad de Medicina de la Universidad de Salamanca Calle de Fonseca 2 SALAMANCA	1254		1421 m 115 f		277 m 6 f	
Facultad de Medicina de la Universidad de Santiago de Compostela Calle San Francisco 18 SANTIAGO DE COMPOSTELA	1648		974 m 44 f		104 m 4 f	
Facultad de Medicina de la Universidad de Sevilla Madre de Dios SEVILLA	1868		570 m 29 f		56 m 3 f	
Facultad de Medicina de la Universidad de Valencia VALENCIA	1373	107 p	1043 m 119 f	344	125 m 11 f	3000
Facultad de Medicina de la Universidad de Valladolid VALLADOLID	1862		1488 m 105 f		114 m 4 f	
Facultad de Medicina de la Universidad de Zaragoza ZARAGOZA	1558		974 m 74 f		124 m 5 f	

## SUDAN

## Introductory data\*

Population . . . . .	11 770 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	336
Number of medical graduates . . . . .	22
Population per medical school . . . . .	11 770 000
Population per physician . . . . .	35 000

\* 1960 figures.

Medical education in the Sudan lasts for six years, including the pre-medical year, and leads to a diploma in medicine.

## Administration

The University of Khartoum is an autonomous body, constitutionally independent of the Government. Most of its income accrues from the interest on endowments and trusts; the balance is supplied by an annual grant-in-aid from the Government.

The chief academic and administrative officer of the University is its Principal, who is appointed, and may be removed, by the Executive Council. The Council is responsible for the general administration and financial management of the University. It appoints the academic staff, including the deans of the faculties. The latter serve three-year terms and are eligible for reappointment.

An Academic Board is responsible for admission requirements, general regulation of courses of study and examinations, conferment of diplomas, and promotion of research. Its members include the Principal, the Vice-Principal, the deans of the faculties, the heads of departments and representatives of the teaching staff.

Each faculty has its Faculty Board, whose chairman is the Dean of the faculty. The Faculty Boards regulate, subject to the authority of the Academic Board, teaching, study, and examinations in their respective faculties. The Principal is an *ex officio* member of all Faculty Boards.

The academic year in the Faculty of Medicine consists of two terms, running from September to December and from January to May. The language of instruction is English.

## Conditions of admission

The minimum university entrance requirement is completion of the four-year secondary-school course with credits in mathematics and science (general science, chemistry, physics or biology). (Previous school education consists of four years at primary school and four years at intermediate school.)

Applications for admission to the medical course are considered by a selection board. That board may interview candidates and have them medically examined. Matriculation is provisional, and is not confirmed until a candidate has satisfactorily completed the first (i.e., the pre-medical) year of the course.

### Curriculum

The curriculum is arranged as follows:

*First year* (taken at the Faculty of Science): English; chemistry; physics; botany; zoology

*Second year*: anatomy; physiology; chemistry (inorganic and physical); medical organic chemistry; genetics; X-ray demonstrations

*Third year*: anatomy; physiology; pathology; bacteriology; parasitology; pharmacology; pharmacy; forensic medicine; introductory medicine

*Fourth year*: medicine; surgery; pathology; bacteriology; pharmacology; pharmacy; forensic medicine; applied physiology; medical radiology; surgical radiology; nursing

*Fifth year*: medicine; surgery; applied pathology; obstetrics; public health; anaesthesiology; dental diseases; tuberculosis

*Sixth year*: obstetrics; gynaecology; paediatrics; ophthalmology; applied anatomy; operative surgery; orthopaedics; psychiatry

Clinical instruction in hospital begins during the second term of the third year with an introductory course in medicine designed to teach students to take case histories and to examine patients. It continues uninterruptedly thereafter for the remainder of the course, and is given chiefly at the Civil Hospitals of Khartoum and Omdurman. Courses in the other clinical subjects are conducted in a similar fashion.

### Examinations

There are four Professional Examinations, held at specified intervals during the course, on the subjects covered during the preceding period. These examinations are written, oral, practical and clinical. There are two examiners for each subject, both appointed by the Academic Board. One of these is always an external examiner—that is, he is not on the staff of the School.

### Qualification

On passing the Final Professional Examination, a student receives a diploma in medicine.

After receiving his diploma, a student holds "rotating" resident posts in approved hospitals for two years. If, after this period of probation, he is reported on as technically and administratively fit to perform medical duties without supervision, he is accepted as a Medical Officer in the Medical Services of the Ministry of Health of the Sudan Government. If he is not considered fit to work without supervision, he is given another year's probation.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Faculty of Medicine University of Khartoum P.O. Box 102 KHARTOUM	1924	18 f 8 p	152 m 7 f	36	22	None*

\* Some students receive bursaries ranging from £S 5 to £S 84.

## SURINAM

### Introductory data\*

Population . . . . .	270 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	154
Number of medical graduates . . . . .	6
Population per medical school . . . . .	270 000
Population per physician . . . . .	1 800

\* 1960 figures.

Medical education in Surinam lasts for seven years and leads to the diploma of *Geneesheren* (Physician).

### Administration

The medical school at Paramaribo is owned and operated by the Government, and is patterned after the institutions in the Netherlands. The school is under the jurisdiction of the Ministry of Social Affairs and Public Health and is administered by a Director.

The academic year begins in November and ends in October. The language of instruction is Dutch.

### Conditions of admission

Admission is open to students who have completed secondary-school education in the Netherlands. Those not in possession of a diploma certifying completion of secondary studies are eligible for admission if they pass an entrance examination. There are no specific requirements concerning health examination and vaccination.

### Curriculum

During the first year students attend courses in physics, chemistry and biology; in the second and third years anatomy, histology, physiology, general pathology and pharmacology are taught.

During the last four years courses are given in pathological anatomy, internal diseases, psychiatry, neurology, pharmacology, paediatrics, hygiene, microbiology and immunology, general and special surgery, operative surgery, ophthalmology, pharmacy, dermatology and venereology, otorhinolaryngology, forensic medicine, and gynaecology and obstetrics.

During the last four years practical work in all hospital departments and in laboratories is compulsory.



### Examinations

Examinations cover all subjects taught; they are oral only, with the exception of those in anatomy, pathological anatomy, internal diseases, special and operative surgery, ophthalmology, and gynaecology and obstetrics, which are both oral and practical, and those in pharmacy, which are practical only. All examinations are controlled by the Government.

### Licence to practise

All graduates of the medical school are entitled to practise medicine in Surinam immediately after graduation. Graduates from Dutch universities are also authorized to practise.

Holders of foreign diplomas, whether nationals or foreigners, are permitted to practise medicine in Surinam only with special permission from the Government.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Florins)</i>
Geneeskundige School Gravenstraat 64 PARAMARIBO	1889	19	24	4	6	300

## SWEDEN

### Introductory data\*

Population . . . . .	7 480 000
Number of medical schools . . . . .	5
Number of physicians . . . . .	7 116**
Number of medical graduates . . . . .	404
Population per medical school . . . . .	1 496 000
Population per physician . . . . .	1 100

\* 1960 figures.

\*\* Excluding 412 physicians not working in the country.

Medical education in Sweden lasts for six and a half years and leads to the degree of *Medicine Licentiat* (Licentiate in Medicine), abbreviated to *Med.Lic.*

### Administration

The five medical schools in Sweden are government institutions, financially supported by the State, and supervised by the Ministry of Education. However, they enjoy autonomy in such matters as the planning of the curriculum and the organization of research work. All the schools follow the same general pattern concerning the admission of students, the arrangement of the curriculum and, in a large measure, the methods of instruction.

The deans of each of these institutions hold office for one year. Professors are appointed by the Crown, through the Minister of Education, on the faculty's recommendation.

The academic year consists of two semesters, running from September to December and from January to May. Some clinical studies, however, continue all the year round.

### Conditions of admission

Students may be admitted to the study of medicine after the *studentexamen*, or school-leaving examination, taken at the end of the secondary-school course. Previous studies in chemistry, physics, biology, and mathematics are required in order to be accepted for medical studies. Applicants usually outnumber vacancies by about three to one, and selection is made on the basis of results obtained in the *studentexamen*, which is uniform throughout the country. Successful applicants are accepted twice a year, at the beginning of each semester.

Foreign students are admitted only in exceptional cases and after individual consideration.

### Curriculum

The curriculum consists of a pre-clinical period of two years and a clinical period of four and a half years.

The first year of the pre-clinical period is devoted to anatomy, histology and embryology, and short courses are also given in medical statistics and medical genetics. In the second year of the pre-clinical period, biochemistry, medical physics, physiology, and psychology are taught.

The clinical part of the course is divided into three stages, and a student must complete all the courses and examinations appertaining to one stage before starting on the next. The first part (one year) of the clinical period is known as the propaedeutic year and serves as an introduction to clinical work. It is devoted to pathology, bacteriology, pharmacology, introductory courses in internal medicine and surgery, roentgenology, and social medicine. The courses consist of lectures, demonstrations, and practical work in diagnostic methods and laboratory procedures.

The second part (two and a half years) of the clinical period begins with one year divided equally between internal medicine and surgery. During that year, lectures and demonstrations are also given in pathology and roentgenology and radiotherapeutics, as well as in chemical, physiological, and bacteriological laboratory methods. This stage is followed by instruction in the special branches, such as paediatrics, psychiatry and neurology, dermatology and venereology, obstetrics and gynaecology, ophthalmology, otorhinolaryngology, and clinical epidemiology.

During the third part (one year) of the clinical period, a student devotes his time to work as a hospital assistant, concentrating on internal medicine and surgery, as well as on one subject of his own choice.

Attendance at all courses is compulsory.

Since the curricula of the various schools do not differ substantially, and since the examinations of the schools are all nationally recognized, students may change universities during their period of training.

After a student has completed the propaedeutic year as well as the clinical courses in general medicine and general surgery, he may undertake work as a locum tenens, subject to the approval of the Royal Medical Board. As medical studies may be interrupted by these periods of service as "student locums", and also by military service, many students require more than the scheduled time to complete their medical course.

## Examinations

Examinations are taken one at a time, on completion of the course in each individual subject. When a student has completed a course and deems himself sufficiently well prepared, he arranges for an examination with the professor concerned. Examinations are written, oral, and practical.

When a student has passed his examinations in the pre-clinical subjects, he is granted the certificate of *Medicine Kandidat* (Candidate in Medicine), abbreviated to *Med.Kand.*, which entitles him to begin the clinical course. After a student has passed his examinations in the clinical subjects, he receives the certificate of *Medicine Licentiat*, or *Med.Lic.*

### Qualification and licence to practise

Both the *Med.Kand.* and *Med.Lic.* certificates are university degrees. The right to practise medicine is conferred by the State, upon application by the Licentiate, and no further examinations need be taken.

For those candidates who intend to enter general practice, no further hospital experience is required after the *Med.Lic.* has been obtained. It is, however, officially recommended that a newly qualified doctor should serve for a year or more as junior assistant in a hospital before setting up as a general practitioner. Medical graduates are, however, under no obligation to serve the State before engaging in private practice.

The degree of *Medicine Doktor* (Doctor of Medicine) is awarded by the Swedish universities to Licentiates in Medicine who present a thesis. The thesis must contain original work and must be defended in public in the course of a *viva voce* examination.

Nationals and foreigners with foreign medical qualifications may be permitted to practise medicine in Sweden under the same conditions. Their applications are dealt with by the Swedish Committee on Foreign Physicians, which may recommend that the applicant undergo post-graduate training, adopting one of the following alternatives:

(1) Work at a Swedish hospital, as a rule for one year. This is required if the applicant, by Swedish standards, is considered to have adequate theoretical knowledge but insufficient hospital experience. The hospital chosen for this work is selected after discussion with the applicant. No salary is paid, but as a rule board and lodging are provided during the year's service. On the recommendation of the head physician of the hospital, who vouches for the foreign physician's professional competence and linguistic ability, permission to hold subordinate remunerative posts (*locum tenens*) during this period may be granted; in most cases this permission is, in fact, granted after three to six months. At the end of the year's service the foreign physician is asked to submit testimonials from the head physician of the hospital and from a qualified teacher of Swedish. Usually he is then requested to take up employment in a hospital as a subordinate physician and to serve as a medical officer during a designated period. A foreign physician with exceptional qualifications may, however, be exempted from this service.

After having complied with the above requirements, passed an examination covering the more important aspects of Swedish medical legislation, the applicant may be recommended by the Committee on Foreign Physicians to the National Board of Health for authorization to work as a legally qualified medical practitioner in Sweden.

(2) Completion of certain courses and examinations at a Swedish medical school. This is required of foreign physicians whose medical education is not considered to be in conformity with Swedish standards. Before admission to these courses the applicant must have acquired a satisfactory knowledge of Swedish.

After due completion of the required courses and examinations, and on the understanding that the applicant is competent in the Swedish language and familiar with Swedish medical legislation, the Committee on Foreign Physicians recommends to the National Board of Health that the applicant be granted permission to work as a legally qualified practitioner in Sweden.

Citizens of Denmark, Finland and Norway with a licence to practise in their own countries are not required to undergo the above-mentioned training but must take a short course in medical legislation.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Medicinska Fakulteten Göteborgs Universitet Vasaparken GÖTEBORG	1948	88 f 185 p	566 m 168 f	193	105	None
Medicinska Fakulteten Universitetet i Lund LUND	1666	76 f 75 p	594 m 165 f	110	42	None
Kungl. Karolinska Mediko- Kirurgiska Institutet Solnavägen 1 STOCKHOLM 60	1810	103 f 83 p	1126	128	241	None
Kungl. Medicinska Högskolan UMÄÅ 2	1958	16 f 20 p	120 m	40	—	None
Medicinska Fakulteten Universitetet i Uppsala UPPSALA	1595	126	868	90	16	None

## SWITZERLAND

### Introductory data\*

Population . . . . .	5 362 000
Number of medical schools . . . . .	5
Number of physicians . . . . .	7 227**
Number of medical graduates . . . . .	393
Population per medical school . . . . .	1 072 000
Population per physician : . . . . .	740

\* 1960 figures.

\*\* Excluding 701 physicians not in practice or residing abroad.

Medical education in Switzerland lasts for six and a half years. It leads either to the *Diplôme fédéral* (Federal Diploma), which is awarded to Swiss citizens and to refugees who were authorized to reside permanently in Switzerland on 24 June 1960, or to the *Certificat de fin d'études médicales* (Certificate of Medical Studies), which is awarded to foreign students only. The examinations leading to the award of these two diplomas cover the same branches without, however, being identical.

### Administration

Each medical faculty, headed by a Dean, is part of a university, an institution operating under cantonal law and administered by the appropriate cantonal government. Students' fees meet only a small part of the cost of medical education; the bulk of the expenditure is therefore a charge on the revenue of the cantons.

Each academic year consists of two semesters, running from October to March and from April to July. First-year students are generally admitted at the beginning of the winter semester.

The language of instruction is French at Geneva and Lausanne and German at Basle, Berne and Zurich.<sup>1</sup>

### Conditions of admission

In order to be admitted to the medical course, a candidate must hold an officially recognized school-leaving certificate (*Maturité—Maturität*), for which twelve to thirteen years of education are required, and which cannot be obtained before 18 years of age. As a rule, there is no *numerus clausus*, but the admission of foreign students to first-year classes may be restricted because of limited facilities.

<sup>1</sup> In addition, there are two universities where students can follow part of the medical curriculum. At the University of Fribourg, medical studies can be undertaken up to and including the second propaedeutic examination. At the University of Neuchâtel, students can attend the pre-medical stage of the course—that is, the semesters devoted to the study of the natural sciences—and take the first propaedeutic examination.

## Curriculum

The medical course, which is the same in all five faculties, is divided into three parts, as follows:

The pre-medical period, consisting of two semesters, which covers theoretical and practical courses in physics, inorganic and organic chemistry, botany, zoology, and comparative anatomy.

The pre-clinical period, consisting of three semesters, which covers theoretical and practical courses in anatomy, histology, embryology, physiology, and physiological chemistry.

The clinical period, consisting of eight semesters, which covers (a) theoretical courses in morbid anatomy (general and special), medicine, general surgery, pharmacology and therapeutics, physiotherapy, radiology, hygiene, forensic medicine, traumatology, and orthopaedics with demonstrations; (b) practical clinical work (in-patients and out-patients) in medicine, surgery, obstetrics, gynaecology, and the specialties, such as paediatrics, dermatology, venereology, ophthalmology, psychiatry, and otorhinolaryngology; (c) practical courses in post-mortem examination and in morbid histology, obstetrical surgery, neurology, bacteriology, and prescription and dispensing of drugs; (d) six months of internship in one or two hospital services.

## Examinations

The examination for the medical degree, both for Swiss and for foreign students, is held in three parts.

The first propaedeutic (or first baccalaureate) examination, in physics, inorganic and organic chemistry, botany, zoology, and comparative anatomy, is held at the end of the pre-medical period, and is oral only.

The second propaedeutic (or second baccalaureate) examination is held at the end of the pre-clinical period. It is practical and oral, and covers anatomy, animal and plant physiology, histology, embryology, and physiological chemistry.

The final (or professional) examination is held in the clinical subjects at the end of the corresponding period of studies. This examination too is practical and oral.

Examinations for Swiss candidates are conducted under the supervision of an Examining Committee appointed by the Swiss Federal Council on the recommendation of the Department of the Interior. This Committee has its headquarters in Berne, but maintains a local branch in each university city, which accepts applications and organizes and conducts examinations. Examinations for foreign students are conducted by a committee designated by the faculty concerned.

## Qualification

A candidate who has passed the professional examination is awarded the *Diplôme fédéral* or the *Certificat de fin d'études médicales*, as the case may be. Only the *Diplôme fédéral*, which is issued by the Federal Department of the Interior, entitles the holder to practise in Switzerland. The *Certificat de fin d'études*

*médicales* issued by the cantonal department of education concerned, or by the university itself, is an academic degree only, and does not give the right to practise medicine in Switzerland.

The higher degree of Doctor of Medicine may be awarded after presentation of a thesis in one of the three national languages—French, German, or Italian.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Francs)</i>
Medizinische Fakultät der Universität Basel Petersplatz 1 BASEL	1460		640 m 123 f	35	46* 28**	
Medizinische Fakultät der Universität Bern BERN	1834	29 f 41 p	258 m 93 f	90	58	700
Faculté de Médecine de l'Université de Genève Rue de Candolle GENÈVE	1876	31 f 45 p	553 m 87 f	120	78	1000
Faculté de Médecine de l'Université de Lausanne LAUSANNE	1890	6 f 40 p	391 m 93 f	65	38* 39**	600
Medizinische Fakultät der Universität Zürich ZÜRICH	1833	120	749	174	80* 26**	800

\* Nationals.

\*\* Foreigners.



## SYRIA

## Introductory data\*

Population . . . . .	4 555 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	985
Number of medical graduates . . . . .	69
Population per medical school . . . . .	4 555 000
Population per physician . . . . .	4 600

\* 1960 figures.

Medical education in Syria lasts for six years, not including the pre-medical year, and leads to the degree of *Docteur en Médecine* (Doctor of Medicine).

## Administration

The Syrian University is a government institution attached to the Ministry of Education. Although largely supported by the State, it enjoys considerable administrative and financial autonomy.

The Medical Faculty is directed by the Dean, who is elected by the Faculty Council, to which all the professors belong, for a three-year term of office. The decisions of the Faculty Council are submitted to the University Council, which consists of two professors from each faculty, one of whom is the Dean. After being approved by the University Council, such decisions are submitted to the Ministry of Education.

The academic year begins in October and ends in June.

## Conditions of admission

In order to be admitted to the Faculty of Medicine, the student must hold the *baccalauréat* (a certificate obtained after seven years of secondary studies, preceded by six years of primary school), as well as the P.C.B. certificate (physics, chemistry, and biology). The courses leading to this certificate last for one year and are held at the Faculty of Sciences.

Foreign students are eligible for enrolment at the Faculty of Medicine of Damascus University provided they know Arabic.

## Curriculum

The curriculum is arranged as follows:

*First year* : medical chemistry; medical physics; anatomy; histology; embryology; physiology; a foreign language (English or French)

*Second year* : anatomy; physiology; morbid anatomy; bacteriology; pharmacology; symptomatology; clinical medicine and surgery; a foreign language

*Third year* : medical pathology; surgical pathology; minor surgery; anaesthesiology; obstetrics; paediatrics; medical and surgical anatomy; parasitology; radiology; a foreign language; period of practical training in general medicine and general surgery; period of practical training in the pathology laboratories.

*Fourth year* : medical pathology; surgical pathology; gynaecology; dermatology and venereology; surgical medicine; a foreign language; period of clinical training in general medicine; general surgery, including a few specialized branches; practical training in the pathology laboratories

*Fifth year* : general pathology; clinical therapeutics; hygiene; psychiatry; forensic medicine; toxicology; history of medicine; medical ethics; otorhinolaryngology; ophthalmology; a foreign language; clinical training in general medicine; general surgery, including those specialized branches which were not studied during the fourth year

*Sixth year* : two compulsory training periods, both of six months' duration: (1) in medicine, paediatrics, general dermatology and venereology, with laboratory work; and (2) in surgery, obstetrics, gynaecology, ophthalmology, otorhinolaryngology, with laboratory work.

The student may, with the approval of the Faculty Council, devote the whole year to one of the two above-mentioned training periods, after due consideration has been given to his abilities in the various branches.

### Examinations

The examinations held relate to the theoretical and practical courses and to clinical subjects.

The examinations on the theoretical and practical courses take place twice yearly and include written, oral and practical tests. Students who fail in June may sit again in September. If they fail on the second occasion, they must repeat the whole year of study.

The examinations in clinical subjects are taken at the end of the sixth year. They are in three parts:

(1) Clinical examination in medical pathology (including the nervous and mental diseases), paediatrics, dermatology and venereology, involving the preparation of a report and a discussion of its findings; questions on these specialties and on treatment; laboratory work and the interpretation of its results.

(2) Clinical examination in surgical diseases, as well as those of the ears, nose, larynx and eyes, involving the preparation of a report and a discussion of its findings; questions on these specialties; practical work in minor surgery, and an interpretation of laboratory results.

(3) Clinical examination in obstetrics and gynaecology, involving the preparation of a report and a discussion of its findings; questions on these specialties; and practical midwifery.

These clinical examinations, which include the study of a patient and a general examination of past work, are conducted in the following manner.

*Medical examination of a patient* : This is carried out in hospitals attached to the Faculty of Medicine or under its patronage. The student must examine, in the presence of the examining board and for not longer than half an hour, a

patient designated by the board. The student is then left on his own for another half an hour to write up his findings. During the examination of the patient, the members of the board are entitled to question the student and to ask him to examine another patient. They are also permitted to request him to carry out clinical work, use instruments, apply dressings and perform any laboratory tests deemed necessary.

*General review examination* : Reading of the student's report and discussion of its findings; interrogation on the patient examined and on general medical subjects. The time assigned for the examination of each student is fixed by the examining board.

### Qualification and licence to practise

After having passed the various examinations, candidates must prepare a thesis with the approval and under the supervision of the professor of the subject concerned. Candidates who have passed the examinations and who have successfully defended their thesis receive the degree of Doctor of Medicine, which entitles them to practise medicine in Syria. Under the regulations in force, medical graduates who are Syrian nationals are bound to serve two years in areas assigned to them by the Ministry of Health.

The holders of foreign diplomas equivalent to the Doctor of Medicine degree conferred by the Faculty of Medicine of Damascus University may be authorized to practise in Syria, provided they sit for a general examination held by the Ministry of Health in conjunction with the Faculty of Medicine.

Foreigners holding qualifications from Damascus University may be authorized to practise medicine in Syria if their countries accord reciprocal treatment to Syrian nationals, or if they fulfil the requirements provided for in the regulations of the Ministry of Health.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (LS)</i>
Faculty of Medicine Damascus University DAMASCUS	1903	56 f 13 p	487	131	69	200

## THAILAND

### Introductory data\*

Population . . . . .	26 258 000
Number of medical schools . . . . .	3
Number of physicians . . . . .	3 402
Number of medical graduates . . . . .	225
Population per medical school . . . . .	8 753 000
Population per physician . . . . .	7 700

\* 1960 figures.

Medical education in Thailand lasts for four years and leads to the degree of Bachelor of Medicine, which is equivalent to the British M.B., B.S. and the United States M.D. degrees.

### Administration

The three medical faculties are part of the University of Medical Sciences, which moreover, contains faculties of dentistry, pharmacy, public health, tropical medicine, medical science, and medical technology. The University is owned by the Government and is under the jurisdiction of the Office of the Prime Minister.

The academic year begins in June and ends in March. Although the language of instruction is Thai, English-language textbooks are used.

### Conditions of admission

Requirements for admission to medical studies include completion of a five-year secondary-school course (preceded by seven years of primary education), as well as two years of pre-medical education at university level. The pre-medical course is taken at the Faculty of Sciences of the University, or an equivalent institution. In addition, candidates for admission must pass an entrance examination held by the Selection Committee appointed by the University.

Foreigners are admitted to medical studies provided they are in good health and satisfy the Selection Committee's requirements.

### Curriculum and examinations

The medical curriculum is divided into two parts—pre-clinical and clinical—each of two years' duration. The following is a summary of the revised curriculum of the Faculty of Medicine at Chulalongkorn Hospital:

*First year* : gross anatomy; histology; embryology; biochemistry; physiology; preventive medicine; psychiatry

*Second year* : topographic anatomy; neuro-anatomy; pharmacology; pharmacy;

neurophysiology; bacteriology; pathology; parasitology; clinical pathology; medicine; preventive medicine; psychiatry; surgery

*Third year* : pathology; medicine; preventive medicine; psychiatry; surgery; obstetrics and gynaecology; radiology; paediatrics; ophthalmology; otorhinolaryngology

*Fourth year* : pathology; forensic medicine; medicine; preventive medicine; psychiatry; surgery; obstetrics and gynaecology; radiology; paediatrics; ophthalmology; otorhinolaryngology.

Clinical studies are undertaken at the Siriraj Hospital, Chiangmai Hospital and Chulalongkorn Hospital of the National Red Cross. The study of preventive medicine in the third year of the course occupies only twenty-four hours of the educational time-table, an additional thirty hours being taken from the vacation time.

Examinations to cover each subject studied in the course of an academic year are held at the end of that period.

### Qualification and licence to practise

The medical degree is conferred by the University of Medical Sciences. One year of "rotating" internship is necessary before a licence to practise medicine in Thailand is given. There is no other obligation towards the State.

Nationals and foreigners with foreign medical qualifications may be permitted to practise, but they must pass an examination and be approved by the Medical Council of the Ministry of Public Health.

A candidate for an advanced degree, equivalent to the British M.D. and the United States Ph.D. or D.Sc., must present a thesis and submit to an examination by the medical faculty three years after receiving the first medical degree.

Courses of one to three years' residency training are now being started at the University.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Faculty of Medicine at Chulalongkorn Hospital University of Medical Sciences BANGKOK	1947	112 f	239 m 107 f	80	87	None
Faculty of Medicine at Chiangmai Hospital University of Medical Sciences CHIANGMAI	1960	48 f 10 p	53 m 9 f	50	—	None
Faculty of Medicine at Siriraj Hospital University of Medical Sciences THONBURI	1889	191 f 10 p	457 m 153 f	120	138	None

## TURKEY

### Introductory data\*

Population . . . . .	27 818 000
Number of medical schools . . . . .	3
Number of physicians . . . . .	9 847**
Number of medical graduates . . . . .	425†
Population per medical school . . . . .	9 273 000
Population per physician . . . . .	2 800

\* 1960 figures.

\*\* Excluding 2569 physicians not in practice.

† Figure supplied by Government.

Medical education in Turkey lasts for six years and leads to the degree of Doctor of Medicine.

### Historical background

Turkey was one of the first countries to employ practical bedside teaching as the basis of medical training. Turkish medical schools, including the great medical training centre founded by Sultan Mehmet II at Constantinople (Istanbul) in 1470, had their origin in hospitals, and were characterized by Islamic, Hindu, and Chinese influences. In 1827 a military medical school of the "Western" type was founded in Istanbul and, about fifty years later, a civilian medical school was established. In 1909 the two merged to form the Faculty of Medicine of the present University of Istanbul.

In the academic year 1932/33 the Faculty of Medicine was reorganized and many German professors took posts at the school in various clinical and laboratory fields. To meet a great need a second school was established at Ankara in 1945, and a third at Izmir in 1955, from which the first class graduated in June 1961. Another medical school is to be established in eastern Turkey.

### Administration

Turkish universities are autonomous institutions, although the Ministry of National Education exercises certain general supervisory powers. Their major sources of funds are governmental, provincial, and municipal grants, as well as fees, income donations, and bequests.

Each university is headed by a Rector, who is assisted by an Executive Board and a Senate. Each faculty is a relatively independent unit, headed by a Dean, with its own administration and its own revenue. Each university co-ordinates the activities of its faculties.

The Ministry of Health and Social Assistance gives fellowships to 900 students who, in return, undertake to serve the Government for a period equivalent to

two-thirds of the duration of their bursary as government doctors and medical officers of health.

The academic year runs from November to June in the Faculty of Medicine at Istanbul; from 1 October to 30 June at Ankara and Izmir, for the pre-clinical period; and from 1 October to 7 July at Ankara for the last two clinical years. Each academic year is divided into two semesters.

### Conditions of admission

In order to be admitted to the medical course, a student must hold the Turkish certificate of secondary education (obtained after four years in upper secondary school, preceded by three years in intermediate school and five years in primary school), or an equivalent foreign diploma recognized by the Turkish Ministry of National Education. A working knowledge of English, French, or German, and evidence of a satisfactory state of health are also required. If the number of applicants is particularly large, candidates may be selected on the basis of their scholastic record or the results of entrance examinations.

Foreign students are eligible for admission under the same conditions as nationals.

### Curriculum and examinations

The curriculum is divided into three main periods and is arranged as follows.

The pre-medical part (two semesters) is taken at the Faculty of Science and consists of lectures and practical work in chemistry, physics, botany, and zoology. Examinations in these subjects are held at the end of the second semester.

The pre-clinical period (three semesters) is devoted to lectures and practical work in anatomy, histology, embryology, physiology, and biochemistry. The maximum time allowed for passing the examinations in these subjects is six semesters. A student who fails to complete his examinations within that time must repeat all the courses. Before he is admitted to an examination, he must submit proof that he has attended the requisite lectures in the subjects concerned and that he has satisfactorily performed the necessary practical work.

During the clinical period (seven semesters), a student attends lectures and performs practical or clinical work in microbiology, parasitology, pathology, pharmacology and materia medica, medicine, surgery, obstetrics and gynaecology, paediatrics, orthopaedics, ophthalmology, otorhinolaryngology, dermatology and venereology, urology, neurology, phthisiology, psychiatry, radiology, physiotherapy, history of medicine, infectious diseases, hygiene and social medicine, and occupational medicine. During these seven semesters, a student also obtains practical hospital experience, two months being devoted to medicine, two months to surgery, and two months to obstetrics, and two to four weeks to each of the other clinical subjects.

An examination is held at the end of each subject course, and a comprehensive final examination takes place at the end of the sixth year. Examinations in respect of each period must be completed before a student may proceed to the next stage of the course.

In each medical school there is a department of hygiene or preventive medicine. Reorganization projects for establishing larger and more effective preventive medicine departments are under preparation and are to be put into effect in the 1962/63 academic year. Close co-operation between the preventive medicine departments and the other departments of the schools is the principal aim of these projects.

### Qualification and licence to practise

Those students who have successfully completed all their intermediate examinations and have passed the comprehensive final examination receive from the university concerned the degree of Doctor of Medicine, which entitles them to practise medicine in Turkey.

The law concerning the medical profession in Turkey stipulates that only Turkish nationals may practise medicine in Turkey. Nationals who have qualified abroad are authorized to practise provided their diploma is recognized by an *ad hoc* commission.

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees (Liras)
Tip Fakültesi Ankara Üniversitesi (Faculty of Medicine, Ankara University) ANKARA	1945	77	1034	175	148	100
Tip Fakültesi İstanbul Üniversitesi (Faculty of Medicine, İstanbul University) İSTANBUL	1827					
Tip Fakültesi Ege Üniversitesi (Faculty of Medicine, Aegean University) Bornova İZMİR (SMYRNA)	1955	13 f 21 p	431 m 218 f	61 m 47 f	—	45.50



## UGANDA

### Introductory data\*

Population . . . . .	23 356 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	1 890**
Number of medical graduates . . . . .	15
Population per medical school . . . . .	23 356 000
Population per physician . . . . .	12 000

\* 1960 figures, which include data for Kenya, Tanganyika and Zanzibar, as well as Uganda, since the one medical school serves all four countries.

\*\* Including physicians no longer working in the country.

Medical education in Uganda lasts for five years and leads to the diploma of Licentiate in Medicine and Surgery (East Africa) known as the L.M.S. (E.A.), and recognized by the General Medical Council of the United Kingdom.

### Historical background

Makerere College was founded in 1922 as a technical school under the Uganda Government. Since 1939 it has been an independent institution, governed by a Council representative of the East African countries Kenya, Tanganyika, Uganda, and Zanzibar. It took its present title in 1949. The University College of East Africa, in association with the Mulago Hospital, began to provide a four-year medical course in 1924, and students from outside Uganda were first admitted in 1936.

### Administration

The University College is an autonomous institution whose main sources of income are government grants, endowments, investments, and fees. It consists of six faculties and is managed by a College Council, an Academic Board, and a Principal. The last named is the chief executive and academic officer of the College, and is responsible to the Council.

The Council is responsible for the administration of the College, including the management of its finances and the appointment of its academic staff. Representatives from the four East African countries are among its members.

The Academic Board is responsible to the Council for the academic management of the College in accordance with the Council's policy. It includes, in addition to the Principal and Vice-Principal, and others, the head of every connected school or institute, every professor, the Reader, or, if there is no Reader, the senior lecturer in each represented department, and the Librarian. Of the other members, two are elected for a term of two years by the academic staff, by such procedure as that staff may determine. Where there is any connected school or

institute, the determined number of members is elected by the school or institute concerned.

The Dean of each faculty, of which there are six, is elected for a period of one year by the members of the Academic Board of that faculty.

The academic year consists of three terms, running from July to September, from October to December, and from January to April. The three clinical years are divided into four terms each of eleven weeks. The language of instruction is English.

### Conditions of admission

To be eligible for admission to medical studies a student must satisfy minimum university entrance requirements, similar to those in force in the United Kingdom. In effect this means that he must present passes at principal standard of the Higher School Certificate, or its equivalent, in physics, chemistry, and biology. (Previous school education consists of eight years of secondary studies, preceded by five or six years of primary.)

The College is open to all students who have the academic qualifications necessary for admission, regardless of sex, race, colour, or religion. At present, owing to pressure on places, entrance has to be restricted to candidates from the four East African countries mentioned.

### Curriculum

The curriculum is divided into two stages and is arranged as follows:

The pre-clinical period (first and second years) is devoted to anatomy and physiology.

The clinical period (third, fourth and fifth years) is arranged as follows:

*Third year* : pathology; pharmacology; medicine; surgery; clinical methods; psychology; dermatology; radiology; preventive medicine

*Fourth year* : pathology; medicine; surgical specialties; obstetrics and gynaecology; venereology; psychiatry; paediatrics; ophthalmology; otorhinolaryngology; dental surgery; anaesthesiology; environmental sanitation; epidemiology and vital statistics

*Fifth year* : medicine; therapeutics; surgery; orthopaedics; operative surgery; surgical anatomy; obstetrics and gynaecology; preventive and social medicine.

### Examinations

The First Professional Examination, held at the end of the second year of course, covers anatomy and physiology.

The Final Professional Examination consists of two parts: Part I covers pharmacology, pathology, forensic medicine, microbiology, environmental sanitation, and epidemiology and vital statistics; Part II covers medicine, surgery, obstetrics and gynaecology, and preventive and social medicine.

Examinations are written, oral, practical and clinical. They are conducted by internal examiners—that is, members of the teaching staff of the Faculty

of Medicine—together with external examiners—that is, persons who have not taken part in teaching the candidates in the subjects of the examination. If a candidate fails in a Professional Examination, it is up to the examiners to recommend to the Faculty whether or not he should be allowed to sit again for a supplementary examination.

### Qualification and licence to practise

After passing the Final Professional Examination, a student receives the diploma of Licentiate in Medicine and Surgery (East Africa). The newly graduated Licentiate is granted provisional registration, which allows him to perform one year of compulsory internship at a recognized hospital. At the end of this period, he receives full registration. Being under no obligation to serve the State, the graduate may then set up in private practice.

Nationals and foreigners with foreign medical qualifications may be permitted to practise after validation and registration.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (£EA)</i>
Faculty of Medicine Makerere College University College of East Africa P.O. Box 2072 KAMPALA	1924	26 f 30 p	137 m 4 f	30	15	51

## UNION OF SOVIET SOCIALIST REPUBLICS

### Introductory data\*

Population . . . . .	214 400 000
Number of medical schools . . . . .	77
Number of physicians . . . . .	364 324**
Number of medical graduates . . . . .	26 452
Population per medical school . . . . .	2 784 000
Population per physician . . . . .	580**

\* 1960 figures.

\*\* 1959 figures; excluding 15 177 stomatologists.

Medical education in the USSR lasts for six years and leads to the diploma of *Vrač* (Physician).

### Historical background

At the time when the USSR was first founded, there were sixteen medical schools<sup>1</sup> in its territory, from which about 1500 physicians graduated each year. Most of these institutions were parts of State universities. They enjoyed a certain amount of autonomy in the conduct of their affairs, but were supervised by the Ministry of Education. Medical education then consisted of a five-year course.

During the 1920's, a special effort was made to increase the number of doctors, and many new medical schools were established. The prevailing attitude was that of experimentation in medical education, including the shortening of the medical course by one year, the elimination of Latin as an entrance requirement, reduced emphasis on examinations, the use of teaching methods other than lectures, increased attention to epidemiology and public health, the introduction of political and social subjects in the curriculum, and so on.

A general reorganization of higher education took place in 1930 and, as a result, technical—including medical—training was removed from the supervision of the educational authorities and placed under the jurisdiction of the appropriate governmental body. Thus, medical faculties were no longer attached to universities, but became autonomous medical institutes under the administration of the health authorities. This arrangement has continued to the present time, and a close relationship has been established between the teaching and training programme, on the one hand, and the network of preventive, curative, and research institutions administered by the ministries of health of the republics, on the other.

A further development took place in 1934, when the curriculum was extended to five years, with a view to training three kinds of potential doctors—namely,

<sup>1</sup> Including one military medical school and four medical schools for women.

practitioners for clinical work, to be known as "therapeutists"; specialists in the health of mothers and children, to be known as "paediatricians"; and "hygiene specialists"—that is, doctors specializing in public health and epidemiology. The curriculum in some of the medical institutes has been adjusted to provide for teaching along these special lines during the latter part of the medical course, although the subjects covered during the first years remain the same for all three groups. This system is still in effect; the curriculum itself, however, was further extended to six years in 1945.

### Administration

Apart from some 15 % of the total number, which are administered directly by the Central Government, the medical institutes are administered by the ministries of health of the republics concerned. All, however, follow general principles, promulgated by the Central Ministries of Health and of Higher Education in Moscow, in respect of the curriculum, examinations, and so forth. Each institute is administered by a director and a faculty, which consists of full-time as well as part-time teachers.

No tuition fees are charged, and medical education is wholly financed out of government funds. Students are eligible for grants of money to cover living and other expenses; the amounts of such stipends vary in accordance with a student's academic achievements.

The school year is divided into two semesters, running from September to January and from February to June. The language of instruction is Russian, but the local language is used in addition in several of the republics.

### Conditions of admission

Students of 18-30 years of age who have completed ten years of primary and secondary education and passed their matriculation or have a certificate from a secondary medical school, where general secondary education is also provided, are admitted to medical institutes. All candidates must pass an entrance examination covering the following secondary-school subjects: Russian language and literature, physics, chemistry and a foreign language (English, French, German or Spanish according to the candidates' choice).

In the first instance the ministry of health of each republic decides on the number of first-year students (plan of admission) to be admitted to each institute and faculty within the republic. The plan of admission for all the republics is determined by the Central Ministry of Health of the USSR. The admission of first-year students is competitive and depends on the marks received at the entrance examination. Preference is given to persons who have had practical experience, for a certain period of time, since leaving their secondary school. All candidates are subject to a medical examination, and if there is no medical contraindication, they are then admitted to the entrance examination.

Foreigners are admitted to the medical institutes under the conditions specified by the agreements in force between the Government of the USSR and the governments of the respective countries. The procedure of admission is determined by

the Ministry of Higher Education. The necessary documents should be presented by the Embassy of the candidate's country. In some individual cases foreign candidates may be admitted to the medical institutes of the USSR under the same conditions as nationals—that is, on the basis of a competitive entrance examination.

### Curriculum

Instruction is by way of lectures, laboratory work in the pre-clinical subjects, and practical work with patients in hospitals and polyclinics during the clinical part of the course. Attendance is compulsory, and students average about 35 hours per week in their classes. In addition, certain seminars and discussion groups can be attended on an optional basis, and students are also encouraged to devote time, on a voluntary basis, to certain subjects which are of special interest to them.

The subjects covered in the course for potential "therapeutists" are as follows:

*First and second years* : physics; biology; chemistry; anatomy; histology and embryology; biochemistry; physiology; microbiology; parasitology; Marxism-Leninism; Latin; a modern language; physical education

*Third year* : morbid anatomy; pathological physiology; pharmacology and introduction to medicine; surgery and other clinical subjects

*Fourth and fifth years* : continuation of clinical studies in medicine, surgery, obstetrics, paediatrics, and the specialties

*Sixth year* : supervised practical work in the clinical subjects.

The curricula for the third, fourth, fifth and sixth years of the medical courses for potential "paediatricians" and "hygiene specialists" lay special stress on subjects related to these specialties. The subjects studied during the course for potential "therapeutists" are also covered, but with less emphasis.

### Examinations

Examinations are held at the end of each semester, and cover the work performed during that period. After the second year of the course, a State Examination is held in all the medical institutes covering the subjects studied thus far.

At the end of the sixth year of the course, a further State Examination is held. For the potential "therapeutists", the subjects covered during that examination are internal medicine, surgery, obstetrics and gynaecology, hygiene and public health and, lastly, Marxism-Leninism. For those students who have followed the "paediatric" course, the examination covers the same subjects, except that paediatrics is substituted for obstetrics and gynaecology. The student specializing in "hygiene" is called upon to sit for examinations in internal medicine, public health, industrial hygiene, epidemiology, and Marxism-Leninism.

These State Examinations are conducted by a Committee appointed by the medical institute concerned, under the chairmanship of a professor from another faculty, nominated for the purpose by the Ministry of Health of the USSR.

### Qualification and licence to practise

Candidates who pass the final State Examination receive the diploma of *Vrač*, which entitles them to practise medicine in any part of the USSR. They

are initially assigned to the locations where they are to practise by the Ministry of Health of the USSR, but personal preferences are taken into account as much as possible. After completing three years of assigned service, the doctor may then choose his own permanent location. Graduates of medical schools are eligible for post-graduate and refresher courses at intervals, according to type of assignment.

Graduates who have achieved special academic distinction during the medical course are eligible to embark on further studies for the advanced degree of Candidate of Medical Sciences, and the higher degree of Doctor of Medical Sciences. The latter degree is generally required for eligibility to full professorship, whereas the former is a prerequisite for other teaching posts.

Foreigners who have obtained a medical degree in the USSR may be permitted to practise. Foreigners holding foreign medical qualifications may be permitted to attend patients provided that their degree or diploma has been validated via consular channels.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
<b>ARMENIAN SSR</b> Erevan Medical Institute Ul. Kirova 2 EREVAN	1922		1539	338	301	None
<b>AZERBAIJANIAN SSR</b> Azerbaijan Medical Institute Ul. Karganova 13 BAKU	1919		2582	535	517	None
<b>BYELORUSSIAN SSR</b> Grodno Medical Institute Ul. Ožesko 1 GRODNO	1958		761	251	—	None
Byelorussian Medical Institute Bazarnaja ul. 10 MINSK	1921		3071	557	617	None
Vitebsk Medical Institute Ul. Oktjabrja 14 VITEBSK	1934		2029	401	214	None
<b>ESTONIAN SSR</b> Faculty of Medicine State University of Tartu Ul. Yulikooli 18 TARTU	1802		1275	243	185	None
<b>GEORGIAN SSR</b> Tbilisi Medical Institute Ul. Melikišvili 16 TBILISI (TIFLIS)	1918		1989	349	274	None

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
<b>KAZAKH SSR</b>						
Aktjubinsk Medical Institute Ul. Lenina 78 AKTJUBINSK	1957		1023	300	—	None
Kazakh Medical Institute Ul. Furmanova 54 ALMA-ATA	1931		3993	721	639	None
Karaganda Medical Institute Ul. Kirova 18 KARAGANDA	1950		2954	535	374	None
Semipalatinsk Medical Institute Ul. Smidta 16 SEMIPALATINSK	1953		1943	370	277	None
<b>KIRGHIZ SSR</b>						
Frunze Medical Institute Ul. Vorošilova 1 FRUNZE	1939		2088	400	301	None
<b>LATVIAN SSR</b>						
Riga Medical Institute Padomyu 12 RIGA	1950		2119	422	392	None
<b>LITHUANIAN SSR</b>						
Kaunas Medical Institute Ul. Mickiewicza 7 KAUNAS	1950		1946	405	252	None
Faculty of Medicine Vilnius State University VILNIUS (VILNA)	1781		599	113	71	None
<b>MOLDAVIAN SSR</b>						
Kišinev Medical Institute Ul. Lenina 156 KIŠINEV (KISHINEV)	1945		1820	300	307	None
<b>RUSSIAN SFSR</b>						
Archangel Medical Institute Pr. Vinogradova 51 ARCHANGEL	1932		1524	303	230	None
Astrakhan Medical Institute Kamyšinskaja ul. 12 ASTRAKHAN	1918		1292	251	209	None



<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
RUSSIAN SFSR ( <i>continued</i> ) Altaj Medical Institute Ul. Lenina 40 BARNAUL	1954		1647	300	194	None
Blagoveščensk Medical Institute Ul. Lenina 90 BLAGOVEŠČENSK	1952		1126	200	171	None
Čeljabinsk Medical Institute Ul. Kommuny 35 ČELJABINSK (CHELYABINSK)	1944		2000	306	324	None
Čita Medical Institute Ul. Čkalova ČITA (CHITA)	1953		1557	300	187	None
North Ossetian Medical Institute Puškinskaja ul. 32/34 DZAUDŽIKAU	1939		1185	210	180	None
Gor'kij Medical Institute Pl. Minina i Požarskogo 10 GOR'KIJ (GORKI)	1930		2922	506	513	None
Habarovsk Medical Institute Ul. K. Marksa 34 HABAROVSK (KHABAROVSK)	1930		1728	300	290	None
Irkutsk Medical Institute Ul. Krasnogo Vosstanija IRKUTSK	1930		2732	550	443	None
Ivanovo Medical Institute Ul. Lenina 8/17 IVANOVO	1930		1953	300	432	None
Iževsk Medical Institute Revolucionnaja 199 IŽEVSK	1933		1351	300	196	None
Faculty of Medicine Jakutsk University Oktabrskaja ul. 33 JAKUTSK (YAKUTSK)	1957		247	77	—	None
Jaroslavl' Medical Institute Ul. Revoljucii 5 JAROSLAVL' (YAROSLAVL)	1944		1772	304	352	None

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
<b>RUSSIAN SFSR (continued)</b>						
Kalinin Medical Institute Sovetskaja ul. 4 KALININ	1954		1484	302	240	None
Kazan' Medical Institute Universitetskaja ul. 13 KAZAN'	1814		2652	451	590	None
Kemerovo Medical Institute Volgorodskaja ul. 1 KEMEROVO	1956		1709	389	—	None
Kuban' Medical Institute Krasnaja 1 KRASNODAR	1920		1486	254	305	None
Krasnojarsk Medical Institute Ul. K. Marksa 124 KRASNOJARSK	1942		2046	400	284	None
Kujbyšev Medical Institute Arcibuševskaja 161 KUIBYŠEV (KUIBYSHEV)	1942		2642	457	460	None
Kursk Medical Institute Ul. K. Marksa 3 KURSK	1935		1364	255	316	None
First Leningrad Medical Institute (I. P. Pavlov Institute) Ul. L. Tolstogo 6/8 LENINGRAD	1897		3240	556	658	None
Leningrad Institute of Paediatrics Litovskaja ul. 2 LENINGRAD	1935		2314	350	434	None
Leningrad Institute of Sanitation and Hygiene Ul. Kurakina 1/3 LENINGRAD	1907		2649	507	558	None
Daghestan Medical Institute Ul. Levanevskogo MAHACH-KALA (MAKHACH-KALA)	1932		1061	200	232	None
First Moscow Order-of-Lenin Medical Institute B. Pirogovskaja ul. 2/6 MOSCOW	1765		6226	1216	1177	None

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
<b>RUSSIAN SFSR (continued)</b>						
Second Moscow Medical Institute M. Pirogovskaja ul. 1 MOSCOW	1906		3679	611	619	None
Novosibirsk Medical Institute Krasnyj pr. 58 NOVOSIBIRSK	1935		2453	404	395	None
Omsk Medical Institute Ul. Lenina 9 OMSK	1920		2955	500	404	None
Orenburg Medical Institute Sovetskaja ul. 6 ORENBURG	1944		1405	300	250	None
Perm' Medical Institute Kommunističeskaja ul. 26 PERM'	1930		2846	500	523	None
Faculty of Medicine Petrozavodsk University Ul. Lenina 71 PETROZAVODSK	1960		163	163	—	None
Rjazan' Medical Institute Ul. Majakovskogo 7 RJAZAN'	1950		2143	362	428	None
Rostov Medical Institute Nahičevanskij pr. 83 ROSTOV-ON-DON	1930		2580	450	540	None
Saratov Medical Institute Ul. XX let VLKSM 112 SARATOV	1930		3008	529	507	None
Smolensk Medical Institute Proletarskaja ul. 3 SMOLENSK	1920		2000	350	408	None
Stavropol' Medical Institute Ul. Mira 310 STAVROPOL'	1938		1430	350	237	None
Sverdlovsk Medical Institute Ul. Kommunarov 1 SVERDLOVSK	1931		2974	500	518	None

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
<b>RUSSIAN SFSR (continued)</b>						
Tomsk Medical Institute Timirjazevskij pr. 1 TOMSK	1888		2762	500	472	None
Bashkir Medical Institute Ul. Lenina 1 UFA	1932		1769	300	281	None
Vladivostok Medical Institute Okeanskij pr. 79/83 VLADIVOSTOK	1958		794	200	—	None
Volgograd Medical Institute Leninskaja ul. 21 VOLGOGRAD	1935		1510	250	351	None
Voronež Medical Institute Studenčeskaja ul. 8 VORONEŽ (VORONEZH)	1930		2899	514	552	None
<b>TADZHIK SSR</b>						
Dušanbe Medical Institute Ul. Kirova 68/87 DUŠANBE	1939		1647	300	231	None
<b>TURKMENIAN SSR</b>						
Aškabad Medical Institute Novaja ul. 10 AŠKABAD (ASHKABAD)	1932		1947	313	297	None
<b>UKRAINIAN SSR</b>						
Černovcy Medical Institute Teatral'naja pl. 5 ČERNOVCY	1944		1751	278	257	None
Dnepropetrovsk Medical Institute Ul. Džeržinskogo 9 DNEPROPETROVSK	1916		3476	600	610	None
Doneck Medical Institute Ul. Artema 57 DONECK	1930		3968	550	443	None
Harkov Medical Institute Ul. Sumskaia 41 HARKOV (KHARKOV)	1805		3457	558	619	None
Ivano-Frankovsk Medical Institute Ul. Karpinskogo 7 IVANO-FRANKOVSK	1945		1818	301	270	None

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
<b>UKRAINIAN SSR (continued)</b>						
Kiev Medical Institute Ul. Sevčenko 13 KIEV	1841		3532	669	730	None
Lugansk Medical Institute Ul. Oboronnaja 25 LUGANSK	1956		1719	304	—	None
L'vov Medical Institute Pekarskaja ul. 69 L'VOV	1773		3176	609	545	None
Odessa Medical Institute Medicinskij per. 2 ODESSA	1900		2861	525	504	None
Crimean Medical Institute Bul'var Lenina 5/7 SIMFEROPOL'	1931		2186	300	371	None
Ternopol' Medical Institute Ul. Pervogo Maja 6a TERNOPOL'	1957		1375	282	—	None
Faculty of Medicine University of Užgorod Ul. Gorkogo 46 UŽGOROD	1945		605	125	77	None
Vinnica Medical Institute Ul. Pirogova 42 VINNICA	1932		2103	350	334	None
<b>UZBEK SSR</b>						
Andižan Medical Institute Dom Sovetov ANDIŽAN	1955		1967	377	—	None
Samarkand Medical Institute Kommunističeskaja ul. 35 SAMARKAND	1930		1743	375	294	None
Taškent Medical Institute Ul. K. Marksa 103 TAŠKENT (TASHKENT)	1919		4088	840	689	None

## UNITED ARAB REPUBLIC

### Introductory data\*

Population . . . . .	25 948 000
Number of medical schools . . . . .	4**
Number of physicians . . . . .	11 310
Number of medical graduates . . . . .	815
Population per medical school . . . . .	6 487 000
Population per physician . . . . .	2 300

\* 1960 figures.

\*\* Not including the schools at Mansourah and Tanta, which opened in 1962/63.

Medical education in the United Arab Republic lasts for seven years, including one year of preliminary studies in the natural sciences, and leads to the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B. Ch.).

### Administration

Medical education is administered and financed by the National Government through the Ministry of Education.

The academic year runs from the beginning of the third week of September to June. The languages of instruction are Arabic and English.

### Conditions of admission

Candidates for admission to a medical faculty must hold the Government General Secondary Education Certificate (Science Section) or an equivalent certificate from a recognized institution. (Previous school education consists of six years at primary school, three years at intermediate school, and three years at secondary school.) The number of students to be admitted depends on the number of vacancies, and selection is made on the basis of the marks obtained in the Certificate examination. In addition, a student has to produce evidence of satisfactory health.

A foreign candidate may be admitted to medical studies provided he holds the Egyptian Secondary Education Certificate, or a foreign certificate considered by the University Council to be its equivalent. During the medical course, such students are expected to acquire a working knowledge of Arabic. They may be awarded the same type of degree as Egyptian students.

A foreign student who requires to be transferred to a medical faculty in the United Arab Republic is allowed to continue his studies at the appropriate stage of the course if he produces evidence that he has attended and passed the examination in the subjects considered preliminary to the desired course.

## Curriculum

The curriculum is divided into five parts, as follows:

(1) Pre-medical (first year): chemistry; physics; botany; zoology; European language (English), with reference to Latin and Greek roots of medical terminology; social sciences.

(2) Pre-clinical (second and third years): anatomy; embryology; histology; physiology; biochemistry and elementary courses in psychology; medicine (signs and symptoms); surgery (signs and symptoms).

(3) Transitional (fourth year): bacteriology; parasitology; pathology; pharmacology; medicine (an elementary course in case-history taking and teaching rounds on in-patients and out-patients); surgery (an elementary course in case-history taking, surgical teaching, out-patients, in-patients and operations).

(4) Clinical (fifth and sixth years): preventive and social medicine (including industrial medicine); forensic medicine (including toxicology); ophthalmology; obstetrics and gynaecology; dermatology and venereal diseases; otorhinolaryngology; paediatrics; radiology; physiotherapy; anaesthetics; psychiatry; clinical pathology; history of medicine; medical ethics; medicine (including applied pharmacology and clinical physiology) and surgery (including surgical anatomy and surgical pathology).

(5) Medical training (seventh year) in hospitals and rural centres.

## Examinations, qualification and licence to practise

On completion of the courses for each of the four parts of the curriculum, a student must pass an examination covering the subjects studied in that part. After passing the final examination and completing the year of medical training, a student receives the degrees of M.B., B.Ch., which entitle him to practise in Egypt. A period of internship after graduation is not compulsory.

Higher diplomas and degrees in practically all branches are awarded after a graduate has been in practice for a number of years, has presented a thesis, and has passed additional examinations.

Medical graduates must serve the State for a period of two years before they may set up in private practice. Most graduates carry out this period of service in rural centres and hospitals.

Nationals with foreign diplomas may be permitted to practise if their diploma or degree is considered equivalent to the M.B., B.S. awarded in the United Arab Republic; they are then given a special licence by the Ministry of Public Health.

Foreigners with foreign qualifications and foreigners qualified in Egypt may be permitted to practise under certain conditions, outlined in Law No. 491 of the year 1955.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (LE)</i>
Faculty of Medicine Alexandria University ALEXANDRIA	1942	136	2010	352	240	10
Faculty of Medicine Assyût University ASSYÛT	1960	24	296	198	—	10
Abbasia Faculty of Medicine University of Ein Shams CAIRO	1947	154	2491	287	240	10
Kasr-el-Aini Faculty of Medicine Cairo University CAIRO	1866	285	3220	422	335	10
Mansourah Faculty of Medicine MANSOURAH	1962/63	—	100	100	—	10
Tanta Faculty of Medicine TANTA	1962/63	—	100	100	—	10



## UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

### Introductory data\*

Population . . . . .	52 352 000
Number of medical schools . . . . .	27
Number of physicians . . . . .	56 431
Number of medical graduates . . . . .	2 649
Population per medical school . . . . .	1 939 000
Population per physician . . . . .	930

\* 1960 figures.

Medical education in the United Kingdom lasts for six years and leads to the university degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B., M.B., B.Chir. or M.B., B.S.).

### Administration

British universities are autonomous bodies, each governing itself, managing its own finances, arranging its own curriculum, and appointing its own staff. They are independent of State control, although they receive government aid in the form of grants.

The administrative organs vary from one university to another, but most have a University Court as the chief governing body (responsible for over-all management and financial affairs), a Senate (responsible for academic matters), and an Assembly of graduates (which may express opinions and give advice). The Court may function through a smaller executive body known as the Council. The nominal head of a university is the Chancellor, a position of honour usually held by some prominent public figure, but the chief executive and academic head is a permanent full-time official, generally known as the Vice-Chancellor.

Each faculty has a Board, for the consideration of its own academic affairs, and is headed by a Dean, who is elected by the Board. Generally, the Dean remains in office until he retires from academic life, but at some medical schools he is elected for a specified period. At some schools, the Dean is a full-time official; at others, he combines the duties of Dean with teaching.

Each major department is headed by a professor, who is the occupant of the Chair in that subject. In addition to the ordinary Chairs, there are "Regius Chairs", most of which are of ancient royal foundation. A Chair may also be founded by a person who leaves money for that purpose, or may be named after some famous person historically connected with the university. The title of professor is held only by the occupant of a Chair—that is, the head of a university department. Second to him is the Reader, and then come the Senior Lecturer, the Junior Lecturers, the Demonstrators, and the Tutors. Some professors in the clinical subjects hold their appointments on a part-time basis and are allowed to

engage in private practice, whereas the teaching staff in the pre-clinical subjects are normally employed full time.

More than half of the students receive financial assistance in the form of scholarships from public or private funds, which cover their fees and expenses, wholly or in part. Some of these awards are based on the financial needs of the student and his family, some on academic achievement, and others on competitive examinations.

The university year is divided into three terms of ten to eleven weeks each, running from October to December, from January to March, and from April to June.

### Conditions of admission

In order to obtain admission to a university in the United Kingdom, a student must pass either the entrance examination held by that university or an alternative exempting examination, such as, for example, the Examination for the General Certificate of Education (G.C.E.). The examinations for the G.C.E. are conducted by a number of approved examining bodies over whom the Minister of Education exercises a co-ordinating authority. Papers are provided at two levels, ordinary and advanced. Students take the examination at the end of their six-year secondary-school course, generally at the age of 17-19. (Previous primary education is of six years' duration.) The minimum requirement for entrance to any faculty includes English; a language other than English; either mathematics or an approved science; and, lastly, three other approved subjects. Two out of these six subjects must be passed at advanced level. For entrance to a faculty of medicine, most universities require that two of the subjects should be chemistry and physics.

Because the number of applicants exceeds the number of vacancies, a selection process has been adopted, based upon the applicant's performance in the entrance examination, his past record, a confidential report from his school headmaster, and a personal interview, to which about one-third of the applicants are invited. The method of interview, its duration, and the size and composition of the interviewing board vary from one medical school to another. There is no centralized system of selection, and each school exercises its own policy on admissions.

Foreign students are eligible for enrolment in medical schools.<sup>1</sup> They must apply to the school for admission, and pass the entrance examination or show evidence that they have passed an examination accepted by the university as equivalent.

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<sup>1</sup> The conditions governing the admission of foreigners to the United Kingdom are the following. All foreigners entering the United Kingdom must have a passport or travel document valid for travel to the United Kingdom and for return to their own country; they also need a visa unless their country has a visa abolition agreement with the United Kingdom.

The power to grant leave to land in the United Kingdom is vested by law in the Immigration Officer at the port of arrival and all foreigners (including those with visas) must satisfy him as to the purpose and duration of their visit. A foreign medical student would have to satisfy the Immigration Officer that a course of study had been arranged and that he could maintain himself throughout his stay. A foreign doctor who wishes to practise medicine in the United Kingdom would have to produce appropriate documentary evidence—e.g., of registration and of acceptance for a medical appointment in a hospital.

## Curriculum

The six-year curriculum is divided into four periods—namely, pre-medical, pre-clinical, introductory clinical, and clinical. Each university has its own regulations for the course to be followed for its particular degree or diploma, but all recognize certain basic principles.

The pre-medical period, covering the first year of the course, is devoted to the study, by lectures and practical work, of chemistry, physics, botany, and zoology.

The pre-clinical period, covering the second year of the course and first two terms of the third year, is taken up with anatomy, embryology, histology, physiology, organic chemistry, and biochemistry. Many schools include, during this period, instruction in psychology.

The third term of the third year is known as the introductory clinical period, and is designed to introduce a student to clinical work. There is considerable variation among schools in the subjects taught in this period, or even as to whether such a term is specifically designated a period. However, most schools include methods of clinical examination and history-taking, as well as a certain amount of instruction in pathology, bacteriology, hospital nursing and hospital routine, pharmacology, practical pharmacy, psychology, psychiatry, public health and social medicine, chemical pathology, and radiology in their schedule.

The clinical period proper begins with the first term of the fourth year, and occupies the last three years of the course. During that time, a student performs practical work in hospital, as a clerk attached to a medical or paediatric unit, usually known as a "firm", or as a dresser attached to a surgical or obstetrical firm. He is allotted a number of patients (usually four to six), and takes their histories, records the results of examinations, keeps progress notes, carries out routine dressings, and performs minor laboratory tests. The importance of the task entrusted to him increases as his skill and knowledge grow. He receives daily bedside instruction from the chief of the firm and from other members of the staff. They supervise his work, question him on his cases, check his observations, and cross-examine him on his notes. An important feature of clerkships and dresser-ships is the opportunity they give the student for personal, daily contact with a group of patients, for whom he is in part responsible and whose progress he can observe from their admission to their discharge.

A teaching hospital is divided into a number of firms, each containing about thirty to fifty beds. The staff of the unit or firm is composed of the physician or surgeon ("the chief"), the assistant (who is also of recognized specialist status), one or more registrars, or clinical tutors<sup>1</sup> (who are training for specialization), house physicians or house surgeons (who are recently qualified graduates), six to eight students, and a nursing staff. Each firm is an autonomous unit equal in status to other firms as regard teaching and clinical work. The chiefs of one medical firm and one on the surgical side are likely to be university professors, with their units having more staff and better facilities for research than, but with no jurisdiction over, other firms. A professor is the head of a university department, but at the teaching hospitals he is head of his own unit only.

<sup>1</sup> The registrar, or clinical tutor, corresponds approximately in status to the *chef de clinique* in France and to the "resident" in the USA.

Concurrently with his ward work, a student attends lectures and demonstrations in pathology and bacteriology, pharmacology and therapeutics, psychiatry, forensic medicine and toxicology, medical ethics, and public health, and receives systematic instruction in the theoretical aspects of the clinical subjects which he is studying at close quarters in the wards. The order in which the various subjects are studied, and the time devoted to each, are different at every school.

### Examinations

Major qualifying examinations are held at the end of each corresponding period of studies, and are known as the Medical (or Professional) Examinations.

At frequent intervals throughout the courses, class examinations aimed at verifying the students' progress are held. A student who shows poor results in his class examinations or who has not attended the requisite minimum number of classes is not admitted to the Medical (Professional) Examinations.

All examinations are written and oral, and, when appropriate, clinical or practical. In the Medical (Professional) Examinations, professors from other universities (External Examiners) participate for all subjects.

The regulations dealing with failure in the Medical Examination are different at every university. In general, a student may not proceed to the next period of the curriculum until he has passed the Medical Examination for the preceding stage. The number of times a student may present himself for re-examination is limited.

### Qualification and licence to practise

After passing his Final Examination, a student is eligible for the degrees of Bachelor of Medicine and Bachelor of Surgery. These two degrees constitute a single qualification, generally awarded on a single occasion.

The acquisition of a registrable qualification leads to provisional registration only. The newly qualified doctor must serve for one year as a resident or intern in an approved hospital before he receives the full registration which makes him a duly qualified medical practitioner. It is not the possession of a degree or diploma, but the act of registration with the General Medical Council, which renders the practitioner legally qualified to practise.

The same provisions apply to foreigners holding a recognized British qualification. Holders of recognized foreign qualifications may, without further examination, be granted temporary registration by the General Medical Council to work in an approved hospital or institution in the United Kingdom. Temporary registration is granted in respect of a specific hospital appointment and is not valid for any other employment. It can only be granted to persons residing temporarily in the United Kingdom.

Many foreign qualifications are recognized for purposes of temporary registration, but for the purposes of full registration the only qualifications at present recognized are those of certain universities in Commonwealth or former Commonwealth countries with which the United Kingdom has reciprocal arrangements. However, holders of foreign qualifications that are not recognized for full or temporary registration may find, after they apply to sit for the examination of British

licensing bodies, that their qualifications exempt them from certain courses of study.

The degree of Doctor of Medicine (M.D. or D.M.) is a post-graduate qualification obtained by writing a thesis or passing a special examination. It is not required for practice.

Standards of medical education are defined and regulated by the General Medical Council, which maintains, in addition, a Medical Register of persons legally entitled to practise medicine, surgery, and obstetrics. To have his name entered on the Register, a person must possess a *registrable qualification*, which means that a degree or diploma must have been granted, after examination, by a recognized licensing body—that is, a university or a medical corporation. The Medical Register is divided into three categories for those graduates who obtain their registrable qualifications from recognized licensing bodies in, respectively, (1) the United Kingdom of Great Britain and Northern Ireland and the Republic of Ireland; (2) countries of the British Commonwealth outside Great Britain (Commonwealth List); and (3) other countries (Foreign List). The General Medical Council from time to time issues rosters of recognized licensing bodies in these three categories.

Registrable medical qualifications in the United Kingdom are also granted by the medical corporations—namely, the Royal College of Physicians of London, the Royal College of Surgeons of England, the Royal Colleges of Physicians and Surgeons of Edinburgh, the Royal Faculty of Physicians and Surgeons of Glasgow, and the Society of Apothecaries of London.<sup>1</sup> So far as undergraduate medical education is concerned, the corporations are examining bodies only. They do not provide undergraduate medical training, and students prepare for the corporations' examinations by taking courses at university faculties of medicine. The corporations hold examinations in both the pre-clinical and clinical subjects, but to obtain the diploma of any particular corporation only the final examination must be taken under the auspices of that body.

The Royal College of Physicians of London and the Royal College of Surgeons of England have formed a joint examining body called the English Conjoint Board. It holds examinations leading to the Licence of the Royal College of Physicians of London and Member of the Royal College of Surgeons of England, which together constitute a registrable qualification (L.R.C.P., M.R.C.S.), known colloquially as "the Conjoint". However, the more important role of the Royal Colleges of Physicians and of Surgeons is to conduct examinations for post-graduate specialization in medicine and in surgery.

The Royal Colleges of Physicians and Surgeons of Edinburgh and the Royal Faculty of Physicians and Surgeons of Glasgow have similarly formed the Scottish Conjoint Board, which conducts examinations for the joint qualification of L.R.C.P. and L.R.C.S. Edin., L.R.F.P.S. Glas., known as the Scottish triple qualification.<sup>2</sup> The Society of Apothecaries of London also confers a registrable

<sup>1</sup> For Irish licensing bodies whose degrees and diplomas are registrable in the United Kingdom, see the chapter on Ireland, page 157.

<sup>2</sup> Each of the three Scottish corporations grants its own diploma separately, after examination, but these single diplomas are not registrable with the General Medical Council.

diploma—namely, the Licentiate in Medicine and Surgery of the Society of Apothecaries of London (L.M.S.S.A. Lond.).<sup>1</sup>

<sup>1</sup> Persons who hold this medical qualification must not be confused with "apothecaries" in the meaning of "druggists", although the Society of Apothecaries was originally composed of druggists.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pounds)</i>
<b>ENGLAND AND WALES</b>						
The Medical School University of Birmingham Edgbaston BIRMINGHAM 15	1825	400*	468	99	117**	66
Faculty of Medicine University of Bristol BRISTOL 8	1879	48 f 110 p	282	60	49	67
Cambridge University Medical School Tennis Court Road CAMBRIDGE	Twelfth century	32 f 22 p	418 m 46 f	150	191	85
The Welsh National School of Medicine 34, Newport Road CARDIFF	1931 †	42 f 63 p	238 m 111 f	41 m 17 f	61	76.10.0
School of Medicine University of Leeds Thoresby Place LEEDS 2	1831	183	355	80	64	67
Faculty of Medicine University of Liverpool LIVERPOOL 3	1834	89 f 149 p	367 m 153 f	74 m 26 f	86	70
Charing Cross Hospital Medical School 62-65, Chandos Place LONDON W.C.2	1823	32 f 54 p	235	45	30	84
Guy's Hospital Medical School London Bridge LONDON S.E.1	1769	70 f 170 p	1040	208	170	69.9.0

\* Including dental staff

\*\* Including dental graduates.

† Year of granting of Royal Charter.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (£ Pounds)</i>
<b>ENGLAND AND WALES</b> <i>(continued)</i>						
King's College Hospital Medical School Denmark Hill LONDON S.E.5	1831	17 f 52 p	140 m 28 f	41 m 9 f	43	66*
The London Hospital Medical College Turner Street LONDON E.1	1785	46 f	581	119	81	72
The Middlesex Hospital Medical School Cleveland Street LONDON W.1	1835	121 f 98 p	379 m 79 f	73 m 13 f	75 m 6 f	60
Royal Free Hospital School of Medicine Hunter Street LONDON W.C.1	1874	52 f 90 p	76 m 362 f	10 m 77 f	74	65
The Medical College of St Bartholomew's Hospital West Smithfield LONDON E.C.1	1662	79 f 66 p	650	100	99	65
St George's Hospital Medical School Hyde Park Corner LONDON S.W.1	1733	21 f 56 p	98 m 22 f	37	42	67.7.0**
St Mary's Hospital Medical School Norfolk Place Paddington LONDON W.2	1854	62 f 55 p	342 m 101 f	68 m 24 f	62 m 12 f	69
St Thomas's Hospital Medical School Lambeth Palace Road LONDON S.E.1	1553	53 f 64 p	333 m 59 f	81 m 13 f	61 m 11 f	60
University College Hospital Medical School University Street LONDON W.C.1	1907	80	250	79	80	84
Westminster Medical School 17, Horseferry Road LONDON S.W.1	1849	80	160 m 26 f	46	53	66

\* This was to be increased in October 1962.

\*\* An increase of up to 15 % was to be introduced after October 1962.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pounds)</i>
<b>ENGLAND AND WALES</b> <i>(continued)</i>						
Faculty of Medicine Victoria University of Manchester MANCHESTER 13	1814	199 f 154 p	608 m 201 f		81	67
The Medical School King's College in the University of Durham Queen Victoria Road NEWCASTLE-UPON-TYNE 1	1834	80 f 73 p	331 m 108 f	60 m 23 f	78	75
Oxford University Medical School OXFORD	Thirteenth century	140 f 63 p	269 m 47 f	78	74	50
Faculty of Medicine University of Sheffield 304, Western Bank SHEFFIELD 10	1828	45 f 101 p	214 m 92 f	34 m 19 f	43 m 8 f	43.10-81
<b>NORTHERN IRELAND</b>						
Faculty of Medicine Queen's University of Belfast 25, University Square BELFAST	1849	142 f 117 p	377 m 106 f	60 m 28 f	50 m 13 f	71
<b>SCOTLAND</b>						
Faculty of Medicine University of Aberdeen Broad Street ABERDEEN	1505	346 f 90 p	2256*	568*	472*	62.12.6
University of St Andrews School of Medicine DUNDEE	1898	81 f 122 p	286 m 118 f	81	69	65
Faculty of Medicine University of Edinburgh 18, Teviot Place EDINBURGH 8	1726	169 f 116 p	715 m 208 f	153	142	62.12.6
Faculty of Medicine University of Glasgow GLASGOW	1637	151 f 120 p	740 m 267 f	163	152	ca 70

\*All courses.

NOTE: The twelve London medical schools together constitute the Faculty of Medicine of the University of London.



## UNITED STATES OF AMERICA

## Introductory data\*

Population . . . . .	180 676 000
Number of medical schools . . . . .	86
Number of physicians . . . . .	234 294**
Number of medical graduates . . . . .	7149
Population per medical school . . . . .	2 101 000
Population per physician . . . . .	780**

\* 1960 figures.

\*\* 1961 figures; excluding 11 639 physicians retired or not in practice.

Medical education in the United States of America lasts for four years and leads to the degree of Doctor of Medicine (M.D.). There are a few schools for the basic medical sciences only which offer the first two years of the course. Their students are readily integrated into the third-year classes of those schools in which the full course is given.

Through the voluntary effort of the medical profession and of medical educators, previously existing substandard schools have been closed and medical education is now kept to a high standard through a periodic inspection programme, which is carried out by the Council of Medical Education and Hospitals of the American Medical Association and the Association of American Medical Colleges.

## Administration

About one half of the medical schools are owned and operated by state<sup>1</sup> or municipal governments, and the remainder by private non-profit corporations or religious organizations. The financial support of schools within the second category comes largely from student fees and endowments, the latter in part from graduates (*alumni*) as well as from other private sources. In addition, the state and municipal schools receive subsidies out of public funds. To all schools, regardless of the primary source of funds, the US Public Health Service makes grants for the support of individual research projects, for the financing of research facilities, and for special training. These funds have also been used for basic science facilities and for hospital space. In addition, Howard University, in Washington, D.C., receives direct appropriations from Congress.

Most medical schools are component parts of universities, but a few hold individual charters as autonomous institutions. Each is headed by a Dean, who is usually appointed by the top administrative body of the university or autonomous school, generally known as the Board of Trustees, or Regents, or Supervisors. That Board formulates the broad policies of the university or school,

<sup>1</sup> The term "state" in this sense refers to one of the 50 states or to Puerto Rico, and not to the United States Federal Government, which does not operate any medical schools.

and its composition reflects representation of various interested groups including, in some instances, government. Where the school of medicine is part of a university, the Dean is administratively responsible to the President, Chancellor, or Rector of the university and, through him, to the Board. There are now several examples of establishing in a university a unit of medical affairs, headed by a Vice-President, and containing schools of medicine, nursing, dentistry, public health and others, as well as one or more hospitals.

Within each school of medicine, there is a Technical or Academic Board, composed usually of the heads of departments, which advises the Dean in the technical operation of the school, including appointments of professors. Such Boards or Councils have the important duty of keeping the curriculum under constant review, a task often aided by the designation of a small representative group of the faculty known as the Curriculum Committee.

In all medical schools, the traditional organization into teaching departments is followed, but additional functions, such as student affairs, post-graduate education, public information, and co-ordination of audio-visual activities are delegated to persons directly responsible to the Dean. In some cases, an associate dean or an assistant dean may take over one or more of these responsibilities. A corps of medical school administrators is thus developing who may or may not carry actual teaching duties as well as administrative functions, but who are drawn largely from the ranks of teachers.

The ranks of teaching personnel are composed of professors, associate professors, assistant professors, lecturers, instructors, associates, assistants, fellows, etc. In many departments, there are a number of professors, one of whom is designated the Head or Executive Officer of the department.

Practically all the teaching personnel (at least those of senior rank) covering the pre-clinical sciences are now employed full time, and their proportion in the other subject courses seems to be increasing. This means that the income of a large number of teachers is derived solely from university salaries, and that they engage in little or no private practice in addition.

The academic year usually begins in September and ends in June, except that a number of schools now require all-the-year-round attendance during the clinical period.

### Conditions of admission

Primary-school education generally takes the pupil from the age of 6 to the age of 14 years, and secondary-school to the age of 18. After finishing his secondary studies, a candidate for medical school must complete at least three years of higher education in a college or university, with special emphasis on natural and physical sciences, social sciences and the humanities, languages, mathematics, and general cultural studies.

The period of college or university studies—attended by those students who are candidates for medical school—is sometimes referred to as the “pre-medical” period although it is, in fact, considered to be one of general education. A student who plans to enter the field of medicine tends to follow most of his college or university courses together with colleagues who are planning careers in other professions, rather than to segregate himself at an early stage. However, the

conditions of admission, as formulated at present by the medical schools, foster an early grouping and separation of such students, and a less rigid pattern of required subjects is now being advocated. Increased emphasis is also being placed on broad cultural studies rather than a possible over-concentration on the natural sciences.

Although the minimum requirement for admission to medical school is three years of university studies, including certain specified courses, a student has, in most cases, already completed the entire four-year course before entering medical school, and has obtained the degree of Bachelor of Arts or Bachelor of Science. Under certain conditions, a student may have his first year of medicine credited as equivalent to a fourth year at college or university, thus enabling him to earn his Bachelor's degree and his M.D. degree in seven years.

A student applies for admission to a medical school in the USA when he has completed his pre-medical work—that is, usually, during his third or fourth year at college or university. This is applicable even if the medical school is part of the university at which the pre-medical courses are followed. As the number of candidates exceeds the number of places, medical schools have introduced selection processes, resulting in the entrance to medical studies of many candidates possessing higher than minimum qualifications. There is, moreover, no assurance that a candidate who has completed all the requirements for admission will be accepted, even by the medical school of the university where he pursued his preliminary studies.

Academic achievement has generally been the most important factor in the selection of students, but other criteria too have been utilized in various institutions. In personal interviews by admission committees or other representatives of the medical school, attempts have been made to assess a candidate's general qualities, his character, and his suitability for the study of medicine. Most medical schools require candidates to sit for a national medical college admission test, which is given under the direction of the Educational Testing Service of Princeton. In some cases, additional tests have been devised as an adjunct in the evaluation process. Although no universally applicable system exists as yet a great deal of research is being carried out on selection procedures.

Foreign students are in direct competition with nationals and are considered for admission to medical schools on the same basis. However, increasing numbers of state-supported schools either reserve all places for state residents or give first priority to residents. Moreover, practically all schools require a standard aptitude test and some type of personal interview; foreign students resident outside the USA, therefore, might not be available for such a test and interview.

## Curriculum

The basic medical sciences are presented largely during the first two years of medical studies, and students perform practical work in anatomy, bacteriology, biochemistry, histology, pathology, pharmacology and physiology during that period. Although some demonstrations are given by the professors, larger proportions of time are given over to individual student performance. During the final two years, the curriculum consists of the clinical subjects, except for an introductory course in medicine or symptomatology (known as physical diagnosis)

given by some schools in the latter half of the second year. Affiliation between the medical school and one or more hospitals provides facilities for practical work in the clinical subjects, as didactic teaching occupies even less time during these years. Students are assigned in small groups to meet their teachers in the wards and in the out-patient departments, where they participate progressively in the diagnosis and treatment of patients. Affiliation of the medical school with government agencies, such as the Department of Health, Education, and Welfare, and with non-official social and health agencies, helps to provide further facilities for studying the preventive and social aspects of medicine.

### Examinations

Class examinations are held at intervals, at the discretion of the professor, during each subject. Generally, a final written examination is given at the end of each particular course. There is no system of external examiners.

An unofficial agency—the National Board of Medical Examiners—provides a qualifying examination of uniform and high quality for which medical students may enrol on a voluntary basis. A candidate may take Part I of the National Board examination in the basic medical sciences after he has completed two years of his medical course. Part II of this examination, covering the clinical subjects, may be taken after graduation, whereas Part III, devoted in the main to practical work, can only be taken after a candidate has performed at least one year's internship. Candidates who pass all three parts of the examination obtain the diploma of the National Board of Medical Examiners. In most states, holders of that diploma are awarded a licence without further examination, but it should be understood that authority to license rests with the individual states.

### Qualification and licence to practise

Completion of four years of medical studies, including at least two years of practical clinical work as observer, extern or clinical clerk, leads to the degree of Doctor of Medicine. An additional year of hospital experience following graduation, not necessarily in a hospital connected with a medical school, is known as "internship" and is compulsory for licensure to practise in some states. Practically all young graduates now take at least one such year of internship voluntarily. An intern is provided with room, board, and laundry facilities, and in some cases a nominal allowance is added. Although most internships are of the "rotating" type, consisting of several months of service in medicine, surgery and paediatrics, some internships offer a "straight" service in one of these only, or in some other subjects. The length of internships varies, ranging from one to three years.

The degree of M.D. (Doctor of Medicine) is the initial, and generally the only, degree awarded by medical schools in the United States of America. For those persons interested in obtaining specialist training, a few words are added here on the system of *residency*. Many hospitals, particularly those connected with medical schools (the so-called "teaching hospitals") offer such a programme of *graduate* training, ranging from two to five years. Although residencies are "straight" services, steps are being taken to develop a "rotating" residency to

equip the young doctor more adequately for general practice. During his period of residency, he advances through the ranks from intern to "assistant resident physician" (or surgeon, or paediatrician, as the case may be) to become "resident" and "chief resident" in a large institution. His responsibilities increase progressively through the years, and at the end of his service he may establish himself as a specialist. There are now, however, special boards that review and certify the qualifications of doctors who claim competence as specialists. The requirements and standards established by these boards are high, and serve to set apart the board-certified specialists from those who restrict their practice to a certain specialty. Important hospital and academic posts now tend to go largely to board-certified specialists.

The granting of a licence to practise medicine is a responsibility of the official public agency authorized by legislative act to carry out this function—in all cases a department of the individual state government. A medical degree is an academic distinction and does not, in itself, entitle its holder to practise his profession, as is the case in many other countries. There is no national United States licensing body, but most of the State Boards have made provision for reciprocity with others, and almost all admit holders of the National Board diploma to licensure without further examination. All medical licensing Boards require that a candidate should have graduated from an approved medical school, and thirty-three of these Boards require in addition the completion of a period of internship. Licensing and registration are dependent on the presentation of credentials, plus an examination, which may be oral, written or practical, although certain states may dispense with that examination if the applicant has already obtained a licence in a specified state. However, the extent to which this policy is applied varies, and ranges from states unwilling to accept reciprocity to those prepared to reciprocate with all other states.

Detailed requirements for licensure of physicians trained outside North America vary from state to state. All states permitting graduates of foreign medical schools to practise require the candidate to pass a written examination. Many states require a period of internship in a hospital in the USA, and most of these require the candidate to pass the qualifying examination of the Educational Council for Foreign Medical Graduates before he can begin his internship. United States citizenship, or a declaration of intent to become a citizen, is a requirement in most of the states.

Medical graduates are under no obligation to serve the State before engaging in private practice.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
ALABAMA Medical College of Alabama 1919, 7th Avenue S. BIRMINGHAM 3	1859	102 f 33 p 265 v	277 m 23 f	80	71	600 (R); 1000 (NR)

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
<b>ARKANSAS</b> University of Arkansas School of Medicine 4301, West Markham LITTLE ROCK	1879	88 m 201 p	320 m 15 f	86 m 6 f	85 m 1 f	514
<b>CALIFORNIA</b> Loma Linda University School of Medicine LOMA LINDA	1909	111 f 745 p	346 m 34 f	87 m 9 f	85	1412
School of Medicine University of California at Los Angeles Medical Center LOS ANGELES 24	1951	212 f 800 p	213 m 17 f	72	49	386 (R); 836 (NR)
University of Southern California School of Medicine 2025, Zonal Avenue LOS ANGELES 33	1885	97 f 1086 p	260 m 17 f	69	64	1400
Stanford University School of Medicine 300, Pasteur Drive PALO ALTO	1908	182 f 580 p	215 m 18 f	60	57	1005
University of California School of Medicine 3rd and Parnassus SAN FRANCISCO 22	1864	201 f 938 p	330 m 36 f	101	79	385 (R); 835 (NR)
<b>COLORADO</b> University of Colorado School of Medicine 4200, East 9th Avenue DENVER 20	1883	240 f 40 p	310 m 17 f	85	71	665 (R); 1055 (NR)
<b>CONNECTICUT</b> Yale University School of Medicine 333, Cedar Street NEW HAVEN 11	1810	310 f 444 p	295 m 15 f	80	72	1150
<b>DISTRICT OF COLUMBIA</b> Georgetown University School of Medicine 3900, Reservoir Road N.W. WASHINGTON 7	1851	160 f 436 p	358 m 39 f	117	101	1450
The George Washington University School of Medicine 1339, H Street N.W. WASHINGTON 5	1825	650	388	102	94	1200

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
<b>DISTRICT OF COLUMBIA</b> (continued)						
Howard University College of Medicine 520, W Street N.W. WASHINGTON 1	1868	91 f 151 p	329 m 39 f	100	69	591
<b>FLORIDA</b>						
University of Miami School of Medicine 1120, Anastasia CORAL GABLES 34	1952	175 570 v	286	88	56	1000 (R); 1500 (NR)
University of Florida College of Medicine GAINESVILLE	1956	122	178	53	40	600 (R); 1200 (NR)
<b>GEORGIA</b>						
Emory University School of Medicine 213, Woodruff Memorial Building ATLANTA 22	1854	148 f 16 p 500 v	276 m 6 f	69 m 1 f	71	1000
Medical College of Georgia University Place AUGUSTA	1828	145 f 127 p	467	100	115	600
<b>ILLINOIS</b>						
The Chicago Medical School 710, South Wolcott Avenue CHICAGO 12	1912	550	261	74	66	1267
Northwestern University Medical School 303, East Chicago Avenue CHICAGO 11	1859	44 f 928 p	519 m	130	131	1250
Strich School of Medicine of Loyola University 706, S. Wolcott Avenue CHICAGO 12	1915	41 f 426 p	310 m 13 f	88	82	950
University of Chicago School of Medicine 950, E. 59th Street CHICAGO 37	1898	329	268	73	75	1110
University of Illinois College of Medicine 1853, West Polk Street CHICAGO 12	1913	1441	734	200	169	450-600 (R)

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
<b>INDIANA</b> Indiana University School of Medicine 1100, West Michigan Street INDIANAPOLIS 7	1903	133 f 393 p	615 m 25 f	194	132	430 (R); 750 (NR)
<b>IOWA</b> State University of Iowa College of Medicine IOWA CITY	1870	287 f	432 m 14 f	120	96	420 (R); 840 (NR)
<b>KANSAS</b> University of Kansas School of Medicine 39th and Rainbow Boulevard KANSAS CITY 12	1905	154 f	375 m 13 f	99 m 4 f	90 m 2 f	475 (R); 935 (NR)
<b>KENTUCKY</b> University of Kentucky College of Medicine LEXINGTON	1960	59*	40*	40*	—	500 (R); 900 (NR)
University of Louisville School of Medicine 101, West Chestnut Street LOUISVILLE 2	1837	82 f 509 p	340 m 19 f	96	85	1025 (R); 1525 (NR)
<b>LOUISIANA</b> Louisiana State University School of Medicine 1542, Tulane Avenue NEW ORLEANS 12	1931	169 f 300 p	432 m 28 f	142	95	173
Tulane University School of Medicine 1430, Tulane Avenue NEW ORLEANS 12	1834	393 f 496 p	495	133	117	1300
<b>MARYLAND</b> Johns Hopkins University School of Medicine 725, N. Wolfe Street BALTIMORE 5	1893	267 f 431 p	300 m 23 f	78	69	1450
University of Maryland School of Medicine 522, West Lombard Street BALTIMORE 1	1807	127 f	360 m 14 f	98	88	705

\* As of June 1961.



<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
<b>MASSACHUSETTS</b> Boston University School of Medicine 80, East Concord Street BOSTON 18	1873	619	252 m 31 f	72	72	1300
<b>Harvard Medical School</b> 25, Shattuck Street BOSTON 15	1784	399 f 885 p	482	114	142	1568
<b>Tufts University Medical School</b> 136, Harrison Avenue BOSTON 11	1893	90 f 350 p	442	114	109	1200
<b>MICHIGAN</b> The University of Michigan Medical School ANN ARBOR	1850	345	720	200	179	620 <sup>*</sup> (R); 1230 <sub>2</sub> (NR)
<b>Wayne State University</b> College of Medicine 1401, Rivard DETROIT 7	1868	171 f 800 p	393 m 25 f	125	71	552 <sup>*</sup> (R); 982 <sub>1</sub> (NR)
<b>MINNESOTA</b> University of Minnesota Medical School MINNEAPOLIS 14	1883	284 f 489 p	483 m 25 f	140	122	505 <sub>7</sub> (R); 945 (NR)
<b>MISSISSIPPI</b> University of Mississippi School of Medicine 2500, North State Street JACKSON 6	1903	70 f 239 p	262 m 11 f	80	63	750 (R); 1150 (NR)
<b>MISSOURI</b> University of Missouri School of Medicine COLUMBIA	1840	86 f 58 p	279	81	59	450
<b>St Louis University</b> School of Medicine 1402, South Grand Boulevard ST LOUIS 4	1903	107 f 485 p	408 m 12 f	119	88*	1200
<b>Washington University</b> School of Medicine 660, South Kingshighway ST LOUIS 10	1842	271 f 604 p 411**	335	86	85	864

\* In 1961.

\*\* Residents or tutors.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
<b>NEBRASKA</b>						
The Creighton University School of Medicine 302, North 14th Street OMAHA 2	1892	33 f 225 p	266 m 8 f	77	64	1100
University of Nebraska College of Medicine 42nd Street at Dewey Avenue OMAHA 5	1881	59 f 43 p	308 m 10 f	90	81	525 (R); 765 (NR)
<b>NEW HAMPSHIRE</b>						
Dartmouth Medical School HANOVER	1797	56 f 58 p	47 m 1 f	24	—	1400
<b>NEW JERSEY</b>						
Seton Hall College of Medicine Jersey City Medical Center JERSEY CITY 4	1955	94 f 274 p	275 m 21 f	80	71	1050
<b>NEW YORK</b>						
Albany Medical College Union University 47, New Scotland Avenue ALBANY 8	1839	501	243	64	54	1200
Albert Einstein College of Medicine Yeshiva University 1300, Morris Park Avenue NEW YORK 61	1955	300 f 450 p + v	357	96	90	1300
State University of New York Downstate Medical Center 451, Clarkson Avenue BROOKLYN 3	1860	280 f 1049 p	530 m 45 f	150	134	700
University of Buffalo School of Medicine 3435, Main Street BUFFALO 14	1846	109 f 613 p	283 m 16 f	80	62	1200
Columbia University College of Physicians and Surgeons 630, West 168th Street NEW YORK 32	1767	277 f 808 p	425 m 45 f	118	116	1500
Cornell University Medical College 1300, York Avenue NEW YORK 21	1898	1130	308 m 19 f	85	86	1500

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
<b>NEW YORK (continued)</b>						
New York Medical College Flower and Fifth Avenue Hospitals Fifth Avenue and 106th Street NEW YORK 29	1860	241 f 634 p	490 m 22 f	120	112	1312
New York University School of Medicine 550, First Avenue NEW YORK 16	1841	378 f 1145 p	508	133	126	1397
The University of Rochester School of Medicine and Dentistry 260, Crittenden Boulevard ROCHESTER 20	1920	210 f 406 p	284	72	59	1250
State University of New York Upstate Medical Center 766, Irving Avenue SYRACUSE 10	1872	434	306		68	700
<b>NORTH CAROLINA</b>						
University of North Carolina School of Medicine CHAPEL HILL	1879	177 f 191 p	255 m 3 f	67	60	800-1200 (R); 1475-1975 (NR)
Duke University School of Medicine Duke Hospital DURHAM	1930	166	309 m 6 f	76	83	1200
The Bowman Gray School of Medicine of Wake Forest College Everett Street and Hawthorne Road WINSTON-SALEM 7	1902	106 f 91 p	199 m 16 f	54	53	1050
<b>NORTH DAKOTA</b>						
University of North Dakota School of Medicine GRAND FORKS	1908	25 f 32 p	78 m 2 f	42	—	210 (R); 480 (NR)
<b>OHIO</b>						
University of Cincinnati College of Medicine Eden and Bethesda Avenues CINCINNATI 19	1819	150 f 452 p	357	100	87	800 (R); 1050 (NR)
Western Reserve University School of Medicine 2109, Adelbert Road CLEVELAND 6	1843	542 f 524 p	292 m 26 f	80	85	1100

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
<b>OHIO (continued)</b>						
Ohio State University College of Medicine 1645, Neil Avenue COLUMBUS 10	1834	108 f 228 p	529 m 33 f	150	129	660
<b>OKLAHOMA</b>						
University of Oklahoma School of Medicine 801, Northeast 13th Street OKLAHOMA CITY 4	1900	100 f 555 p	359 m 15 f	104	85	500 (R); 1000 (NR)
<b>OREGON</b>						
University of Oregon Medical School 3181, Southwest Sam Jackson Park Road PORTLAND 1	1887	136 f 26 p 480 v	289 m 13 f	79	73	206 (R); 307 (NR)
<b>PENNSYLVANIA</b>						
Hahnemann Medical College and Hospital of Philadelphia 235, North 15th Street PHILADELPHIA 2	1848	68 f 176 p	384	110	93	1087
Jefferson Medical College of Philadelphia 1025, Walnut Street PHILADELPHIA 7	1825	760	646	175	164	1000
Temple University School of Medicine 3400, North Broad Street PHILADELPHIA 40	1901	320	517	140	125	1000
University of Pennsylvania School of Medicine Thirty-sixth and Pine Streets PHILADELPHIA 4	1765	552 f 616 p	492 m 23 f	125	130	1300 + 100 general fee
Woman's Medical College of Pennsylvania 3300, Henry Avenue PHILADELPHIA 29	1850	42 f 231 p	198	61	41	1200
University of Pittsburgh School of Medicine 3941, O'Hara Street PITTSBURGH 13	1886	162 f 603 p	373	101	97	1350
<b>PUERTO RICO</b>						
University of Puerto Rico School of Medicine School of Tropical Medicine Ponce de León Avenue SAN JUAN 22	1950	152 f 46 p	167 m 27 f	52	45	500

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
<b>SOUTH CAROLINA</b>						
Medical College of South Carolina 16, Lucas Street CHARLESTON 16	1824	80 f 115 p	288 m 15 f	80	71 m 1 f	592.50
<b>SOUTH DAKOTA</b>						
State University of South Dakota School of Medicine VERMILLION	1907	16 f 10 p 70 v	77	44	33	410 (R); 760 (NR)
<b>TENNESSEE</b>						
University of Tennessee College of Medicine 62, S. Dunlap MEMPHIS 3	1851	134 f 470 p*	521 m 47 f	200	186	1000 (R); 1416 (NR)
School of Medicine Meharry Medical College 1005, 18th Avenue North NASHVILLE 5	1876	67 f 68 p	257	65	65	869
Vanderbilt University School of Medicine Twenty-first Avenue South NASHVILLE 4	1873	150 f 250 p	196 m 6 f	56	51	1210
<b>TEXAS</b>						
The University of Texas Southwestern Medical School 5323, Harry Hines Boulevard DALLAS 35	1943	115 f 640 p	400	100	101	300 (R); 800 (NR)
The University of Texas Medical Branch School of Medicine 900, Strand Street GALVESTON	1891	138 f 86 p	475	144	140	360
Baylor University College of Medicine 1200, M. D. Anderson Boulevard HOUSTON 25	1903	150 f 800 p	334 m 14 f	84	67	955
<b>UTAH</b>						
University of Utah College of Medicine SALT LAKE CITY	1905**	126 f 355 p	211 m 1 f	55	48	504 (R); 855 (NR)
<b>VERMONT</b>						
University of Vermont College of Medicine Pearl Street BURLINGTON	1804	160	188	50	43	550 (R); 1500 (NR)

\* Includes 51 geographic full-time staff (i. e., those whose other duties must be performed on the premises).

\*\* Changed to four-year programme in 1942.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
<b>VIRGINIA</b>						
University of Virginia School of Medicine CHARLOTTESVILLE	1825	107 f 55 p	277 m 10 f	76	64	591
Medical College of Virginia Twelfth and Broad Streets RICHMOND 19	1838	110 f 367 p	317 m 14 f	84	95	699 (R); 1049 (NR)
<b>WASHINGTON</b>						
University of Washington School of Medicine SEATTLE 5	1946	186 f 329 p	276 m 11 f	72 m 3 f	68 m 4 f	525
<b>WEST VIRGINIA</b>						
West Virginia University School of Medicine MORGANTOWN	1912*	52 f 22 p	104 m 5 f	46	—*	597 (R); 1033 (NR)
<b>WISCONSIN</b>						
University of Wisconsin Medical School 418, N. Randall Avenue MADISON	1907**	167 f 181 p	313 m 27 f	100	83	420 (R); 800 (NR)
Marquette University School of Medicine 561, North 15th Street MILWAUKEE 3	1914	68 f 31 p 423 v	366 m 15 f	100	89	1050

\* Changed to four-year programme in 1960.

\*\* In 1927 first four-year class graduated.

## URUGUAY

## Introductory data\*

Population . . . . .	2 827 000
Number of medical schools . . . . .	1
Number of physicians . . . . .	3 116**
Number of medical graduates . . . . .	91
Population per medical school . . . . .	2 827 000
Population per physician . . . . .	870**

\* 1960 figures.

\*\* 1957 figures.

Medical education in Uruguay lasts for six years and leads to the degree of *Doctor en Medicina* (Doctor of Medicine).

## Administration

Although the University is under the jurisdiction of the Ministry of Education and Social Welfare (Ministerio de Instrucción y Previsión Social), it exercises full autonomy in technical, administrative and academic matters through its Central Council (Consejo Central). This body is composed of the Rector and of twenty members appointed by the various faculties. The Rector of the University is elected by vote of all the members of the Governing Councils (Consejos Directivos) of the various faculties.

The Governing Council of the Faculty of Medicine consists of twelve members (the Dean and representatives of the teaching staff, of the medical profession, and of the student body). The representatives of the teaching staff must be titular professors, and the representatives of the students must be physicians. The Dean, who presides over the Governing Council, is elected by that body for a period of four years.

The academic year begins in the first week of March and ends in the middle of November.

## Conditions of admission

In order to gain admission to the Faculty of Medicine, a candidate must have completed two years of preparatory, or pre-medical, studies after having obtained the *bachillerato* certificate (awarded after six years of secondary school, preceded by six years of primary education). There is no *numerus clausus*. However, from 1962 onwards students who fail in the first session of examinations, held at the end of the pre-medical course, will not be admitted.

### Curriculum

The curriculum is arranged as follows:

*First year* : anatomy; histology; embryology

*Second year* : physiology; biochemistry; biophysics; psychology

*Third year* : semeiology; morbid anatomy; physiopathology; bacteriology and parasitology

*Fourth year* : medicine; surgery; clinical medicine; clinical surgery; traumatology and orthopaedics; radiology; applied anatomy

*Fifth year* : medicine; surgery; clinical surgery; radiology; otorhinolaryngology; urology; obstetrics and gynaecology; endocrinology; pharmacodynamics and therapeutics

*Sixth year* : ophthalmology; radiology; gastro-enterology; neurology; psychiatry; dermatology and syphilology; medicine and clinical medicine; therapeutics; forensic medicine; phthisiology; paediatrics; paediatric surgery; hygiene.

### Examinations

Examinations are given at the end of each year in the subjects studied during that year. They cover the practical as well as the theoretical aspects of the course. A student who fails to pass an examination may try again two months later. There is no restriction as to the number of re-examinations a student may take.

### Qualification

After a student has completed the six-year medical course and has passed all the examinations, he is awarded the degree of *Doctor en Medicina*. This degree entitles the holder to practise medicine in Uruguay.

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees
Facultad de Medicina de la Universidad de la República Avenida General Flores 2125 MONTEVIDEO	1876	896	1733 m 1255 f	398	91	Nooe



## VENEZUELA

## Introductory data\*

Population . . . . .	7 365 000
Number of medical schools . . . . .	6
Number of physicians . . . . .	5 045
Number of medical graduates . . . . .	258
Population per medical school . . . . .	1 228 000
Population per physician . . . . .	1 500

\* 1960 figures.

Medical education in Venezuela lasts for six years and leads to the degree of *Médico Cirujano* (Physician and Surgeon) or of *Doctor en Ciencias Médicas* (Doctor of Medical Sciences).

#### Administration

Medical education is a responsibility of the Ministry of Education, which prescribes the content and disposition of the curriculum, the conditions of admission, the system of examinations, and so forth. An Academic Council (*Consejo Académico*), consisting of the deans of the various faculties, is responsible for organizing the curriculum.

Each university has its medical faculty, which, in turn, is composed of several schools. Each faculty is administered by a Dean, and each school by a Director. A Faculty Council (*Consejo de Facultad*), elected from among the professors, assists and advises the Dean.

All universities in Venezuela are represented in a body called the National Universities Council (*Consejo Nacional de Universidades*), composed of the Rectors and presided over by the Minister of Education, with a permanent secretariat in the Ministry. The National Universities Council establishes working groups for each of the universities' activities. One such working group—the *Núcleo de Trabajo de Medicina*—studies problems relative to medical education.

The academic year begins in September and ends in July; it consists of thirty to thirty-two weeks, excluding the examination periods.

#### Conditions of admission

For admission to medical studies a student must be in possession of the *bachillerato* certificate in sciences (obtained after five years at secondary school, preceded by six years of primary education). If he presents his certificate in the humanities, he must take an entrance examination in the sciences. The number of students admitted to the faculty is restricted.

Foreign students are eligible for admission under the same conditions as nationals.

## Curriculum

The new curriculum, approved in 1961, is arranged as follows:

*First year* : anatomy; histology and embryology; biochemistry; English

*Second year* : neuro-anatomy; physiology; microbiology; statistical methodology; psychology; elective subjects (humanities)

*Third year* : physiopathology; parasitology; preventive and social medicine (I); medicine (I), including semeiology and pathology (I); medical psychology

*Fourth year* : pathological anatomy; pharmacology and toxicology; medicine (II), including medical pathology (II), gastro-enterology, electroradiology, neurology and cardiology; surgery (I), including surgical pathology (II), traumatology and orthopaedics; obstetrics (I); tropical medicine

*Fifth year* : preventive and social medicine (II); forensic medicine and deontology; medicine (III), including phthisiology, cardiology and neurology; surgery (II), including gynaecology and urology, paediatrics and puericulture (I); obstetrics (II)

*Sixth year* : medicine (IV), including dermatology and syphilology, gastro-enterology, psychiatry, and electroradiology; surgery (III), including ophthalmology and otorhinolaryngology; paediatrics and puericulture (II); history of medicine.

Instruction in clinical medicine, surgery, obstetrics and paediatrics also includes the integrated teaching of pathology, semeiology, diagnosis, therapeutics and rehabilitation. Preventive and social medicine are taught together with other clinical subjects.

## Examinations

Examinations are oral, written, practical or clinical, according to the type of subject covered. They are held in July, at the end of each academic year, in respect of that whole year's work. A student who fails in any subjects, or, for a legitimate reason, is unable to take the examination, may sit for re-examination in September. If he fails in the September examination, he must devote a whole academic year to further study of the subject or subjects in which he failed.

## Qualification and licence to practise

After a student has completed the sixth year of the course and has passed the ordinary end-of-the-year examination covering that year's work, he receives the degree of *Médico Cirujano*, which entitles him to practise medicine in Venezuela.

A candidate who wishes to obtain the higher degree of *Doctor en Ciencias Médicas* must write a thesis, under the supervision of a member of the teaching staff of the faculty.

Graduates in medicine have no obligation to serve the State. According to legislation governing medical practice, those who wish to enter public office in a town of more than 10 000 inhabitants should, after graduation, in principle practise for one year in a town of less than 10 000 inhabitants.

Foreigners who have obtained their degree in Venezuela may practise immediately after graduation. Citizens of Venezuela and foreigners who hold foreign

medical qualifications must have their degree validated if they wish to practise in Venezuela. The number of examinations they have to sit for the validation varies according to the country in which the degree was obtained.

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Escuela de Medicina Universidad de Oriente BOLIVAR	1960	9 f	43 m 10 f	43 m 10 f	—	None
Escuela de Medicina "José Mara Vargas" Facultad de Medicina Universidad Central de Venezuela Hospital Vargas CARACAS	1960	2 f 18 p	80	80	—	None
Facultad de Medicina Universidad Central de Venezuela Ciudad Universitaria CARACAS	1827	52 f 425 p	1870	320	178	None
Facultad de Ciencias Médicas Universidad Nacional del Zulia Apartado 526 MARACAIBO	1946	5 f 145 p	423 m 125 f	156 m 50 f	29 m 6 f	None
Facultad de Medicina Universidad de Los Andes Avenida Tulio Febres Cordero MÉRIDA	1854	80	608	240	45	None
Facultad de Medicina Universidad de Carabobo VALENCIA	1958	26 f 60 p	151 m 74 f	100	—	None

## REPUBLIC OF VIET-NAM

### Introductory data\*

Population . . . . .	14 100 000
Number of medical schools . . . . .	1**
Number of physicians . . . . .	489
Number of medical graduates . . . . .	59
Population per medical school . . . . .	14 100 000
Population per physician . . . . .	29 000

\* 1960 figures.

\*\* Not including the Faculty of Medicine at Hué, which opened in 1961.

Medical education in the Republic of Viet-Nam lasts for six years and leads to the degree of *Docteur en Médecine* (Doctor of Medicine). A reform of the medical curriculum is now under consideration.

### Historical background

The Indochinese School of Medicine at Hanoi was created in 1904. It provided a four-year course from which *médecins indochinois* (Indochinese physicians) graduated. In 1933 the school began to provide a six-year medical course leading to the diploma of *Docteur en Médecine* (Doctor of Medicine), which was conferred by the University of Paris. Later, in 1941, the school was transformed into a *faculté mixte de médecine et de pharmacie* (combined faculty of medicine and pharmacy). In 1954, at the time of the political separation, this faculty was transferred to Saigon and amalgamated with an institute of higher learning that had been established in that city in 1947. The combined faculty now forms part of the University of Saigon.

### Administration

The University of Saigon is Government-owned and -operated. About two-thirds of the teaching staff are Vietnamese and about one-third French. The academic year runs from August to May and is divided into four terms. For the time being, French remains the language of instruction.

### Conditions of admission

In order to be admitted to the Faculty of Medicine and Pharmacy, a candidate must hold the *baccalauréat* (obtained after seven years of secondary education, preceded by five years of primary school), as well as a certificate to show that he has completed a course in physics, chemistry and biology. This course (the P.C.B.) is taken at the Faculty of Science after a student has obtained his *baccalauréat*.

Foreign students are eligible for admission on the same terms as Vietnamese students, but the diploma awarded them on completion of medical studies is not a State diploma.

### Curriculum<sup>1</sup>

The medical curriculum covers six years (twenty-four *inscriptions*) and is arranged as follows:

#### (1) Theoretical instruction

*First and second years* : medical chemistry and physics; anatomy; histology and embryology; physiology

*Third year* : medical pathology; surgical pathology; experimental medicine; morbid anatomy; bacteriology; parasitology

*Fourth year* : medical pathology; surgical pathology; obstetrical pathology; specialties

*Fifth year* : pharmacology; therapeutics; hygiene; forensic medicine; medical ethics; preventive medicine; specialties

*Sixth year* : practical training as a *stagiaire interne* (hospital probationer) at a hospital approved by the Faculty.

In addition to the *stages* for students, a competitive examination has been established for the *internat* in the hospitals of Saigon. Students who have twelve valid *inscriptions* and who have occupied the post of *externe* in a hospital for one year are entitled to enter for this examination. The maximum duration of such an appointment is four years.

#### (2) Practical instruction

Instruction in practical work is given in the various laboratories of the faculty (anatomy, morbid anatomy, histology, physiology, parasitology, biochemistry, medical physics, preventive medicine, bacteriology).

#### (3) Clinical instruction

Clinical instruction is given in the hospitals attached to the faculty for three hours every morning from the first year onwards.

All students are required to make regular attendance at the practical and clinical work, their assiduity being duly recorded in the marks given at the end of each term.

### Examinations

At the end of each year, a student sits for written, oral, and practical examinations. These end-of-the-year examinations take place in March-April. A student who fails may sit for a supplementary examination in July-August. On completing the sixth year of the course, candidates must take clinical examinations in medicine,

<sup>1</sup> It is intended that the curriculum of the new Faculty of Medicine at Hué should be the same as that of the Faculty of Medicine of the University of Saigon.

surgery, and obstetrics, which include the examination of patients and the writing of clinical observations. After passing all his examinations, a student must prepare a thesis, which has to be presented before an Examining Board, consisting of four members.

### Qualification and licence to practise

After a student has passed all examinations, and completed his one-year service as a *stagiaire hospitalier*, and after his thesis has been accepted, he receives the diploma of *Docteur en Médecine*. This also constitutes his licence to practise, and no further examinations need to be taken.

Vietnamese nationals and foreigners who hold a foreign medical degree, as well as foreigners who hold a Vietnamese degree, must be examined by the National Medical Council and the Ministry of Health of the Republic of Viet-Nam if they desire to obtain authorization to practise in the country.

Name and address	Year founded	Teaching staff	Total enrolment	Admissions	Graduates	Annual tuition fees (Piastres)
Faculté de Médecine Université de Hué Hué	1961	4 f 15 p	46 m 47 f	47	—	1063
Faculté mixte de Médecine et de Pharmacie Université de Saïgon 28, rue Testard SAIGON	1904	3 f 65 p	920	302	59	720

## Annex 1

CONDITIONS GOVERNING THE PRACTICE OF MEDICINE  
IN SOME COUNTRIES WITHOUT MEDICAL SCHOOLS

## Cameroon

Ordinance No. 60-9 of 2 February 1960, embodying regulations for the practice and organization of the professions of physician, dentist and midwife (*Journal officiel de l'Etat du Cameroun*, 17 February 1960, No. 1356, p. 217-223), states that no person may practise the profession of physician, dentist or midwife in Cameroon unless:

- (1) he holds the relevant diploma;
- (2) he is a Cameroonian citizen, except for the exemptions laid down for certain categories; and
- (3) he has been entered in the register of his professional association (unless he is an official or an unestablished official [*contractuel*] and has no private practice).

The Ordinance also requires the establishment of: (1) a National Association of Physicians [*Ordre national des Médecins*], which shall include all physicians entitled to practise in Cameroon, as well as all stomatologists; (2) a National Association of Dentists; and (3) a National Association of Midwives.

## Cyprus

According to the Medical Practitioners Law (No. 16 of 1952, No. 27 of 1956, and No. 39 of 1959), all medical practitioners in Cyprus must be registered by the Medical Council of Cyprus. Any person wishing to be registered must submit evidence that:

- (1) he has attained the age of 21 years;
- (2) he is a person of good character;
- (3) he is not by reason of any professional misconduct prohibited from practising medicine elsewhere, and
  - (a) he is the holder of a licence, degree or diploma that entitles him to be registered as a medical practitioner in the United Kingdom, or
  - (b) he is the holder of a licence, degree or diploma granted by any university, college or medical school and declared by order of the appropriate authority to be a recognized qualification; he has resided in Cyprus for a period of five years within the fifteen years immediately preceding the date of his application for registration, and, following graduation, has had at least eighteen months' experience as a resident house surgeon in a general hospital.

In exceptional cases, and on the recommendation of the Medical Council, exemption from the residence requirement may be granted.

Except for persons mentioned under (3)(a) above, the number of registered persons is limited. If the number of applicants for registration exceeds the prescribed maximum, the Medical Council may require applicants to undergo a qualifying examination in medicine, surgery, gynaecology, obstetrics and preventive

medicine; applicants who obtain the highest marks at this examination are selected for registration.

Special licence to practise medicine solely in a government or State-aided hospital may be granted, on the application of a scientific or medical institution and on the recommendation of the Medical Council, to any person who has studied medicine for at least five years in a university or medical school approved by the Director of Medical and Health Services, and has obtained a diploma approved by him.

Any person appointed by a foreign state to its consulate in Cyprus as a medical attaché is entitled to practise medicine, without registration, among the consular staff.

### **Federation of Malaya**

The practice of medicine in the Federation of Malaya is governed by the Medical Registration Ordinance No. 69 of 1952, No. 68 of 1953 and No. 17 of 1959. According to these ordinances the registration of medical practitioners by the Medical Council of the Federation of Malaya is obligatory. The following persons are entitled to be registered:

(1) any person who holds a degree, diploma or licence in medicine and surgery conferred by the University of Malaya [in Singapore];

(2) any person who holds any other degree or diploma which is recognized by the General Medical Council of the United Kingdom as a qualification entitling the holder to be registered in the Medical Register of the United Kingdom; and

(3) any person who, holding a degree or diploma or licence other than those mentioned above, is considered suitable for registration by the Medical Council and whom the High Commissioner, after consultation with the Medical Council, may by order declare to be entitled to registration, subject to such conditions and restrictions as may be prescribed by the order.

Applicants for full registration are required to submit a certificate showing that they have acquired practical experience, after having passed the qualifying examination in one or more approved hospitals or other institutions for a prescribed period. To enable such persons to be employed as residents in these institutions, provisional registration is issued to an applicant by the Registrar, after he has produced evidence that he has been selected for such employment.

### **Ghana**

According to Law No. 36 of 22 July 1959, relating to physicians and dentists, registration of such practitioners by the Medical and Dental Board of Ghana is obligatory. A person who wishes to be registered must produce evidence that:

(1) he holds any qualification listed in the United Kingdom Medical Act, 1956, or some other qualification recognized by the Medical and Dental Board and approved by the appropriate authority;

(2) he is of good character; and

(3) he is by law entitled to practise medicine in the country in which his qualification was granted, or would, if he were a national of that country, be so entitled.

Where, by the law of any country, practical experience is required after obtaining academic qualifications in order to obtain the licence to practise, the Medical



## **ANNEXES**

have qualified in Yugoslavia are authorized to practise only if they have obtained the approval of the federal or republic government (Federal or Republic Executive Council).

<i>Name and address</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Medicinski Fakultet Univerziteta u Beogradu (Medical Faculty, University of Belgrade) Studentski Trg 1 BEOGRAD (BELGRADE)	1920			562	574	None
Fakulteta za Splošno Medicino in Stomatologijo (Faculty of Medicine and Stomatology) Vrazov Trg 4/1 LJUBLJANA	1945	53 f 3 p	279 m 218 f	101 m 107 f	51 m 22 f	None
Medicinski Fakultet (Medical Faculty) Braća Taskovića 81 Niš	1960	4 f 23 p	200	200	—	None
Medicinski Fakultet (Medical Faculty) Hajduk Veljkova 12 NOVI SAD	1960	15 f 15 p	157	150	—	None
Medicinski Fakultet (Medical Faculty) RIJEKA	1956	57 f 37 p	298 m 160 f	61 m 60 f	18 m 4 f	None
Medicinski Fakultet Univerziteta u Sarajevu (Medical Faculty, University of Sarajevo) SARAJEVO	1946			273	106	None
Medicinski Fakultet Univerziteta vo Skoplje (Medical Faculty, University of Skopje) SKOPLJE	1947			150	145	None
Medicinski Fakultet Sveučilišta u Zagrebu (Medical Faculty, University of Zagreb) ZAGREB	1917	345	1245 m* 784 f*	479	294	None

\* Including students of stomatology.

## YUGOSLAVIA

## Introductory data\*

Population . . . . .	18 402 000
Number of medical schools . . . . .	8
Number of physicians . . . . .	11 386**
Number of medical graduates . . . . .	1 214
Population per medical school . . . . .	2 300 000
Population per physician . . . . .	1 600

\* 1960 figures.

\*\* Excluding 618 stomatologists.

Medical education in Yugoslavia lasts for five years and leads to the degree of Doctor of Medicine, known as *Lekar* in Serbo-Croat and *Zdravnik* in Slovenian.

## Administration

All the Yugoslav medical faculties are incorporated within the universities, which are financially supported by the Government. They function in accordance with the provisions of the Act on the Universities, Statute of Universities and Faculties. They are self-supporting and autonomous institutions set up in accordance with the principles of social management. Faculties are governed by Faculty Councils, Faculty Administrations and the Dean, who is also the executive officer. Professors are elected by the respective faculties, and appointed in each instance by the University Council.

The academic year is divided into two terms, running from October to January and from February to July.

The language of instruction is Serbo-Croat, with the exception of the faculty at Ljubljana, where it is Slovenian, and that at Skopje, where it is Macedonian.

## Conditions of admission

Nationals and foreigners possessing the secondary-school leaving certificate or corresponding qualifications may enrol in the faculties of medicine, under the same conditions and with the same rights. (School education in Yugoslavia consists of eight years at primary school and four years at secondary.)

Adults over 18 years of age possessing no corresponding school qualifications are also eligible for enrolment provided they have wide experience and have passed the entrance examination, or otherwise prove that they possess enough basic knowledge and ability to follow faculty instruction. There is no *numerus clausus*, but in some special cases, if there is no possibility of providing instruction for all the applicants, the Faculty or the University Council, following the regulations set by the government of the republic concerned, may propose that a *numerus clausus* be introduced as a temporary measure.

## Curriculum

The course of study in the eight medical schools in Yugoslavia differs in detail, particularly in respect of the amount of time devoted to the various subjects, but the following outline is generally applicable:

*First year* : chemistry; physics; biology; introduction to medicine; anatomy; sociology

*Second year* : anatomy; histology and embryology; physiology; biochemistry; history of medicine

*Third year* : pathological anatomy; pathological physiology; microbiology; virology and parasitology; introduction to clinical medicine; internal medicine and radiology

During the summer recess a compulsory one-month period of practical work in internal medicine is performed in clinics or in the larger hospitals.

*Fourth year* : internal medicine; physiology; infectious diseases; epidemiology; pharmacology; neuropsychiatry and medical psychology; dermatology; medical hydrology and climatology; physical medicine and rehabilitation; occupational medicine; general surgery

*Fifth year* : paediatrics and child surgery; general surgery; war surgery; obstetrics and gynaecology (compulsory six-day internship); ophthalmology; dentistry; hygiene; forensic medicine; social medicine.

After the fourth year practical work during the summer recess is compulsory in surgical clinics or in the surgical wards of the larger hospitals.

## Examinations

Examinations are held at the end of each subject period by the professors of the respective subjects. Examinations covering subjects of the first, second and third years of the curriculum have to be taken in regular examination sessions—in June, September and February. Examinations in the subjects of the fourth and fifth years, in addition to the regular sessions, may also be taken at other periods, with the exception of the summer months of July and August.

There are individual and group examinations. If a student fails in the prescribed examinations at the end of the academic year, he may sit for re-examination in October. He is admitted to the next academic year provided he fails in no more than one subject. Students are allowed to repeat their examinations, but the number of times they may do so is restricted.

No State examination is held at the end of the medical course, but a student who has passed all the course examinations is eligible for the degree of Doctor of Medicine.

## Qualification and licence to practise

After receiving his degree, the graduate must complete a one-year internship in a hospital. He is then authorized to practise medicine in Yugoslavia. Private practice has been abolished; all medical graduates work in the State health services.

Nationals with foreign diplomas may be permitted to practise after the necessary validation. Foreigners with foreign medical qualifications and foreigners who

and Dental Board may prescribe the conditions under which the holder of the medical degree becomes entitled to registration by giving his services for a specified period, either in Ghana or elsewhere, in one or more approved hospitals or other institutions.

### Liberia

According to Chapter 20 of the Liberian Code of Laws of 1956, relating to physicians, dentists and pharmacists, a person wishing to practise as a physician must be registered by the Medical Board. In order to be put on the register, applicants must produce a certificate or diploma from some recognized institution and, in addition, present evidence of being qualified in tropical medicine. The licence to practise is issued by the Bureau of Revenues, on production of the certificate of qualification by the Medical Board and on payment of a licence fee. The licence is renewable annually.

### Monaco

According to the existing provisions concerning the practice of medicine, no one may practise medicine or surgery in the Principality unless he is on the register established by order of the Minister of State, after consultation with a special commission appointed by the Minister. Candidates must submit to the commission either the French State diploma of Doctor of Medicine or a foreign diploma of recognized equivalence.

Any physician or surgeon applying for authorization must undertake to reside and practise in the Principality during the whole or part of the months of May, June, July, August, September and October. Authorized physicians may organize a roster system among themselves.

The licence to practise is issued by the Minister of State. All doctors of medicine authorized to practise in the Principality are required to register with the Medical Association.

The number of foreign physicians and surgeons authorized to practise is fixed at twenty-five. Nevertheless, in cases where additional staff are needed for the running of hospital departments, any physician or surgeon whose qualifications correspond to those required for the licence to practise may perform the duties of physician or surgeon, *chef de service*, *adjoint*, *assistant* or specialist attached to a given department. Such practitioners are registered separately with the Medical Association.

The licence to practise may be withdrawn, on the advice of the Medical Association, if the holder has not been in active practice in the Principality for a period of one year, without previously having obtained the permission of the Minister of State to absent himself or having provided a plausible reason for absence after the above-mentioned time-limit. The same applies to physicians and surgeons who have not fulfilled their obligations with respect to service to the State.

### Sierra Leone

According to the Medical Practitioners, Dentists and Druggists Ordinance No. 4 of 1958, the registration of medical practitioners in Sierra Leone is obligatory.

The following persons are entitled to be registered as medical practitioners:

- (1) the holder of any British, British-Indian or British-Colonial degree, diploma or licence entitling him to registration in the United Kingdom; and
- (2) the holder of a degree or licence in medicine or surgery of any medical school in Europe, the United States of America, or Japan, the degrees, diplomas and licences of which are recognized as entitling to registration by the General Medical Council of the United Kingdom.

### **Tanganyika**

According to the Medical Practitioners and Dentists Ordinance No. 15 of 1952 and No. 17 of 1953, the registration of medical practitioners by the Tanganyika Medical Board is obligatory. The following persons are entitled to registration:

- (1) the holder of any degree, diploma or licence recognized by the General Medical Council of the United Kingdom;
- (2) the holder of any medical diploma that may be recognized for the time being by the Tanganyika Medical Board;
- (3) the holder of the qualification of Licentiate in Medicine and Surgery of the University College of East Africa [Kampala, Uganda]; and
- (4) the holder of a diploma of Makerere College [Kampala, Uganda] in medicine, surgery and midwifery received before 1 December 1957.

Registration of any person as a medical practitioner is subject to fulfilment of one of the following conditions as the appropriate authority may decide:

- (1) that the candidate for registration has acquired post-graduate experience in the practice of medicine and surgery, or medicine, surgery and midwifery; or
- (2) that he has furnished sufficient guarantee that he possesses the requisite knowledge and skill for the efficient practice of medicine and surgery or medicine, surgery and midwifery.

### **Tunisia**

According to Law No. 53-38 of 15 March 1958, relating to the practice and organization of the medical, dental and veterinary professions, no person may practise medicine in Tunisia unless:

- (1) he has held Tunisian nationality for at least five years;
- (2) he holds a diploma of doctor of medicine endorsed by the Secretary for Public Health on the recommendation of a special board for the verification of qualifications, the membership of which is fixed by order of the Secretary of State for Public Health; and
- (3) he is registered with the Medical Association, of which all medical practitioners entitled to practise medicine in Tunisia must be members, with the exception of medical practitioners engaged in purely administrative duties.

## Annex 2

# NUMBER OF YEARS REQUIRED FOR MEDICAL DEGREE AND OTHER CONDITIONS FOR THE PRACTICE OF MEDICINE

Country	Education				Internship	Total for licence to practise	Other conditions	
	Primary	Secondary	Pre- medical	Medical			Rural service	State service
Afghanistan . . . . .	6	6	1	6	—	19	—	× <sup>a</sup>
Albania . . . . .	7	4	—	6	—	17	—	×
Argentina . . . . .	6	6	—	6	1	19	—	—
Australia . . . . .	6	5	—	6	—	17	—	—
Austria . . . . .	4	8	—	5	3	20	—	—
Belgium . . . . .	6	6	—	7	—	19	—	—
Bolivia . . . . .	6	6	—	7	—	20 <sup>b</sup>	1 <sup>b</sup>	—
Brazil . . . . .	4	7	—	6	—	17	—	—
Bulgaria . . . . .	7	4	—	6	—	17	—	×
Burma . . . . .	4	6	2	5	—	17	—	1
Cambodia . . . . .	6	7	1	6	—	20	—	<sup>c</sup>
Canada:								
English-speaking schools	6	6	3	4	1	20	} × <sup>d</sup>	—
French-speaking schools	7	8	—	4	1	20		—
Ceylon . . . . .	6	5	1	5	1	18	—	5
Chile . . . . .	6	6	—	7	—	19	—	—
China (Taiwan) . . . . .	6	6	—	6-7 <sup>e</sup>	—	18-19 <sup>e</sup>	—	× <sup>f</sup>
Colombia . . . . .	5	6	—	6	2 <sup>g</sup>	18 <sup>g</sup> -19 <sup>g</sup>	1 <sup>g</sup>	1 <sup>g</sup>
Congo (Leopoldville) . . . . .	6	6	1	6	—	19	<sup>c</sup>	<sup>c</sup>
Costa Rica . . . . .	6	6	2	5	—	19	1	—
Cuba . . . . .	8	5	—	6	—	19	1 <sup>h</sup>	—
Czechoslovakia . . . . .	8	4	—	6	—	18	—	×
Denmark . . . . .	7	5	—	7	1	20	—	—
Dominican Republic . . . . .	6	4	—	6	1 <sup>i</sup>	17	1 <sup>i</sup>	—
Ecuador . . . . .	6	6	—	7	—	19	<sup>c</sup>	<sup>c</sup>
El Salvador . . . . .	6	5	1	6	—	19 <sup>j</sup>	1 <sup>j</sup>	—
Fiji . . . . .	8	4	—	5	—	17	—	×
Finland . . . . .	4	8	—	6	1/2-1	18 <sup>1/2</sup> -19	—	× <sup>k</sup>
France . . . . .	5	7	—	6	—	18	—	—
Germany, Democratic Republic . . . . .	8	4	—	6	—	18	—	×

<sup>a</sup> Two years against each year of study at university.

<sup>b</sup> Licence to practise granted after one year of rural service.

<sup>c</sup> Information not available.

<sup>d</sup> Only in certain provinces; against each year of fellowship received.

<sup>e</sup> In National Taiwan University College of Medicine.

<sup>f</sup> Ten years for graduates of National Defense Medical Center.

<sup>g</sup> Two years of internship, or one year of rural or State service, or two years of specialization or teaching.

<sup>h</sup> One year since 1960; does not apply to physicians who graduated before this date, nor to holders of foreign medical diplomas.

<sup>i</sup> Either one year of internship or one year of rural service.

<sup>j</sup> Licence to practise granted after one year of rural service.

<sup>k</sup> At least four years for students who have received government loans for studies abroad.

## Annex 2 (continued)

Country	Education				Internship	Total for licence to practise	Other conditions	
	Primary	Secondary	Pre-medical	Medical			Rural service	State service
Germany, Federal Republic	4	9	—	5 ½	2	20½	—	—
Greece	6	5	—	6	1	18	—	—
Guatemala	6	5	—	7	1	19	1 <sup>a</sup>	—
Haiti	6	7	1	5	2 <sup>b</sup>	22 <sup>b</sup>	1 <sup>b</sup>	—
Honduras	6	5	1	5	1	19 <sup>c</sup>	1 <sup>c</sup>	—
Hong Kong	6	5	—	5	1	17	—	—
Hungary	8	4	—	6	—	18	—	×
Iceland	6	4	—	7	1	18½ <sup>d</sup>	½ <sup>d</sup>	—
India	13	—	2	5-5½	—	20-20 ½	—	×
Goa	4	7	—	5 ½	—	16½	—	—
Indonesia	6	6	—	7 <sup>f</sup>	—	19	—	3
Iran	6	6	—	7	—	19	×	—
Iraq	6	5	—	6	—	17	—	6
Ireland	6	6	1	5	1	19	—	—
Israel	8	4	1 ½	5 ½	—	19	—	—
Italy	8	5	—	6	½	19½	—	—
Jamaica	7	6	—	6	1	20	—	×
Japan	6	6	2	4	1	19	—	—
Korea	6	5	2	4	1 <sup>i</sup>	17	—	×
Laos	9	—	—	4	—	13	—	×
Lebanon	5	7	3 <sup>i</sup>	5½, 6 <sup>m</sup>	1 <sup>i</sup>	21 <sup>i</sup> , 18 <sup>m</sup>	—	—
Madagascar:								
local diploma course	10	—	1	4	—	15	—	—
French State diploma	5	7	—	6 <sup>n</sup>	—	18	—	—
Malta	6	5	2	5	—	18	—	—
Mexico	6	5	—	6	—	17½ <sup>o</sup>	½ <sup>o</sup>	—
Morocco	5	7	—	6	—	18	—	2
Netherlands	6	6	—	7	—	19	—	—
New Zealand	7	5	—	6	1	19	—	—
Nicaragua	6	5	—	8	—	19	—	—
Nigeria	6	6	1	5	p	p	p	p

<sup>a</sup> Scheduled to begin in 1962.<sup>b</sup> Internship is completed after the rural service; licence to practise granted thereafter.<sup>c</sup> Licence to practise granted after one year of rural service.<sup>d</sup> Licence to practise granted after six months of assistantship (locum tenens) to a district physician.<sup>e</sup> Required in some states.<sup>f</sup> In Djakarta reduced to six years on experimental basis.<sup>g</sup> Before setting up a private practice in the capital city graduates are required to practise elsewhere in the country for a given period.<sup>h</sup> Holders of government fellowships are required to serve the Government for at least five years.<sup>i</sup> Not compulsory.<sup>j</sup> May be requested in case of emergency.<sup>k</sup> Minimum five years for students who study on government scholarships.<sup>l</sup> Medical School, American University of Beirut.<sup>m</sup> French Faculty of Medicine and Pharmacy, St Joseph's University.<sup>n</sup> First year only taken in Madagascar.<sup>o</sup> Licence to practise granted after six months of rural service.<sup>p</sup> Information not available.



## Annex 2 (concluded)

Country	Education				Internship	Total for licence to practise	Other conditions	
	Primary	Secondary	Pre-medical	Medical			Rural service	State service
Norway . . . . .	7	5	—	6	1 ½	19½	—	—
Pakistan . . . . .	5	5	2	5	1 <sup>a</sup>	17	—	—
Panama . . . . .	6	6	3	4	1	20	1	—
Paraguay . . . . .	6	6	—	6	—	18	—	—
Peru . . . . .	7	5	2	7	—	21	—	—
Philippines . . . . .	4	6	2-4	5	—	17-19	—	—
Poland . . . . .	7	4	—	6	—	17	—	× <sup>b</sup>
Portugal . . . . .	4	7	—	6	1	18	c	c
Romania . . . . .	11		—	6	—	17	—	×
Senegal . . . . .	5	7	1	6	—	19	c	c
Singapore . . . . .	6	6	—	6	1	19	c	c
South Africa . . . . .	7	5	1 <sup>d</sup>	6	1	19	c	c
Spain . . . . .	5	7	—	6	—	18	c	c
Sudan . . . . .	4	8	1	5	2	20	—	×
Surinam . . . . .	6	6	—	7	—	19	c	c
Sweden . . . . .	4	9	—	6 ½	1 <sup>e</sup>	19½	—	—
Switzerland . . . . .	12-13		—	6 ¾	—	18½-19½	—	—
Syria . . . . .	6	7	1	6	—	20	—	2
Thailand . . . . .	7	5	2	4	1	19	—	—
Turkey . . . . .	5	7	—	6	—	18	—	× <sup>f</sup>
Uganda . . . . .	5-6	8	—	5	1	19-20	—	—
Union of Soviet Socialist Republics . . . . .	10		—	6	—	16	—	×
United Arab Republic . . . . .	6	6	—	7	—	19	—	2
United Kingdom . . . . .	6	6	—	6	1	19	—	—
United States of America . . . . .	8	4	4	4	1	21	—	—
Uruguay . . . . .	6	6	2	6	—	20	c	c
Venezuela . . . . .	6	5	—	6	—	17	—	—
Viet-Nam, Republic of . . . . .	5	7	1	6	—	19	c	c
Yugoslavia . . . . .	8	4	—	5	1	18	—	×

<sup>a</sup> To be introduced in the near future.<sup>b</sup> Private practice authorized outside official hours.<sup>c</sup> Information not available.<sup>d</sup> At the University of Natal.<sup>e</sup> Recommended.<sup>f</sup> Period equivalent to two-thirds of the duration of fellowship.

## Annex 3

NUMBERS OF MEDICAL, DENTAL, AND VETERINARY SCHOOLS:  
COMPARATIVE LIST

Country	Medical schools		Dental schools 1958 <sup>a</sup>	Veterinary schools 1959 <sup>b</sup>
	1955	1960		
Afghanistan . . . . .	1	1	1	—
Albania . . . . .	1	1	—	1
Algeria . . . . .	..	1	..	—
Argentina . . . . .	6	9	4	3
Australia . . . . .	4	6 <sup>c</sup>	5	2 <sup>d</sup>
Austria . . . . .	3	3	3	1
Belgium . . . . .	4	4	4	2
Bolivia . . . . .	3	3	3	1
Brazil . . . . .	23	30 <sup>e</sup>	36	8
Bulgaria . . . . .	2	2	1	1
Burma . . . . .	2	2	—	1
Cambodia . . . . .	1	1	—	—
Canada . . . . .	12	12 <sup>f</sup>	6	2
Ceylon . . . . .	1	1	1	1
Chile . . . . .	4	4	3	2
China (Taiwan) . . . . .	3	4	2	—
Colombia . . . . .	7	7	4	2
Congo (Leopoldville) . . . . .	2	2	—	—
Costa Rica . . . . .	—	1	1	—
Cuba . . . . .	1	1 <sup>g</sup>	1	1
Czechoslovakia . . . . .	10 <sup>h</sup>	9	8	2
Denmark . . . . .	2	2	2	1
Dominican Republic . . . . .	1	1	1	1
Ecuador . . . . .	3	3	3	4
El Salvador . . . . .	1	1	1	—
Fiji . . . . .	1	1	1	—
Finland . . . . .	2	3	1	1
France . . . . .	25	24 <sup>i</sup>	17	3
Germany, Democratic Republic . . . . .	9	..	7	..
Germany, Federal Republic . . . . .	19	19	17	4
Greece . . . . .	2	2	1	1
Guatemala . . . . .	1	1	1	1
Haiti . . . . .	1	1	1	—
Honduras . . . . .	1	1	1	—
Hong Kong . . . . .	1	1	—	—
Hungary . . . . .	4	4	1	1

<sup>a</sup> Figures taken from the *World Directory of Dental Schools*, 1961, Geneva, World Health Organization.<sup>b</sup> Figures taken from the *World Directory of Veterinary Schools*, 1963, Geneva, World Health Organization.<sup>c</sup> Not including the Faculty of Medicine of Monash University in Clayton, Victoria, which opened in 1961.<sup>d</sup> A third veterinary school in Melbourne, Victoria, was scheduled to open in 1961.<sup>e</sup> Not including the school in Vitória, Espírito Santo, which opened in 1961.<sup>f</sup> The University of Sherbrooke in Sherbrooke, Quebec, planned to open a medical school in 1962.<sup>g</sup> Not including the school in Santiago, which opened in 1962.<sup>h</sup> The Academy of Military Medicine in Hradec Králové closed in 1958.<sup>i</sup> Not including the Faculté mixte de Médecine et de Pharmacie de l'Université d'Alger.

## Annex 3 (continued)

Country	Medical schools		Dental schools 1958 <sup>a</sup>	Veterinary schools 1959 <sup>b</sup>
	1955	1960		
Iceland . . . . .	1	1	1	—
India . . . . .	43	60	7	16
Goa . . . . .	1	1	—	—
Indonesia . . . . .	6	6	2	2 <sup>c</sup>
Iran . . . . .	6	6 <sup>d</sup>	1	1
Iraq . . . . .	1	2	1	1
Ireland . . . . .	5	5	4	2
Israel . . . . .	1	1	1	—
Italy . . . . .	21	21 <sup>e</sup>	12	9
Jamaica . . . . .	1	1	—	—
Japan . . . . .	46	46	7	14
Kenya . . . . .	—	—	—	1
Korea, Republic of . . . . .	6	8	1	7
Laos . . . . .	—	1	—	—
Lebanon . . . . .	2	2	1	—
Madagascar . . . . .	1	1 <sup>f</sup>	1	—
Malta . . . . .	1	1	1	—
Mexico . . . . .	18	22	10	3
Netherlands . . . . .	6	6	2	1
New Zealand . . . . .	1	1	1	—
Nicaragua . . . . .	1	1	1	—
Nigeria . . . . .	1	1 <sup>g</sup>	—	—
Norway . . . . .	2	2	1	1
Pakistan . . . . .	15	15 <sup>h</sup>	1	2
Panama . . . . .	1	1	—	—
Paraguay . . . . .	1	1	1	1
Peru . . . . .	1	3 <sup>i</sup>	1	1
Philippines . . . . .	6	7	10	1
Poland . . . . .	10	10	8	3
Portugal . . . . .	3	3	—	1
Romania . . . . .	5	5	2	1
Senegal . . . . .	1	1	—	—
Singapore . . . . .	1	1	1	—
South Africa . . . . .	5	5	2	1
Spain . . . . .	10	10	1	4
Sudan . . . . .	1	1	—	1
Surinam . . . . .	1	1	—	—
Sweden . . . . .	4	5	2	1

<sup>a</sup> Figures taken from the *World Directory of Dental Schools*, 1961, Geneva, World Health Organization.

<sup>b</sup> Figures taken from the *World Directory of Veterinary Schools*, 1963, Geneva, World Health Organization.

<sup>c</sup> Not including the Faculties of Veterinary Science and Animal Husbandry established within the University of Sjah Kuala at Kotaradja, Sumatra, in 1960, and in Brawidjaja University at Malang, East Java, in 1962.

<sup>d</sup> Not including the School of Medicine, National University of Iran, Teheran, which opened in 1961.

<sup>e</sup> Not including the Facoltà di Medicina e Chirurgia dell'Università Cattolica del Sacro Cuore di Milano in Rome, which opened in 1961.

<sup>f</sup> Not including the Ecole nationale de Médecine et de Pharmacie in Tananarive, which opened in 1961.

<sup>g</sup> Not including the Medical School of the University of Lagos, which opened in 1962.

<sup>h</sup> Including the C.M.S. Medical School in Hyderabad, the Punjab Medical School in Lahore, and the Aminuddin Medical School in Quetta, which closed in 1962.

<sup>i</sup> Not including the Facultad de Medicina "Cayetano Heredia" in Lima, which opened in 1962.

## Annex 3 (concluded)

Country	Medical schools		Dental schools 1958 <sup>a</sup>	Veterinary schools 1959 <sup>b</sup>
	1955	1960		
Switzerland . . . . .	5	5	4	2
Syria . . . . .	1	1	1	—
Thailand . . . . .	2	3	1	1
Turkey . . . . .	3	3	1	1
Uganda . . . . .	1	1	—	—
Union of Soviet Socialist Republics . .	69	77	25 <sup>c</sup> 53 <sup>d</sup>	23
United Arab Republic . . . . .	3	4 <sup>e</sup>	2	1
United Kingdom . . . . .	27	27	16	6
United States of America . . . . .	85	86	46	18
Uruguay . . . . .	1	1	1	1
Venezuela . . . . .	3	6	3	1
Viet-Nam, Republic of . . . . .	1	1 <sup>f</sup>	1	1
Yugoslavia . . . . .	6	8	4	4
TOTAL	606 <sup>g</sup>	656 <sup>h</sup>	380 <sup>g</sup>	181 <sup>h</sup>

<sup>a</sup> Figures taken from the *World Directory of Dental Schools*, 1961, Geneva, World Health Organization.

<sup>b</sup> Figures taken from the *World Directory of Veterinary Schools*, 1963, Geneva, World Health Organization.

<sup>c</sup> Stomatology schools.

<sup>d</sup> Dental schools.

<sup>e</sup> Not including the schools in Mansourah and Tanta, which opened in 1962/63.

<sup>f</sup> Not including the Faculté de Médecine de Hué, which opened in 1961.

<sup>g</sup> Not including China (Mainland) and North Viet-Nam.

<sup>h</sup> Not including China (Mainland), the German Democratic Republic and North Viet-Nam.

## Annex 4

## AFRICA : MEDICAL SCHOOLS AND PHYSICIANS, 1960

Country	Population (thousands)	Number of medical schools	Number of physicians	Number of medical graduates	Population per medical school (thousands)	Population per physician
Algeria . . . . .	11 020	1	1 870	<i>a</i>	11 020	5 800
Angola . . . . .	4 642	—	323	—	—	14 000
Basutoland . . . . .	685	—	37	—	—	19 000
Bechuanaland . . . . .	330	—	25	—	—	13 000
Cameroon . . . . .	4 066 <sup>b</sup>	—	179 <sup>b</sup>	—	—	23 000 <sup>b</sup>
Cape Verde . . . . .	202	—	15	—	—	13 000
Central African Republic . . . . .	1 210	—	37	—	—	33 000
Chad . . . . .	2 660	—	42	—	—	63 000
Comoro Archipelago . . . . .	183	—	11	—	—	17 000
Congo (Brazzaville) . . . . .	900	—	59	—	—	15 000
Congo (Leopoldville) . . . . .	14 139	2	223	6 <sup>c</sup>	7 070	63 000
Dahomey . . . . .	1 934	—	89	—	—	22 000
Ethiopia . . . . .	20 300	—	200	—	—	102 000
Federation of Rhodesia and Nyasaland . . . . .	8 320	—	1 185	—	—	7 000
French Somaliland . . . . .	67	—	10	—	—	6 700
Gabon . . . . .	440	—	57	—	—	7 700
Gambia . . . . .	284	—	15	—	—	19 000
Ghana . . . . .	6 727	—	315	—	—	21 000
Guinea . . . . .	3 000	—	114	—	—	26 000
Ifni . . . . .	54	—	6	—	—	9 000
Ivory Coast . . . . .	3 230 <sup>d</sup>	—	175 <sup>d</sup>	—	—	18 000 <sup>d</sup>
Kenya . . . . .	7 131	—	766	—	—	9 300
Liberia . . . . .	1 300 <sup>e</sup>	—	80 <sup>e</sup>	—	—	16 000 <sup>e</sup>
Libya . . . . .	1 195	—	205	—	—	5 800
Madagascar . . . . .	5 393	1	644 <sup>b</sup>	17	5 393	8 100 <sup>b</sup>
Mali . . . . .	4 100	—	98	—	—	42 000
Mauritania . . . . .	750	—	22	—	—	34 000
Mauritius . . . . .	639	—	142	—	—	4 500
Morocco . . . . .	11 626	—	1 236	—	—	9 400
Mozambique . . . . .	6 482	—	321	—	—	20 000
Niger . . . . .	3 000 <sup>e</sup>	—	45 <sup>e</sup>	—	—	67 000 <sup>e</sup>
Nigeria . . . . .	35 091	1	1 079	19	35 091	33 000
Portuguese Guinea . . . . .	544	—	25	—	—	22 000
Réunion . . . . .	336	—	97	—	—	3 500
Ruanda-Urundi . . . . .	4 901	—	90	—	—	54 000
St Helena . . . . .	5	—	2	—	—	2 500
São Tomé and Príncipe . . . . .	66	—	8	—	—	8 300

<sup>a</sup> Information not available.<sup>b</sup> In 1959.<sup>c</sup> In 1962.<sup>d</sup> In 1958.<sup>e</sup> In 1961.

## Annex 4 (concluded)

Country	Population (thousands)	Number of medical schools	Number of physicians	Number of medical graduates	Population per medical school (thousands)	Population per physician
Senegal . . . . .	2 973	1	140	—	2 973	21 000
Seychelles . . . . .	42	—	9	—	—	4 700
Sierra Leone . . . . .	2 450	—	106	—	—	23 000
Somalia . . . . .	2 000	—	67	—	—	30 000
South Africa . . . . .	15 822	5	7 939	299	3 164	2 000
Spanish Equatorial Region .	246	—	42	—	3 164	5 900
Spanish Sahara . . . . .	24	—	38	—	—	630
Sudan . . . . .	11 770	1	336	22	11 770	35 000
Swaziland . . . . .	260	—	29	—	—	9 000
Tanganyika . . . . .	9 239	—	560	—	—	16 000
Togo . . . . .	1 440 <sup>b</sup>	—	41 <sup>a</sup>	—	—	35 000 <sup>a</sup>
Tunisia . . . . .	4 168	—	421	—	—	10 000
Uganda . . . . .	6 677	1	521	15	6 677	13 000
United Arab Republic . .	25 948	4	11 310	815	6 487	2 300
Upper Volta . . . . .	3 635	—	51	—	—	71 000
Zanzibar and Pemba . . .	304 <sup>a</sup>	—	43 <sup>a</sup>	—	—	7 100 <sup>a</sup>
TOTAL	253 950	17	31 500	1 193 <sup>b</sup>	14 940	8 000

<sup>a</sup> In 1959.<sup>b</sup> Excluding Algeria.

See also notes to the introductory data at the head of each chapter.

## Annex 5

## AMERICAS : MEDICAL SCHOOLS AND PHYSICIANS, 1960

Country	Population (thousands)	Number of medical schools	Number of physicians	Number of medical graduates	Population per medical school (thousands)	Population per physician
Antigua . . . . .	54	—	16	—	—	3 400
Argentina . . . . .	20 006	9	30 295	1 770	2 223	660
Bahamas . . . . .	105	—	56	—	—	1 900
Barbados . . . . .	232	—	77	—	—	3 000
Bermuda . . . . .	43	—	37	—	—	1 200
Bolivia . . . . .	3 453	3	895	<i>a</i>	1 151	3 900
Brazil . . . . .	70 967	30	26 526 <sup>b</sup>	1 528	2 366	2 300 <sup>b</sup>
British Guiana . . . . .	567	—	145	—	—	3 900
British Honduras . . . . .	91	—	22	—	—	4 100
Canada . . . . .	17 909	12	19 700	874	1 492	910
Canal Zone . . . . .	42	—	107	—	—	390
Chile . . . . .	7 627	4	4 250	280	1 906	1 800
Colombia . . . . .	14 132	7	5 970	442	2 019	2 400
Costa Rica . . . . .	1 171	1	458	—	1 171	2 600
Cuba . . . . .	6 797	1	6 609	335	6 797	1 000
Dominica . . . . .	60	—	8	—	—	7 500
Dominican Republic . . . . .	3 014	1	442 <sup>f</sup>	85	3 014	<i>f</i>
Ecuador . . . . .	4 317	3	1 656	<i>a</i>	1 439	2 600
El Salvador . . . . .	2 612	1	483	29	2 612	5 400
Falkland Islands . . . . .	2	—	4	—	—	500
French Guiana . . . . .	31	—	23	—	—	1 300
Greenland . . . . .	31 <sup>e</sup>	—	36 <sup>c</sup>	—	—	860 <sup>c</sup>
Grenada . . . . .	89	—	20	—	—	4 500
Guadeloupe . . . . .	270	—	112	—	—	2 400
Guatemala . . . . .	3 765	1	730 <sup>d</sup>	30	3 765	4 900 <sup>d</sup>
Haiti . . . . .	4 156	1	120 <sup>b, f</sup>	41	4 156	<i>f</i>
Honduras . . . . .	1 953	1	365 <sup>b</sup>	34	1 953	4 800 <sup>b</sup>
Jamaica . . . . .	1 614	1	629	25	1 614	2 600
Martinique . . . . .	277	—	113	—	—	2 500
Mexico . . . . .	34 988	22	20 227	1 011	1 590	1 700
Montserrat . . . . .	12	—	3 <sup>f</sup>	—	—	<i>f</i>
Netherlands Antilles . . . . .	191	—	136	—	—	1 400
Nicaragua . . . . .	1 477	1	524	22	1 477	2 800
Panama . . . . .	1 079	1	401	20	1 079	2 700
Paraguay . . . . .	1 768	1	983	97	1 768	1 800
Peru . . . . .	10 857	3	5 061	<i>a</i>	3 619	2 100
Puerto Rico . . . . .	2 370 <sup>e</sup>	—	1 277 <sup>e</sup>	—	—	1 900 <sup>e</sup>
St Christopher (St Kitts)- Nevis-Anguilla . . . . .	57	—	12	—	—	4 800

<sup>a</sup> Information not available.<sup>b</sup> In 1957.<sup>c</sup> In 1959.<sup>d</sup> In 1958.<sup>e</sup> In 1961.<sup>f</sup> Incomplete data.

## Annex 5 (concluded)

Country	Population (thousands)	Number of medical schools	Number of physicians	Number of medical graduates	Population per medical school (thousands)	Population per physician
St Lucia . . . . .	86	—	12	—	—	7 200
St Pierre and Miquelon . .	5	—	4	—	—	1 300
St Vincent . . . . .	80	—	10	—	—	8 000
Surinam . . . . .	270	1	154	6	270	1 800
Trinidad and Tobago . . .	844	—	352	—	—	2 400
United States of America .	180 676	86	234 294 <sup>a</sup>	7 149	2 101	780 <sup>a</sup>
Uruguay . . . . .	2 827	1	3 116 <sup>b</sup>	91	2 827	870 <sup>b</sup>
Venezuela . . . . .	7 365	6	5 045	258	1 228	1 500
Virgin Islands, British . . .	7	—	2	—	—	3 500
Virgin Islands of the United States . . . . .	34 <sup>a</sup>	—	20 <sup>a</sup>	—	—	1 700 <sup>a</sup>
<b>TOTAL</b>	<b>410 380</b>	<b>198</b>	<b>371 537</b>	<b>14 127<sup>c</sup></b>	<b>2 073</b>	<b>1 100</b>

<sup>a</sup> In 1961.<sup>b</sup> In 1957.<sup>c</sup> Excluding Bolivia, Ecuador and Peru.

See also notes to the introductory data at the head of each chapter.



## Annex 6

## ASIA : MEDICAL SCHOOLS AND PHYSICIANS, 1960 \*

Country	Population (thousands)	Number of medical schools	Number of physicians	Number of medical graduates	Population per medical school (thousands)	Population per physician
Aden Colony . . . . .	155	—	66	—	—	2 300
Aden Protectorate . . . . .	758	—	23	—	—	33 000
Afghanistan . . . . .	13 800	1	349	34	13 800	40 000
Bahrain . . . . .	147	—	67	—	—	2 200
Brunei . . . . .	84	—	6 <sup>a</sup>	—	—	<sup>a</sup>
Burma . . . . .	20 662	2	1 962	141	10 331	11 000
Cambodia . . . . .	4 952	1	183	30	4 952	27 000
Ceylon . . . . .	9 896	1	2 201	101	9 896	4 500
China (Taiwan) . . . . .	10 612	4	6 901	401	2 653	1 500
Cyprus . . . . .	573	—	391	—	—	1 500
Federation of Malaya . . . . .	6 909	—	1 075	—	—	6 400
Hong Kong . . . . .	3 075	1	1 001	45	3 075	3 100
India . . . . .	431 698	60	84 686 <sup>b</sup>	3 119	7 195	5 000 <sup>b</sup>
Goa . . . . .	626	1	378	19	626	1 700
Indonesia . . . . .	93 506	6	1 938	303	15 584	48 000
Iran . . . . .	20 182	6	5 264	493	3 364	3 800
Iraq . . . . .	7 085	2	1 257	108	3 543	5 600
Israel . . . . .	2 114	1	5 225	64	2 114	400
Japan . . . . .	93 200	46	99 793 <sup>b</sup>	3 200	2 026	930 <sup>b</sup>
Jordan . . . . .	1 064	—	292	—	—	3 600
Korea, Republic of . . . . .	24 665	8	7 064	600	3 083	3 500
Kuwait . . . . .	223	—	242	—	—	920
Laos . . . . .	1 805	1	40	—	1 805	45 000
Lebanon . . . . .	1 646	2	1 531	74	823	1 100
Macao . . . . .	220	—	71	—	—	3 100
Mongolia . . . . .	846 <sup>c</sup>	—	354 <sup>c</sup>	—	—	2 400 <sup>c</sup>
Nepal . . . . .	9 180	—	128	—	—	72 000
North Borneo . . . . .	454	—	48	—	—	9 500
Pakistan . . . . .	92 578	15	10 693	<sup>d</sup>	6 172	8 700
Philippines . . . . .	27 792	7	3 949 <sup>a</sup>	1 010	3 970	<sup>a</sup>
Portuguese Timor . . . . .	502	—	10 <sup>a</sup>	—	—	<sup>a</sup>
Sarawak . . . . .	745	—	51	—	—	15 000
Saudi Arabia . . . . .	6 036 <sup>c</sup>	—	495	—	—	13 000
Singapore . . . . .	1 634	1	640	81	1 634	2 600
Syria . . . . .	4 555	1	985	69	4 555	4 600
Thailand . . . . .	26 258	3	3 402	225	8 753	7 700
Turkey . . . . .	27 818	3	9 847	425	9 273	2 800
Viet-Nam, Republic of . . . . .	14 100	1	489	59	14 100	29 000

\* Excluding China (Mainland) and the Asian part of the USSR.

<sup>a</sup> Incomplete data.<sup>b</sup> In 1959.<sup>c</sup> In 1956.<sup>d</sup> Information not available.

## Annex 6 (concluded)

Country	Population (thousands)	Number of medical schools	Number of physicians	Number of medical graduates	Population per medical school (thousands)	Population per physician
West Irian . . . . .	735	—	86	—	—	8 500
Yemen . . . . .	5 000	—	32 <sup>a</sup>	—	—	<sup>a</sup>
TOTAL	967 890	174	253 215	10 601 <sup>b</sup>	5 563	3 800

<sup>a</sup> Incomplete data.<sup>b</sup> Excluding Pakistan.

See also notes to the introductory data at the head of each chapter.

## Annex 7

## EUROPE : MEDICAL SCHOOLS AND PHYSICIANS, 1960 \*

Country	Population (thousands)	Number of medical schools	Number of physicians	Number of medical graduates	Population per medical school (thousands)	Population per physician
Albania . . . . .	1 607	1	444	94	1 607	3 600
Austria . . . . .	7 081	3	11 180	182	2 360	620
Belgium . . . . .	9 153	4	11 180	519	2 288	820
Bulgaria . . . . .	7 867	2	11 051	<sup>a</sup>	3 934	710
Czechoslovakia . . . . .	13 654	9	22 006	1 136	1 517	620
Denmark . . . . .	4 581	2	5 850	241	2 291	780
Faroe Islands . . . . .	34	—	18	—	—	1 900
Finland . . . . .	4 467	3	2 827	168	1 489	1 600
France . . . . .	45 540	24	48 285	<sup>a</sup>	1 898	940
Germany, Federal Republic <sup>b</sup>	55 426	19	82 633	<sup>a</sup>	2 917	670
Gibraltar . . . . .	26	—	28	—	—	930
Greece . . . . .	8 327	2	10 400	424	4 164	800
Hungary . . . . .	9 984	4	14 398	795	2 500	690
Iceland . . . . .	176	1	230 <sup>c</sup>	20	176	750 <sup>c</sup>
Ireland . . . . .	2 834	5	2 921 <sup>d</sup>	271	567	1 000 <sup>d</sup>
Italy . . . . .	49 361	21	66 165	3 270	2 351	750
Luxembourg . . . . .	314	—	346	—	—	910
Malta and Gozo . . . . .	329	1	337	14	329	980
Netherlands . . . . .	11 480	6	12 809	610	1 913	900
Norway . . . . .	3 585	2	4 213	118	1 793	850
Poland . . . . .	29 703	10	27 569	2 856	2 970	1 100
Portugal . . . . .	8 921	3	6 701	318	2 974	1 300
Romania . . . . .	18 403	5	23 358	1 735	3 681	790
Spain . . . . .	30 128	10	29 232	1 498	3 013	1 000
Sweden . . . . .	7 480	5	7 116	404	1 496	1 100
Switzerland . . . . .	5 362	5	7 227	393	1 072	740
United Kingdom . . . . .	52 352	27	56 431	2 649	1 939	930
Yugoslavia . . . . .	18 402	8	11 386	1 214	2 300	1 600
TOTAL	406 577	182	476 557	18 929 <sup>e</sup>	2 234	850

\* Excluding the German Democratic Republic and the European part of the USSR.

<sup>a</sup> Information not available.<sup>b</sup> Including West Berlin.<sup>c</sup> In 1959.<sup>d</sup> In 1951.<sup>e</sup> Excluding Bulgaria, France and the Federal Republic of Germany.

See also notes to the introductory data at the head of each chapter.

## Annex 8

## OCEANIA : MEDICAL SCHOOLS AND PHYSICIANS, 1960

Country	Population (thousands)	Number of medical schools	Number of physicians	Number of medical graduates	Population per medical school (thousands)	Population per physician
American Samoa . . . . .	21 <sup>a</sup>	—	15 <sup>a</sup>	—	—	1 400 <sup>a</sup>
Australia . . . . .	10 275	6	12 000	472	1 713	860
British Solomon Islands . . .	124	—	22	—	—	5 600
Cook Islands . . . . .	18	—	18	—	—	1 000
Fiji . . . . .	394	1	195	10	394	2 000
French Polynesia . . . . .	76 <sup>b</sup>	—	25 <sup>b</sup>	—	—	3 000 <sup>b</sup>
Gilbert and Ellice Islands . .	46	—	19	—	—	2 400
Guam . . . . .	69 <sup>c</sup>	—	26 <sup>c</sup>	—	—	2 700 <sup>c</sup>
Nauru . . . . .	4	—	7	—	—	570
New Caledonia . . . . .	77	—	47	—	—	1 600
New Guinea (Australia) . . .	1 402	—	70	—	—	20 000
New Hebrides . . . . .	58 <sup>b</sup>	—	17 <sup>b</sup>	—	—	3 400 <sup>b</sup>
New Zealand . . . . .	2 372	1	3 396	100	2 372	700
Niue . . . . .	5	—	5	—	—	1 000
Pacific Islands . . . . .	74 <sup>a</sup>	—	37 <sup>a</sup>	—	—	2 000 <sup>a</sup>
Papua . . . . .	503	—	41 <sup>b</sup>	—	—	12 000 <sup>b</sup>
Tokelau . . . . .	2	—	3	—	—	670
Tonga . . . . .	57 <sup>c</sup>	—	22 <sup>c</sup>	—	—	2 600 <sup>c</sup>
Western Samoa . . . . .	107	—	49	—	—	2 200
TOTAL	15 684	8	16 014	582	1 961	980

<sup>a</sup> In 1958.<sup>b</sup> In 1959.<sup>c</sup> In 1956.

See also notes to the introductory data at the head of each chapter.

## Annex 9

## WORLD TOTALS : MEDICAL SCHOOLS AND PHYSICIANS, 1960

Region	Population (thousands)	Number of medical schools	Number of physicians	Number of medical graduates	Population per medical school (thousands)	Population per physician
Africa . . . . .	253 950	17	31 500	1 193 <sup>a</sup>	14 940	8 000
Americas . . . . .	410 380	198	371 537	14 127 <sup>d</sup>	2 073	1 100
Asia <sup>c</sup> . . . . .	967 890	174	253 215	10 601 <sup>d</sup>	5 563	3 800
Europe <sup>e</sup> . . . . .	406 577	182	476 557	18 929 <sup>f</sup>	2 234	850
Oceania . . . . .	15 684	8	16 014	582	1 961	980
Union of Soviet Socialist Republics . . . . .	214 400	77	364 324 <sup>g</sup>	26 452	2 784	580 <sup>g</sup>
TOTAL	2 268 881	656	1 513 147	71 884	3 459	1 500

<sup>a</sup> Excluding Algeria.<sup>b</sup> Excluding Bolivia, Ecuador and Peru.<sup>c</sup> Excluding China (Mainland) and the Asian part of the USSR.<sup>d</sup> Excluding Pakistan.<sup>e</sup> Excluding the German Democratic Republic and the European part of the USSR.<sup>f</sup> Excluding Bulgaria, France and the Federal Republic of Germany.<sup>g</sup> In 1959.

See also notes to Annexes 4-8.

**WORLD DIRECTORY OF MEDICAL SCHOOLS**

**Third Edition, 1963**

**CORRIGENDA**

## CZECHOSLOVAKIA

Page 80, table, "Name and address" column, 2nd line from bottom

*delete* robárova 48

*insert* Šrobárova 48

## IRELAND

Page 157, **Administration**, lines 7-10

*delete* The language of instruction is English in the medical schools of the National University of Ireland; Irish-born students are required to have a working knowledge of Irish.

*insert* The language of instruction is English; in the medical schools of the National University of Ireland Irish-born students are required to have a working knowledge of Irish.

Page 158, **Curriculum and examinations**, lines 1 and 2

*delete* and third years and the first half of the fourth year of the curriculum and

*insert* year and the first two terms of the third year of the curriculum; it

line 4

*delete* the second half of the fourth year

*insert* the last of the third year

line 8

*delete* fifth

*insert* fourth

Page 158, **Qualification and licence to practise**, line 22

*delete* registered. In addition

*insert* registered in the Medical Register of Ireland. In addition

Page 159, table, "Year founded" column, line 2

*delete* 1784

*insert* 1854

line 3

*delete* 1854

*insert* 1784

## **JAPAN**

Page 180, table, "Teaching staff" column, line 5

*delete* 29 f

*insert* 129 f

## **MADAGASCAR**

Page 192, table, "Teaching staff" column, last line

*delete* 5 p

*insert* 5 f

## **SWITZERLAND**

Page 268, table, "Total enrolment" column, line 3

*delete* 258 m

*insert* 528 m

## **Annex 7**

### **EUROPE : MEDICAL SCHOOLS AND PHYSICIANS 1960**

Page 345, "Number of physicians" column, line 2

*delete* 11 180

*insert* 11 396

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