

WORLD DIRECTORY OF MEDICAL SCHOOLS



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INTRODUCTION

The Second Edition of the *World Directory of Medical Schools*, like its predecessor, lists institutions of medical education in more than eighty countries and gives a few pertinent facts about each. However, its scope has been enlarged, in that 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. As the latter have generally developed in relatively limited cultural areas and do not have world-wide significance, any reference to them has been omitted from this volume.

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,¹ etc. Annexes 1-7 summarize these data by continent, while Annex 8 gives the world totals. There is no commentary on the significance of the figures in question, since their implications have already been discussed elsewhere.² It will be noted, however, that the ratio of physicians to population (see Annex 9) differs markedly from country to country, varying from 1: 434 in Israel to 1: 174 640 in Nepal.

¹ Population figures have been taken from the *United Nations Statistical Yearbook, 1954*.

² Troupin, J. L. (1955) *Bull. Wld Hlth Org.*, 13, 345. In the present work, however, two additional columns have been included; these show the annual number of medical graduates per 1000 physicians, and population per annual medical graduate.

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 eight years in others (see Annex 10). 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 early part of the course which 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. In Annex 10, the latter compulsory period is included with internship, for purposes of presentation.

These are only a few of the considerations which 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.

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 the USA and 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.

In general, the data pertaining to enrolment, admission, graduation, etc., refer to the academic year 1954-55. However, in some cases it has been possible to obtain more recent information.

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

Column 2 — Ownership

The following code letters found in this column refer to the ownership of the institution:

- GN owned and operated by government (national)
- GP owned and operated by government (provincial, state, or other large subdivision)
- GM owned and operated by government (municipal)
- G owned and operated by government (branch or unit not specified)
- R owned and operated, or supported, by a religious or denominational association
- P owned and operated by a non-governmental, non-religious association, which means in most cases by a private corporation supported by endowments.

Column 3 — Year founded

This is the year in which it is considered that medical education began at the institution concerned. It does not necessarily correspond to the date on which the university as a whole was founded. Moreover, as the history of some institutions contains several mergers and changes of name, the earliest date is considered the appropriate year. For example, if Medical School A (founded in 1898) merged in 1919 with Medical School B (founded in 1867) to form the Faculty of Medicine C, and in 1946 changed its name to the Faculty of Medicine of University D, the year of foundation is considered to be 1867.

In certain instances, institutions have been obliged to close their doors for some years because of war or other reasons. Such a temporary suspension of operations is not considered in this compilation as affecting the original date of foundation.

Column 4 — Teaching staff

The numbers refer to persons who are officially connected with the institution as teachers, 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. Thus, 63 f and 137 p means that 63 teachers are counted as full-time and 137 as part-time. (In the case of the USSR, the number which appears in this column refers to total full-time teaching assignments; for example, 100 may mean 100 full-time teachers or 200 who work only half-time.)

Full-time refers to the person who derives all or most of his professional income from his salary as a teacher, and who does not conduct a private practice or engage in other remunerative activities outside the institution. *Part-time* refers to the person who, while receiving a nominal salary (or none at all), spends less than full time in his teaching and other institutional duties.

Column 5 — Total enrolment

This refers to the number of students enrolled at the medical school during the year for which the latest figures are available, and may be compared to the census of a population group. Whenever known, the number of men and women are given separately, otherwise the figure is a total of both. Thus 157 m and 31 f means that a total of 157 men and 31 women are enrolled.

Column 6 — Annual admissions

This figure refers to the number of new students who enter studies at the institution in question at the beginning of the academic year.

Column 7 — Graduates

This is the number of persons who have received their medical degrees or diplomas at the end of the most recent academic year for which information is available. A dash (—) means either that the school is too young to have guided a class through their complete studies (see explanation of column 3) or that it does not offer a complete course of studies. Generally, the annual number of graduates should be of the same magnitude as the number of new admissions (column 6), allowing of course for such factors as increase by transfer and natural decrease. Large discrepancies may be explained by changes in policy designed to increase or reduce the annual number of admissions within recent years, so that the resulting change in the number of graduates is not yet in evidence.

Column 8 — Annual tuition fees

The figures given here (in local currency) refer only to money paid for inscription, tuition, laboratory fees, etc., and do not include board, lodging, other living expenses, or transportation to and from the student's home.

In most cases, the same fees apply to all students, but in some instances, generally in the case of institutions supported by public funds, there is a higher fee for those whose legal place of residence is outside the governmental jurisdiction concerned. Here, the letters R and NR apply respectively to residents and non-residents, in the sense of citizenship of the particular country, province, or municipality, as the case may be.

For comparative purposes only, approximate currency equivalents in terms of US dollars are given for each country, where indicated. The rates of exchange used here are those adopted by WHO for accounting purposes, as of 1 October 1956, and do not necessarily correspond to rates fixed by the governments concerned.

* * *

Finally, the World Health Organization acknowledges with thanks the valuable assistance given by many medical educators from all parts of the world in the composing and reviewing of the descriptive statements. The collaboration of the International Association of Universities in the collection of data concerning individual institutions is also greatly appreciated.

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

AFGHANISTAN

Population	12 000 000
Medical schools	1
Physicians	232
Medical graduates per annum	12
Population per medical school	12 000 000
Population per physician	51 724
Medical graduates per 1000 physicians per annum	51.7
Population per annual medical graduate	1 000 000

Introduction

Medical education in Afghanistan consists of a six-year course, 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 the University of 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 runs from March to December.

Teaching is carried out primarily by foreign professors, generally French or Turkish, and is modelled on that in the French medical faculties. Those foreign professors who do not speak Farsi lecture in either English, French or German, and a translation into Farsi is given by a qualified interpreter whenever necessary.

School education

A number of primary schools are established in the country, but secondary schools exist only in Kabul and in the provincial capitals. Both primary and secondary education are provided free of charge.

There are four *lycées* (secondary schools) for boys at Kabul, where the predominant cultural influence is either Anglo-American, French or German. In addition, there are two Afghan *lycées* for girls.

Conditions of admission

To be admitted to the Faculty of Medicine, a student must hold the secondary school certificate, obtained after completing a course at one of the *lycées*, or an equivalent certificate—for example that of the Afghan Military Preparatory School. A one-year pre-medical course (the "P.C.B."—"Physics, chemistry, biology")

must be taken at the Faculty of Science. Only after he has passed the examination held at the end of that course is a student permitted to begin his medical studies proper. Male candidates only are eligible.

Curriculum

The six years of the medical curriculum are arranged as follows:

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

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

Third year: surgery; special pathology; medicine; dermatology; urology (clinical work in surgery, medicine and dermatology is undertaken during the morning and theory is taught in the afternoon)

Fourth year: pharmacology; paediatrics; neurology; medicine; dermatology; obstetrics; surgery; otorhinolaryngology; stomatology (the morning session is devoted to clinical work in surgery, otorhinolaryngology, stomatology, dermatology, and neurology; theory is taught in the afternoon)

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

Sixth year: rotating internship in different clinics 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

After passing the final examination, a student receives the degree of Doctor of Medicine, which gives him the right to practise medicine in Afghanistan.

Name and address	Owner-ship	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees
Faculty of Medicine University of Kabul KABUL	GN	1931	17 p	164	40	12	None

ALBANIA

Population	1 260 000
Number of medical schools	1
Number of physicians	100*
Annual number of medical graduates	—
Population per medical school	1 260 000
Population per physician	12 600
Medical graduates per 1000 physicians per annum	—
Population per annual medical graduate	—

* Estimated

As this Directory was going to press, WHO was informed of the existence of a medical school in Albania. The institution in question is owned by the State and administered by the Ministry of Public Health. The academic year runs from September to July.

To be admitted to medical studies, the candidate must have completed a course of secondary education. The duration of the medical course is five years, at the end of which the successful student is awarded a diploma that enables him to practise medicine in Albania.

The name and address of the school are as follows:

Instituti Lartë Mjekësor
(Faculty of Medicine)
TIRANA, Shqipëri.

It has not been possible to obtain information regarding the annual number of graduates or the system of medical education in operation. In a subsequent edition of the Directory these details, as well as other missing data—such as, for example, that on school education—will be included.

It should be noted that the tabulated data appearing in the annexes to this volume have not been recomputed to include the new institution in the total number of medical schools. Readers who wish to use these data for statistical analysis should make the necessary modifications.

ARGENTINA

Population	18 742 000
Medical schools	6
Physicians	13 600
Medical graduates per annum	1 800*
Population per medical school	3 124 000
Population per physician	1 378
Medical graduates per 1000 physicians per annum	132.4
Population per annual medical graduate	10 000

* Estimated

Introduction

The medical curriculum 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. Each university, for example, is headed by a Rector, who is assisted in his functions by a *Consejo Directivo* (Directive Council) consisting of the deans and other representatives of each faculty. Each faculty of medicine includes a school of medicine and a school of pharmacy, and is headed by a dean, assisted by a Directive Council common to both schools. The Directive 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 runs from April to November. The language of instruction is Spanish.

School education

Education is provided free of charge through subsidies from the central and provincial governments; it is secular, and compulsory for children from 6 to 14 years of age. The average age of attendance at primary schools is 6 to 12, and 13 to 18 at secondary schools. Success in the examinations at the end of the secondary school course leads to the certificate of *bachillerato* (secondary school certificate).

Conditions of admission

The *bachillerato* is a basic requirement for entrance to a medical school. 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.

Men and women are admitted on the same basis.

Curriculum

The curriculum is divided into three periods of two years each. 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 operating techniques; whereas 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 dealt with.

Examinations

Examinations are compulsory in those subjects which are considered 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

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.

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Facultad de Ciencias Médicas de la Universidad Nacional de Buenos Aires Paraguay, 2155 BUENOS AIRES, D.F.	GN	1821	556	8656 m 4303 f	2706	588	None
Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba Obispo Trejo, 241 CÓRDOBA, Córdoba	GN	1877	2 f 77 p	2664 m 355 f	825	215	None
Facultad de Ciencias Médicas de la Universidad Nacional de La Plata 44, N° 775 LA PLATA, Buenos Aires	GN	1919	1 f 111 p	1975 m 319 f	587	102	None
Facultad de Ciencias Médicas de la Universidad Nacional de Cuyo MENDOZA, Mendoza	GN						
Facultad de Ciencias Médicas de la Universidad Nacional del Litoral Santa Fe, 3100 ROSARIO, Santa Fe	GN	1919		2205 m 264 f	3607	665	None
Facultad de Medicina de la Universidad Nacional de Tucumán Lamadrid, 875 TUCUMÁN, Tucumán	GN	1953	67	497 m 83 f	300		None

AUSTRALIA

Population	8 987 000
Medical schools	4
Physicians	8 500
Medical graduates per annum	625
Population per medical school	2 247 000
Population per physician	1 057
Medical graduates per 1000 physicians per annum	73.5
Population per annual medical graduate . . .	14 000

Introduction

The medical curriculum in Australia lasts for six years, the first of these being devoted to pre-medical studies. The degrees conferred upon completion are those 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 the Universities of Adelaide or Melbourne. The University of Western Australia which, until recently, also provided the first year of the medical course only, now has a full medical school. It is understood that professors have now been appointed for the later years of the course, and it is hoped that students will be admitted to these new stages of the course at the beginning of the next academic year.

Administration

The Australian universities are, by statute or Royal Charter, self-governing academic corporations. Their governing bodies are composed of representatives of the state,¹ 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 which 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.

¹ The word "state" is used here to denote the individual state in which the university is situated; for example, the University of Melbourne is situated in the State of Victoria.

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. The language of instruction is English.

School education

Attendance at school is compulsory from 6 to 14, 15, or 16 years of age, according to state. Primary and secondary education is provided either in state public schools, which are secular and where no fees are charged, or in private schools, many of which are denominational and where fees vary. Primary school is normally attended between the ages of 6 and 12. There are several types of secondary school, including: (a) junior technical schools, technical high schools, and home science schools, which are attended from 13 to 16 and in the main provide for instruction of a technical nature; and (b) high schools, attended from 13 to 18, which provide courses on the traditionally academic lines with the aim of preparing pupils for public examinations and qualifying them to enter universities or similar institutions. The average age of entrance to university is seventeen.

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. 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. Men and women are admitted on the same basis.

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*—namely, 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*, that is 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, 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, that is, 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 specialities are started. 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 that 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 main examinations at their end. A student who has not attended the requisite minimum 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, when 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 unless and 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

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. of the Universities of Adelaide, Melbourne, Queensland, or Sydney, and they award a licence to practise without further examination. In the case of candidates holding other degrees, recognition by the Boards varies from state to state, and recognition by any one Board does not necessarily signify recognition by another.

The higher degree of Doctor of Medicine (M.D.) is granted on presentation of a thesis.

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

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (£ A)*</i>
Faculty of Medicine University of Adelaide North Terrace ADELAIDE, South Australia	GP	1885	25 f 33 p	456 m 55 f	87	101	55
Faculty of Medicine University of Queensland St. Lucia, Brisbane and George St. BRISBANE, Queensland	GP	1936	32 f 170 p	432 m 58 f	88	55	87
Faculty of Medicine University of Melbourne Carlton N. 3 MELBOURNE, Victoria	GP	1862	143 f 118 p	1022	223	163	150
Faculty of Medicine University of Sydney SYDNEY, New South Wales	GP	1883	40 f 210 p	1269 m 255 f	364	306	125

* £A 1 = \$ 2.25

AUSTRIA

Population	6 969 000
Medical schools	3
Physicians	11 092
Medical graduates per annum	549
Population per medical school	2 323 000
Population per physician	628
Medical graduates per 1000 physicians per annum	49.4
Population per annual medical graduate . .	13 000

Introduction

Medical education in Austria consists of a five-year course leading 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 may be 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 Bundesministerium für Unterricht (Ministry of Education).

Professors and lecturers 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 each year 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. The language of instruction is German.

School education

School education consists of four to five years at *Volksschule* (primary school) generally between the ages of 6 and 10, and eight years at *Mittelschule* (secondary school), generally up to the age of 18 or 19. 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 in between the two.

Conditions of admission

A student who seeks admission to a medical faculty must produce the *Matura*, or matriculation certificate. A knowledge of Latin is compulsory for

all Austrian students, and those who have attended a *Realschule* must follow a complementary course in that language. There is no further selection process, and no *numerus clausus*. Men and women are admitted to medical studies on the same basis.

Curriculum

The study of medicine covers a period of five years, consisting 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*¹ 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; however, he must 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, 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 is performed over a period of two semesters and is a compulsory subject.

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 to 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, and within certain limits determined by the sequence in which examinations are held, the students themselves choose the order in which they wish to study the various subjects. Attendance is compulsory for the prescribed period at the clinical demonstrations in medicine, surgery, midwifery, psychiatry, paediatrics, otorhinolaryngology, ophthalmology, dentistry, and dermatology.

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

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 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 *Rigorousum* 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 only regarded as "recognized" if a student has passed these examinations during that period. Pre-clinical training must be completed, and the first *Rigorousum* must be passed, not more than two years after a candidate has passed the examination in anatomy; otherwise, a student is not permitted to continue the medical course. 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 *Rigorousa*. 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 *Rigorousum* examination covers pathology, pharmacology and pharmacy, internal medicine, paediatrics, psychiatry, and neurology. The third *Rigorousum* is in surgery, obstetrics and gynaecology, ophthalmology, dermatology and syphilology, hygiene, and forensic medicine.

Qualification

After a student has passed the third *Rigorousum* 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 which entitles 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), midwifery and gynaecology (six months), otorhinolaryngology (three months), dermatology and syphilology (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 from four to six years, according to the subject chosen for specialization.

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment *</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Schillings) †</i>
Medizinische Fakultät der Universität Graz GRAZ	GN	1863	60 f	382 m 120 f	54	155	900
Medizinische Fakultät der Leopold-Franzens-Univer- sität INNSBRUCK	GN	1669	30 f 10 p	405 m 113 f	65	60	2000
Medizinische Fakultät der Universität Wien WIEN	GN	1365	69 f 91 p	797 m 304 f	97	334	800

* The proportion of foreign students is said to be almost half the total number.

† 26 Schillings = \$1.00

BELGIAN CONGO

Population	16 526 000
Medical schools	2
Physicians	673
Medical graduates per annum	10*
Population per medical school	8 263 000
Population per physician	24 556
Medical graduates per 1000 physicians per annum	14.8
Population per annual medical graduate	1 653 000

* Estimated

NOTE: These figures include data for the adjoining Trust Territory of Ruanda-Urundi, which has no medical school of its own and is served by the two institutions in the Belgian Congo.

The Faculty of Medicine of the Lovanium University, at Kimuenza (Léopoldville), was opened in October 1954. The Lovanium University is a private institution subsidized by the public authorities. The academic year runs from the end of October to the end of July.

In order to be admitted to the Faculty of Medicine, students must hold an approved certificate for complete secondary studies (Greek and Latin, Latin and mathematics or Latin and science section) or a diploma from a local secondary school (Latin section), supplemented by a year of pre-university studies. Studies last seven years and lead to the degree of Doctor of Medicine, Surgery and Obstetrics. The language of instruction is French.

The official university at Elisabethville, created by the Decree of 26 October 1955, also includes a Faculty of Medicine, which opened in October 1956.

The conditions of admission, the length of studies and the degrees awarded are the same as in the Lovanium University. The language of instruction is also French and the academic year runs from October to July.

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Francs)*</i>
Faculté de Médecine de l'Université officielle d'Elisabethville ELISABETHVILLE	GN	1956					
Faculté de Médecine de l'Université Lovanium Kimuenza LÉOPOLDVILLE	R	1954	5 p	25			2000

* 50 francs = \$1.00

BELGIUM

Population	9 125 000
Medical schools	4
Physicians	9 555
Medical graduates per annum	428
Population per medical school	2 281 000
Population per physician	955
Medical graduates per 1000 physicians per annum	44.8
Population per annual medical graduate	21 000

NOTE: The figures shown above refer to both Belgium and Luxembourg, since the latter country has no medical school of its own and is largely served by Belgian institutions.

Introduction

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 Ministère de l'Instruction publique (Ministry of Public Education). Each of these two universities is administered by a Conseil d'Administration (Administrative Board), presided over by the Rector, who is elected by the professorial staff at a meeting of the Conseil académique (Academic Council) and is then appointed for a four-year period by the reigning monarch. The Ministry of Public Education appoints directly, and independently of any university recommendation, a State representative to the Administrative Board. Its other members are the 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. These 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 Education. 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 contributors and governed by an Administrative Board of 37 members, none of whom represent the State. The Rector of the University is elected 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 these 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 Flemish at the University of Ghent, and in French at the Universities of Brussels and Liège; the University of Louvain provides for French and Flemish language sections, and each student is free to join whichever he prefers.

School education

Primary education in Belgium is compulsory from 6 to 12 years of age. Secondary education lasts for six years, the student finishing at the age of about 18 or 19.

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*, or certificate of secondary education, showing that he has satisfactorily passed in Latin (a major entrance requirement) as well as in Greek, mathematics, and 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.

Men and women are admitted on the same basis.

All the Belgian universities are provided with students' 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.

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, leads up to the *Doctorat en Médecine, Chirurgie et Accouchements* (Doctorate of Medicine, Surgery and Midwifery). 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, embryology, histology, physiology, and biochemistry. The courses on 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 an example of the other three, the main differences being 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 propaedeutics; 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 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*,¹ and while performing it the student is known as a *stagiaire*.¹ 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*.¹ The *stages* are supplemented by practical demonstrations in medicine, regional anatomy, operative surgery, and otorhinolaryngology.

In addition to the compulsory subjects, optional courses can be attended on which there may be no examinations. These courses cover such subjects as

¹ There are no close equivalents for these terms in English.

medical toxicology, tropical medicine, mental health, insurance medicine, history of medicine, medical statistics and Flemish 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* (Candidate in Natural and Medical Sciences), 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* (Doctor of Medicine, Surgery and Midwifery). The various examinations are known by their number and title such as, for example, the second candidature, the third doctorate, and so on.

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 Public Education, and is composed of representatives of the faculties of the four universities.

Qualification

Students of Belgian nationality who hold the Latin section of the *diplôme d'études secondaires* (secondary school diploma) and have passed the fourth doctorate receive an official degree, the *diplôme légal*, which authorizes the holder to practise medicine in Belgium or in Belgian territories overseas after registration. Foreign students receive the *diplôme scientifique*, an academic degree which authorizes them to practise medicine in Belgian territories overseas only. The courses and examinations for both of these degrees are identical.

Possession of the degree of Doctor of Medicine, Surgery, and Midwifery does not in itself constitute authority to practise medicine. Each practitioner must have his degree registered by the Commission médicale provinciale (Medical Board) of the province 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 Ministère de la Santé publique et de la Famille (Ministry of Health).

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

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual 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	P	1834	48 f 56 p	564 m 155 f	245	109	6000
Faculteit der Geneeskunde Rijksuniversiteit te Gent Voldersstraat 9 GENT	GN	1817	18 f 15 p	636 m 84 f	198	55	1500
Faculté de Médecine Université de l'Etat à Liège Place du 20 Août LIÈGE	GN	1817	43	542 m 118 f	120	95	1500
Faculté de Médecine de l'Université catholique de Louvain 4, rue Kraeken LOUVAIN	R	1834	61	1822 m 312 f	250	169	3350

* 50 francs = \$1.00

BOLIVIA

Population	3 162 000
Medical schools	3
Physicians	795
Medical graduates per annum	48
Population per medical school	1 054 000
Population per physician	3 977
Medical graduates per 1000 physicians per annum	60.4
Population per annual medical graduate . . .	66 000

Introduction

The medical course 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 Consejo Universitario (University Council), of which he is the chairman. The dean of each faculty is assisted by a Consejo Directivo (Executive Council).

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.

Duration of the academic year varies 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. The language of instruction is Spanish.

School education and conditions of admission

Primary instruction is compulsory between the ages of 7 and 14, and is given free of charge, being the responsibility of the municipalities and the State. Potential medical students spend six years at primary school and six years at secondary school, after which they take an examination leading to the *bachillerato* (secondary school certificate).

Candidates applying for admission to a medical school must hold the *bachillerato* or its equivalent.

Men and women are admitted on the same basis.

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 activities and "rotate" through the different services, such as medicine, surgery, obstetrics, and the specialities. 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 specialities are held in the Faculties of Sucre and Cochabamba. In La Paz, the examination is a combined one, and covers 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

After a student has passed all his examinations he receives the degree of *Médico-Cirujano* (Physician and Surgeon), 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.

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Bolivianos) *</i>
Facultad de Medicina de la Universidad de San Simon Avenida Aniceto Arce COCHABAMBA	G	1932	54	380 m 8 f	213	14	500
Escuela de Medicina de la Uni- versidad Mayor de San Andrés LA PAZ	G	1833	27	313 m 15 f	130	12	350
Facultad de Ciencias Médicas de la Universidad Mayor Real y Pontificia de San Francisco Xavier de Chuquisaca Calle Junin, 501 SUCRE	G	1826	39	159 m 5 f	34	22	400

* Approximately 1000 bolivianos = \$1.00 (as on 1 January 1954)

BRAZIL

Population	57 098 000
Medical schools	23
Physicians	17 364
Medical graduates per annum	2 000*
Population per medical school	2 482 000
Population per physician	3 288
Medical graduates per 1000 physicians per annum	115.2
Population per annual medical graduate	29 000

* Estimated

Introduction

The medical course in Brazil lasts for six years, and leads to the degree of *Doutor em Medicina* (Doctor of Medicine).

Administration

Most of the medical schools in Brazil are associated with universities. The Division of Higher Learning of the Ministério da Educação e Saúde (Ministry of Education and Health) sets up a uniform curriculum for all the schools, and establishes minimum standards for laboratory and other equipment, space and other facilities. As a result of special arrangements made, whereby hospital authorities and school administrators co-operate in the utilization of personnel and facilities, clinical instruction is given at hospitals which are not under the direct administrative control of medical schools.

The academic year runs from the beginning of March to the middle of December, and consists of two semesters. The language of instruction is Portuguese.

School education

Preliminary school education in primary schools begins at the age of six, and continues for five years. This is followed by a further four-year period of intermediate studies, provided at a *Ginásio*. A student then attends *Colégio* (secondary school) for three years and, during that period, may follow either a classical or a scientific course of study. Candidates for medical school are therefore generally about eighteen to twenty years of age at the time of admission.

Conditions of admission

In order to be admitted to a medical school, an applicant must have completed the curriculum of the *Colégio*, which alone enables him to sit for the *exame*

vestibular, a competitive entrance examination with oral and written sections on physics, chemistry, and biology. 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.

Men and women are admitted on the same basis.

Curriculum

The curriculum for the medical course is established by the Government, and is practically uniform in all the schools. Generally, the first three years of the course are taken up with *pre-clinical* studies, whereas the last three are mainly devoted to the *clinical* subjects. The curriculum is arranged as follows:

First year: biochemistry; histology; embryology and anatomy I

Second year: biophysics; physiology and anatomy II

Third year: internal medicine I; pharmacology; bacteriology and pathology I

Fourth year: internal medicine II; surgery I; pathology II; parasitology; dermatology; and psychiatry I

Fifth year: internal medicine III; surgery II; obstetrics; gynaecology; paediatrics; and therapeutics

Sixth year: internal medicine IV; surgery III; hygiene; ophthalmology; otorhinolaryngology; neurology; orthopaedics; forensic medicine; and psychiatry II.

Examinations

Written and oral examinations are held at the end of every semester. A student who fails in any of the subjects may take the examinations again before the beginning of the next semester. Should he fail in one or two subjects at the second attempt, he may proceed to the following year's course, but must also study again the subjects in which he has failed with a view to re-examination. If he fails for a third time, however, he must repeat the entire year's course. There is no limit to the number of times a student may repeat a year's course.

Qualification

Licence to practise is obtained through registration with the Ministry of Education. In order to obtain that licence, it is required that an applicant should hold the degree of *Doutor em Medicina* from one of the existing schools, and that he should have spent one year in an internship. No further examination need be taken.

A graduate who is interested in an academic career may work for the higher degrees of *Livre Docente* and *Professor Catedrático*, for which it is necessary to submit a thesis.

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Cruzeiros)*</i>
Faculdade de Medicina e Cirurgia do Pará Praça Camilo Salgado 1 BELÉM, Pará	GN	1919	62	152 m 35 f	22	47	60 per subject
Faculdade de Ciências Médicas de Minas Gerais Avenida Francisco Sales 1219 BELO HORIZONTE, Minas Gerais	R	1951	1 f 39 p	58 m 4 f	35		2500
Faculdade de Medicina da Universidade de Minas Gerais Avenida Mantiqueira BELO HORIZONTE, Minas Gerais	GN						
Faculdade de Medicina da Universidade do Paraná Praça Santos Andrade CURITIBA, Paraná	GN	1915	72	644 m 46 f	150	81	750
Faculdade de Medicina da Universidade do Ceará Praça José de Alencar FORTALEZA, Ceará	GN	1947	76	93 m 19 f	30	3	2000
Faculdade de Medicina de Paraíba Praça 2 de Novembro JOÃO PESSOA, Paraíba	P						
Faculdade de Medicina de Juiz de Fora JUIZ DE FORA, Minas Gerais	P	1952	4 f 13 p		25		5500
Faculdade de Medicina de Alagôas Praça Afranio Jorge MACEIÓ, Alagôas	P	1950	46	66 m 20 f	18	4	4000
Faculdade Fluminense de Medicina Rua Visconde de Moraes 101 NITERÓI, Rio de Janeiro							
Faculdade de Medicina de Porto Alegre Universidade do Rio Grande do Sul Rua Sarmento Leite PORTO ALEGRE, Rio Grande do Sul	GN	1898	99	385 m 38 f	60	72	60 per subject

* 73 cruzeiros = \$1.00

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Cruzeiros)*</i>
Faculdade de Ciências Médicas de Pernambuco Rua Benfica 198 RECIFE, Pernambuco	P	1950	42 p	226	40		6000
Faculdade de Medicina da Universidade do Recife Praça do Derby RECIFE, Pernambuco	GN	1920	114	629 m 142 f	65	132	700
Faculdade de Medicina da Universidade de São Paulo Fazenda Monte Alegre RIBEIRÃO PRETO, São Paulo	GP	1948	50	117 m 21 f	45		
Escola de Medicina e Cirurgia do Rio de Janeiro Rua Frei Caneca 94 RIO DE JANEIRO, D. F.	P	1912	76	595 m 94 f	600	90	3000
Faculdade de Ciências Médicas Rua Fonseca Telles 121 RIO DE JANEIRO, D. F.	P	1936	120	512 m 55 f	100	60	1000
Faculdade Nacional de Medicina da Universidade do Brasil Avenida Pasteur 458 RIO DE JANEIRO, D. F.	GN	1920					
Faculdade de Medicina de Santa Maria Universidade do Rio Grande do Sul Rua Floriano Peixoto 1184 SANTA MARIA, Rio Grande do Sul	GN						
Escola Paulista de Medicina Rua Botucatu 720 SÃO PAULO, São Paulo	P	1933	14 f 112 p	525 m 56 f	70	124	12 400
Faculdade de Medicina da Universidade de São Paulo Avenida Dr Arnaldo SÃO PAULO, São Paulo	GP	1913	53 f 102 p	447 m 81 f	80	82	None
Escola Baiana de Medicina e Saúde Pública SÃO SALVADOR, Bahia	P						

* 73 cruzeiros = \$1.00

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Cruzeiros) *</i>
Faculdade de Medicina da Uni- versidade de Bahia Praça 15 de Novembro SÃO SALVADOR, Bahia	GN						
Faculdade de Medicina de Sorocaba Rua Claudio Manoel da Costa 57 SOROCABA, São Paulo	R						
Faculdade de Medicina do Triângulo Mineiro Rua Guilherme Ferreira 217 UBERABA, Minas Gerais	P						

* 73 cruzeiros = \$1.00

BULGARIA

Population	7 500 000
Medical schools	2
Physicians	4 800*
Medical graduates per annum	957
Population per medical school	3 750 000
Population per physician	1 562
Medical graduates per 1000 physicians per annum	199.4
Population per annual medical graduate	8 000

* Estimated

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. The language of instruction is Bulgarian.

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. Men and women are admitted on the same basis.

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>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Levas)*</i>
Pavlov Higher Institute of Medicine PLOVDIV	GN	1945	163	741 m 585 f	250	174	160
Faculty of Medicine of the Chervenko Higher Institute of Medicine SOFIA	GN	1918	285 f 36 p	1740 m 1181 f		783	170

* 6.80 levass = \$1.00

BURMA

Population	19 242 000
Medical schools	2
Physicians	2 242
Medical graduates per annum	100*
Population per medical school	9 621 000
Population per physician	8 582
Medical graduates per 1000 physicians per annum	44.6
Population per annual medical graduate	192 000

* Estimated

Introduction

Medical training in Burma consists of a seven-year course, 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 University of Rangoon is a Government-owned institution, operated under the jurisdiction of the Ministry of Education. The Faculty of Medicine is headed by a Dean, who serves a two-year term, but is not eligible for immediate reappointment.

The academic year runs from June to March. The language of instruction is English.

School education

Primary education is provided free of charge, and is compulsory for all children from six to ten years of age. Secondary education is divided into two stages, namely, middle schools of three forms (V to VII) for children aged from 11 to 14, and high schools of two forms (VIII to IX) for children aged fifteen years and over. The language of instruction in primary, middle and high schools is Burmese.

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, considered 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, and must be passed before a student is admitted to the medical course proper.

Men and women are admitted on the same basis.

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; (9) hospital work in maternal and child health.

Qualification

The award of the degrees of M.B., B.S. entitles their holder to practise in Burma. No further examinations need be taken.

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Branch Faculty of Medicine University of Rangoon MANDALAY	G	1954	12	26 m 8 f	34		None
Faculty of Medicine University of Rangoon RANGOON	G	1924	51 f 31 p	495 m 281 f	207	63	None

CAMBODIA

Population	4 100 000
Medical schools	1
Physicians	43
Medical graduates per annum	7
Population per medical school	4 100 000
Population per physician	95 349
Medical graduates per 1000 physicians per annum	162.8
Population per annual medical graduate	586 000

Introduction

The newly-established medical course at the Ecole royale de Médecine du Cambodge will last for seven years, including a one-year period of pre-medical studies, and will lead 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 Phnompenh 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 Ecole royale de Médecine du Cambodge. For various reasons, however, the School did not begin to function until 1955, when it inaugurates its first pre-medical or P.C.B. course under the auspices of the Faculties of Medicine and Science of the University of Paris.

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 Ecole royale de Médecine du Cambodge 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 the University of Paris to send professors and lecturers to the Royal School of Medicine to give

short courses, ranging from three to six months, in their respective subjects. The language of instruction is French.

School education

In Cambodia, education is provided free at all grades. Primary education comprises two stages of three years each: the *cycle élémentaire* (lower primary), and the *cycle complémentaire* (first and second year of middle class and higher class). At the end of the six-year course, pupils sit for the complementary school certificate known as *CEPC*. Secondary education is divided into two stages, the first preparing for the secondary diploma, which may be awarded after a four-year course; the second preparing for the *baccalauréat* (secondary school certificate), which is obtainable after an additional three years.

Conditions of admission

For the time being, only twenty students are to be admitted to the full medical course given at the Royal School of Medicine. In order to be eligible for admission, students must have obtained the *baccalauréat* and, moreover, must have completed the pre-medical one-year course known as the P.C.B., which is devoted to the study of physics, chemistry, and biology.

Men and women are admitted on the same basis.

Examinations and qualification

In view of the fact that the *Ecole royale de Médecine* did not start its full curriculum until 1955, and in order to bridge the gap, special arrangements, applicable for five years as from 1954, have been made with the University of Paris whereby Cambodian health technicians will be able to obtain the diploma of Doctor of Medicine by pursuing additional studies in Paris. Cambodian health technicians will be eligible for this degree if they have obtained the *baccalauréat*, or have been successful in a competitive examination, presided over by a professor of the Paris Faculty. They must have worked as health technicians for at least two years, and must then successfully complete the fourth and fifth years of the medical course in Paris, and submit a thesis. Their work as health technicians in Cambodia is regarded as exempting them from the sixth year of the medical course in Paris which is spent as *stagiaires hospitaliers* (hospital probationers).

When the first class of the *Ecole royale* graduates, they will receive the degree of *Docteur en Médecine*, which will entitle them to practise in Cambodia.

Name and address	Ownership	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees
Ecole royale de Médecine du Cambodge PHNOMPENH	GN	1946	17	86 m 4 f	20	7	None

CANADA

Population	15 195 000
Medical schools	12
Physicians	16 031
Medical graduates per annum	817
Population per medical school	1 266 000
Population per physician	948
Medical graduates per 1000 physicians per annum	51.0
Population per annual medical graduate . . .	19 000

Introductions

Medical studies in Canada lead to the degree of Doctor of Medicine (M.D.). The duration of these studies varies, and ranges from four to six years. This difference in the timetable 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 work elsewhere before being admitted to a medical school. Some schools require, in addition, that a period of internship be completed before a degree can be 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. Certain scholarship awards are available for needy students.

The academic year runs from September to June. The language of instruction is English, except at Montreal and Laval Universities, where the language of instruction is French.

School education

Primary school generally takes a student from the age of six to that of fourteen, and secondary school to the age of eighteen. After completion of secondary studies, a candidate for admission to 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 who wish for an academic education enter

a classical college for an eight-year course from which they graduate with the *baccalauréat* (secondary school certificate).

Conditions of admission

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 undertake a minimum of two years of pre-medical work 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. In Montreal and Laval 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, that is, 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 require therefore that applicants pass the Medical College Admission Test, held twice yearly by the Educational Testing Service, Princeton, New Jersey, U.S.A. Medical schools do not allow students to begin their medical studies before they have reached the age of 19 or after they have attained the age of 30; suitable adjustment is made, however, in the cases of those schools offering a pre-medical programme along with the regular medical studies.

Most of the medical students are citizens of Canada, but a small number of vacancies are available for students from other countries of the Commonwealth and from the United States of America.

Men and women are admitted on the same basis.

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-clinical* 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, in some cases, the 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.

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 which both qualify the student for his degree and satisfy the Medical Council's examination requirements.

Qualification

Permission to practise in Canada does not automatically follow the granting of a degree. The licence to practise in any particular province is not granted unless and until the Provincial College of Physicians and Surgeons is satisfied as to an applicant's qualifications. A candidate may sit for the examination of the Medical Council of Canada, which is accepted by all the provinces, and therefore obviates the necessity of taking further examinations.

Moreover, before being granted full registration, an applicant must have served one year's internship in a hospital approved by the Province in which he seeks a licence to practise.

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)*</i>
Faculty of Medicine University of Alberta EDMONTON, Alberta	GP	1913	21 f 131 p	206 m 10 f	59	59	438
Faculty of Medicine Dalhousie University University Avenue HALIFAX, Nova Scotia	P	1867	19 f 131 p	201 m 13 f	58	51	440 (R) 690 (NR)
Faculty of Medicine Queen's University KINGSTON, Ontario	P	1854	40 f 136 p	268 m 16 f	64	59	425
Faculty of Medicine University of Western Ontario 346 South Street LONDON, Ontario	P	1881	213	216 m 15 f	60	58	550
Faculty of Medicine McGill University 3640 University Street MONTREAL 2, Quebec	P	1829	50 f 300 p	400 m 26 f	116	109	575
Faculté de Médecine de l'Uni- versité de Montréal 2900, boulevard du Mont-Royal MONTREAL, Québec	P	1843	21 f 225 p	415 m 29 f	129	96	390 (R) 465 (NR)
Faculty of Medicine University of Ottawa OTTAWA, Ontario	R	1945	30 f 91 p	199 m 6 f	90	32	475 (R) 775 (NR)
Faculté de Médecine de l'Uni- versité Laval QUÉBEC, Québec	R	1853	25 f 170 p	510 m 24 f	150	78	420 (R) 620 (NR)
School of Medical Sciences University of Saskatchewan SASKATOON, Saskatchewan	GP	1926	12 f 30 p	71 m 10 f	32		388
Faculty of Medicine University of Toronto TORONTO 5, Ontario	P	1843	400	527 m 57 f	150	151	540
Faculty of Medicine University of British Columbia VANCOUVER 8, British Columbia	GP	1949	34 f 227 p	205 m 17 f	60	60	445
Faculty of Medicine University of Manitoba Bannatyne Avenue WINNIPEG, Manitoba	P	1883		231 m 9 f	61	64	438

* SCan. 1.00 = US \$1.00

CEYLON

Population	8 385 000
Medical schools	1
Physicians	1 542
Medical graduates per annum	100
Population per medical school	8 385 000
Population per physician	5 438
Medical graduates per 1000 physicians per annum	64.8
Population per annual medical graduate	84 000

Introduction

Medical studies in Ceylon, including a one-year preparatory course for the First or Pre-medical Examination, last for six years, and lead 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 runs from June to March. The language of instruction is English.

School education

Education is provided free of charge and is compulsory up to the age of 14. The educational system is divided into three stages, namely, primary, secondary, and higher education. The primary stage, for children aged 5 to 11 years, includes both infants' and primary classes. Pupils then pass on to secondary education, which consists of three courses. These are the Junior Secondary School, for age groups 11 to 14; followed by the Senior Secondary School, which provides a two-year course leading to the Senior School Certificate Examination. This, in turn,

leads to the Collegiate Course which is preparatory to university studies. A Higher School Certificate Examination is taken at the end of the Collegiate Course.

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, with credit passes in five approved subjects, including English, or an equivalent examination, as well as a Preliminary Entrance Examination consisting of a test in four subjects, two of which must be chemistry and physics, and a general paper including an essay in Sinhalese, Tamil, or English.

Men and women are admitted on the same basis.

Curriculum and examinations

A student studies chemistry, physics, and biology for one year, and, at the end of that period, takes the First M.B. Examination in these subjects.

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

During the fourth and fifth 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 fourth, fifth, and sixth 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

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.

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Faculty of Medicine University of Ceylon COLOMBO 3	GN	1871	200	500 m 200 f	120	100	None

CHILE

Population	6 447 000
Medical schools	4
Physicians	3 450
Medical graduates per annum	280*
Population per medical school	1 612 000
Population per physician	1 867
Medical graduates per 1000 physicians per annum	81.2
Population per annual medical graduate	23 000

* Estimated

Introduction

Medical studies in Chile last for seven years, and lead 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 runs from March to December. The language of instruction is Spanish.

School education

Primary education is provided free of charge, and is compulsory from the ages of 6 to 12. Secondary education consists of a six-year course, given in *licea* (secondary schools) from the ages of 13 to 18.

Conditions of admission

Candidates for admission to a school of medicine must have obtained the *bachillerato*, or secondary education certificate, with special mention in biology, and are moreover 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 of

biology, physics and chemistry; a test covering other subjects of general education is also given.

Men and women are admitted to medical studies on the same basis.

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 speciality subjects. A student attends clinical instruction in hospital for at least three hours each day, and is given progressive responsibility, under supervision, for the care and follow-up of a few (one to three) patients. During the sixth and seventh years, he is required to attend for two-and-a-half hours daily and one night weekly, over a period of two months, at a public emergency medical service.

Examinations and qualification

Examinations are held at the end of each course and each academic year. They are written, oral, practical and clinical. A student may not proceed to the next year of the course until he has passed the end-of-the-year examinations for the previous year.

Students are required to carry out research work in a clinical, basic science, or preventive medicine subject in order to write a thesis, which has to be prepared under the sponsorship of a professor, and must be approved by a special commission. This commission is appointed by the Dean, and does not include the sponsoring professor. After a student has successfully completed his seven years' training and his thesis has been approved, he receives the degree of *Licenciado en Medicina* (Licentiate in Medicine) from his own University. This qualifies him to act as an intern in hospital, but not to engage in practice.

The examination for the higher degree of Physician and Surgeon must be taken at the University of Chile, the only one empowered to deliver this degree. As part of this examination, licentiates must spend one week in each of four services, namely, medicine, surgery, pathological anatomy and physiopathology, and pass four corresponding practical examinations. After they have done so, they are allowed to sit for the final examination given by a Commission of the University of Chile, and presided over by the Dean of the Medical Faculty of that University, to which the licentiate's parent university may also send a delegate. If a licentiate passes this final examination, he is granted the degree of *Médico-Cirujano* by the University of Chile. This degree entitles him to practise in Chile.

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pesos)*</i>
Facultad de Medicina de la Universidad de Concepción Casilla 127 CONCEPCIÓN	P	1924	20 f 70 p	182 m 30 f	68		
Facultad de Medicina de la Universidad Católica de Chile Casilla 114-D SANTIAGO	R	1930	20 f 55 p	165 m 5 f	35	21	7500
Facultad de Medicina de la Universidad de Chile Avenida Bernardo O'Higgins, 1058 SANTIAGO	GN	1833	30 f 420 p	840	150	221	3000
Facultad de Medicina de la Universidad de Chile VALPARAÍSO	GN	1957					

* 580 pesos = \$1.00

CHINA

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 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 postgraduate training.

During the Sino-Japanese War of 1937-1945, most of the medical teaching institutions were either destroyed or badly damaged. By the end of 1948, however, some 44 medical schools were restored and were again in operation.

NOTE : Owing to the present circumstances, it has been decided to present the subsequent information in two parts, one section dealing with the island of Taiwan and the other with the mainland of China.

Taiwan

Population	8 617 000
Medical schools	3
Physicians	3 264
Medical graduates per annum	162
Population per medical school	2 872 000
Population per physician	2 640
Medical graduates per 1000 physicians per annum	38.3
Population per annual medical graduate	69 000

Introduction

In Taiwan there are three 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 two 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. Chinese is the language of instruction.

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

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. Women are admitted on the same basis as men.

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 three 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.

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Kaohsiung (Takau) Medical College Shih Chuan I Road KAOHSIUNG	P	1954	23	127 m 3 f	60	— —	
National Defense Medical Center TAIPEI	GN	1902	181 f	309 m	89	91	None
College of Medicine National Taiwan University No. 1 Jen Ai Road, 1st section TAIPEI	GN	1897	94 f 33 p	317 m 33 f	78	71	NT \$570* US \$23

* NT \$36 = US \$1.00

Mainland

Population	582 603 000
Medical schools	35
Physicians	30 000*
Medical graduates per annum	3 000*
Population per medical school	16 646 000
Population per physician	19 420
Medical graduates per 1000 physicians per annum	100.0
Population per annual medical graduate	194 000

* Estimated

Introduction

In 1949 medical education was reorganized so as to produce the maximum number of physicians within the shortest possible period to serve the long-felt needs of the large population. Several institutions were amalgamated and reorganized, resulting in the consolidation of teaching staff and facilities. A uniform five-year course of instruction was adopted.

All medical schools and colleges are State operated. Chinese is the language of instruction.

In addition to the training of physicians, certain schools have been established to train medical assistants over a three-year period. This is a temporary measure necessitated by the extreme shortage of medical personnel in those areas of the country where even elementary medical needs cannot be satisfied. Such graduates are not allowed to practise medicine independently, but work within certain prescribed limits under the supervision of qualified physicians.

Conditions of admission

The minimum requirement for admission to the five-year medical course is senior middle school graduation, or its equivalent, plus the passing of an entrance examination. Since pre-medical science instruction within the five-year medical course has now been shortened, some training in these sciences is also required before admission to the medical course. Women are admitted on the same basis as men.

In the case of the three-year training course for medical assistants, the student must have completed the junior middle school course, or its equivalent.

Curriculum and examinations

During the five-year medical course, the student is required to undergo a period of basic pre-clinical training, lasting two-and-a-half to three years, in physics, chemistry, biology, anatomy, physiology, pathology, parasitology, bacteriology, and immunology. He then enters the clinical period (of two to two-and-a-half years' duration), concentrating on one of five fields, as a "major" subject, in which he will eventually work—namely, public health, medicine, surgery, obstetrics and gynaecology, or maternal and child health. One of the other four subjects is taken as a "minor". Practical training in laboratories, hospitals, clinics and public health institutions is given considerable importance.

The choice of subject for "majoring" is left to the student, in so far as is practicable, but the number training in any one field is determined by the requirements of a planned programme of development. The students, and later the graduates, work in groups in medical or health institutions so that all fields are adequately covered.

Individual examinations are held to assess each student's progress, but group examinations are also held. Practical and oral tests are given greater emphasis than are written examinations.

The graduate is required to serve in the governmental medical and health services. The area of assignment is determined partly by his own wish and partly by the requirements of a national plan.

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Kwong Hua Medical College Sien Lit Road CANTON 24, Kwangtung	GN	1909					None
Lingnan University Medical College Hok Lok CANTON, Kwangtung	GN						None
National Chungshan University Medical College CANTON, Kwangtung	GN						None
Hsiangya Medical College CHANGSHA, Hunan	GN	1914					None
Hwasi University Medical College CHENG TU, Szechwan	GN						None
Kiangsu Medical College CHINGKIANG, Kiangsu	GN						None
Chungking University Medical College CHUNGKING, Szechwan	GN						None
Dairen Medical College DAIREN, Liaotung	GN						None
Fukien Provincial Medical College FOOCHOW, Fukien	GN	1937					None
Chekiang Provincial Medical College HANGCHOW, Chekiang	GN	1912					None
Harbin Medical University HARBIN, Sungkiang	GN						None
Anhwei Medical College HOFEI, Anhwei	GN						None
Hainan Medical School HOIHOW, Kwangtung	GN						None
College of Medicine Honan University KAIFENG, Honan	GN						None

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Medical College University of Yunnan Tsin Yung Street KUNMING, Yunnan	GN	1922					None
Kwangsi Provincial Medical College KWEILIN, Kwangsi	GN						None
National Kweiyang Medical College KWEIYANG, Kweichow	GN	1938					None
National Lanchow University Medical College LANCHOW, Kansu	GN	1946					None
Kiangsi Medical College NANCHANG, Kiangsi	GN	1936					None
Nanking University Medical College NANKING, Kiangsu	GN						None
North Kiangsu Medical College NANTUNG, Kiangsu	GN	1912					None
Hopeh Medical College PAOTING, Hopeh	GN	1916					None
Peking Union Medical College PEKING, Peking	GN	1918					None
Peking University Medical College PEKING, Peking	GN	1912					None
Second Shanghai Medical College SHANGHAI, Shanghai	GN						None
Shanghai Medical College SHANGHAI, Shanghai	GN						None
Chinese Medical University SHENYANG, Liaotung	GN						None
Northwest Medical College SIAN, Shensi	GN						None
Shansi University Medical College TAIYUAN, Shansi	GN						None

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Tientsin Medical College TIENTSIN, Hopeh	GN						None
Shantung Medical College TSINAN, Shantung	GN						None
Shantung University Medical College TEINGTAO, Shantung	GN						None
Hupei Medical College WUCHANG, Hupei	GN						None
Tsungnan Tungchi Medical College WUCHANG, Hupei	GN						None
Wuchang University Medical College WUCHANG, Hupei	GN						None

COLOMBIA

Population	12 382 000
Medical schools	7
Physicians	4 212
Medical graduates per annum	500*
Population per medical school	1 769 000
Population per physician	2 940
Medical graduates per 1000 physicians per annum	118.7
Population per annual medical graduate . . .	25 000

* Estimated

Introduction

Medical studies in Colombia last for seven years, including a period of internship, and lead 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 Consejo Directivo (Directive Council) which determines policy, and a Consejo Académico (Academic Council) which has advisory functions and makes recommendations to the Consejo Directivo. The Dean of the Faculty of Medicine of the National University is appointed for one year by the Consejo Directivo 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. The language of instruction is Spanish at all the seven Colombian faculties.

School education

Primary education covers five years. It is provided free of charge, and attendance at classes is compulsory. In order to be admitted to secondary school, a pupil must be at least twelve years of age, and must have completed the fifth primary class, which replaces the earlier preparatory class attached to secondary schools. Secondary education consists of a six-year course, leading up to university studies.

Conditions of admission

In order to be admitted to medical studies, a student must hold the *bachillerato superior*, or higher certificate of secondary education, and must pass an entrance examination.

Men and women are admitted on the same basis.

Curriculum

The medical 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. After a student has passed his final examination at the end of the sixth year of the course, he must complete one year's service as an intern, and then serve for a further year in a rural health service before he is granted a licence to practise.

The degree obtained is that of *Doctor en Medicina y Cirugía*.

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pesos)*</i>
Facultad de Medicina de la Pontificia Universidad Católica Javeriana BOGOTÁ, Cundinamarca	R	1942	83 p	690	130	60	1000
Facultad de Medicina de la Universidad Nacional de Colombia Apartado 400 BOGOTÁ, Cundinamarca	GN	1826	360	1397	250	127	
Facultad de Medicina de la Universidad del Valle CAU, Valle	GP	1950	16 f 100 p	145 m 15 f	60		varies up to 1000
Facultad de Medicina y Ciencias Naturales de la Universidad de Cartagena CARTAGENA, Bolívar	GP	1828	39	460 m 3 f			
Facultad de Medicina de la Universidad de Caldas MANIZALES, Caldas	GP	1952	1 f 14 p	106 m 9 f			
Facultad de Medicina de la Universidad de Antioquia Apartado postal 205 MEDELLÍN, Antioquia	GP	1872	11 f 160 p	450	85	65	varies up to 1000
Facultad de Medicina de la Universidad del Cauca Calle 5a, 4-10 POPAYÁN, Cauca	GN	1949	5 f 30 p	146 m 10 f	40		varies up to 800

* 4.50 pesos = \$1.00

COSTA RICA

Population	915 000
Number of medical schools	1
Number of physicians	319
Annual number of medical graduates	—
Population per medical school	915 000
Population per physician	2 868
Medical graduates per 1000 physicians per annum	—
Population per annual medical graduate	—

The opening of a medical school in Costa Rica was announced at the time of going to press. In the circumstances, it was not possible to assemble the data on school education, university administration, etc., which have been included in the other chapters of this Directory.

Information regarding the annual number of medical graduates and the system of medical education in operation is not at present available. In a subsequent edition of the Directory these omissions will be rectified.

The name and address of the school are as follows:

Facultad de Medicina
 Universidad de Costa Rica
 SAN JOSÉ
 Costa Rica.

It should be noted that the tabulated data appearing in the annexes to this volume have not been recomputed to include the new institution in the total number of medical schools. Readers who wish to use these data for statistical analysis should make the necessary modifications.

CUBA

Population	5 807 000
Medical schools	1
Physicians	5 600
Medical graduates per annum	80*
Population per medical school	5 807 000
Population per physician	1 037
Medical graduates per 1000 physicians per annum	142.8
Population per annual medical graduate . . .	73 000

* Estimated

Introduction

Medical education in Cuba consists of a seven-year course, leading to the degree of *Doctor en Medicina* (Doctor of Medicine).

Administration

The University of Havana is an autonomous institution, subsidized by the National Government and administered by a University Council, whose chairman is the Rector of the University. The University Council consists of the deans of the thirteen Schools making up the University.

The Dean of the Faculty of Medicine is elected by the professors of that Faculty. His term of office is three years.

The academic year runs from September to June. The language of instruction is Spanish.

School education

Primary education begins when a child is 6 years of age, and continues for eight years. Six of these are devoted to basic, and two to higher, primary education.

Secondary education, leading to the *bachillerato* (secondary education certificate), begins at the age of fourteen and continues for five years. Four years of that period are given over to fundamental secondary instruction, whereas the final year brings the student up to pre-university standard.

Conditions of admission

To qualify for admission to the medical course the candidate must have reached the age of seventeen, have obtained the Cuban *bachillerato*,

with specialization in science subjects, or a recognized foreign equivalent, and, lastly, have been successful in a competitive entrance examination in chemistry, physics, botany, zoology, biology, mathematics, psychology, and a foreign language which may be either English or French.

Men and women are admitted on the same basis.

Curriculum

The curriculum is arranged as follows:

First year: biological chemistry; biological physics; descriptive anatomy I; histology; embryology

Second year: descriptive anatomy II; physiology I; bacteriology; parasitology and tropical diseases

Third year: topographical anatomy; physiology II; morbid anatomy and morbid histology; general pathology I

Fourth year: pharmacology; general pathology II; microscopy and clinical chemistry; tuberculosis; obstetrics; radiology; physiotherapy

Fifth year: medicine; neurology; psychiatry; surgery; operative surgery; ophthalmology; otorhinolaryngology

Sixth year: clinical medicine I; clinical surgery I; urology; dermatology and venereology; therapeutics; hygiene and health legislation

Seventh year: clinical medicine II; clinical surgery II; paediatrics; orthopaedics; gynaecology; experimental pathology; forensic medicine and toxicology.

A student begins hospital attendance in the third year of the course. Hospital training consists of demonstrations and direct clinical work in semeiology, medicine, surgery, and specialities. Progressively responsible ward work is undertaken during the sixth and seventh years.

Examinations

Examinations are held once or twice during each academic year in the relevant subjects, which are not grouped for examination purposes. Examinations are either written, oral, practical or clinical, according to subject. A student who has failed an ordinary examination may take it once more as an extraordinary examination, without having to repeat the course.

Qualification

In addition to completing the courses successfully and passing his examinations, a student must write a thesis on a subject approved by the Dean of the Faculty. If the thesis is accepted, the student receives the degree of *Doctor en Medicina*, which authorizes him to practise in Cuba.

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Facultad de Medicina de la Universidad de La Habana LA HABANA	GN	1728					

CZECHOSLOVAKIA

Population	12 952 000
Medical schools	7
Physicians	17 571
Medical graduates per annum	1 000*
Population per medical school	1 850 000
Population per physician	737
Medical graduates per 1000 physicians per annum	56.9
Population per annual medical graduate . . .	13 000

* Estimated

Introduction

Medical education in Czechoslovakia lasts for six years and leads to the degree of Medical Practitioner.

In addition to the six general medical faculties, two specialized faculties are established in Prague; one of these is devoted to paediatrics and the other to hygiene. There is also an academy of military medicine at Hradec Králové.

Administration

All medical schools in Czechoslovakia operate under the authority of the Ministry of 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 years runs from October to June. The language of instruction is Czech at Brno, Hradec Králové, Olomouc, Pilsen and Prague, and Slovak at Bratislava.

School education

Basic education is provided free of charge and is compulsory up to 15 years of age. It is provided by "national schools" in a five-year course. Those scholars who wish to gain admittance to a university must follow a four-year course in the *gymnasia*, or secondary schools.

Conditions of admission

The student is eligible for admission to university if he has successfully completed his secondary school studies. Entrants are selected mainly on the basis of their scholastic achievements, state of health and character.

Men and women are admitted on the same basis.

Curriculum

The first three years of the curriculum are given over to the basic sciences and pre-clinical subjects, no matter what speciality 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 and qualification

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. A graduate who wishes to undertake research work must submit a thesis, which, if accepted, entitles him to the degree of Candidate or Doctor of Medical Sciences.

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Lékařská Fakulta Slovenská Univerzita (Faculty of Medicine, Slovak University) BRATISLAVA	GN	1919				200	None
Lékařská Fakulta Masarykova Univerzita (Faculty of Medicine, Masaryk University) BRNO	GN	1919				200	None
Lékařská Fakulta Karlova Univerzita (Faculty of Medicine, Charles University) HRADEC KRÁLOVÉ	GN	1945				200	None
Vojenská Lékařská Akademie (Academy of Military Medicine) HRADEC KRÁLOVÉ	GN						None
Lékařská Fakulta Palackého Univerzita (Faculty of Medicine, Palacký University) OLOMOUC	GN	1778				200	None

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Lékařská Fakulta Karlova Universita (Faculty of Medicine, Charles University) PLZEN (PILSEN)	GN	1945				200	None
Lékařská Fakulta Karlova Universita (Faculty of Medicine, Charles University) PRAHA (PRAGUE)	GN	1348			300	200	None

DENMARK

Population	4 439 000
Medical schools	2
Physicians	4 769
Medical graduates per annum	257
Population per medical school	2 220 000
Population per physician	931
Medical graduates per 1000 physicians per annum	53.9
Population per annual medical graduate	17 000

Introduction

Medical education in Denmark consists of a seven-year course, 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 each year by his faculty. He is eligible for re-election.

The academic year begins in September and ends in June. The language of instruction is Danish.

School education

After seven years of primary education and five years at a *Gymnasium* or secondary school, a student receives the secondary school certificate. There are three types of *Gymnasia*, which vary according to the emphasis given to instruction in classical languages and literature, or modern languages and literature, or mathematics and science. Most medical students are drawn from schools of the last type. The average age when medical studies begin is 18 or 19 years.

Conditions of admission

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. Men and women are admitted on the same basis.

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 which 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

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 *Laege*, 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.

The university degree of *Doctor Medicinae* (Dr. Med.) may be obtained by writing a thesis, which must contain the results of original research, and must be publicly presented. If the thesis is accepted by the faculty, then a candidate must publicly defend his work, in the course of a *viva voce* examination, against two *opponentes* (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 appointments.

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Det Lægevidenskabelige Fakultet Aarhus Universitet AARHUS	P	1928	44 f 28 p	726 m 134 f	128	57	None
Det Lægevidenskabelige Fakultet Københavns Universitet Frue Plads KØBENHAVN (COPENHAGEN)	GN	1778	47 f 33 p	1181 m 379 f	225	200	None

DOMINICAN REPUBLIC

Population	2 347 000
Medical schools	1
Physicians	472
Medical graduates per annum	66
Population per medical school	2 347 000
Population per physician	4 972
Medical graduates per 1000 physicians per annum	139.8
Population per annual medical graduate	36 000

Introduction

The medical course 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 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 runs from October to July. The language of instruction is Spanish.

School education

Primary education, which extends over a period of six years, is provided free of charge and is compulsory for all children between the ages of 7 and 14 years. Intermediate and secondary education are not compulsory but are likewise provided free of charge. Secondary education consists of a four-year course.

Conditions of admission

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

The school is open on the same terms to men and women.

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 pathology; surgical anatomy and operative medicine; semeiotics and medical 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 and qualification

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* may be conferred.

One year of internship in an approved hospital is then compulsory before a licence to practise can be issued.

Name and address	Ownership	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees (Pesos)*
Facultad de Medicina de la Universidad de Santo Domingo CIUDAD TRUJILLO	GN	1538	41	709 m 85 f	150	66	60

* 1 peso = \$1.00

ECUADOR

Population	3 567 000
Medical schools	3
Physicians	900
Medical graduates per annum	206
Population per medical school	1 189 000
Population per physician	3 963
Medical graduates per 1000 physicians per annum	228.3
Population per annual medical graduate	17 000

Introduction

Medical education in Ecuador consists of a seven-year course, leading to the degree of *Doctor en Medicina y Cirugia* (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 Consejo Universitario (University Council) 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 Consejo Directivo (Directive Council) 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. The language of instruction is Spanish.

School education

Primary education is provided free of charge, and is compulsory for all children between six and twelve years of age. Secondary schools give a six-year course, terminated by examination. Successful candidates are granted the *bachillerato* (secondary school certificate).

Conditions of admission

A candidate for admission to a faculty of medical sciences in Ecuador must hold the *bachillerato* and, in addition, must pass a faculty entrance examination in physics, chemistry and biology.

Men and women are admitted on the same basis.

Curriculum

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

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

Second year: organic chemistry; anatomy; parasitology

Third year: topographical 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; clinical surgery; 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 and qualification

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-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 subject 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, that is, he defends it 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* (Doctor of Medicine and Surgery), 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.

Name and address	Owner-ship	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees (Sucre) *
Facultad de Ciencias Médicas de la Universidad de Cuenca CUENCA	G	1867	25	174 m 7 f	60	60	250
Facultad de Ciencias Médicas de la Universidad de Guayaquil Casilla 471 GUAYAQUIL	G	1877	46 p	429 m 149 f	83	62	352
Facultad de Ciencias Médicas de la Universidad Central QUITO	G	1827	49 p	556 m 60 f	75	84	250

* 18.50 sucres = \$1.00 (as on 1 July 1956)

EGYPT

Population	22 651 000
Medical schools	3
Physicians	6 420
Medical graduates per annum	560
Population per medical school	7 550 000
Population per physician	3 528
Medical graduates per 1000 physicians per annum	87.2
Population per annual medical graduate	40 000

Introduction

Medical training in Egypt consists of a six-and-a-half-year course, leading to the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.Ch.).

Administration

Medical education in Egypt is administered and financed by the National Government through the Ministry of Education.

The academic year runs from October to June. The language of instruction is English, but contact with patients is carried on in Arabic.

School education

The usual schooling in Egypt consists of six years of compulsory education at a primary school, followed by three years of intermediate education and three years at a secondary school. A student is generally about 18 years of age by the time he completes his secondary school education.

Conditions of admission

Candidates for admission to a medical faculty must hold the Egyptian Government General Secondary Education Certificate (Science Section) or an equivalent certificate from a recognized institution. The number of students to be admitted depends on the vacancies available, 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 non-Egyptian 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.

Men and women are admitted on the same basis.

Curriculum

The curriculum is divided into four parts, as follows:

1. *Pre-medical* (first year): chemistry; physics; biology
2. *Pre-clinical* (second and third years): anatomy; embryology; histology; physiology; biochemistry
3. *Transitional* (fourth year): bacteriology; parasitology; pathology; pharmacology; medicine (an elementary course in case-taking and teaching rounds on in-patients and out-patients); surgery (an elementary course in case-taking, surgical teaching, out-patients, in-patients and operations)
4. *Clinical* (fifth and sixth years, and final half-year): medicine; dermatology; paediatrics; infectious diseases; psychiatry; neurology; tuberculosis; electro-therapy; clinical pathology; physical medicine; surgery, urology; venereal diseases; orthopaedics; otorhinolaryngology; thoracic surgery; neurosurgery; anaesthetics; radiology; physiotherapy; obstetrics; gynaecology; ophthalmology; hygiene and preventive medicine including nutrition, forensic medicine, and toxicology.

Examinations and qualification

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, 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 at present 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.

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (LE)*</i>
Faculty of Medicine Alexandria University 8 Sharia Kenissa el-Ingulizja ALEXANDRIA	GN	1942	106	1250	275	160	20
Abbasia Faculty of Medicine University of Ein Shams Sharia El-Malika CAIRO	GN	1947	36 f 52 p	1593 m 201 f	229	150	20
Kasr-el-Aini Faculty of Medicine Cairo University Sharia Kasr-el-Aini CAIRO	GN	1866		2000	500	250	20

* LE 1 = \$2.87

EL SALVADOR

Population	2 122 000
Medical schools	1
Physicians	380
Medical graduates per annum	18
Population per medical school	2 122 000
Population per physician	5 584
Medical graduates per 1000 physicians per annum	47.4
Population per annual medical graduate	118 000

Introduction

Medical training in El Salvador consists of a six-year course, leading 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, an institution owned and operated by the Government.

The academic year begins in May, and ends in February. The language of instruction is Spanish.

School education

Primary school education is provided free of charge, and is compulsory. Primary schools provide a six-year course for children from 7 to 12 years of age. Pupils are admitted to secondary schools without examination if they have completed the full primary course. The secondary course lasts for five years.

Conditions of admission

Candidates for admission to the medical school must have completed their secondary school studies and have obtained the certificate of *Bachiller en Ciencias y Letras* (secondary school certificate in science and letters). They must pass an entrance examination and submit a certificate of good health.

The school is open on the same terms to men and women.

Curriculum

The curriculum is divided into a *pre-medical* year, two *pre-clinical* years, two *clinical* years, and one *internship* year. During the last-named period, a student works under supervision in the medical, surgical, and obstetrical departments of the hospital.

Examinations and qualification

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—preferably 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 Consejo Superior de Salud Pública.

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Colones)*</i>
Escuela de Medicina Universidad Nacional del Sal- vador Calle Arce, 93 SAN SALVADOR	GN	1847	1 f 57 p	223 m 28 f	40	18	100

* 2.50 colones = \$1.00

FIJI

Population	523 000
Medical schools	1
Physicians	181
Medical graduates per annum	16
Population per medical school	523 000
Population per physician	2 890
Medical graduates per 1000 physicians per annum	88.4
Population per annual medical graduate	33 000

NOTE: The medical school in Fiji serves a number of neighbouring islands. The population figures, etc., for the territories concerned have therefore been added to those of Fiji for the purposes of the present table.

Introduction

Medical training in Fiji at present consists of a five-year course, and leads to the diploma of Assistant Medical Practitioner.

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.

Administration

The Suva Central Medical School 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 1956 came from Fiji, and the remaining two-thirds from the following territories: Cook Islands,

Gilbert and Ellice Islands, Nauru, New Hebrides, Niue, Pacific Islands under United States trusteeship, Papua and New Guinea, American Samoa, Western Samoa, British Solomon Islands, and Tonga.

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 Medical School at Suva.

The study year runs from February to December. The language of instruction is English.

School education

Education is provided free of charge, but is not yet compulsory for all children. Regulations in Fiji require that all children between the ages of 6 and 14 shall attend school, if one is available within three miles from their home. Primary schools provide eight years' schooling, but the last three years should be regarded as of post-primary standard. Children are admitted to secondary school after spending five years at a primary school. The secondary school system aims largely at preparing students for the Cambridge School Certificate Examinations.

Conditions of admission

Fijian and Fiji-Indian candidates for admission to the school are expected to have acquired secondary education up to the Senior Cambridge Certificate standard; 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 Central Medical School, 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.

Men and women are admitted on the same basis.

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.

Examinations and qualification

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 on the subject.

Candidates successful in the final examination receive the diploma of Assistant Medical Practitioner. 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.

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (£ F)*</i>
Central Medical School Suva	G	1928	6 f 12 p	88 m 9 f	20	16	144

£F 1 = \$2.50

FINLAND

Population	4 190 000
Medical schools	2
Physicians	2 296
Medical graduates per annum	114
Population per medical school	2 095 000
Population per physician	1 825
Medical graduates per 1000 physicians per annum	49.7
Population per annual medical graduate	37 000

Introduction

The medical curriculum in Finland lasts for six years, and is followed by a period of compulsory internship. The course 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 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.

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

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

School education

School education is provided free of charge, and is compulsory for children between 7 and 15 years of age. Primary education is provided by State schools in a seven-year course, leading to a school-leaving certificate. Secondary education consists of a six-year course, following completion of the 6th class of the primary school, or of an eight-year course, following completion of the 4th class of the primary school.

Conditions of admission

Requirements for admission are a matriculation certificate from a 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 available vacancies, the entrance examination is, in fact, tantamount to a selection process. First-year students may be admitted to either of the two semesters.

Men and women are admitted on the same basis.

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, plus 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 pathology and bacteriology, and takes up dermatology and venereology. The eighth semester is devoted almost entirely to medicine, including neurology, 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 also required to examine patients, to write up case histories, and present such case histories 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* or resident house-officer in certain approved hospitals for a period ranging from six months to one year, and only then receives the degree of Licentiate in Medicine from the University, and a licence to practise from the State Medical Board.

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.

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Markkaa)</i>
Lääketieteellinen Tiedekunta Helsingin Yliopisto (Faculty of Medicine, University of Helsinki) HELSINKI	GN	1640	130	650	120	100	10 000
Lääketieteellinen Tiedekunta Turkun Yliopisto (Faculty of Medicine, University of Turku) TURKU	P	1943	15 f 30 p	208 m 69 f	60	14	6000

* 230 markkaa = \$1.00

FRANCE

Population	43 022 000	(9 369 000)
Medical schools	24	(1)
Physicians	39 356	(1 922)
Medical graduates per annum	3 000*	(70)
Population per medical school	1 793 000	(9 369 000)
Population per physician	1 093	(4 875)
Medical graduates per 1000 physicians per annum	76.2	(36.4)
Population per annual medical graduate	14 000	(134 000)

* Estimated

NOTE: The figures in parentheses refer to Algeria. They have been listed separately, since, although Algeria is considered as part of Metropolitan France, the pertinent data are more conveniently grouped with those of other African countries (see Annex 1).

Introduction

Medical training in France lasts for six years, not including one year of pre-medical studies, covering physics, chemistry and biology, and generally referred to as the P.C.B. course. The course is held either in a *faculty* of medicine or in a *school* of medicine 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 nine *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 either of these faculties are the same. The diplomas issued are likewise identical, and the complete six-year medical course can be taken at any of the thirteen faculties.

In addition to these faculties of medicine, there are also two types of *school* of medicine in France, each headed by a director. These are, first of all, the *écoles nationales de médecine et de pharmacie*, or national schools of medicine and pharmacy, of which there are five. These schools provide full medical training—and are therefore known as *écoles de plein exercice*—but conduct examinations for the first, second and third years or, in some cases, for the first, second, third and fourth years of the medical course only. Examinations at the end of subsequent years of the course must be taken at a faculty of medicine.

The second type are the *écoles nationales préparatoires de médecine et de pharmacie* or national preparatory schools of medicine and pharmacy, of which there are six. These provide the first, second and third years of medical training, and hold the first and second years' examinations.¹ For the rest of his medical training, a student must then transfer to an *école nationale de médecine et de pharmacie* or to a medical faculty.

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 which 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. Academically, each school of medicine is affiliated with a faculty of medicine, which sends professors to preside over the examinations held at the school.

The academic year in all the faculties and schools of medicine runs from November to July. The language of instruction is French.

School education

Primary schooling is compulsory. It is given either in State schools, in which case it is secular and provided free of charge, or in private institutions. The period of primary instruction covers eight years, generally from the ages of 6 to 14. Those pupils who plan to go on to secondary education usually transfer at about the age of 11 to a secondary school, which may be either a State-owned or a private establishment. Secondary schools give a seven-year course, with the last year devoted to *philosophie* or mathematics and leading to the *baccalauréat* or secondary school certificate. Usually, therefore, a student obtains the *baccalauréat* when he is about 18 years of age.

Conditions of admission

In order to be admitted to medical studies, a student must hold the *baccalauréat* and, moreover, must have completed the one-year P.C.B. course at a faculty of science. The examination at the end of the P.C.B. course is oral and practical; no candidate may sit for it more than four times.

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

Men and women are admitted on the same basis.

Curriculum

The medical curriculum is established by Decree ratified by the Ministry of Education, and is identical in all faculties and schools of medicine.

¹ The provision of a recent Decree, to be implemented gradually over the next few years, will transform these schools into institutions giving the full medical course.

The first and second years of the medical course are devoted to theoretical and practical instruction in medical chemistry, medical physics, anatomy, histology, embryology, and physiology. In addition, a student attends hospital clinics and wards, where he receives elementary training in general medicine and surgery, with special emphasis on the observation of cases, clinical examination, and the approach and attitude of the physician.

In the third and fourth years, a student takes academic courses in pathological anatomy, bacteriology, parasitology, medical and surgical anatomy, medicine and experimental medicine, surgery, operating techniques, and obstetrics, and also continues his hospital course in general medicine and surgery. The fourth year, moreover, includes clinical training in the specialities, such as obstetrics, dermatology, venereology, communicable diseases, neurology, psychiatry and paediatrics.

In the fifth year, a student also takes courses in hygiene, forensic medicine, medical ethics, therapeutics, hydrology, climatology, and pharmacology, along with practical work where appropriate, while continuing his clinical training.

The sixth year of the medical course consists of service in a hospital. The student, known at this phase as a *stagiaire hospitalier* or hospital probationer, assists the chief of a hospital department, and works under his supervision. This *stage*, or probationary period, may only be served in hospitals approved for that purpose by a student's parent faculty. Hospital probationers receive some remuneration.

Courses and examinations are identical throughout France. Students may, therefore, transfer from one institution to another during the medical course.

Examinations and qualification

At the end of the first, second, third, fourth and fifth years of the medical course, that is, in June-July of each year, examinations are held in respect of the subjects covered during the academic year. Examinations at the end of the first and second years consist of written, oral and practical tests. Generally, only the oral and practical portions of the examination are held at the end of the remaining years of the course. Students who fail in a regular end-of-the-year examination may take it again in October-November. A student who fails a second time must repeat the whole year's practical and clinical training.

In the sixth year of the medical course, a student is required to pass separate examinations in clinical medicine, clinical surgery, and clinical obstetrics. A candidate who fails in any of these examinations is not allowed to take a repeat examination until he has taken an additional practical course of two or three months' duration.

A student who has passed all his examinations must submit a thesis before he can receive the *Doctorat en médecine*, or degree of Doctor of Medicine (either state or university type—see below). The subject of that thesis must be approved beforehand by the professor who will, later on, act as *Président du Jury*, or Chairman of the Examining Board, before which the candidate must "defend" his thesis in public during the course of a *viva voce* examination.

Degrees and diplomas

The French universities confer two types of medical degree or diploma.

The first of these, the *diplôme d'Etat* or State diploma, authorizes the holder to practise medicine in Metropolitan France and in French territories overseas. Foreigners too may obtain the State diploma if they meet all the requirements in force for French citizens; that is, they must effect twenty-four *inscriptions*² or immatriculations, must pass all the necessary examinations—including those for the French *baccalauréat* and the P.C.B. course—and must “defend” a written thesis. 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, but must still obtain the French *baccalauréat* and pass the P.C.B. course. Naturalized French citizens, who hold the State diploma, may practise medicine in France and overseas territories on condition that they have fulfilled certain obligations with respect to military service.

The second type of diploma, known as the *diplôme universitaire*, or 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 France or overseas territories. The studies and examinations required to obtain the *diplôme universitaire* are exactly the same as those required for the State diploma, except that equivalent foreign examinations may be accepted instead of the French *baccalauréat* and P.C.B. certificates. 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 universitaire* in addition may also be exempted from some of the courses and examinations included in the first three years of the medical course.

Furthermore, foreigners, who have completed the course for a university doctorate may become candidates for the State diploma, provided that they satisfy the requirements demanded of French students and pass all the necessary examinations. Certain exemptions may be granted to such candidates.

Externat and internat

These are hospital appointments, awarded as a result of *concours* or competitive examinations, and are not necessarily post-graduate appointments as is the case in other countries. *Externes*, in France, are always students, and *internes* generally so.

The *externat* and *internat* are performed concurrently with the medical course, but there is no connexion or co-ordination between the *externat* and *internat* on the one hand, and the medical course on the other, except that *externes* and *internes* are exempted from the ordinary clinical courses and from the hospital service performed during the sixth year. Candidates for these appointments must have effected a certain number of valid *inscriptions* at their parent faculty or school of medicine. The competitive examinations are conducted under the

² An *inscription* is the registration fee, and is used to denote a portion of an academic year, since there are normally four inscriptions per year.

auspices of the hospitals,³ and not by the faculties or schools of medicine; they are optional, and known as *concours hospitaliers*.

It should be mentioned that *externe* appointments can be made only in hospitals located in the same city as a faculty or school of medicine giving the full medical course. On the other hand, any hospital may recruit *internes* by competitive examination, provided that it is included in a list compiled jointly by the Ministries of Health and Education.

A student may enter a *concours* for the *externat* after four valid *inscriptions*, that is, after passing the examinations at the end of the first year of the medical course. These examinations differ somewhat from centre to centre but, as a rule, consist of written or oral tests in anatomy, physiology, medical pathology, surgical pathology, general medicine, and surgery. *Externes* are appointed for three years, but their period of service may be prolonged. They attend the medical and surgical wards of the teaching hospitals and, under the supervision of *internes*, perform work which includes admission of patients, history taking, physical examinations, maintenance of records, analyses, lumbar punctures, dressings, and such like. They receive some remuneration, which varies according to seniority, and also obtain their mid-day meal at the hospital.

In order to be admitted to the *concours* for the *internat* in a hospital in the same city as his faculty or school of medicine, a candidate must have served as an *externe* for at least eighteen months, and have effected twelve valid *inscriptions* or immatriculations. The competitive examination for the *internat* 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*,⁴ 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 *externe*; 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 paid according to seniority, and receive various considerations with respect to lodging, food, etc.

To compete for the post of *interne* in a hospital other than that situated in the same city as his faculty or school of medicine, the candidate must have effected 16 valid *inscriptions*. The examinations are usually held on a regional basis and the requirements are similar to those for the normal *internat* examination. *Internes* are appointed for three years.

Foreign candidates may be allowed by the Ministry of Health to sit for the *externat* and *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 *externes* and *internes* of French nationality.

³ In Paris, Lyons and Marseilles, under the auspices of the Service de l'Assistance publique locale, which is the body responsible for the administration of all public hospitals in those cities.

⁴ A *service* consists of a team of assistants, *chefs de clinique*, *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 competitive examinations for *externats* and *internats* are held once a year; no candidate may compete more than five times for either. It has been estimated that about 20% of the students taking these examinations succeed in becoming *externes*, and that about 5% ultimately become *internes* in local hospitals.

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

The right to use the titles "*ancien externe*" (former extern) or "*ancien interne*" (former intern) is important in the career of a French physician, particularly if the *externat* or *internat* was served in a university city. For instance, only *anciens internes* are eligible for the higher competitive examinations for the posts of physician and surgeon in hospitals located in the same city as the faculty or school of medicine.

Name and address	Owner-ship	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees (Francs)*
Faculté mixte de Médecine et de Pharmacie de l'Université d'Alger 2, rue Michelet ALGER, Algérie	GN	1857	129	712 m 180 f	350	70	4000
Ecole nationale préparatoire de Médecine et de Pharmacie 18, place Saint-Michel AMIENS, Somme	GN	1806	1 f 20 p	57 m 50 f	46		4500
Ecole nationale de Médecine et de Pharmacie d'Angers 16, boulevard Daviers ANGERS, Maine-et-Loire	GN	1807		325	50		2800
Ecole nationale préparatoire de Médecine et de Pharmacie Université de Besançon 4, place Saint-Jacques BESANÇON, Doubs	GN	1856	20 f 22 p	140 m 79 f	125		3100
Faculté mixte de Médecine et de Pharmacie de l'Université de Bordeaux Place de la Victoire BORDEAUX, Gironde	GN	1878	98	2400 m 611 f	246	286	2700

* 350 francs = \$1.00

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Francs)*</i>
Ecole nationale préparatoire de Médecine et de Pharmacie Université de Caen 1, rue Vaubénard CAEN, Calvados	GN	1432	35 p	132 m 56 f	80		3500
Faculté mixte de Médecine et de Pharmacie Université de Clermont-Ferrand 34, avenue Carnot CLERMONT-FERRAND, Puy-de-Dôme	GN	1928	63	267 m 103 f			2800
Ecole nationale préparatoire de Médecine et de Pharmacie de Dijon 16, rue de l'Hôpital DIJON, Côte-d'Or	GN	1820	8 f 47 p	90 m 59 f	41		3700
Ecole nationale de Médecine et de Pharmacie Université de Grenoble 21, rue Lesdiguières GRENOBLE, Isère	GN	1820	42	167 m 111 f			4165
Faculté libre de Médecine et de Pharmacie des Universités catholiques de Lille 1, rue François-Baès LILLE, Nord	R	1876	45 p	176 m 24 f	20		7500
Faculté mixte de Médecine et de Pharmacie de l'Université de Lille Cité hospitalière LILLE, Nord	GN	1852	53 f 50 p	775 m 96 f	160	80	2800
Ecole nationale de Médecine et de Pharmacie 11, rue François-Chénieux LIMOGES, Haute-Vienne	GN		36	300			
Faculté mixte de Médecine et de Pharmacie Université de Lyon 8, avenue Rockefeller LYON, Rhône	GN	1877	27 f 53 p	1394 m 274 f	256	225	2800
Faculté mixte de Médecine générale et coloniale et de Pharmacie de Marseille Université d'Aix-Marseille Jardin Emile-Duclaux MARSEILLE, Bouches-du-Rhône	GN	1930		1927	350	264	2800

* 350 francs = \$1.00

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Francs)*</i>
Faculté de Médecine de Montpellier Rue de l'Ecole-de-Médecine MONTPELLIER, Hérault	GN	1220	45 f 50 p	1467 m 348 f	250	130	4350
Faculté de Médecine de l'Uni- versité de Nancy 30, rue Lionnois NANCY, Meurthe-et-Moselle	GN	1872	48 f 34 p	710 m 196 f	212	104	4500
Faculté mixte de Médecine et de Pharmacie 16, quai Moncoussu NANTES, Loire-Inférieure	GN	1808	64	360 m 196 f			2800
Faculté de Médecine de l'Uni- versité de Paris 12, rue de l'Ecole-de-Médecine PARIS 6 ^e , Seine	GN	1253	155	12683	1600	1100	4500
Ecole nationale préparatoire de Médecine et de Pharmacie 17, rue de l'Hôtel-Dieu PORTIERS, Vienne	GN	1430	36 f	73 m 20 f	50		2700
Ecole nationale préparatoire de Médecine et de Pharmacie 51, rue Simon REIMS, Marne	GN	1550	29 p	168 m 82 f	80		2800
Faculté mixte de Médecine et de Pharmacie 16, boulevard Laennec RENNES, Ile-et-Vilaine	GN	1906	1 f 52 p	380 m 91 f	90	60	3500
Ecole nationale de Médecine et de Pharmacie Université de Caen 55, rue Louis-Ricard ROUEN, Seine-Inférieure	GN	1841	4 f 30 p	136 m 42 f	45		2200
Faculté de Médecine de l'Uni- versité de Strasbourg 1, place de l'Hôpital STRASBOURG, Bas-Rhin	GN	1621	65	997 m 226 f	190	85	3500
Faculté mixte de Médecine et de Pharmacie de l'Univer- sité de Toulouse 37, allées Jules-Guesde TOULOUSE, Haute-Garonne	GN	1891	54	753 m 140 f	150	120	4255
Ecole nationale de Médecine et de Pharmacie 2 bis, boulevard Tonnelle TOURS, Indre-et-Loire	GN	1841	45 p	368 m 122 f			2800

* 350 francs = \$1.00

FRENCH WEST AFRICA

Population	14 938 000
Medical schools	1
Physicians	643
Medical graduates per annum	20*
Population per medical school	14 938 000
Population per physician	23 232
Medical graduates per 1000 physicians per annum	31.1
Population per annual medical graduate	747 000

* Estimated

Introduction

At present, only the first three years, or pre-clinical years, of the medical course can be taken at the *Ecole préparatoire de Médecine et de Pharmacie* at Dakar. The next two years, that is, the clinical part of the medical curriculum, must be taken in Metropolitan France, whereas the sixth or final year, devoted to a *stage hospitalier* or period of practical training, is again served in Dakar. Medical studies thus cover a period of six years, not including the one-year pre-medical or P.C.B. course.

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 medical branches, 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 de Pharmacie* (Preparatory School of Medicine and Pharmacy), which has been preparing students for the French *diplôme d'Etat* (State diploma) ever since.

Administration

The *Ecole préparatoire de Médecine et de Pharmacie* at Dakar is attached to the *Institut des Hautes Etudes de Dakar*, an institute of higher learning which also provides courses in law, science and letters.

The academic year runs from November to July. The language of instruction is French.

School education

Primary education lasts from six to eight years, and is provided free of charge. As a rule, pupils enter primary school at the age of six, and leave when they are

fourteen years old. The primary course concludes with the test for the *certificat d'études primaires* (primary school certificate).

In the intermediate classes, the best pupils between 11 and 13 years of age can sit for the competitive entrance examination for the *lycées* and *collèges*, where secondary education is provided. Secondary education leads to the final qualifying examination for the *baccalauréat* (secondary school certificate).

Conditions of admission

The Ecole préparatoire de Médecine et de Pharmacie is a State institution. Entrance requirements are the same as for candidates wishing to embark on medical studies in Metropolitan France—namely, the *baccalauréat*, and a certificate showing that the candidate has successfully completed the one-year pre-medical course in physics, biology, and chemistry, generally referred to as the P.C.B. course. This course is given under the auspices of the Faculty of Science of the Institut des Hautes Etudes at Dakar.

Students beginning their medical studies at Dakar are also registered simultaneously at the Faculty of Medicine of the University of Bordeaux, where they may take the clinical part of the medical course later on.

Curriculum

The first three years of the medical curriculum, as at present provided for at the Ecole préparatoire de Médecine et de Pharmacie, are arranged as follows:

First and second years: chemistry; physics; anatomy; histology; embryology; physiology

Third year: pathology; bacteriology; parasitology; introduction to medicine and surgery; experimental medicine.

The fourth and fifth years of the medical course must, at present, be taken in faculties or schools of medicine in Metropolitan France. The sixth and final year of the medical curriculum, in the course of which a student receives practical training in a hospital as a *stagiaire hospitalier*, is again served in Dakar, in local hospitals, under the supervision of professors of the Institut des Hautes Etudes.

Examinations and qualification

Examinations are held at the end of each academic year, and cover the subjects studied during that period. A sponsoring body, the Commission mixte des Universités de Paris et Bordeaux (Joint Committee of the Universities of Paris and Bordeaux), which is presided over alternately by the rectors of each of these institutions, is responsible for educational standards and levels. The Joint Committee sends professors to Dakar at regular intervals, in order to ensure that the examinations held in Dakar are equivalent to those held in Metropolitan France.

The degree obtained as a result of these examinations is the *diplôme d'Etat*, or State diploma.

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (CFA francs)*</i>
Ecole préparatoire de Médecine et de Pharmacie Institut des Hautes Etudes DAKAR, Sénégal	GN	1950	7 f 13 p	46 m 5 f	22		1300

* 175 CFA (French colonies in Africa) francs = \$1.00

GERMANY: DEMOCRATIC REPUBLIC

Population	18 318 000
Medical schools	9
Physicians	11 000*
Medical graduates per annum	1 000*
Population per medical school	2 035 000
Population per physician	1 665
Medical graduates per 1000 physicians per annum	90.9
Population per annual medical graduate	18 000

* Estimated

Introduction

In the German Democratic Republic medical education consists of a six-year course,¹ which includes periods of professional practical training (*Berufspraktika*).

The academic year runs from September to May.

School education

School attendance is compulsory from the ages of 7 to 18 years. Primary schools give an eight-year course; the subjects taught during the last four years include a foreign language (Russian), physics, chemistry, and biology. Secondary schools are divided into three categories, each giving a three-year course: Class A (modern languages); Class B (mathematics and natural sciences); and Class C (classical languages).

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.

Men and women are admitted on the same basis.

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.

¹ 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.

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 (pro-paedeutics) 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.

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 (*Pflichts-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.

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Medizinische Fakultät der Humboldt-Universität Unter den Linden 6 BERLIN C. 2	GN	1810	32 f 102 p	873 m 800 f			None
Medizinische Akademie "Carl- Gustav-Carus" Fetscherstrasse 76 DRESDEN A. 16	GN						None
Medizinische Akademie Erfurt Nordhäuserstrasse 74 ERFURT	GN						None
Medizinische Fakultät der Universität Greifswald GREIFSWALD	GN	1456					None
Medizinische Fakultät der Martin-Luther-Universität HALLE	GN	1502	39 f 27 p	492 m 327 f	160	101	None
Medizinische Fakultät der Friedrich-Schiller-Universi- tät Siegelmühlenweg 1 JENA	GN	1548	52				None
Medizinische Fakultät der Karl-Marx-Universität Härtelstrasse 16/18 LEIPZIG C. I	GN	1416	85 f 25 p	1200 m 800 f	650	140	None
Medizinische Akademie Magde- burg Leipzigerstrasse 44 MAGDEBURG	GN						None
Medizinische Fakultät der Universität Rostock ROSTOCK	GN	1419					None

GERMANY: FEDERAL REPUBLIC *

Population	51 707 000
Medical schools	18
Physicians	69 411
Medical graduates per annum	3 246
Population per medical school	2 873 000
Population per physician	745
Medical graduates per 1000 physicians per annum	46.8
Population per annual medical graduate	16 000

Introduction

The duration of the medical curriculum in Western Germany is five-and-a-half years.¹ After a student has passed the final qualifying examination, he must acquire two years' practical experience in a hospital before he may be granted the licence to practise, known as *Bestallung*.

Administration

Most universities, as well as academies, in the Federal Republic of Germany are government institutions. They are administered and financially supported by the government of the *Land* 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.

The language of instruction is German.

* This chapter does not include information on the Saar, which is the subject of a separate chapter (see page 223), since, at the time the material was compiled, the Franco-German Agreement of 27 October 1956, under whose terms this territory reverted to Western Germany on 1 January 1957, had not yet come into effect.

¹ In contrast to the university faculties proper, the two academies at Dusseldorf and Giessen provide the clinical part of the curriculum only.

School education

School education consists of four years at primary school (average age, 6 to 10) and nine years at secondary school (average age, 11 to 19). There are three types of secondary school in the Federal Republic of Germany: the *Gymnasium*, devoted in the main to classical studies; the *Oberrealschule*, mainly concerned with scientific subjects; and the *Realgymnasium*, which is intermediate between the two.

Conditions of admission

A certificate, based on oral and written examination, attesting to the completion of a course of secondary education is required. An applicant must also submit a *curriculum vitae* written in his own hand. There is no *numerus clausus*. Women are admitted on the same basis as men.

Potential medical students are expected to have acquired some knowledge of Latin, and evidence of having reached a certain standard in that language must be produced before admission to the first or pre-clinical examination in medicine. Those candidates who did not study Latin at secondary school may do so during their early years at the University.

Curriculum

The curriculum, and the examination requirements, are laid down by a Federal Regulation 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 medical and surgical out-patients. While attending these demonstrations, he is known as a *Praktikant*. The compulsory practical courses which the student attends include: practical classes in pathology (one in dissection and one in histology), pharmacology, hygiene (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, topographical 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.

Examinations

Two examinations are held—namely, the pre-clinical examination, known as the *Ärztliche Vorprüfung* or *Physikum*, and the clinical or qualifying examination known as the *Ärztliche Prüfung*.

The pre-clinical examination, which covers chemistry, physics, botany, zoology, anatomy, physiology, and biochemistry, may be taken after the student has satisfactorily attended at least five semesters. The pre-clinical examination is entirely oral, except for anatomy, when dissection has to be performed; histology, when histological preparations have to be made, and physiology and biochemistry, when a student also has to pass practical examinations. The examinations in chemistry, physics, botany, and zoology are conducted jointly by the respective professors. If a student fails in one subject, he is re-examined in that subject only. If he 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 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

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 which is not satisfactorily performed must be repeated.

After the period of internship has been completed, the *Bestallung* (licence to practise) 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 of Germany.

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.

Name and address	Ownership	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees (D. Marks)*
Medizinische Fakultät der Freien Universität Berlin Charlottenburg 9 BERLIN, Land Berlin (West)	P	1948	48	593 m 280 f	120	135	440
Medizinische Fakultät der Rheinischen Friedrich-Wilhelms-Universität Bonn, Nordrhein-Westfalen (North Rhine-Westphalia)	GP	1818	21 f 74 p	793 m 365 f	150	180	500
Medizinische Akademie Moorenstrasse 5 DÜSSELDORF, Nordrhein-Westfalen (North Rhine-Westphalia)	GP	1923	19 f 84 p	242 m 110 f	111	148	500
Medizinische Fakultät der Universität Erlangen Kollegienhaus ERLANGEN, Bayern (Bavaria)	G	1743	52	897 m 248 f	300	250	400
Medizinische Fakultät der Johann-Wolfgang-Goethe-Universität Ludwig Rehnstrasse 14 FRANKFURT-AM-MAIN, Hessen	G	1914	90	700 m 200 f	150	150	500
Medizinische Fakultät der Albert-Ludwigs-Universität Belfortstrasse 11 FREIBURG-IM-BREISGAU, Baden-Württemberg	P	1457	82 f 8 p	627 m 296 f	263	126	500

* 4.20 D. Marks = \$ 1.00

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (D. Marks)*</i>
Akademie für Medizinische Forschung und Fortbildung an der Justus-Liebig-Hoch- schule Bismarckstrasse 22 GIESSEN, Hessen	GP	1607	47 f	63 m 17 f	43	21	350
Medizinische Fakultät der Georg-August-Universität GÖTTINGEN, Niedersachsen (Lower Saxony)	G	1734	96	570 m 140 f	150	115	500
Medizinische Fakultät der Universität Hamburg Martinistrasse 52 HAMBURG 20, Hamburg	P	1919	137	643 m 269	439	300	400
Medizinische Fakultät der Universität Heidelberg Grabengasse 1 HEIDELBERG, Baden-Württem- berg	GP	1390	45 f 73 p	865 m 302 f	291	246	500
Medizinische Fakultät der Christian-Albrechts- Universität Ohlshausenstrasse 40 KIEL, Schleswig-Holstein	GP	1665	56 f 24 p	343 m 105 f	85	137	400
Medizinische Fakultät der Universität Köln KÖLN, Nordrhein-Westfalen (COLOGNE, North Rhine- Westphalia)	GP	1904	26 f 47 p	464 m 157 f	247	120	550
Medizinische Fakultät der Johannes-Gutenberg- Universität Saarstrasse MAINZ, Rheinland-Pfalz (Rhineland-Palatinate)	GP	1477	20	2477 m 1001 f	190	130	400
Medizinische Fakultät der Philipps-Universität Emil Mannkopffstrasse 2 MARBURG/LAHN, Hessen	GP	1527	48 f 14 p	920	200	196	500
Medizinische Fakultät der Ludwig-Maximilians- Universität Pettenkoferstrasse MÜNCHEN, Bayern (MUNICH, Bavaria)	G	1472	179	1251 m 461 f	217	600	500

* 4.20 D. Marks = \$ 1.00

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (D. Marks)*</i>
Medizinische Fakultät der Westfälischen Landes- Universität Schlossplatz 2 MÜNSTER, Nordrhein-Westfalen (North Rhine-Westphalia)	GP	1771	84	1238 m 535 f	250	174	500
Medizinische Fakultät der Eberhard-Karls-Universität Schollplatz TÜBINGEN, Baden-Württemberg	G	1477	44 f 29 p	311 m 145 f	150	150	250
Medizinische Fakultät der Julius-Maximilians- Universität Sanderring 2 WÜRZBURG, Bayern (Bavaria)	GP	1582	47 f 7 p	3752 m 1000 f	1110	68	450

* 4.20 D. Marks = \$ 1.00

GREECE

Population	7 901 000
Medical schools	2
Physicians	8 626
Medical graduates per annum	197
Population per medical school	3 950 000
Population per physician	916
Medical graduates per 1000 physicians per annum	22.8
Population per annual medical graduate	40 000

Introduction

The duration of medical studies in Greece is six years, not including a period of internship. They lead 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 seventy.

The academic year runs from October to June. The language of instruction is Greek.

School education

A Greek child begins to attend school at the age of 7. Six years of primary school education is compulsory. Children who attend secondary school do so from the age of 13 to the age of 18. In secondary schools, ancient Greek, Latin, and French or English are compulsory, but students may also devote special attention to mathematics and the sciences.

Conditions of admission

A candidate for admission to a medical school must have completed his secondary studies 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.

Men and women are admitted on the same basis.

Curriculum

The six-year medical 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; topographical 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 the three clinics, that is, those for internal medicine, surgery, and obstetrics.

Examinations and qualification

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.

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Drachmas) *</i>
Faculty of Medicine National University of Athens ATHENS	GN	1837	126	3115	600	30	1600
Faculty of Medicine University of Salonika SALONIKA	GN	1942	70 p	890 m 145 f	202	167	2100 (for 1st year) 1800 (for 2nd to 6th year)

* 30 drachmas = \$1.00

GUATEMALA

Population	3 149 000
Medical schools	1
Physicians	497
Medical graduates per annum	25
Population per medical school	3 149 000
Population per physician	6 336
Medical graduates per 1000 physicians per annum	50.3
Population per annual medical graduate	126 000

Introduction

Medical training in Guatemala consists of an eight-year course, including a period of internship. It 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, operated under the Ministerio de Educación (Ministry of Education). 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. The language of instruction is Spanish.

School education

Primary education is provided free of charge, and is compulsory for children from the age of 7 to 12 years. The curriculum extends over a period of six years. Secondary school education covers a period of five years, and is divided into two parts, the first providing general education (three years), and the second devoted to special training (two years) in preparation for the *bachillerato* (secondary school certificate).

Conditions of admission

In order to be admitted to the Faculty of Medicine, a candidate must hold the *bachillerato* or its equivalent.

Men and women are admitted on the same basis.

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 and qualification

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 licence to practise in Guatemala, and no further examinations are required.

Name and address	Owner- ship	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees (Quetzales)*
Facultad de Ciencias Médicas de la Universidad de San Carlos de Guatemala 2ª Avenida Sur, 44 GUATEMALA	GN	1840	65	623 m 14 f	120	25	25

* 1 quetzal = \$1.00

HAITI

Population	3 506 000
Medical schools	1
Physicians	300
Medical graduates per annum	38
Population per medical school	3 506 000
Population per physician	11 687
Medical graduates per 1000 physicians per annum	126.7
Population per annual medical graduate	92 000

Introduction

Medical education in Haiti consists of a five-year course, 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 Ministère de la Santé (Ministry of Health), but close co-operation is maintained with the University proper, which is under the jurisdiction of the Ministère de l'Éducation nationale (Ministry of Education).

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

The academic year runs from October to July. The language of instruction is French.

School education

Elementary education is provided free of charge and, nominally, is compulsory in urban areas. Children enter elementary school at 6 or 7 years of age; a five- or six-year course leads to the *certificat d'études primaires* (certificate of primary studies); an eight-year course to the *brevet élémentaire*, and a ten-year course to the *brevet supérieur*. Rural schools offer a six-year elementary course. Students may enter a *lycée* (secondary school) after completing six years of primary education, and upon taking an entrance examination. The *lycée* (secondary school) course lasts six years and leads to the certificate known as the *baccalauréat*, Part I. The *baccalauréat*, Part II is conferred upon public examination after the seventh year.

Conditions of admission

A candidate for admission to medical studies must have obtained the *baccalauréat*, Part II, have completed a one-year pre-medical course, and be in good

health. As the number of applicants generally exceeds the number of available vacancies, candidates must sit for a written competitive entrance examination. Women are admitted to medical studies on the same basis as men.

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: including 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

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 two-year *stage* (period of service as a practitioner) either in a rural practice under the control of the *Section de Médecine rurale* (Rural Health Service) or in residence in a hospital. Foreigners may obtain a *doctorat d'Université* (University doctorate), which is an academic degree and does not, therefore, confer on them the right to practise medicine in Haiti.

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Gourdes) *</i>
Faculté de Médecine et de Pharmacie de l'Université d'Haiti PORT-AU-PRINCE	GN	1830	49 p	227 m 34 f	41	38	100

* 5 gourdes = \$1.00

HONDURAS

Population	1 608 000
Medical schools	1
Physicians	138
Medical graduates per annum	14
Population per medical school	1 608 000
Population per physician	11 652
Medical graduates per 1000 physicians per annum	101.4
Population per annual medical graduate . . .	115 000

Introduction

Medical training in Honduras consists of a seven-year course, leading to the degree of *Doctor en Medicina y Cirugía* (Doctor of Medicine and Surgery).

Administration

The University of Honduras is a State-owned and supported institution operating under the jurisdiction of the Secretaría de Educación Pública (Ministry of Public Education). It is governed by a University Council and a Rector, who acts as the chief executive and administrative officer of the University. Each faculty is administered by a Junta Directiva (Directing Board) and is headed by a dean. Professors and lecturers are appointed by the Minister of Public Education upon the advice of the Rector.

The academic year runs from February to November. The language of instruction is Spanish.

School education

Primary education is provided free, and is compulsory between the ages of 7 and 15. Courses last from two to six years, with a "certificate of completion" conferred after six years.

Admission to secondary school requires completion of the six-year primary school course, or an entrance examination. The minimum age for admission is 13 years.

Conditions of admission

In order to be admitted to a medical course, a student must have completed five years of secondary education, and must hold the *bachillerato en ciencias y letras* (certificate of secondary education in science and letters), or its recognized equivalent. He must also furnish a certificate of good health. Women are admitted on the same basis as men.

Curriculum

The curriculum is arranged as follows:

First year: biology; medical physics; anatomy (with dissection)

Second year: anatomy (with dissection); histology; embryology; physiology; biochemistry; bacteriology; parasitology; English

Third year: general pathology; morbid anatomy; surgery; clinical surgery; operative surgery

Fourth year: medicine; surgery; clinical surgery; operative surgery; bacteriology

Fifth year: medicine; midwifery; urology; otorhinolaryngology; radiology; hygiene and preventive medicine

Sixth year: clinical medicine; therapeutics; *materia medica* and pharmacology; tropical medicine; psychiatry; gynaecology

Seventh year: clinical medicine; therapeutics; paediatrics; clinical paediatrics; ophthalmology; forensic medicine and toxicology; medical ethics; and history of medicine.

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.

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

Name and address	Ownership	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees (Lempiras)*
Facultad de Medicina y Cirugía de la Universidad de Honduras TEGUCIGALPA	GN	1882	42 p	249 m 15 f	88	14	293

* 2 lempiras = \$1.00

HONG KONG

Population	2 277 000
Medical schools	1
Physicians	704
Medical graduates per annum	54
Population per medical school	2 277 000
Population per physician	3 234
Medical graduates per 1000 physicians per annum	76.7
Population per annual medical graduate . . .	42 000

Introduction

The medical course in Hong Kong lasts for six years (including the preliminary science year) 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.

School education

Primary education is given in Government, subsidized and private schools, which take children from the age of 6 to 11. Fees vary considerably from one school to another. Government and subsidized schools are allowed to provide free places up to 10% of the total enrolment figure. Secondary schools give a six-year course, leading to the school certificate examination, which is a required qualification for admission to higher education.

Conditions of admission

Minimum qualifications for admission to the University of Hong Kong are attainment of the age of 17, satisfactory health examination, and success in the University of Hong Kong Matriculation Examination or a recognized equivalent. The University is open to students of both sexes and of all races and creeds.

Curriculum

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

Pre-medical period (first year of course)

During the pre-medical period, the student follows the preliminary course in science, which is held in the Faculty of Science and extends over one academic year. The subjects covered are chemistry, physics, and biology, and are taught by lectures and practical work. Students who have passed the University of Hong Kong Matriculation Examination (or an examination recognized as equivalent for this purpose) in chemistry, physics, and biology at the advanced level are exempted from the preliminary course in science.

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

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

Introductory clinical period (last term of 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 elementary pathology and bacteriology is also given.

Clinical period (fourth to sixth years)

In the fourth year, the subjects studied are pathology, bacteriology, parasitology, pharmacology, medicine, and surgery.

The curriculum for fifth- and sixth-year students covers medicine, surgery, obstetrics, gynaecology, social medicine and public health, forensic medicine, pathology, paediatrics, orthopaedics, ophthalmology, otorhinolaryngology, radiology, venereology, anaesthetics, infectious diseases, dermatology, neurology, psychiatry, and radiology.

Examinations

Four 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 is known as the Preliminary Examination in Science (Biology group) and is taken at the Faculty of Science at the end of the pre-medical period. A candidate who fails must receive permission to repeat the year's work; he then has to take the Preliminary Examination again in all subjects. Only those students who have successfully completed this examination and have been recommended by the Selection Committee of the Faculty of Medicine may enter the

second year of the course. The number of new admissions to the second year is limited to fifty.

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

The Third University Examination covers pharmacology, pathology, bacteriology, forensic medicine, and social medicine and public health. This examination is taken during a student's fifth year.

The Fourth University Examination is held in three parts: Part I in medicine, including tropical medicine, clinical pathology and bacteriology, and therapeutics; Part II in surgery, including surgical anatomy and surgical pathology; and Part III in obstetrics and gynaecology, including the care of the new-born infant. It is held twice yearly (in May and December) and a student must pass in the three parts of the examination at one session.

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

After passing the Fourth University Examination, a student receives the university degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.). 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 Board, 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 Hong Kong Medical Board, are eligible for registration in the Commonwealth List of the Medical Register of the United Kingdom.

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (\$ HK)*</i>
Faculty of Medicine University of Hong Kong HONG KONG	P	1887	42 f 45 p	275 m 34 f	50	54	1500

* 5.70 Hong Kong \$ = US \$1.00

HUNGARY

Population	9 691 000
Medical schools	4
Physicians	11 400
Medical graduates per annum	260
Population per medical school	2 423 000
Population per physician	850
Medical graduates per 1000 physicians per annum	22.8
Population per annual medical graduate	37 000

Medical education in Hungary is provided at the Faculties of Medicine, which are State owned and operated by the Ministry of Health. The course lasts for six years. The academic year runs from September to June.

Students wishing to study medicine must first have finished the secondary school course. They are then required to sit for a university entrance examination.

The first three years of study are devoted to pre-medical and pre-clinical subjects. Students begin their hospital attendance in the third year, and continue with clinical subjects during the remaining years of the course.

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Orvosi Fakultás Lóránd Eötvös Tudományegyetem (Faculty of Medicine, Lóránd Eötvös University) Ulloi-Ut 26 BUDAPEST VIII	GN	1769	33	3229		95	None
Orvosi Fakultás Kossuth Lajos Tudományegyetem (Faculty of Medicine, Kossuth Lajos University) DEBRECEN	GN	1912	23	612		55	None
Orvosi Fakultás Pécsi Tudományegyetem (Faculty of Medicine, University of Pécs) Rákóczi-Ut. 80 PÉCS	GN	1912	17			47	None

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Szegedi Orvostudományi Egyetem (Szeged University of Medical Sciences) Dugonics-Tér 13 SZEGED	GN	1940	18	603		63	None

ICELAND

Population	154 000
Medical schools	1
Physicians	195
Medical graduates per annum	18
Population per medical school	154 000
Population per physician	790
Medical graduates per 1000 physicians per annum	92.3
Population per annual medical graduate	9 000

Introduction

Medical training in Iceland consists of a seven-year course, leading to the university degree of *Candidatus Medicinae et Chirurgiae*.

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 and runs from 15 September to 15 June. The language of instruction is Icelandic.

School education

The school system in Iceland is divided into four stages: the primary stage (known as *barnafraedslustig*); lower secondary stage (*gagnfraedastig*), higher secondary stage (*menntaskólaog séeskólastig*) and the university stage (*háskólastig*).

The primary school course lasts for six years, and covers the 7 to 13 age-group. The lower secondary school course lasts for four years, the first two of which are compulsory, and ends with an examination. The higher secondary school course lasts for four years, and ends with the final examination which grants admission to the University.

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. The Faculty has the

power to restrict admission if it deems it necessary. Men and women are admitted on the same basis.

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, specialities (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. Examination in the other subjects is oral.

Qualification

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 practicandi*, or licence to practise, which is granted by the Ministry of Health.

Name and address	Ownership	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees
Læknadeild Háskóla Íslands (Faculty of Medicine, University of Iceland) REYKJAVÍK	GN	1876	7 f 14 p	211 m 26 f	48	18	None

INDIA

Population	377 000 000
Medical schools	43
Physicians	52 262
Medical graduates per annum	3 000*
Population per medical school	8 767 000
Population per physician	7 214
Medical graduates per 1000 physicians per annum	57.4
Population per annual medical graduate . . .	124 000

* Estimated

Introduction

Medical training 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 Provincial¹ Governments at Calcutta and at 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 London² 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.

¹ Under the new Constitution of India, Provinces have been renamed States.

² An exception is the School of Medicine at Pondicherry which was established by the French Government in 1823. At that school, the basic requirement for admission is possession of the *baccalauréat* (certificate of secondary education). Instruction is given in French, and no tuition fees are charged. The medical course lasts for five years, and is modelled after the course given in the French faculties of medicine. Hospital work begins in a student's first year, and continues throughout the course. End-of-the-year examinations on the subjects studied during the year are held in May, with a supplementary session in August for those students who failed at their first attempt. On successful completion of the course, students receive the diploma of *Médecin assistant local* (Local Assistant Doctor). Externships and internships are arranged as in France, and admission thereto is by competitive examination.

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 some 1000 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 two medical schools of the Licentiate type still continue to exist which, however, are neither encouraged nor recognized by the Government. Provision has also been made for a "condensed M.B., B.S. course" for 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 only been accorded recognition so far in the States of Bombay, 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 High Powered 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

At the present time, India has thirty-three universities. Seven of these are unitary teaching universities, one is an affiliating university without any teaching functions, and the remainder are mixed. The degree of affinity between the parent universities and their affiliated institutions varies, but the former's functions are almost entirely limited to the carrying out 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 inspections.

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 at all medical colleges in India is English, but a gradual change-over to the regional or national language is contemplated.

School education

The school system in India can be divided into four stages: nursery or pre-primary, primary, middle, and high. The last two together constitute the secondary stage, which a student generally completes at about the age of 16 or 17. The English language is studied as a compulsory subject during the last two to four years.

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.

With the exception of the Lady Hardinge Medical College at New Delhi, which is a residential college for women students only and is staffed entirely by women, medical colleges in India admit both male and female students.

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.).

No All-India Register containing the names of all registered medical practitioners in the country is maintained at present. The relevant provisions of the controlling legislation in the shape of the Indian Medical Council Act are, however, being amended in such a way as to require the compilation of an All-India Register. The amending Bill is now before the Parliament.

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Rupees)*</i>
Sarojini Naidu Medical College AGRA, Uttar Pradesh	GP	1854	55 f 3 p	263 m 96 f	75	77	130
Byramjee Jeejeebhoy Medical College Gheekanta Road AHMEDABAD, Bombay	GP	1946	26 f 30 p	403 m 49 f	100	50	400
Medical College AMRITSAR, Punjab	GP	1868	58 f	67 m 15 f	82	88	242
Bangalore Medical College BANGALORE, Mysore	P	1955					
Medical School University of Mysore BANGALORE 2, Mysore	GP	1917	9 f 20 p	422 m 86 f	120	68	100
Baroda Medical College Nicol Road, Ballard Estate BARODA, Bombay	GP	1949	33 f 28 p	266 m 32 f	60	29	350
Gandhi Medical College BHOPAL, Bhopal	GP	1955					190
Grant Medical College Byculla BOMBAY 8, Bombay	GP	1845	40 f 63 p	846	120	182	350
Seth Gordhandas Sunderdas Medical College Parel BOMBAY 12, Bombay	GM	1925	25 f 57 p	373 m 116 f	80	67	450
Topiwala National Medical College Dr. A. L. Nair Road Byculla BOMBAY 8, Bombay	GM	1921	10 f 63 p	319 m 65 f	60	43	350
Calcutta National Medical Institute 32 Gorachand Road CALCUTTA 14, West Bengal	P	1908	61 f 37 p	551 m 47 f	143		250
Medical College 88 College Street CALCUTTA 12, West Bengal	GP	1835	65 f 35 p	1021 m 129 f	136	235	200
Niratan Sirkar Medical College 138 Lower Circular Road CALCUTTA 12, West Bengal	GP	1873	52 f 21 p	631 m 78 f	150	35	200

* Rupees 4.12.2 = \$1.00

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Rupees)*</i>
R. G. Kar Medical College 1 Belgachia Road CALCUTTA, West Bengal	P	1886	107 f 1 p	844 m 5 f	125	126	280
Sriram Chandra Bhanj Medical College CUTTACK, Orissa	GP	1875	41 f 3 p	230 m 40 f	50	33	125
Assam Medical College DIBRUGARH, Assam	GP	1947	42 f	312 m 32 f	65	50	144
Guntur Medical College GUNTUR, Andhra	GP	1946	40 f	104 m 13 f	50		240
Gajra Raja Medical College GWALIOR, Madhya Bharat	GP	1946	70 f	322	65		120
Osmania Medical College HYDERABAD, Hyderabad	GP	1926	43 f 17 p	437 m 152 f	110	34	120
Mahatma Gandhi Memorial Medical College INDORE, Madhya Bharat	GP	1874	50 f	258 m 39 f	65	22	240
Jabalpur Medical College JABALPUR, Madhya Pradesh	GP	1955	13 f	96 m 17 f	61		300
Sawai Man Singh Medical College JAIPUR, Rajasthan	GP	1947	58 f 3 p	352 m 65 f	80	40	260
Medical College JAMNAGAR, Saurashtra	GP	1955					
Khanpur Medical College KHANPUR, Uttar Pradesh	GP	1955					
Dharbhanga Medical College LAHERIASARAI, Bihar	GP	1925	43 f 2 p	54 m 6 f	64	67	150
King George's Medical College LUCKNOW, Uttar Pradesh	GP	1911	57 f 7 p	924 m 168 f	152	138	200
Arya Medical School Civil Lines LUDHIANA, Punjab	P	1934	20 f 10 p	166 m 10 f	36	24	300
Christian Medical College LUDHIANA, Punjab	R	1894	48 f 4 p		50		
Madras Medical College MADRAS 3, Madras	GP	1835	103 f 6 p	1000 m 352 f	135	134	240

* Rupees 4.12.2 = \$1.00

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Rupees) *</i>
Stanley Medical College MADRAS 1, Madras	GP	1835	77 f 4 p	480 m 131 f	110	116	225
Madurai Medical College MADURAI, Madras	GP	1954	16 f		50		
Kasturba Medical College MANIPAL, Madras †	P	1953	39 f 2 p	95 m 5 f	120		1000
University Medical College MYSORE, Mysore	GP	1924	30 f 11 p	430 m 86 f	85	33	200
Medical College NAGPUR, Madhya Pradesh	GP	1947	91	494 m 90 f	100	107	300
All-India Medical Institute NEW DELHI, Delhi	GP	1956	15 f 24 p	40 m 10 f	50		350
Lady Hardinge Medical College and Hospital Lady Hardinge Road NEW DELHI, Delhi	GN	1916	42 f 15 p	221 f	50	42	320
Government Medical College PATIALA, P.E.P.S.U. ††	GP	1953	21 f	82 m 22 f	50		240
Prince of Wales Medical College PATNA, Bihar	GP	1925	53 f 5 p	670	100	90	150
Ecole de Médecine de Pondichéry PONDICHÉRY, Madras	GP	1823	13	14 m 1 f	5	3	None
Byramjee Jeejeebhoy Medical College POONA, Bombay	GP	1946	29 f 38 p	450	100	50	350
Trivandrum Medical College TRIVANDRUM 4, Travancore- Cochin	GP	1951	76 f 3 p	265 m 105 f	84		300
Christian Medical College VELLORE, Madras	R	1918	87 f	25 m 25 f	50	34	525
Andhra Medical College VISHAKHAPATNAM, Andhra	GP	1902	85 f	560	110	83	245

* Rupees 4.12.2 = \$1.00

† Pre-clinical course at Manipal, clinical course at Mangalore

†† Patiala and East Punjab States Union

INDONESIA

Population	81 000 000
Medical schools	6
Physicians	1 146
Medical graduates per annum	200*
Population per medical school	13 517 000
Population per physician	70 768
Medical graduates per 1000 physicians per annum	174.5
Population per annual medical graduate	406 000

* Estimated

Introduction

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.

School education

Primary education from the age of 6 to 12 years is provided free. Attendance is not yet compulsory. On completing the course satisfactorily, pupils are granted admission to secondary schools, after taking an examination.

Secondary schools are maintained by the Ministry of Education. The course is divided into two periods, each of three years' duration. At the end of the first period, pupils take a State examination and, on completing the second period, sit for a further examination which qualifies, under certain conditions, for entry to the universities and academies.

Conditions of admission

The basic admission requirement is possession of the secondary school certificate, granted after an examination and upon satisfactory completion of six years of secondary education. Both men and women are eligible for admission to all faculties.

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 undertakes 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

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.

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Rupiah)*</i>
Faculty of Medicine BUKITTINGGI	G	1955					
Faculty of Medicine University of Indonesia 6 Salemba DJAKARTA	GN	1926	77 f 11 p	716 m 182 f	266		240
Faculty of Medicine Gadjah Mada University DJOKJAKARTA	GN	1949	9 f 25 p	896 m 225 f			240
Faculty of Medicine Hasan Udin University MAKASSAR	G	1956					
Faculty of Medicine University of North Sumatra 1 Djalan Ceram MEDAN	P	1952	3 f 6 p	84 m 8 f	56		310
Faculty of Medicine Airlangga University 47 Djalan Darma Husada SURABAYA	GN	1911	17 f 8 p	1082 m 157 f	297		240

* 11.40 rupiah = \$1.00

IRAN

Population	20 721 000
Medical schools	6
Physicians	2 302
Medical graduates per annum	375
Population per medical school	3 454 000
Population per physician	9 001
Medical graduates per 1000 physicians per annum	162.9
Population per annual medical graduate	55 000

Introduction

The medical course in Iran lasts for six 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 language of instruction is Persian. The academic year runs from September to June.

School education

School education in Iran consists of six years at a primary school, and a further six years at a secondary school.

Conditions of admission

In order to be admitted to a faculty of medicine in Iran, a student must hold the secondary school certificate in the natural science or mathematics section or its equivalent. 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). Women are admitted on the same basis as men.

Curriculum

The six-year curriculum, consisting of theoretical teaching, practical work in the laboratories of the faculty, and clinical work at the university hospitals, is as follows:

First year: botany; zoology; anatomy; biochemistry; comparative anatomy; a foreign language (generally English or French)

Second year: physiology; histology and embryology; bacteriology and immunology; medical physics; a foreign language; clinical medicine and clinical surgery

Third year: medicine; surgery; parasitology; pathology; clinical medicine and clinical surgery

Fourth year: pharmacology; medicine; surgery; surgical anatomy and operative surgery; obstetrics; general and experimental pathology; tropical medicine; paediatrics; urology and dermatology-venereology

Fifth year: preventive medicine and hygiene; therapeutics; forensic medicine; radiology; history of medicine; tuberculosis; general clinical lectures; obstetrics; gynaecology; otorhinolaryngology; ophthalmology; neurology and psychiatry; medical economics

Sixth year: internship in hospital, the student's time being divided equally among medicine, surgery, and obstetrics and specialized departments; medical economics.

Examinations

An examination is held at the end of each of the first five academic years on 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 fifth year determines the choice of hospital where the student will serve his sixth-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 fifth 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

A student who has passed the final examination, has completed his year's internship, and whose thesis has been accepted, receives the university degree of Doctor of Medicine. A licence to practise must then be obtained from the Ministry of Education. Graduates from the Faculty of Medicine are required to practise for a minimum period of two years outside Teheran before they may establish themselves in the capital.

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Faculty of Medicine AHWAZ	GN	1956					None
Faculty of Medicine ISFAHAN	GN	1946	17	124 m 4 f	50	37	None
Faculty of Medicine MESHED	GN	1948	8 f 18 p	213 m 4 f	55	51	None
Faculty of Medicine Avenue Zande SHIRAZ	GN	1949	23	163 m 10 f	40	31	None
Faculty of Medicine TABRIZ	GN	1947	33 f	524 m 16 f	61	62	None
Faculty of Medicine University of Teheran Shahreza Avenue TEHERAN	GN	1851	6 f 175 p	1430 m 92 f	239	194	None

IRAQ

Population	4 948 000
Medical schools	1
Physicians	833
Medical graduates per annum	47
Population per medical school	4 948 000
Population per physician	5 940
Medical graduates per 1000 physicians per annum	56.4
Population per annual medical graduate	105 000

Introduction

Medical training in Iraq consists of a six-year course, leading to the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.).

Administration

The Royal College of Medicine is one of the schools of the Royal Faculty of Medicine; the others are the College of Dentistry, the College of Pharmacy and Chemistry, and the two schools for nurses and health officers.

The Royal Faculty operates under the general jurisdiction of the Minister of Health, but enjoys a large measure of autonomy. It is headed by a dean, who is appointed by the Minister of Health, exercises full administrative authority over the various colleges, and presides over the meetings of the Faculty Council, composed of the directors of the colleges and five other members elected from among the professors of the College of Medicine. A Board of Studies, consisting of the professors of the various departments, with the director of the College of Medicine acting as chairman, meets regularly to decide on matters pertaining to the study courses.

The professors of all the pre-clinical departments are recruited from Western countries, mainly from the United Kingdom. The majority of the professors of the clinical departments and their assistants are Iraqis.

The academic year runs from October to May. At present, the language used for formal teaching and at examinations is English, but it is envisaged to introduce Arabic as the teaching language at some future date. Thus far, however, only forensic medicine is taught in Arabic.

School education

Primary education is compulsory, and provided free of charge. It lasts for six years. Secondary education takes five years, with an intermediate examination given at the end of the third year (first stage) and a final, or national, examination at the end of the fifth year (second stage).

Conditions of admission

Students are admitted to the Medical School on completion of their secondary school studies, 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 school is open on the same terms to men and women. Age on admission must not be less than 17 and not more than 25 years.

Curriculum

The curriculum is arranged as follows:

First year: biology; chemistry; physics

Second year: anatomy; biochemistry; histology and embryology; physiology (including experimental and applied)

Third year: anatomy; biochemistry; physiology (including experimental and applied)

Fourth year: pharmacology (including *materia medica* and dispensing); bacteriology and parasitology; pathology (including clinical pathology and morbid anatomy); forensic medicine; medicine; surgery; orthopaedic surgery

Fifth year: public health and social medicine; 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 and qualification

Class examinations are held at the end of each semester, and professional examinations on completion of each specific course. After completing the six prescribed 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 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 five years, having regard to the country's need for doctors, particularly in the provinces.

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Royal College of Medicine BAGHDAD	GN	1927	36 f 88 p	449 m 71 f	150	47	None

IRELAND

Population	2 933 000
Medical schools	5
Physicians	2 921
Medical graduates per annum	279
Population per medical school	587 000
Population per physician	1 004
Medical graduates per 1000 physicians per annum	95.5
Population per annual medical graduate	10 000

Introduction

The medical course in Ireland lasts for six years (including a one-year pre-medical period), and leads to the degrees of Bachelor of Medicine, Bachelor of Surgery and Bachelor of Obstetrics (M.B., B.Ch., B.A.O.). 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, but, with certain exceptions, Irish-born students are required to have a working knowledge of Irish as well.

School education

Elementary education is provided free of charge and is given in "national", (i.e., state-aided primary) schools. Education is compulsory from the age of 6 to the age of 14. The secondary schools, the vast majority of which are State-aided, are under private management. The majority of the managers are members of religious orders. The average age of attendance at secondary schools is 12 to 18.

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, the General Certificate of Educa-

tion Examination (United Kingdom) is accepted by all Irish medical schools. The limitation of facilities at each medical school has made it necessary to adopt a selection process.

Medical studies in Ireland are open to men and women alike.

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, third, 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 months' 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.

The medical degrees or diplomas of M.B., B.Ch., B.A.O. 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 on the Medical Register of Ireland are the same as those registrable on the Medical Register of the United Kingdom.

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pounds)*</i>
Faculty of Medicine University College CORK	G	1849	11 f 26 p	190	36	31	60
Royal College of Surgeons in Ireland St Stephen's Green DUBLIN	P	1784	9 f 18 p	500	100	81	78
School of Physic, Trinity College University of Dublin DUBLIN	P	1591	26 f 28 p	401 m 153 f	110	63	75
Faculty of Medicine University College of Dublin Earlsfort Terrace DUBLIN	G	1854	8 f 30 p	517 m 144 f	165	77	55
Faculty of Medicine University College GALWAY	G	1849	14 f 16 p	210 m 54 f	39	27	35

* £1 = \$2.80

ISRAEL

Population	1 688 000
Medical schools	1
Physicians	3 887
Medical graduates per annum	55
Population per medical school	1 688 000
Population per physician	434
Medical graduates per 1000 physicians per annum	14.2
Population per annual medical graduate	31 000

Introduction

In Israel, medical education is provided at the Hadassah Medical School of the Hebrew University in Jerusalem. The medical course lasts for seven years, including periods of pre-medical studies and internship, and leads to the degree of Doctor of Medicine.

Historial 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 which 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 two semesters. The language of instruction is Hebrew.

School education

Primary education is compulsory from the ages of 5 to 13 and is provided free of charge. The primary school system is unified and State controlled, with provision for special religious schools. Secondary schools, which are attended, on an average, from the ages of 14 to 18, are supported largely by tuition fees, although some are subsidized by local authorities.

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. Both men and women are eligible for admission.

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 is divided into two periods of six months each, one devoted to medicine, the other to various branches of surgery and to obstetrics. This year of internship service 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. 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

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.

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (LI)*</i>
Hadassah Medical School Hebrew University P.O. Box 1255 JERUSALEM	P	1949	121 f 26 p	414	60	55	240

* LI = \$1.00

ITALY

Population	47 679 000
Medical schools	21
Physicians	57 610
Medical graduates per annum	3 800*
Population per medical school	2 270 000
Population per physician	828
Medical graduates per 1000 physicians per annum	66.0
Population per annual medical graduate	13 000

* Estimated

Introduction

The medical course 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 runs from November to July. The language of instruction is Italian.

School education

Primary education is provided free of charge, and is compulsory up to the age of 11. Secondary education consists of three years' intermediate school, leading to a diploma qualifying its holder to enrol in a *lyceum* (higher secondary school). There are two types of *lyceum*, the classical and the scientific, with a course of study of five years, leading to the certificates of *maturità classica*, and *maturità scientifica*, respectively.

Conditions of admission

The basic requirement for admission to a medical faculty is possession of either the *maturità classica*, or the *maturità scientifica* certificate. There is no further selection process, and no *numerus clausus*. Men and women are admitted to medical studies on the same basis.

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 sub-tropical diseases, orthopaedics, obstetrics, gynaecology and paediatrics.

Teaching 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 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

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.

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Lire)*</i>
Facoltà di Medicina e Chirurgia dell'Università di Bari Piazza Umberto I° BARI	GN	1925	28 f	1471 m 111 f	180	150	55 000
Facoltà di Medicina e Chirurgia dell'Università di Bologna Via Zamboni 33 BOLOGNA	GN	Thirteenth Century	35 f	2325 m 241 f	255	279	75 000
Facoltà di Medicina e Chirurgia dell'Università di Cagliari Via Università 40 CAGLIARI	GN	1858	29 f 4 p	370 m 62 f	56	44	43 000
Facoltà di Medicina e Chirurgia dell'Università di Catania Piazza dell'Università CATANIA	GN	1434	25 f	1138 m 43 f	124	138	43 000
Facoltà di Medicina e Chirurgia dell'Università di Ferrara Via Scienze 17 FERRARA	GN	1391	18 f	207 m 13 f	31	25	50 000
Facoltà di Medicina e Chirurgia dell'Università di Firenze FIRENZE (FLORENCE)	GN	Fourteenth Century					
Facoltà di Medicina e Chirurgia dell'Università di Genova Via Balbi 5 GENOVA	GN	1774	65 f 256 p	946 m 184 f	194	141	48 000
Facoltà di Medicina e Chirurgia dell'Università di Messina MESSINA	GN	1548	16 f	1265 m 60 f	150	120	50 000
Facoltà di Medicina e Chirurgia dell'Università di Milano Via della Passione 12 MILANO	GN	1925	33	2705	300	263	51 500
Facoltà di Medicina e Chirurgia dell'Università di Modena MODENA	GN	Thirteenth Century	35 f 14 p	2193 m 121 f	68	238	65 000
Facoltà di Medicina e Chirurgia dell'Università di Napoli NAPOLI	GN	1224	130 f 451 p	4850 m 300 f	900	440	30 000

* 625 lire = \$1.00

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Lire)*</i>
Facoltà di Medicina e Chirurgia dell'Università di Padova Via VIII Febbraio PADOVA	GN	1399	97	1747 m 156 f	244	154	53 000
Facoltà di Medicina e Chirurgia dell'Università di Palermo PALERMO	GN	1841	43	818 m 50 f	133	144	45 000
Facoltà di Medicina e Chirurgia dell'Università di Parma Via Università 12 PARMA	GN		33	706 m 90 f	90	100	30 000
Facoltà di Medicina e Chirurgia dell'Università di Pavia Corso Strada Nuova PAVIA	GN	1361	63	1138 m 105 f	128	174	45 000
Facoltà di Medicina e Chirurgia dell'Università di Perugia PERUGIA	GN		10	700			
Facoltà di Medicina e Chirurgia dell'Università di Pisa Via Roma 33 PISA	GN		26	875 m 61 f	160	90	57 500
Facoltà di Medicina e Chirurgia dell'Università di Roma Città Universitaria ROMA	GN	1303	210 f 249 p	3947 m 496 f	532	547	25 000
Facoltà di Medicina e Chirurgia dell'Università di Sassari SASSARI	GN	1562	69	1040	173	120	25 000
Facoltà di Medicina e Chirurgia dell'Università di Siena SIENA	GN						
Facoltà di Medicina e Chirurgia dell'Università di Torino Via Po 17 TORINO	GN	1404	32	1109 m 138 f	174	125	49 000

* 625 lire = \$1.00

JAMAICA

Population	3 084 000
Medical schools	1
Physicians	859
Medical graduates per annum	35
Population per medical school	3 084 000
Population per physician	3 590
Medical graduates per 1000 physicians per annum	40.7
Population per annual medical graduate	88 000

NOTE: These figures include the data for the territories of Barbados, British Guiana, British Honduras, Jamaica (where the school is located), the Leeward Islands, Trinidad and Tobago, and the Windward Islands.

Introduction

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 the British Caribbean Colonies (Barbados, British Guiana, British Honduras, Jamaica, the Leeward Islands, Trinidad and Tobago, and the Windward Islands). A small part of the College's income is derived from students' fees.

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. The language of instruction is English.

School education

Primary education is provided free and is compulsory, generally from the ages of 6 to 13. The usual secondary school entrance age is 12, and the course lasts for five or six years. Most secondary schools require pupils to pass an entrance examination before admission. They prepare pupils for the School Certificate and Higher School Certificate examinations of the Cambridge Syndicate but some schools make use of the Oxford and Cambridge Joint Board Examinations and the School Examinations of London University, or the United Kingdom Certificate of Education for overseas pupils. Fees vary from £3 to £5 10s. a term.

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.

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. Men and women are admitted on the same basis. A medical certificate of good health must be produced.

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 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 syllabuses 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.

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.

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (£BWI)*</i>
Faculty of Medicine University College of the West Indies MONA, ST ANDREW, Jamaica	P	1948	24 f 10 p	106 m 30 f	30	35	50

* £BWI (British West Indies pound) f = \$2.80

JAPAN

Population	88 778 000
Medical schools	46
Physicians	89 885
Medical graduates per annum	3 200*
Population per medical school	1 930 000
Population per physician	988
Medical graduates per 1000 physicians per annum	35.6
Population per annual medical graduate . . .	28 000

* Estimated

Introduction

Medical education in Japan is now provided by a six-year university course (including two years of pre-medical studies) leading 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 some 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 number of students that can be admitted to these schools each year is fixed at 2860.

The academic year runs from April to March. The language of instruction is Japanese.

School education

Primary school instruction, which begins at the age of 6, extends over a period of six years; intermediate school instruction lasts for three years. Both are compulsory. In addition, higher schools provide secondary education, lasting three years.

Conditions of admission

To gain admission to the pre-medical course, a student must either have completed his secondary school education 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 students from other countries who are sufficiently versed in Japanese. Women are admitted to all medical schools on the same basis as men; one school of the forty-student class admits women only.

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 to 34 weeks, with an approximate total of 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.

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Yen)*</i>
School of Medicine Chiba University 785 Yahagi-cho CHIBA, Chiba	GN	1923	125 f 8 p	357 m 10 f	80	80	6000
Faculty of Medicine Kyushu University 1276 Katakasu FUKUOKA, Fukuoka	GN	1903	171 f 28 p	400 m 3 f	80	106	6000
Fukushima Medical College Suginoe-cho FUKUSHIMA, Fukushima	GP	1950	45 f 2 p	174 m 15 f	40	40	9000
Gifu Prefectural Medical College 1 Kitano-machi GIFU, Gifu	GP	1944	103 f 5 p	184 m 7 f	51	46	9000
Osaka Medical University for Women 12 Saka HIRAKATA, Osaka	P	1928	70 f 10 p	153 f	40	40	20 000
Faculty of Medicine Hirosaki University 2 Sagara-cho HIROSAKI, Aomori	GN	1944	123 f 7 p	222 m 19 f	60	49	6000
Faculty of Medicine Kagoshima Prefectural University Kamoike-machi KAGOSHIMA, Kagoshima	GP	1944	53 f 9 p	316 m	80	62	8400
Faculty of Medicine Kanazawa University 15 Tsuchitoriba-naga-machi KANAZAWA, Ishikawa	GN	1870	161 f 12 p	347 m 5 f	80	80	6000
Kobe Medical College 38 Kusunoki-cho 6-chome Ikuta-ku KOBÉ, Hyogo	GP	1944	89 f 6 p	322 m 6 f	80	70	9600
School of Medicine Kumamoto University Jonaininomaru-cho KUMAMOTO, Kumamoto	GN	1757	59 f 9 p	381 m 3 f	85	90	3600

* 360 yen = \$1.00

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Yen)*</i>
Hiroshima University Medical School 3937 Aga-machi KURE, Hiroshima	GN	1945	143 f 21 p	234 m 17 f	40	51	6000
Faculty of Medicine Kurume University 67 Asahi-machi KURUME, Fukuoka	P	1928	67 f 6 p	312 m 7 f	71	100	7500
Kyoto Prefectural University of Medicine 465 Kajicho-agayru, Kawara-machi Kamikyo-ku KYOTO, Kyoto	GP	1872	56 f 2 p	326 m 25 f	82	115	2250
Faculty of Medicine Kyoto University Konee-cho, Yoshida Sakyo-ku KYOTO, Kyoto	GN	1899	255 f 15 p	420 m 24 f	80	111	6000
School of Medicine Gunma University 280 Iwagami-cho MAEBASHI, Gunma	GN	1943	150 f 7 p	210 m 10 f	60	44	6000
Faculty of Medicine Shinshu University Asahi-machi MATSUMOTO, Nagano	GN	1944	54 f 4 p	231 m 3 f	60	23	6000
Iwate Medical University MORIOKA, Iwate	P	1947	52 f 34 p	257 m 8 f	60	76	7500
Faculty of Medicine Nagasaki University 93 Sakamoto-machi NAGASAKI, Nagasaki	GN	1923	101 f	301 m 2 f	80	67	3600
Medical School Nagoya City University 1 Tanabe-dori 3-chome Mizuho-ku NAGOYA, Aichi	GM	1943	100 f 5 p	209 m 23 f	40	40	10 000
School of Medicine Nagoya University Tsurumai-cho Showa-ku NAGOYA, Aichi	GN	1920	56	344 m 10 f	79	89	6000

* 360 yen = \$1.00

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Yen)*</i>
School of Medicine Niigata University 757 Asahi-machi-dori 1-chome NIGATA, Niigata	GN	1910	193 f 15 p	319 m 18 f	80	97	6000
Okayama University Medical School 164 Oka OKAYAMA, Okayama	GN	1870	59 f 5 p	341 m 9 f	83	80	6000
Osaka City Medical School Asahi-machi 2-chome Abeno-ku OSAKA, Osaka	GM	1944	165 f 9 p	285 m 12 f	40	40	6000 (R) 7000 (NR)
Faculty of Medicine Osaka University 33 Joan-cho Kita-ku OSAKA, Osaka	GN	1869		369 m 10 f	80	110	6200** 6100†
Faculty of Medicine Hokkaido University Kita 12, Nishi 5 SAPPORO, Hokkaido	GN	1919	153 f 9 p	362 m 11 f	80	113	6000
Sapporo Medical College Minami 1, Nishi 17 SAPPORO, Hokkaido	GP	1945	180 f 5 p	233 m 14 f	60	41	6000
Faculty of Medicine Tohoku University 85 Kitayoban-cho SENDAI, Miyagi	GN	1917	91 f 17 p	393 m 10 f	97	101	6000
Osaka Medical College TAKATSUKI, Osaka	P	1927	33 f 21 p	317 m 1 f	69	91	7500
School of Medicine Tokushima University Kuramoto 2-chome TOKUSHIMA, Tokushima	GN	1943	106 f 16 p	287 m 19 f	66	61	6000
Faculty of Medicine Juntendo University 1 Hongo 1-chome Bunkyo-ku TOKYO, Tokyo	P	1950	99 f 40 p		48	48	5800

* 360 yen = \$1.00

** Pre-medical

† Medical

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Yen)*</i>
School of Medicine Keio Gijuku University 35 Shinano-machi Shinjuku-ku Tokyo, Tokyo	P	1917	95 f 20 p	387 m 8 f	80	80	27 500
Faculty of Medicine Nihon University 724 Oyaguchi-machi Itabashi-ku Tokyo, Tokyo	P	1924	173 f 16 p	318 m 23 f	80	110	40 000
Nippon Medical School 57 Komagome Sendagi-cho Bunkyo-ku Tokyo, Tokyo	P	1904	145 f 7 p	395 m 12 f	91	109	36 000
Showa Medical School Hiratsuka 6-chome Shinagawa-ku Tokyo, Tokyo	P	1928	46 f 6 p	357	60	60	30 000
Medical College of Toho University Omori-ku Tokyo, Tokyo	P	1925	97 f 7 p	142 m 95 f	40	38	30 000
Tokyo Jikei-Kai School of Medicine 105 Minato-ku Shiba-atago- cho 2-chome Tokyo, Tokyo	P	1881	63 f 13 p	437 m 6 f	80	129	30 000
Tokyo Medical University Higashi-Okubo Shinjuku-ku Tokyo, Tokyo	P				60		
School of Medicine Tokyo Medical and Dental University 1 Yushima 3-chome Bunkyo-ku Tokyo, Tokyo	GN	1944	141 f 10 p	167 m 7 f	40	48	6100
Faculty of Medicine University of Tokyo Hongo Motofuji-cho Bunkyo-ku Tokyo, Tokyo	GN	1877	101 f 26 p	381 m 1 f	84	127	6000

* 360 yen = \$1.00

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Yen)*</i>
Tokyo Women's Medical College 10 Kawada-cho Shinjuku-ku Tokyo, Tokyo	P	1900	170 f 15 p	247 f	40	50	50 000
Faculty of Medicine Mie Prefectural University 11 Ohtani-cho Tsu, Mie	GP	1944	105 f 10 p	169 m 7 f	40	40	17 000
Yamaguchi Prefectural University of Medicine UBE, Yamaguchi	GP	1950	42 f 3 p	151 m 3 f	40		7800
Nara Prefectural Medical College 50 Unebi UNEBI (Takaichi-gun), Nara	GP	1945	107 f 15 p	165 m 6 f	43	44	12 000
Wakayama Medical College 5 Misono-cho WAKAYAMA, Wakayama	GP	1948	37 f 5 p	147 m 9 f	40	31	9000
School of Medicine Yokohama University Urafane-cho Minami-ku YOKOHAMA, Kanagawa	GM	1949	126 f 4 p	178 m 12 f	40	40	8500
Faculty of Medicine Tottori University 86 Nichi-machi YONAGO, Tottori	GN	1945	31 f 4 p	182 m 7 f	60	41	6000

* 360 yen = \$1.00

KOREA *

Population	30 000 000
Medical schools	6
Physicians	6 000 †
Medical graduates per annum	260
Population per medical school	5 000 000
Population per physician	5 000
Medical graduates per 1000 physicians per annum	43.3
Population per annual medical graduate	115 000

† Estimated

Introduction

The medical schools in the Republic of Korea provide a four-year medical course, preceded by a two-year pre-medical period, leading 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.

School education

The average age of attendance at primary school is from 6 to 12 years and at secondary school, from 13 to 18 years. Primary school education is compulsory up to the age of 12.

* The material presented in this chapter refers only to that portion of the country known as South Korea. No information was available on North Korea.

Conditions of admission

Applicants for admission to the medical course must have obtained the secondary school certificate 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.

Men and women are admitted to medical studies on the same basis; there are two medical colleges specifically reserved for women students.

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 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 examination may no longer continue his medical studies.

Qualification

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.

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Hwan)*</i>
Medical College Chun Nam University KWANGJU	GN	1944	31 f 7 p	243 m 12 f	120	23	24 000
Medical and Pharmaceutical College Ewha Women's University SEOUL	P	1946	123 f 21 p	250 f	80	12	100 000
College of Medicine Seoul National University 28 Ryungundong, Chongnoku SEOUL	GN	1924	72 f 12 p	558 m 18 f	164	54	25 000
Seoul Women's Medical College 2, 2-Ka Myungnyun-Dong, Chongno-Ku SEOUL	P	1928	29 f 34 p	551 f	163	95	39 000
Severance Union Medical College 115, 5th Street, Nam-Dai-Moon SEOUL	R	1884	68	170	70	40	18 000
Taegu Medical College Kyong Puk University 328 Tongin Dong TAEGU	GN	1923	48 f 6 p	201 m 14 f	105	36	50 000

* 500 hwan = \$1.00

LEBANON

Population	1 383 000
Medical schools	2
Physicians	1 049
Medical graduates per annum	73
Population per medical school	692 000
Population per physician	1 318
Medical graduates per 1000 physicians per annum	69.6
Population per annual medical graduate	19 000

General Note

Primary education in the Lebanon consists of a five-year course, ending in the Primary Studies' Certificate examination. Secondary education consists of a seven-year course. A public examination, both oral and written, known as the *baccalauréat* examination, Part I, is held at the end of the sixth year, while the *baccalauréat* examination, Part II, is held at the end of the seventh year. Successful candidates are awarded the *baccalauréat* (secondary school certificate).

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.

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 eighteen years of age; 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, 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. Women are admitted on the same basis as men.

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; surgery; obstetrics; preventive medicine and the specialities, 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 takes a final comprehensive examination, and is then eligible for the degree of Doctor of Medicine (M.D.). Graduates who wish to qualify for admission to the licensing examinations to practise in 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 *Conseil supérieur* (Higher Council) 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. Women are admitted on the same basis as men.

Curriculum, examinations and qualification

The first year of the curriculum, known as the pre-medical year, is devoted to the study of physics, chemistry, and biology. At the end of that period, the P.C.B. examination is held. Success in that examination admits the student to the first year of the medical course proper. The P.C.B. examination is conducted by a Board, appointed by the Faculty of Science of the University of Lyons. The official French P.C.B. certificate is granted; in this instance, it emanates from the University of Lyons.

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* (State diploma) of *Docteur en Médecine* (Doctor of Medicine), which is in all respects equivalent to that awarded in France. Its holders are entitled to practise in the Lebanon, as well as in France and in French territories, both metropolitan and colonial, provided that they satisfy requirements relating to nationality and citizenship.

Name and address	Ownership	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees (LL)*
Medical School American University of Beirut BEIRUT	P	1867	47 f 26 p	158 m 11 f	40	33	1200
Faculté française de Médecine et de Pharmacie de l'Uni- versité Saint-Joseph BEYROUTH	P	1883		243 m 24 f	50	40	720

* LL 3.20 = \$1.00

MADAGASCAR

Population	4 983 000
Medical schools	1
Physicians	594
Medical graduates per annum	15
Population per medical school	4 983 000
Population per physician	8 389
Medical graduates per 1000 physicians per annum	25.2
Population per annual medical graduate . . .	332 000

NOTE: The figures shown above include data for the neighbouring territories of Comoro and Réunion, which have no medical school.

Introduction

Medical training in Madagascar consists of a five-year course, including a year of pre-medical studies, and leads to the diploma of *Médecin de l'Assistance médicale de Madagascar et Dépendances* (Diploma in Medicine of the Medical Services of Madagascar and Dependencies).

Administration

The Madagascan Ecole de Médecine et de Pharmacie (School of Medicine and Pharmacy) operates under the over-all authority of the High Commissioner of the French Republic. For technical matters, it is under the jurisdiction of the Director of the Madagascan Health and Medical Services, but its financial support is provided by the Madagascan educational authorities.

The Director of the School is appointed by the French High Commissioner, and is assisted by an academic board, the Conseil de Perfectionnement, of which the professors of the School are members. These professors are selected from among physicians, pharmacists, dental surgeons and veterinarians, holding the appropriate French State diploma. These professors are also required to have teaching qualifications, hospital experience, and to have specialized or to have achieved eminence in the subject concerned. They are appointed by the French High Commissioner and are in office for the duration of their residence in Tananarive, or for a maximum period of five years. They are eligible for re-appointment.

The academic year runs from October to July. The language of instruction is French.

School education

The timetables and curricula of secondary schools in Madagascar are in every way identical with those adopted in France, and lead to the first and second parts of the *baccalauréat*, or certificate of secondary education.

Conditions of admission

Candidates for admission to the preparatory or pre-medical year of studies, known as the P.C.B. course because it is primarily devoted to the study of physics, chemistry, and biology, are required to hold the *baccalauréat* or secondary school certificate. Candidates holding the *brevet élémentaire* or primary school certificate only may, however, be considered for admission after they have passed a competitive examination. At the end of the pre-medical or P.C.B. course, all students must take a competitive examination in order to be admitted to the first year of the medical course proper. The number of students admitted each year is determined by the French High Commissioner. In addition to the admission requirements already referred to, a student must submit a certificate of good health, as well as a vaccination certificate.

The school is open on the same terms to men and women.

Curriculum

The curriculum of the medical course proper, not including the preparatory year, is arranged as follows:

First year: anatomy; practical anatomy; medical symptomatology; surgical symptomatology; physiology; minor surgery

Second year: medical pathology; surgical pathology; anatomy; pharmacology; practical anatomy; clinical work (at hospital) in medicine, surgery, and infectious diseases

Third year: medical pathology; surgical pathology; therapeutics; obstetrics; otorhinolaryngology; ophthalmology; stomatology; clinical work (at hospital) in otorhinolaryngology, ophthalmology, dermatology, venereology, stomatology, and phthisiology

Fourth year: epidemiology; hygiene; malariology; administration; operative surgery; bacteriology; meat hygiene; clinical medicine, surgery, and obstetrics (including hospital stay).

Competitions for posts as hospital externs and interns are held each year in order to enable students to work in teaching hospitals under conditions similar to those of externs and interns in Metropolitan France.

Examinations and qualification

Students take examinations at the end of each school year before passing on to the next. Each examination covers the subjects taken during that period, and includes written, oral and practical tests. A student who fails in a subject

in the July session may sit for re-examination in that subject in October. If he fails once again, he must repeat the entire course.

After passing the final examination, a student receives the diploma of *Médecin de l'Assistance médicale de Madagascar et Dépendances*, which entitles the holder to practise in Madagascar and the Dependencies only.

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Ecole de Médecine et de Pharmacie TANANARIVE	GN	1896	20 f 5 p	87 m 3 f	20	15	None

MALTA

Population	320 000
Medical schools	1
Physicians	293
Medical graduates per annum	37
Population per medical school	320 000
Population per physician	1 092
Medical graduates per 1000 physicians per annum	126.3
Population per annual medical graduate . . .	9 000

Introduction

The medical course 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, such as the appointment of teaching staff, it can only 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 runs from October to 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, although the Maltese language is widely used, and is an obligatory subject in the matriculation examination.

School education

Primary education is provided free, and is compulsory for a period of five years. At the age of 11 or 12, pupils are eligible to take the entrance examination for admittance to secondary schools. Secondary education is provided by the Government lyceum for boys, and by secondary schools for girls. The curriculum is academic, leading to matriculation and higher education.

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 and, in addition, must pass an examination for admission to the faculty in question. In addition, Catholic candidates must pass an examination in religious doctrine.

Men and women are eligible for admission on the same basis.

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, English and Maltese. Examinations in these subjects must be passed before a student may be admitted to the Faculty of Medicine.

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, and medical semeiotics. 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:

First year: pathology; *materia medica*; pharmacology and therapeutics; systematic and clinical study of medicine; surgery (including anaesthetics); and obstetrics. At the end of the fifth year, there is an examination in *materia medica*, pharmacology and therapeutics, and a test in the remaining subjects.

Second year: pathology; gynaecology; ophthalmology; hygiene and preventive medicine, as well as systematic and clinical study of medicine and surgery, including otorhinolaryngology. At the end of the year, an examination is held in pathology and ophthalmology, and a test in the remaining subjects.

Third year: clinical medicine; surgery; obstetrics and gynaecology; paediatrics; dermatology and venereology; forensic medicine; psychiatry; epidemiology and vital statistics; and operative surgery.

In addition to clinical work performed in the general hospital, a student must also attend to clinical work in the tuberculosis hospital, the isolation hospital, and the leprosy hospital.

The final examination is held in two parts. Part I covers medicine (including paediatrics), psychiatry, dermatology and venereology, hygiene, preventive medicine and vital statistics, as well as forensic medicine. Part II is devoted to surgery, operative surgery, and obstetrics and gynaecology.

Qualification

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. Reciprocity as regards medical practice has been established with New South Wales and Victoria (Australia) and Pakistan.

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pounds)*</i>
Faculty of Medicine and Surgery Royal University of Malta St Paul Street VALLETTA	P	1674	2 f 58 p	282 m 32 f	50	37	20

* £1 = \$2.80

MEXICO

Population	28 849 000
Medical schools	18*
Physicians	14 221
Medical graduates per annum	1 100**
Population per medical school	1 603 000
Population per physician	2 029
Medical graduates per 1000 physicians per annum	77.4
Population per annual medical graduate	26 000

* Information regarding the establishment of the new medical school in the University of Tamaulipas was received as this Directory was going to press. Although the institution in question appears in the list of schools presented on page 182, it is not included in the figures shown above or in the data assembled in the relevant annexes. Readers who wish to use these data for statistical analysis should make the necessary modifications.

** Estimated

Introduction

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* (Doctor of Medicine and Surgery). The only exceptions are the Escuela de Medicina at Pachuca, which provides for the first three years of the curriculum only; 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 faculties of medicine establish their own curricula, which are generally almost identical. The various faculties are also responsible, in the majority of instances, for the programme of internships to be served in hospitals.

The school 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. The language of instruction is Spanish.

School education

Primary education is compulsory and is provided free of charge. The primary school course lasts six years, after which the pupil is awarded a school-leaving

certificate. The secondary school course, as a rule, covers five years, and ends with the examination for the *bachillerato*, or secondary school certificate.

Conditions of admission

In order to gain admission to a medical school, a student must hold the *bachillerato*. At some of the medical schools, a competitive entrance examination is held in addition. In general, the number of students to be admitted is not limited in any way. Most of the schools require students to undergo a physical examination before admission. Men and women are admitted on the same basis.

Curriculum

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, fifth and sixth 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, fifth and sixth years, a student also takes several courses in the clinical specialities.

The fourth, fifth and sixth years of the medical course are, in the main, taken up with clinical instruction at a hospital, and include a period of internship. Moreover, a student gains additional clinical experience in the specialities because he spends the first six months of the final year of the course as an intern in the various departments of a hospital, and attends further clinical courses during the same period. The remaining six months of the final year are devoted to compulsory service in rural areas at localities chosen by the Government. (Students of the Escuela Nacional de Medicina in Mexico City may undertake this rural practice at the end of the six-year course.)

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 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. Once his thesis has been accepted, a student may take the first, or theoretical, section of the final, qualifying examination. After he has passed in that section, he may sit for the second, or clinical practical, part. (Students of the Escuela Nacional de Medicina sit for the latter examination immediately before they begin their rural practice.) A student who

fails in these qualifying examinations may sit for them again after he has followed a new course of study.

The degree of *Médico Cirujano* (Doctor of Medicine and Surgery), which is awarded after the final, qualifying examination has been passed, entitles its holder to practise in any of the States of Mexico.

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pesos)*</i>
Facultad de Medicina de la Universidad de Chihuahua CHIHUAHUA, Chihuahua	GP	1955	7	15	15		
Facultad de Medicina de la Universidad Autónoma de Guadalajara Tolsa, 238 GUADALAJARA, Jalisco	P	1935	54 f 20 p	251 m 12 f	60	41	750
Facultad de Medicina de la Universidad de Guadalajara Hospital, 320 GUADALAJARA, Jalisco	GP	1792	4 f 56 p	492 m 36 f	300	75	100
Escuela de Medicina de León Universidad de Guanajuato LEÓN, Guanajuato	GP	1945	2 f 46 p	88 m 12 f	25	10	150
Facultad de Medicina de la Universidad Nacional del Sureste MÉRIDA, Yucatán	GP	1833	34 p	265 m 15 f	36	16	420
Escuela Libre de Homeopatía de México Santa Lucía, 6 MÉXICO, D.F.	P	1912	40	60 m 20 f	15	10	300
Facultad de Medicina de la Universidad Nacional Autónoma de México MÉXICO, D.F.	P	1578	478	5265 m 601 f	952	557	200
Escuela Médico Militar Avenida del Castillo y Batalla de Celaya MÉXICO, D.F.	GN	1917	13 f 119 p	160 m	50	19	None

* 12.50 pesos = \$1.00

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pesos)*</i>
Escuela Nacional de Medicina Homeopática del Instituto Politécnico Nacional Gómez Farías, 40 MÉXICO, D.F.	GN	1896	44	127 m 39 f	58	18	None
Escuela Superior de Medicina Rural del Instituto Politécnico Nacional MÉXICO, D.F.							
Facultad de Medicina de la Universidad de Nuevo León Apartado Postal 1563 MONTERREY, Nuevo León	GP	1859	110	775 m 75 f	200	100	120
Facultad de Medicina de la Universidad Michoacana de San Nicolás de Hidalgo MORELIA, Michoacán	GP	1901	21	206	67	15	
Escuela de Medicina y Cirugía Universidad "Benito Juárez" de Oaxaca OAXACA, Oaxaca	P	1920	48	230	60	35	
Escuela de Medicina Instituto Científico y Literario Autónomo del Estado de Hidalgo Hospital Civil Pasteur, 1 PACHUCA, Hidalgo	P	1945	21	53	26		200
Facultad de Medicina de la Universidad de Puebla 4 Sur, 104 PUEBLA, Puebla	G	1834	2 f 69 p	385 m 27 f	74	35	R: 60 NR: US\$60.00
Facultad de Medicina de la Universidad Autónoma de San Luis Potosí Alvaro Obregón, 64 SAN LUIS POTOSÍ, San Luis Potosí	GP	1879	3 f 46 p	194 m 32 f	70	45	410
Escuela Oficial de Medicina del Estado de Tamaulipas 20 de Noviembre, 206, Sur TAMPICO, Tamaulipas	GP	1950	48 p	57 m 26 f	35		1250

* 12.50 pesos = \$1.00

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pesos) *</i>
Facultad de Medicina Universidad de Tamaulipas TAMPICO, Tamaulipas		1957					
Facultad de Medicina " Miguel Aleman " Universidad de Veracruz VERACRUZ, Veracruz	GP	1952	48	180	86		

* 12.50 pesos = \$1.00

NETHERLANDS

Population	10 615 000
Medical schools	6
Physicians	10 993
Medical graduates per annum	750*
Population per medical school	1 769 000
Population per physician	966
Medical graduates per 1000 physicians per annum	68.2
Population per annual medical graduate . . .	14 000

* Estimated

Introduction

The medical course 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 qualifying a graduate to serve as a general medical practitioner.

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 one year, on appointment by the Crown. About 90% of university income is provided by the Government, the budget being submitted through the Minister of Education. The remainder is derived from students' fees.

At the University of Amsterdam (a municipal institution), the College of Curators is appointed by the City Council. Academic affairs are handled by the College of Rector and Assessors, composed of the Rector Magnificus, whose term of office is five years, and the deans of the faculties. Funds are provided by the City of Amsterdam, but are supplemented by Government subsidy and students' fees. Appointments to academic and administrative posts are made by the City Council. 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. Part 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. The language of instruction is Dutch.

School education

Attendance at school is compulsory until the age of 14. The average age of attendance at secondary schools is from 12 to 17 or 18 years.

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.

Conditions of admission

The basic requirement for admission to a medical faculty is possession of the secondary school certificate in science. Latin is not compulsory. There is no *numerus clousus*. Women are admitted on the same basis as men.

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 out-patient 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-assistantships 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-assistantships 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

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.

Name and address	Ownership	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees (Guilders)*
Medische Faculteit Universiteit van Amsterdam Oudemanshuispoort 4 AMSTERDAM	GM	1660	22 f 34 p	1450 m 418 f	151	230	335
Vrije Universiteit te Amsterdam Keizersgracht 162 AMSTERDAM	R						
Medische Faculteit Rijksuniversiteit te Groningen Broerstraat 5 GRONINGEN	GN	1614	18 f 2 p	820 m 190 f	100	80	325
Medische Faculteit Rijksuniversiteit te Leiden Zonneveldstraat 18a LEIDEN	GN	1575	46 f 10 p	1173 m 311 f	160	145	335
Faculteit van Geneeskunde Rooms-Katholieke Universiteit te Nijmegen Kapittelweg 40 NIJMEGEN	R	1951	17 f 1 p	192 m 33 f	82		335
Faculteit der Geneeskunde Rijksuniversiteit te Utrecht Achter den Dom 7 UTRECHT	GN	1636	19 f 18 p	1543 m 302 f	89	160	335

* 3.80 guilders = \$1.00

NEW ZEALAND

Population	2 116 000
Medical schools	1
Physicians	2 920
Medical graduates per annum	100
Population per medical school	2 116 000
Population per physician	725
Medical graduates per 1000 physicians per annum	34.2
Population per annual medical graduate . . .	21 000

Introduction

The six-year medical course in New Zealand prepares for the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.) of the University of New Zealand. 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 of the University of Otago is one of the Constituent Colleges of the University of New Zealand.

The academic year runs from March to November, and is divided into three terms of three months each. The language of instruction is English.

School education

Under the Education Act of 1914 compulsory and secular education is provided free of charge. Attendance at school is compulsory from 7 to 15 years of age, and education is provided free to all students who claim it until the end of the year in which they turn 19. On reaching the age of 14 years, a pupil can pass on to secondary education.

Conditions of admission

Before admission to the Medical School, a student must have satisfactorily completed a course of secondary education, and have passed the University Entrance Examination. The school is open on the same terms to men and women.

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, botany, 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 upon 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. Students may take the examination not earlier than the end of their fifth term after beginning the professional course.

The *Second Professional Examination* covers pathology, bacteriology, pharmacology and therapeutics. The course of study lasts for four academic terms and students may take this examination not earlier than at the end of the third academic year after they began the professional course, or not earlier than six months after passing the First Professional Examination.

The *Third Professional Examination, Section I*, in preventive and forensic medicine, may be taken not earlier than at the end of the fourth year of the professional course, or not earlier than six months after passing the Second Professional Examination.

Section II of the *Third Professional Examination*, which may be taken not earlier than at the end of the fifth year of the professional course, covers medicine (including paediatrics, clinical medicine, and clinical paediatrics), surgery (including operative surgery and clinical surgery), and obstetrics and gynaecology (including clinical obstetrics and gynaecology).

Before sitting for the Third Professional Examination, candidates must have attended courses in medicine, clinical medicine, paediatrics, surgery, clinical surgery, obstetrics and gynaecology, ophthalmology, otorhinolaryngology, dentistry, radiology, anaesthesiology, venereal diseases, and psychiatry. They may be tested on the relationship of the subjects of previous examinations, both Intermediate and Professional, to the subjects of this examination.

Qualification

A compulsory one-year period of internship, following graduation and before entering medical practice, was introduced recently by the Medical Council of New Zealand. 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.

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (£NZ)*</i>
Medical School University of Otago Great King Street DUNEDIN C.1	P	1875	47 f 67 p	477 m 53 f	120	100	50

* £NZ 1 = \$2.80

NICARAGUA

Population	1 202 000
Medical schools	1
Physicians	477
Medical graduates per annum	18
Population per medical school	1 202 000
Population per physician	2 520
Medical graduates per 1000 physicians per annum	37.7
Population per annual medical graduate	67 000

Introduction

Medical training in Nicaragua consists of an eight-year course, 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 a State institution, supervised by the Ministerio de Educación Pública (Ministry of Public Education). The chief executive and administrative officer of the University is its Rector, who is appointed by the Minister of Public Education. The Faculty of Medicine is directed by a Council, which consists of the Dean of the Faculty, the Vice-Dean, the Secretary, the Assistant-Secretary, and four professors.

The academic year runs from May to February. The language of instruction is Spanish.

School education

Primary education is compulsory, and is provided free of charge. It consists of a six-year course. Secondary education is provided in State institutions and private schools, and consists of a five-year course leading up to the *bachillerato en ciencias y letras* (secondary school certificate in sciences and letters).

Conditions of admission

A candidate for admission to the medical course must hold the *bachillerato en ciencias y letras*.

Men and women are admitted on the same basis.

Curriculum

The medical curriculum is arranged as follows:

First year: medical chemistry; physics; botany and zoology; biology; anatomy

Second year: anatomy; histology; embryology; parasitology

Third year: anatomy; physiology; bacteriology; history of medicine; medical ethics

Fourth year: medicine and surgery; clinical, medical and surgical propaedeutics, general pathology; materia medica and pharmacology

Fifth year: medicine; surgery; therapeutics; morbid anatomy; hygiene and preventive medicine; forensic medicine and toxicology

Sixth year: clinical medicine; clinical surgery; experimental surgery; paediatrics; tropical medicine; therapeutics; obstetrics and gynaecology; dermatology and venereology

Seventh year: clinical medicine; clinical surgery; clinical obstetrics; clinical gynaecology; clinical paediatrics; psychiatry; ophthalmology; otorhinolaryngology; radiology

Eighth year: medical service, either in a government hospital or in a locality where there is no practising physician.

Examinations and qualification

Examinations are held at the end of each academic year and cover the subjects studied during that period. They are oral, practical, and clinical.

After a student has completed the first seven years of the medical course, he takes a comprehensive examination, known as the "private general examination," and then begins his year of medical service. After this period of service has been completed, he enters for the "public general examination." Success in that examination leads to the degree of *Doctor en Medicina y Cirugía*, which also constitutes a licence to practise.

Name and address	Ownership	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees (Córdobas)*
Facultad de Medicina y Cirugía de la Universidad Nacional de Nicaragua LEÓN	GN	1814	45	439	80	18	225

* 7 córdobas = \$1.00

NIGERIA

Population	30 300 000
Medical schools	1
Physicians	540
Medical graduates per annum	30*
Population per medical school	30 300 000
Population per physician	56 111
Medical graduates per 1000 physicians per annum	55.6
Population per annual medical graduate	1 010 000

* Estimated

Introduction

At present, only the pre-medical and pre-clinical parts of the medical course can be taken at the Faculty of Medicine at Ibadan, and students must therefore complete the clinical stage of their training in the United Kingdom. Plans are being made, however, to offer the full curriculum at Ibadan and, eventually, to provide for fifty medical graduates each year.

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.

It is intended that, ultimately, the College should apply for a charter, giving it full university status and the right to confer degrees. 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 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) a 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 equivalent 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 to 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.

Qualification

At present, there is no teaching hospital in West Africa where students can undertake their three years' clinical training for a degree. They must, therefore, go abroad to do so, and most of the students go to medical schools in the United Kingdom, chiefly to those in London. A new hospital is now being completed at Ibadan, and, as soon as it is opened, clinical teaching will be carried out entirely at Ibadan, and will follow the pattern as it exists in the United Kingdom.

Name and address	Ownership	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees (£BWA)*
Faculty of Medicine University College IBADAN	P	1948	24	64	33	—	130

* £BWA (British West African pound) 1 = \$2.80

NORWAY

Population	3 392 000
Medical schools	2
Physicians	3 616
Medical graduates per annum	100
Population per medical school	1 696 000
Population per physician	938
Medical graduates per 1000 physicians per annum	27.6
Population per annual medical graduate	34 000

Introduction

The medical course in Norway lasts for six years, and is followed by a compulsory period of one-and-a-half years' practical training before a licence to practise may be issued. Medical training leads to the certificate of *Candidatus Medicinæ* (Candidate in Medicine).

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, which consists of the Rector and of the deans of the various faculties, exercises general control over all university affairs. Although the faculties must adhere to certain general regulations, they enjoy considerable autonomy in administration and academic affairs.

The academic year runs from August to June. The language of instruction is Norwegian.

School education

School education in Norway usually begins at the age of seven years, and consists of seven years at an elementary school, followed by five years at a *gymnasium*, or secondary school.

Conditions of admission

First-year students are admitted to the Medical Faculty of Oslo only. Not more than one hundred new students are admitted each year. Candidates for the medical course must have passed the *Examen Artium* (secondary school certificate examination). When, as it generally happens, the number of applicants exceeds the number of vacancies, one hundred candidates are selected on the basis of marks obtained in the *Examen Artium*. The average age of students on admission to medical school is 18 to 19 years.

Men and women are admitted on the same basis.

Curriculum

The Faculty at Bergen does not provide the complete curriculum, and only the clinical part of medical training is at present available. Every year, some forty students move over from Oslo to Bergen to undertake clinical work.

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 held is 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

After a student has passed all the examinations, he receives the certificate of *Candidatus Medicinae* (Candidate in Medicine). No degree is awarded.

A period of one-and-a-half years' post-graduate training, following the final examination, is now compulsory. 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 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 licence to practise.

Name and address	Owner- ship	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees (Kroner)*
Medisinske Fakultet Universitetet i Bergen BERGEN	GN	1946	19 f 14 p	131 m 13 f		40	50
Medisinske Fakultet Universitetet i Oslo OSLO	GN	1811	93 f 48 p	400	100	60	50

* 7.14 kroner = \$1.00

PAKISTAN*

Population	80 167 000
Medical schools	15
Physicians	5 947
Medical graduates per annum	750 [†]
Population per medical school	5 344 000
Population per physician	13 480
Medical graduates per 1000 physicians per annum	126.1
Population per annual medical graduate . . .	107 000

[†] Estimated

Introduction

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,¹ 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

* 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.

¹ 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.

colleges, are in the hands of the principals or deans, who may also act as professors in their own 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.

School education

Primary schools comprise from four to five classes. The average age of children in primary classes is 6 to 11 years. Secondary education is given in middle and high schools. Like the primary schools, secondary schools differ from one local government to the other, and the total duration of secondary education varies from five to seven years. The main function of middle schools is to prepare students for the high schools, while the latter, in turn, prepare students for the universities.

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. This examination is taken on completion of secondary school studies, and is prescribed, and sometimes conducted, by 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% to 30% of the vacancies are open to women. The Fatima Jinnah Medical College in Lahore admits women only.

The minimum entrance requirement for admission at 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.

Curriculum

The duration of the medical course at each medical college 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 with

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

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 the medical schools who have obtained the diploma of Licentiate of Medical Faculty (L.M.F.) are taken into Government service as sub-assistant surgeons, assistant medical officers, or civil medical assistants, and are generally assigned to dispensaries located in rural areas. Under certain conditions, registration, and thus private practice, is permitted.

A holder of the L.M.F. diploma may obtain the university degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.) by fulfilling the following conditions: he must have studied in one of the medical schools for not less than four years; he must, before taking the medical course, have passed the first science examination, including biology; he must take a special "condensed course" lasting for two years in one of the medical colleges; and, lastly, he must pass the statutory, or professional, examinations held by a university.

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Rupees)*</i>
Government Medical School CHITTAGONG, East Bengal							
Dacca Medical College Dacca, East Bengal							
Dacca Medical School Dacca, East Bengal	GP	1889	19 f 1 p	454 m 59 f	102		120
C.M.S. Medical School HYDERABAD, Sind	GP	1953	19 p	147 m 5 f	60		120
Liaquat Medical College HYDERABAD, Sind	GP	1951	34 f 6 p	243 m 41 f	60		205
Dow Medical College KARACHI, Federal Capital Area	GN	1945	77 f 5 p	854	130	38	240
Fatima Jinnah Medical College for Women Queens Road LAHORE, Punjab	GN	1948	38 f 12 p	394	96	29	431
King Edward Medical College Nila Gumbad LAHORE, Punjab	GP	1860	40 f 7 p	687 m 27 f	139	88	about 250
Punjab Medical School LAHORE, Punjab	GP	1954	22 f 3 p	129 m 17 f	70		120
Nishtar Medical College MULTAN, Punjab	GP	1951	57 f 7 p	399 m 22 f	100		250
Lytton Medical School MYMENSINGH, East Bengal	GP	1924	13 f 3 p	275 m 7 f	50	27	120
Khyber Medical College PESHAWAR, North-West Fron- tier Province		1955					
Aminuddin Medical School QUETTA, Baluchistan		1953					
Rajshahi Medical School RAJSHAHI, East Bengal	P	1949	8 f 6 p	305 m 15 f	61	50	120
Sylhet Medical School SYLHET, East Bengal		1948	16 f 1 p	197 m 13 f	55	22	120

* Rupees 4.12.2 = \$1.00

PANAMA

Population	886 000
Medical schools	1
Physicians	238
Medical graduates per annum	20
Population per medical school	886 000
Population per physician	3 723
Medical graduates per 1000 physicians per annum	84.0
Population per annual medical graduate	44 000

Introduction

The medical course in Panama lasts for four years, and leads to the degree of *Doctor en Medicina* (M.D.), i.e., Doctor of Medicine.

Administration

The course is held at the Faculty of Medicine of the University of Panama.

The academic year runs from May to February. The language of instruction is Spanish.

School education

Primary education is compulsory. Primary and secondary State education is provided free of charge. Primary schools give a six-year course. Secondary education consists of two periods of three years each. The first of these provides a general education; the second is academic or professional, and prepares students for the school-leaving certificate in literature or science.

Conditions of admission

In order to be eligible for admission to medical studies, an applicant must have performed four years of pre-medical work at university level. Moreover, a candidate must undergo a professional aptitude test, which helps to evaluate his suitability for the study of medicine.

Men and women are admitted on the same basis.

Curriculum

The curriculum is similar to that in the USA, 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 each subject studied. After the final examination at the end of the fourth year, successful candidates are granted the university degree of *Doctor en Medicina* (M.D.).

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Balboas)*</i>
Facultad de Medicina de la Universidad de Panamá PANAMA	GN	1951	8 f 42 p	54 m 12 f	25	20	112 (R) 250 (NR)

* 1 balboa = \$1.00

PARAGUAY

Population	1 530 000
Medical schools	1
Physicians	507
Medical graduates per annum	17
Population per medical school	1 530 000
Population per physician	3 018
Medical graduates per 1000 physicians per annum	33.5
Population per annual medical graduate	90 000

Introduction

The medical course 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 a Government institution under the jurisdiction of the Ministerio de Educación (Ministry of Education).

The academic year runs from April to October. Instruction is given in Spanish, which is the official language of the University, although Guaraní is widely spoken throughout the country.

School education

Primary education is compulsory, and is provided free of charge in a six-year course. This leads to secondary education, which also lasts for six years.

Conditions of admission

In order to be admitted to the Faculty of Medicine, a student must hold the *bachillerato*, or secondary school certificate. The age limit for entrance to the faculty is between 18 and 26 years.

Men and women are admitted on the same basis.

Curriculum

The six-year curriculum is arranged as follows:

First year: anatomy; histology and embryology

Second year: physiology; biochemistry; physics; bacteriology; parasitology

Third year: regional anatomy; surgical techniques; general pathological anatomy; medicine; surgery

Fourth year: medicine; surgery; pathological anatomy; medical diagnosis; surgical diagnosis

Fifth year: clinical medicine; clinical surgery; obstetrics; urology; radiology; dermatology; ophthalmology; otorhinolaryngology; pharmacology and toxicology

Sixth year: clinical medicine; clinical surgery; paediatrics; gynaecology; tuberculosis; psychiatry; forensic medicine; clinical therapeutics; hygiene and preventive medicine; traumatic and orthopaedic surgery.

Examinations

Examinations are held at the end of each academic year, and cover the subjects studied during that period. A student who fails in an examination may take it again as many as three times, without having to repeat the course. In the event of his failing a third time, there is no limit to the number of times he may repeat the course.

Qualification

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* (Doctor of Medicine and Surgery), which also constitutes his licence to practise. No theses are required, except from candidates for higher degrees who intend to follow a teaching career.

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Guaranis) *</i>
Facultad de Medicina de la Universidad Nacional de Asunción Av. Dr Mootero y Lagerenza ASUNCIÓN	GN	1892	63 p	547 m 121 f	214	17	500

* 107 guaranis = \$1.00 (as on 1 September 1956)

PERU

Population	9 213 000
Medical schools	1
Physicians	1 964
Medical graduates per annum	150
Population per medical school	9 213 000
Population per physician	4 691
Medical graduates per 1000 physicians per annum	76.3
Population per annual medical graduate	61 000

Introduction

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 Junta (Board) composed of all the full professors, and of six of the associate professors.

The academic year lasts for nine months. The language of instruction is Spanish.

School education

Elementary education is provided free, and is compulsory between the ages of 7 and 14 years. Secondary education is provided at State schools, in a five-year course for students aged 12 to 17 years.

Conditions of admission

Candidates for admission to the Faculty of Medicine must have completed secondary education, must have taken a two-year pre-medical course, and must pass an entrance examination.

Men and women are admitted on the same basis.

Curriculum

The curriculum includes the following subjects:

First year: anatomy; histology; biochemistry

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* (Physician and Surgeon) is awarded. The latter also constitutes a 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	Ownership	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees (Soles)*
Facultad de Medicina de la Universidad Nacional Mayor de San Marcos Avenida Grau-Lima LIMA	GN	1808	499	2740 m 207 f	450	150	200

* 19.10 soles = \$1.00

PHILIPPINES

Population	21 440 000
Medical schools	6
Physicians	11 698
Medical graduates per annum	1 350*
Population per medical school	3 573 000
Population per physician	1 833
Medical graduates per 1000 physicians per annum	115.4
Population per annual medical graduate	16 000

* Estimated

Introduction

The medical course 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 (M.D.).

Administration

The Southwest College of Medicine, 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 its dean. He is appointed by, and responsible to, the officials of the university of which the medical school is part.

The academic year runs from June to March. The language of instruction is English, although contact with patients is generally in one of the local languages.

School education

Elementary education is compulsory, and is provided free of charge. It consists of a four-year primary course and a two-year intermediate course. Instruction starts in the lowest primary grade for children 7 or 8 years old. Secondary education lasts for four years and is provided at general high schools.

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 in order to be admitted 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.

Men and women are admitted on the same basis.

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 material 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.

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 which cover 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.

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pesos)*</i>
Southwest College of Medicine CEBU CITY	P	1956			148		
College of Medicine University of the East MANILA	P	1956					
Institute of Medicine Far Eastern University Morayta Street MANILA	P	1952	13 f 27 p	742 m 332 f	507		700
College of Medicine Manila Central University Balintawak, Calcoocan, Rizal MANILA	P	1947	142	1022 m 376 f	253	296	650
College of Medicine University of the Philippines 547 Herran Street MANILA	GN	1907	61 f 63 p	346 m 126 f	100	83	500
Faculty of Medicine and Surgery University of Santo Tomás España Street MANILA	R	1871	241 f 129 p	2770 m 1635 f	1286	581	700

* 2 pesos = \$1.00

POLAND

Population	26 500 000
Medical schools	10
Physicians	16 056
Medical graduates per annum	700*
Population per medical school	2 650 000
Population per physician	1 650
Medical graduates per 1000 physicians per annum	43.6
Population per annual medical graduate	38 000

* Estimated

Introduction

The medical curriculum in Poland lasts for six years, including one year of practical hospital work, 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. The Ministry for Higher Education advises the Ministry of Health on such matters as educational standards and the selection of senior teaching staff.

Each academy is headed by a Rector and by an Academic Senate, and may contain one or more of the following faculties: medicine (for the training of the general practitioner); paediatrics; hygiene and public health (either as full faculties or as branches of the faculty of medicine); pharmacy; stomatology (generally as a branch of the faculty of medicine). Some academies have under their direct

administration schools for the training of nurses, midwives, technical assistants, and other categories of health worker. Certain academies devote special attention to those branches of medicine which are of importance locally, such as industrial medicine and hygiene in mining and textile centres, and maritime hygiene in port cities.

The academic year consists of two semesters of about fifteen weeks each, running from October to February and from February to June respectively. The language of instruction is Polish.

School education

Primary education is provided free of charge, and is compulsory from the ages of 7 to 13 years. The primary course covers seven years. General secondary education extends over four years, and ends with the *egzamin dojrzałości*, or final secondary examination.

Conditions of admission

The basic condition for admission to a medical academy is possession of the secondary school certificate. Candidates are also required to pass an entrance examination. The number of annual admissions to each faculty is laid down by the Government in accordance with estimated future needs for medical personnel. Women are admitted on the same basis as men.

Curriculum

The faculties of medicine, of paediatrics, and of hygiene and public health have 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, parasitology, pharmacology, clinical propaedeutics (including nursing), surgery, operative surgery and topographical anatomy, public health organization, military medicine, foreign languages (Russian, English, and French or German) and physical training.

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, and military medicine.

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 eighth and ninth semesters of the course, students of medicine and of paediatrics must work as interns in a maternity department for two 72-hour periods.

The sixth year of the medical course is given over to hospital work.

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, be admitted provisionally to the next semester. If, during that semester, he fails to make good his academic deficiencies, it rests with the dean to decide whether he is to be allowed to continue the medical course. However, if a student fails the first-year examinations, he must abandon further study of medicine.

After obtaining credits for the full course, a student is admitted to the final or diploma 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, and otorhinolaryngology. These examinations may be taken in any order.

Qualification

Success in the final examination leads to the award of the diploma of *Lekarz* (Physician). This qualification permits the holder to practise medicine, and no further examinations need be taken. Graduates of the faculties of paediatrics and of hygiene receive the same type of diploma, together with a certificate of "Grade I Specialist".¹

The university degree of *Kandydat Nauk Lekarskich* (Candidate of Medical Sciences) may be obtained by passing special examinations and by writing a thesis based on research. This degree is not needed in order to enter medical practice, but it is required for teaching and research appointments. It is also a prerequisite for obtaining the higher degree of *Doktór Nauk Lekarskich* (Doctor of Medical Sciences).

¹ This is the lower grade of specialization; that of Grade II is obtainable only after further training.

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Akademia Medyczna BIAŁYSTOK	GN	1946					None
Akademia Medyczna BYTOM (BEUTHEN)	GN	1946					None
Akademia Medyczna GDAŃSK (DANZIG)	GN	1945					None
Akademia Medyczna KRAKOW	GN	1410					None
Akademia Medyczna ŁÓDZ	GN	1946					None
Akademia Medyczna LUBLIN	GN	1944					None
Akademia Medyczna POZNAN	GN						None
Akademia Medyczna SZCZECIN (STETTIN)	GN	1946					None
Akademia Medyczna WARSZAWA (WARSAW)	GN						None
Akademia Medyczna WROCLAW	GN						None

PORTUGAL

Population	8 693 000
Medical schools	3
Physicians	6 275
Medical graduates per annum	200*
Population per medical school	2 898 000
Population per physician	1 385
Medical graduates per 1000 physicians per annum	31.9
Population per annual medical graduate	43 000

* Estimated

Introduction

The medical course in Portugal lasts for six years and ten months, including a period of internship. It leads to the diploma of *Licenciatura em Medicina* (diploma of 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. The language of instruction is Portuguese.

School education

Most of the primary and secondary schools in Portugal belong to, and are financed by, the State. Secondary education for pupils between the ages of 10 and 17 years is provided at two types of school—namely, the *liceus*, for general secondary education, and schools for technical instruction.

Conditions of admission

A candidate for admission to a faculty of medicine must have passed the secondary school examination, as well as the faculty entrance examination in chemistry, physics, and biology. The average age on admission to medical studies

is 17 to 18 years. No limit is placed on the number of medical students admitted each year. Men and women are admitted to medical studies on the same basis.

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.

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; topographical 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; 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 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

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* (Licentiate in Medicine). Possession of this diploma constitutes a licence to practise medicine in Portugal.

Medical graduates who desire to take the higher academic degree of *Doutorado em Medicina* (Doctorate in Medicine) must pass a special examination and submit an additional thesis.

Name and address	Owner-ship	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees (Escudos)*
Faculdade de Medicina de la Universidade de Coimbra COIMBRA	GN	1290	15				
Faculdade de Medicina de la Universidade de Lisboa Avenida 28 de Maio LISBOA	GN	1911	90 p	849 m 331 f	200	82	8000
Faculdade de Medicina de la Universidade do Porto PORTO	GN	1825	70 p	619 m 167 f	141	80	6000

* 29 escudos = \$1.00

PORTUGUESE INDIA

Population	1 309 000
Medical schools	1
Physicians	143
Medical graduates per annum	16
Population per medical school	1 309 000
Population per physician	9 154
Medical graduates per 1000 physicians per annum	111.8
Population per annual medical graduate	82 000

NOTE: These figures include data for the other Portuguese territories in Asia: Macao and Timor.

Introduction

The medical course in Portuguese India 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 Portuguese India 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 its dean.

The academic year runs from June to 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. The number of students entering the School each year is limited, and selection is made on the basis of their academic record.

Men and women are admitted on the same basis.

Curriculum

The five-and-a-half years which make up the medical curriculum are arranged as follows:

First year: descriptive and topographical anatomy (Part I); histology; embryology

Second year: descriptive and topographical anatomy (Part 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 pathology, dermatology and mycology; medical pathology; 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, medicine and surgery, 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, has satisfactorily completed the period of internship and has submitted a thesis, he receives the certificate of *Médico-Cirurgião* (Physician and Surgeon). This diploma enables him to practise medicine, both in a private and in an official capacity, in Portuguese India; he can also take up private practice in the other Portuguese overseas territories.

If he wishes to practise clinical medicine in Portugal itself, he must sit for an examination in clinical medicine and surgery in one of the faculties of medicine in continental Portugal, to which he must also submit a thesis.

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Rupees) *</i>
Escola Médico-Cirúrgica de Gôa Avenida da República Gôa	GN	1842	1 f 15 p	157 m 7 f	135	16	60 per subject

* Rupees 4.12,2 = \$1.00

ROMANIA

Population	17 150 000
Medical schools	5
Physicians	12 500*
Medical graduates per annum	350*
Population per medical school	3 430 000
Population per physician	1 372
Medical graduates per 1000 physicians per annum	28.0
Population per annual medical graduate	49 000

* Estimated

Introduction

Medical studies in the People's Republic of Romania last for six years, and lead to the diploma of *Medic* (Physician).

Administration

Medical education in Romania began a century ago with the establishment of "Medical High Schools". Later on, medical faculties were affiliated with universities. In 1948, medical education was reorganized, and faculties transformed into independent institutes of medicine, or of medicine and pharmacy.

These institutes of medicine and pharmacy are Government-owned, and operate under the jurisdiction of the Ministry of Education, which organizes and administers medical education in collaboration with the Ministry of Health. Financial support is provided through the latter Ministry. Each institute includes faculties of general medicine and of paediatrics, as well as, in certain cases, faculties of pharmacy and of dentistry.

Each institute is headed by a Rector, who is directly responsible to the Ministries of Education and Health. He is assisted by two or three 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, seminars, hospital work, and examinations.

The dean of each faculty directs the educational and scientific activities of the professors, and supervises the teaching and the progress of the students. He is assisted by the professors of the Faculty, who form its Scientific Council.

The academic year is divided into two semesters, running from September to January and from February to June respectively.

The language of instruction is Romanian in all the institutes except that at Târgu-Mureş, where Hungarian is used.

School education

Primary education is provided free of charge, and is compulsory for all children from 7 to 14 years of age. Secondary education begins at the age of 14.

Conditions of admission

Admission of candidates to medical studies is based on a competitive examination. Only those candidates who have completed secondary school, and have obtained the secondary school certificate, are eligible to compete. The yearly number of admissions to institutes of medicine is determined by the Government; it depends on the number of available vacancies and on the country's need for medical personnel.

Curriculum

The basic curriculum is arranged as follows:

First year: medical physics; medical chemistry; biology; parasitology; anatomy; physiology; social sciences; Russian language; physical education

Second year: physiology; histology; biochemistry; anatomy; social sciences; Russian language; physical education

Third year: microbiology; morbid anatomy; physiopathology; medical and surgical semeiotics; topographical anatomy; operative surgery; social sciences

Fourth year: clinical medicine; clinical surgery; pharmacology; hygiene; clinical neurology; clinical psychiatry

Fifth year: clinical medicine; clinical surgery; clinical dermato-venereology; contagious diseases and epidemiology; clinical radiology; clinical ophthalmology; clinical otorhinolaryngology

Sixth year: clinical medicine; organization of health protection; history of medicine; clinical obstetrics and gynaecology; clinical paediatrics.

After the fourth year of medical studies, students also spend periods of time during the summer months in medical and surgical clinics and wards.

For the first three years of the medical course, the curriculum is 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 certain specialities, such as paediatrics, dentistry, and so on.

Attendance at classes and at practical work, as well as at clinics, is compulsory. In addition, arrangements exist whereby students can devote time to certain optional subjects, and each institute makes provision for scientific groups in which students undertake individual research under the direction of a professor. The results achieved by them are reported at annual students' conferences; those students whose contribution is particularly valuable receive awards.

Examinations and qualification

Examinations on 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 may be admitted to the next year of the medical course.

After a final examination, held at the end of the sixth year of the curriculum, a student has to take a State Examination covering the principal subjects related to his future speciality. A candidate who is successful in the State Examination then receives the diploma of *Medic* (Physician), which also constitutes his licence to practise.

A graduate may, subsequently, take additional courses for specialization and, after further examinations and the presentation of a thesis, may be eligible for the diploma of *Doctor în Medicină* (Doctor of Medicine).

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Institutul de Medicină 13, Bulevardul Republicii BUCUREȘTI (BUCHAREST)	GN	1864					None
Institutul de Medicină CLUJ	GN	1919					None
Institutul de Medicină IAȘI (JASSY)	GN						None
Institutul de Medicină TÂRGU-MUREȘ	GN	1945					None
Institutul de Medicină TIMIȘOARA	GN	1945					None

SAAR *

Population	983 000
Medical schools	1
Physicians	522
Medical graduates per annum	30
Population per medical school	983 000
Population per physician	1 883
Medical graduates per 1000 physicians per annum	57.5
Population per annual medical graduate . . .	33 000

Introduction

The duration of the medical curriculum in the Saar is six years, including a year of pre-medical studies, leading to the degree of *Doctor Medicinae* (Doctor of Medicine).

Administration

The University of the Saar is an autonomous institution, financed mainly by Government subsidy. The Government is represented in the Administrative Council, and appoints the Rector on proposal of the Administrative Council.

The University is a bilingual institution of international character. It is open to students of all countries, and professors of any nationality are eligible to hold teaching posts. French and German are both used as teaching languages.

The academic year is in two semesters—November to February and March to June.

School education

Schools in the Saar include primary schools (ages 6-10) and secondary schools (ages 11-18). (Attendance at school is compulsory from 6 to 14.) The secondary schools are of three types, emphasizing respectively Greek and Latin; natural sciences and Latin; or sciences and modern languages. The official language of instruction in the schools is German.

Conditions of admission

For admission to the University of the Saar a student must possess the secondary education certificate (*Reifezeugnis*).¹ This certificate is obtained after

* Information on the Saar is listed separately, since, at the time this material was compiled the Franco-German Agreement of 27 October 1956, under whose terms this territory reverted to Western Germany on 1 January 1957, had not yet come into effect.

¹ Sometimes referred to as *Abitur*.

examination at the end of the secondary school course. Certain foreign examinations are accepted as equivalent. Only 40 new medical students are admitted each year. Women are eligible on the same basis as men.

Curriculum

The six-year medical curriculum consists of one pre-medical year (taken at the Faculty of Science and known as the P.C.B.), two pre-clinical years, and three clinical years.

First year (P.C.B.): physics, chemistry, biology

Second year: anatomy, histology, physiology, biochemistry, medical physics, history of medicine

Third year: anatomy, histology, embryology, physiology, biochemistry, medical physics, general pathology and morbid anatomy, general surgery, medical propaedeutics, clinical chemistry

Fourth year: morbid anatomy, bacteriology and serology, parasitology, pharmacology and toxicology, experimental pathology, clinical medicine, medical pathology, clinical surgery, surgical pathology, obstetrics and gynaecology

Fifth year: morbid histology, hygiene, pharmacology and toxicology, medicine, surgery, obstetrics and gynaecology, paediatrics, neurology and psychiatry, ophthalmology, dermatology and venereology

Sixth year: hygiene, therapeutics, applied anatomy, neurology and psychiatry, otorhinolaryngology, orthopaedics, urology, paediatrics, forensic medicine, social medicine, medical ethics, radiology, occupational medicine.

During the summer holidays, following either the pre-medical or the first pre-clinical year, every student must work in hospital for eight weeks as a dresser (*Krankenpflegedienst*). During the holidays of the subsequent years he works as a clinical clerk (*Famulus*) for a total of at least six months.

Examinations

There are three principal examinations, one at the end of the pre-medical period (P.C.B. or *Vorphysikum*), one at the end of the pre-clinical period (*Ärztliche Vorprüfung* or *Physikum*), and one at the end of the clinical period (*Ärztliche Prüfung* or *Staatsexamen*). In addition, examinations on the year's work are held at the end of each academic year, i.e., in June (*Jahres-Prüfungen*). A candidate who fails in the June session may try again in October. If he fails in October he must repeat the year's courses.

All examinations are written and oral. They are, in addition, practical and clinical according to the nature of the subject.

Qualification

After receiving his diploma, the young graduate must devote one year to hospital work before he is authorized to practise medicine.

Persons who have passed the final examination in medicine of universities in France, Germany, or the Saar, and who have fulfilled all necessary conditions for the practice of medicine in these countries, are eligible for the Doctorate in Medicine of the University of the Saar. The candidate for this degree must present to the Faculty a thesis (in French or German) embodying original work, and must pass an oral examination. Medical graduates of other universities may also qualify for the Doctor of Medicine degree, but must take a more extensive examination, including theoretical and clinical subjects.

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Fr. francs) *</i>
Medizinische Fakultät der Universität des Saarlandes HOMBURG	P	1946	124	215	41	30	5600

* 350 French francs = \$1.00

SINGAPORE

Population	7 057 000
Medical schools	1
Physicians	1 184
Medical graduates per annum	50
Population per medical school	7 057 000
Population per physician	5 960
Medical graduates per 1000 physicians per annum	42.2
Population per annual medical graduate	141 000

NOTE: As the Medical Faculty in Singapore also serves the Federation of Malaya, the figures for the two areas have been combined in the above table.

Introduction

The medical course 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.

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 runs from October to June, and is divided into three terms of about ten weeks each. The language of instruction is English.

School education

Primary education is provided free of charge, and is compulsory between the ages of 6 and 12 years. National primary schools provide education either in English or Malay, with the other language a compulsory subject.

Fees are charged in all secondary schools, which usually provide a four-year course, occasionally with a fifth, pre-university, year added. At the conclusion of the course, students take the School Certificate Examination of the Cambridge University Syndicate.

Conditions of admission

In order to be admitted to the medical course, a candidate must have passed the Cambridge School Certificate Examination, or the Matriculation Examination of the University of London, or their equivalent. Moreover, he must have completed five terms of post-School Certificate work and must have passed the competitive University Entrance Examination. Candidates are not eligible to sit for the latter unless they have reached the age of seventeen, and have passed a medical examination.

Men and women are admitted on the same basis.

Curriculum

The curriculum is composed of the following subjects:

First year: chemistry; physics; botany; zoology; plus a course of study in the English language (unless exempted by the faculty)

Second and third years: anatomy (including histology); physiology; and biochemistry

Fourth year: *materia medica* and pharmacy (including practical dispensing); bacteriology; pathology (including attendance at, and performance of, post-mortems); and medicine

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; and 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 Second Professional Examination, held during the last term of the fourth year, is devoted to *materia medica* and pharmacy, as well as to pathology and bacteriology.

The Final Professional Examination is in two parts—namely Part I, which covers social medicine and public health, as well as forensic medicine; and Part II, which covers medicine, surgery, obstetrics and gynaecology. Normally, Part I

is taken before Part II, but both 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>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Straits \$)*</i>
Faculty of Medicine University of Malaya Sepoy Lines SINGAPORE 3	G	1905	61 f 14 p	493 m 67 f	109	50	540

* 3.03 Straits \$ = US \$1.00

SPAIN

Population	28 756 000
Medical schools	10
Physicians	29 138
Medical graduates per annum	1 000*
Population per medical school	2 876 000
Population per physician	987
Medical graduates per 1000 physicians per annum	34.3
Population per annual medical graduate	29 000

* Estimated

Introduction

The medical course in Spain lasts for seven 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 runs from October to June. It is divided into three terms of about eleven weeks each. The language of instruction is Spanish.

School education

The secondary school course covers seven years, and begins when a pupil is approximately ten years of age. It leads to the *bachillerato*, a certificate granted as a result of an examination conducted at the end of secondary school studies. During the last part of the secondary school course, potential medical students usually concentrate on the study of science subjects.

Conditions of admission

The minimum requirement for admission to a faculty of medicine is possession of the *bachillerato*. Women are admitted on the same basis as men.

Curriculum

The medical curriculum is established by law, and is the same for all the faculties. It is arranged as follows:

First year: chemistry; physics; biology; mathematics; and a modern language (English, French, or German)

Second year: anatomy; histology and embryology; physiology; biochemistry

Third year: anatomy; special physiology; psychology; microbiology; parasitology.

During the first three years, instruction is also given in religion, politics, and physical education.

Fourth year: general pathology and propaedeutics; morbid anatomy; pharmacology and therapeutics; physiotherapy

Fifth year: medicine and clinical medicine; surgery and clinical surgery; obstetrics and gynaecology; ophthalmology

Sixth year: medicine and clinical medicine; surgery and clinical surgery; obstetrics and gynaecology; paediatrics and child health; otorhinolaryngology; psychiatry

Seventh year: medicine and clinical medicine; surgery and clinical surgery; dermatology and venereology; urology; hygiene and sanitation; forensic medicine; history of medicine.

Examinations

Examinations take place at the end of each academic year, and a final examination is held at the end of the course. 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 repeat 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* (Licentiate in Medicine and Surgery) which, at the same time, serves as a 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).

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pesetas)*</i>
Facultad de Medicina de la Universidad de Barcelona BARCELONA	GN	1340	49 f 8 p	1398 m 55 f	134	130	100 per subject
Facultad de Medicina de Cádiz CÁDIZ	GN	1748	31	802 m 31 f	150	60	900
Facultad de Medicina de la Universidad de Granada Carretera de Jaén GRANADA	GN	1531	34	969 m 7 f	101	81	700
Facultad de Medicina de la Universidad de Madrid Ciudad Universitaria MADRID	GN	1843	95 p	3807 m 226 f	512	351	950
Facultad de Medicina de la Universidad de Salamanca Calle de Fonseca, 2 SALAMANCA	GN	1254	40 f 41 p	1002 m 34 f	98	96	900
Facultad de Medicina de la Universidad de Santiago de Compostela Calle San Francisco, 18 SANTIAGO DE COMPOSTELA	GN	1648	36 p	600	50	80	1000
Facultad de Medicina de la Universidad de Sevilla Madre de Dios SEVILLA	GN	1868	37	382 m 11 f	56	36	700
Facultad de Medicina de la Universidad de Valencia VALENCIA	GN						
Facultad de Medicina de la Universidad de Valladolid VALLADOLID	GN	1862	48 p	977 m 39 f	167	101	600
Facultad de Medicina de la Universidad de Zaragoza ZARAGOZA	GN	1558	16 f 18 p	630	69	32	600

* 39.4 pesetas = \$1.00

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>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Faculty of Medicine University of Khartoum KHARTOUM	G	1924	13 f 12 p	106 m 4 f	30	14	None

SURINAM

Population	220 000
Medical schools	1
Physicians	99
Medical graduates per annum	4
Population per medical school	220 000
Population per physician	2 222
Medical graduates per 1000 physicians per annum	40.4
Population per annual medical graduate . . .	55 000

Introduction

The medical course in Surinam lasts for seven years. Graduates are known as *Geneesheren*.

Administration

The medical school at Paramaribo is owned and operated by the Government, and is patterned after the institutions in the Netherlands.

The academic year runs from November to October. The language of instruction is Dutch.

School education

Education is provided free of charge, and is compulsory for children between 7 and 12 years. Secondary education is provided at advanced elementary schools in a four-year course, leading to *algemene middelbare school*, or general secondary school, where pupils are prepared for university studies in a three-year course.

Conditions of admission

In order to gain admission to medical studies, a candidate must have completed secondary school education. Men and women are admitted on the same basis.

Curriculum

Students attend courses in chemistry, physics, and biology during the early part of the medical course. Pre-clinical subjects are taught in the school laboratories and, in the final years of the curriculum, the clinical material of the Central Hospital of Paramaribo is used for teaching. Students work under supervision in the wards and in the out-patient department.

Qualification

Graduates of the medical course are qualified to practise in Surinam, but further study is required for those who wish to practise elsewhere.

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Florins)*</i>
Geneeskundige School 64 Gravenstraat PARAMARIBO	G	1882	19 p	69 m 8 f	16	4	300

* 1.89 florins = \$1.00

SWEDEN

Population	7 214 000
Medical schools	4
Physicians	5 433
Medical graduates per annum	280
Population per medical school	1 804 000
Population per physician	1 328
Medical graduates per 1000 physicians per annum	51.5
Population per annual medical graduate	26 000

Introduction

Medical training in Sweden consists of a six-and-a-half year course, leading to the certificate of *Medicine Licentiat* (Licentiate in Medicine), abbreviated to *Med.Lic.*

Administration

The four 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 these 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 respectively. Some clinical studies, however, continue all the year round. The language of instruction is Swedish.

School education

Children usually attend primary school from the age of 7 until the age of about 12 years. Swedish secondary schools are of two different types—the *gymnasium* and the *lyceum*. The curriculum in each varies according to the emphasis given to classical or scientific subjects. Students usually attend secondary school until they are 19 years of age.

Conditions of admission

Students are admitted to the study of medicine on the basis of the *Student-examen* or secondary 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.

Men and women are admitted on the same basis.

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, and concentrates 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 as the examinations of these 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. There is no limit to the number of times an examination may be repeated. 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.* (Licentiate in Medicine).

Qualification

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.

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.

Name and address	Ownership	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees
Medicinska Fakulteten Göteborgs Universitet Vasaparken GÖTEBORG	GN	1948	30 f 38 p	277 m 75 f	70	70	None
Medicinska Fakulteten Universitetet i Lund LUND	GN	1666	132	472 m 121 f	110	51	None
Kungl. Karolinska Mediko- Kirurgiska Institutet Solnavägen 1 STOCKHOLM 60	GN	1810	75 f 79 p	770 m 230 f	138	99	None
Medicinska Fakulteten Universitetet i Uppsala UPPSALA	GN	1477	53 f 50 p	427 m 123 f	90	60	None

SWITZERLAND

Population	4 937 000
Medical schools	5
Physicians	5 061
Medical graduates per annum	422
Population per medical school	987 000
Population per physician	976
Medical graduates per 1000 physicians per annum	83.4
Population per annual medical graduate	12 000

Introduction

The medical course in Switzerland lasts for six-and-a-half years. It leads either to the *Diplôme fédéral* (Swiss Federal Diploma), which is awarded to Swiss citizens only or to the *Certificat de fin d'études médicales* (Certificate of Medicine), 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 Canton.

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.¹

School education

Education is provided free of charge, and is compulsory up to the age of 14. Both primary and secondary education consist of a six-year course. Secondary education starts at about 12, and is generally completed at about 18 years of age.

¹ 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.

Conditions of admission

In order to be admitted to the medical course, a candidate must hold an officially recognized school-leaving certificate (*Maturité—Maturität*). As a rule, there is no *numerus clausus*, but in the case of foreign students, admission to first-year classes may be restricted because of limited facilities.

Women are eligible for admission on the same basis as men.

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 specialities, 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 on 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 upon 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 Federal Diploma or the Certificate of Medicine, 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* (Certificate of Medicine) 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, that is, French, German, or Italian.

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Francs)*</i>
Medizinische Fakultät der Universität Basel Petersplatz 1 BASEL, Basel-Stadt	GP	1460	73	488 m 55 f	98	66	500
Medizinische Fakultät der Universität Bern BERN, Bern	GP	1834	63 f	502 m 70 f	106	45	700
Faculté de Médecine de l'Université de Genève Rue de Candolle GENÈVE, Genève	GP	1876	25 f 32 p	677 m 98 f	163	142	900
Faculté de Médecine de l'Université de Lausanne LAUSANNE, Vaud	GP	1890	11 f 33 p	480 m 39 f	138	49	1000
Medizinische Fakultät der Universität Zürich ZÜRICH, Zürich	GP	1833	30 f 72 p	721 m 117 f	275	120	800

* 4.28 francs = \$1.00

SYRIA

Population	3 670 000
Medical schools	1
Physicians	670
Medical graduates per annum	56
Population per medical school	3 670 000
Population per physician	5 478
Medical graduates per 1000 physicians per annum	83.5
Population per annual medical graduate	66 000

Introduction

Medical education in Syria consists of a six-year course (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 lasts from October to June. The language of instruction is Arabic.

School education

Education in Syria is provided free of charge in all State schools up to the end of secondary studies. Primary education is compulsory. Secondary education falls into two stages. The first part is a four-year course held in the complementary or intermediate schools and leading to a *certificat de fin d'études* (school-leaving certificate). The aim of this course is to give the pupils a certain level of general culture.

Students who have completed this stage and who wish to enter university follow an additional three-year course which provides them with the necessary background for commencing their academic studies and which leads to the *baccalauréat* (secondary school certificate).

Conditions of admission

In order to be admitted to the Faculty of Medicine, the students must hold the *baccalauréat* as well as the P.C.B. certificate (physics, chemistry, and biology). The courses leading to this certificate last one year and are held at the Faculty of Sciences.

Curriculum

The medical curriculum includes the following subjects:

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 pathological 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 pathological 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 specialities 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 specialities; 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 specialities; 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

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.

Name and address	Ownership	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees (LS)*
Faculty of Medicine Syrian University DAMASCUS	GN	1919	55 f 7 p	327 m 32 f	65	56	220

* LS 3.57 = \$1.00

THAILAND

Population	19 925 000
Medical schools	2
Physicians	2 943
Medical graduates per annum	156
Population per medical school	9 962 000
Population per physician	6 770
Medical graduates per 1000 physicians per annum	53.0
Population per annual medical graduate	128 000

Introduction

The medical course in Thailand lasts for four years. It leads to the medical degree known as Bachelor of Medicine, which is equivalent to the United Kingdom M.B., B.S., and the United States M.D.

Administration

Both the medical schools are part of the University of Medical Sciences which, moreover, contains schools of dentistry, pharmacy, public health, nursing, midwifery, dental hygiene, sanitary science, and medical technology. The University is owned by the Government, and operated by the Ministry of Public Health.

The academic year runs from June to March. The language of instruction is Thai, although English-language textbooks are used.

School education

Primary education is provided free of charge, and is compulsory from the ages of 7 to 14 years. Secondary school education consists of three phases—namely, an initial stage of three years; a final stage consisting of a further three years; and two additional years for those students proceeding to universities and other institutions of higher learning. Government schools provide free tuition during these three stages.

Conditions of admission

Requirements for admission to medical studies include completion of secondary school studies, as well as two years of pre-medical work at university level. The pre-medical course is taken at the Faculty of Arts and Sciences of the Chulalongkorn University, but equivalent work performed at other institutions is acceptable.

Men and women are admitted to medical studies under the same conditions.

Curriculum and examinations

Pre-clinical subjects are studied during the first and second years of the medical course, whereas the third and fourth years of the curriculum are given over to *clinical* subjects. These latter studies are undertaken at the hospitals affiliated to the respective medical schools. The fact that medical schools and hospitals operate under the jurisdiction of the same ministry makes for close co-operation in carrying out the teaching programme.

Examinations to cover each subject studied in the course of an academic year are held at the end of that period.

Qualification

The medical degree, as conferred by the University of Medical Sciences, is accepted as a licence to practise medicine in Thailand. A period of internship is not, at present, compulsory, but opportunities are open to students to apply on an optional basis for one-year appointments available in the affiliated hospitals. From among such interns a few may subsequently be selected to perform an additional year's service as senior house officers.

A candidate for an advanced degree, equivalent to the United Kingdom M.D., and the United States Ph.D. or D.Sc., must present a thesis and submit to an examination by the medical faculty, after three years from the date of receiving the first medical degree (that is, the degree equivalent to the United Kingdom M.B., B.S., or the United States M.D.) have elapsed.

Name and address	Ownership	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees
Faculty of Medicine at Chulalongkorn Hospital University of Medical Sciences BANGKOK	GN	1947	76 f 15 p	219 m 81 f	85	41	None
Faculty of Medicine at Siriraj Hospital University of Medical Sciences THONBURI	GN	1889	120 f 6 p	411 m 198 f	165	115	None

TURKEY

Population	22 949 000
Medical schools	3
Physicians	7 179
Medical graduates per annum	250*
Population per medical school	7 649 000
Population per physician	3 197
Medical graduates per 1000 physicians per annum	34.8
Population per annual medical graduate . . .	92 000

* Estimated

Introduction

The medical course in Turkey lasts for six years, and leads to the degree of Doctor of Medicine (M.D.).

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 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 at Constantinople 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.

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. Each academic year is divided into two semesters. The language of instruction is Turkish.

School education

Education is compulsory, and provided free of charge for all children from 7 to 12 years of age. Secondary education comprises two stages: intermediate and upper secondary. The intermediate schools receive pupils who have graduated from primary schools. The intermediate course lasts for three years, and the standard curriculum provides for both general and scientific subjects. In the upper secondary schools, the course lasts for four years, and prepares students for the universities.

Conditions of admission

In order to be admitted to the medical course, a student must hold the Turkish "Diploma of Maturity" or certificate of secondary education, 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.

Men and women are admitted on the same basis.

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 again. 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.

Qualification

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.

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Liras) *</i>
Tip Fakültesi Ankara Üniversitesi (Faculty of Medicine, Ankara University) ANKARA	GN	1945	30 f 44 p	1177 m 196 f	200	197	30
Tip Fakültesi İstanbul Üniversitesi (Faculty of Medicine, İstanbul University) İSTANBUL	G	1827					
Tip Fakültesi Ege Üniversitesi (Faculty of Medicine, Aegean University) Bornova İZMİR (SMYRNA)	G	1955					

* 1 lira = \$1.00

UGANDA

Population	19 845 000
Medical schools	1
Physicians	1 331
Medical graduates per annum	6
Population per medical school	19 845 000
Population per physician	14 910
Medical graduates per 1000 physicians per annum	4.5
Population per annual medical graduate	3 308 000

NOTE: These figures include data for Kenya, Tanganyika and Zanzibar, as well as Uganda, since the one medical school serves all four territories.

Introduction

The medical course in Uganda lasts for seven years, including two years of pre-medical studies. It leads to the diploma of Licentiate in Medicine and Surgery (East Africa) known as the L.M.S. (E.A.).

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 all the British East African Territories, that is, 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 latter is the chief executive and academic officer of the College, and is responsible to the Council. He is appointed by the Secretary of State for the Colonies.

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 several East African Territories 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 January to March, 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.

School education

The primary course covers five or six years, from the age of 6 onwards. The full secondary course covers six years, and leads to the Cambridge School Certificate, or the University College of East Africa entrance examinations.

Conditions of admission

In order to be eligible for admission to medical studies, a student must hold an equivalent of the requirements for the Intermediate Examination in Science of London University, such as the Cambridge Overseas School Certificate. One of the three required credits must be in the English language, and another in elementary mathematics. In addition, a candidate must present a recommendation from his school headmaster.

The College is open to all students who have the academic qualifications necessary for admission, regardless of sex, race, colour, or religion. Candidates may be accepted from any of the East African Territories, and applicants from Northern Rhodesia and Nyasaland.

Curriculum

The curriculum is divided into three stages, and is arranged as follows:

The *pre-medical* period (first and second years), is taken in the Faculty of Science. The subjects studied include chemistry, physics, biology, mathematics, and English. Candidates who have already acquired sufficient credits in these subjects elsewhere may be exempted from the pre-medical course.

The *pre-clinical* period (third and fourth years) is devoted to anatomy and physiology.

The *clinical* period (fifth, sixth and seventh years of the course) is arranged as follows:

Fifth year: pathology; pharmacology; medicine; surgery; clinical methods; paediatrics; psychology; dermatology; radiology; preventive medicine

Sixth year: pathology; medicine; surgical specialities; obstetrics and gynaecology; venereology; psychiatry; ophthalmology; otorhinolaryngology; dental surgery; anaesthesiology; environmental sanitation; epidemiology and vital statistics

Seventh year: medicine; therapeutics; surgery; orthopaedics; operative surgery; surgical anatomy; obstetrics and gynaecology; preventive and social medicine.

Examinations

The *First Professional Examination* is held in the Faculty of Science at the end of the second year of the course and covers chemistry, physics, zoology, and botany.

The *Second Professional Examination*, held at the end of the fourth year of the course, covers anatomy and physiology.

The *Final Professional Examination* consists of two parts. Part I covers pharmacology, pathology, forensic medicine, 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, by 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. There are no supplementary examinations for the Second Professional Examination.

Qualification

After passing the Final Professional Examination, a student receives the diploma of Licentiate in Medicine and Surgery (East Africa), abbreviated to L.M.S. (E.A.). The newly graduated Licentiate is granted provisional registration, which allows him to perform two years of compulsory internship at a recognized hospital. At the end of this period, he receives full registration. A further five years in Government service is then compulsory, after which a Licentiate is free to practise privately if he so wishes. However, he may only engage in private practice in one of the East African Territories, as the diploma granted is not yet recognized by the General Medical Council of the United Kingdom.

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual 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	P	1924	16 f 16 p	52	20	6	40

* £EA (East African) 1 = \$2.80

UNION OF SOUTH AFRICA

Population	13 425 000
Medical schools	5
Physicians	6 723
Medical graduates per annum	364
Population per medical school	2 685 000
Population per physician	1 997
Medical graduates per 1000 physicians per annum	54.1
Population per annual medical graduate	37 000

Introduction

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 lasts for seven years. Successful students receive the university degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.Ch.). One year of hospital internship after graduation is then required before authority to practise is granted.

Administration

The South African universities are State-aided institutions, and Government grants are proportionate to the amount raised each year from other sources, such as endowments, fees, popular subscriptions, and so forth. The chief executive officer of a university is its Principal, Chancellor or Rector, who is responsible to a Council, whose members generally include a number of Government-appointed representatives. A University Senate deals with academic, rather than administrative, matters. Professors are appointed by the Council on the recommendation of the Senate. Each faculty is headed by a dean, who is assisted by a Council of Professors, except in the case of the Faculty of Medicine, Witwatersrand University, where a Board of faculty members fulfils the latter role.

The academic year, in general, runs from February to November. The language of instruction is English at the medical faculties of Capetown, Durban and Johannesburg, and Afrikaans at the medical faculties of Pretoria and Stellenbosch.

School education

The average age for primary education is from 7 to 15 years. The average age for secondary education is from 15 to 19 years. Secondary schools in the Union of South Africa provide three types of instruction, the main emphasis being on either science and mathematics, modern languages, or classical languages.

Conditions of admission

In order to be admitted to university studies in the Union of 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, mathematics must have been one of the subjects in which they passed their matriculation examination.

Curriculum

Specifications for a *minimum* curriculum, recommended by the South African Medical and Dental Council, have been prescribed by the Governor-General 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; botany; zoology; anatomy; physiology; pathology; pharmacology and *materia medica*; medicine; surgery; obstetrics and gynaecology; hygiene and public health; forensic medicine and toxicology; medical ethics; psychological medicine; and the special subjects. The number of hours to be devoted to lectures and laboratory or clinical work in respect of each subject is mentioned in these specifications, and the number of units, such as deliveries and anaesthetics, which a student is expected to achieve likewise is clearly prescribed. In some instances, sub-topics or other contents of a subject are also specified.

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

After passing the final examination, a student receives the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.Ch.), but before being authorized to practise, he is required to serve a one-year internship in a hospital approved by the Medical and Dental Council. Holders of the medical degrees of the universities of South Africa are eligible for registration in the Commonwealth List of the British Register, such registration conferring the same privileges as registration in the British List.

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (£SA)*</i>
Faculty of Medicine University of Cape Town Rondebosch CAPE TOWN	GN	1918	118 f 138 p	550 m 104 f	150	100	96
Faculty of Medicine University of Natal DURBAN	GP	1951	115 f 58 p	316 m 48 f	37	87	70
Medical School University of Witwatersrand Hospital Hill JOHANNESBURG	P	1922	145 f 160 p	535 m 176 f	120	116	110
Faculty of Medicine University of Pretoria P. O. Box 667 PRETORIA	GN	1943	61 f 31 p	487	100	61	70
Faculty of Medicine University of Stellenbosch STELLENBOSCH	GN	1955					

* £SA (South African) 1 = \$2.80

UNION OF SOVIET SOCIALIST REPUBLICS

Population	214 500 000
Medical schools	69
Physicians	273 600
Medical graduates per annum	15 000*
Population per medical school	3 109 000
Population per physician	784
Medical graduates per 1000 physicians per annum	54.8
Population per annual medical graduate	14 000

* Estimated

Introduction

The medical course in the Soviet Union lasts for six years, and leads to the diploma of *Vrach* (Physician).

Historical background

At the time when the USSR was first founded, there were sixteen medical schools¹ in its territory, graduating about 1500 doctors 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 1920s, 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 in the curriculum, 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 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,

¹ 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 of 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 respectively. The language of instruction is Russian, but the local language is used in addition in several of the Republics.

School education

Primary education is compulsory for all children aged 7 to 14 years. Certain *special* secondary schools conduct three- to five-year courses from the age of 14 onwards in preparation for certain vocations. *Regular* secondary school education is provided in a combined course of ten years for pupils from the age of seven onwards. This combined course covers both primary and secondary schooling.

Conditions of admission

In order to gain admission to a medical institute, a candidate must have completed all the ten classes of primary-secondary education. Graduates of certain of the *special* secondary schools are also accepted. An entrance examination is held for all applicants, but candidates who pass through secondary school with special distinction are exempted from this examination. Women are admitted on the same basis as men.

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 "theraputists" 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 specialities

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 specialities. The subjects studied during the course for potential "theraputists" 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 "theraputists", 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 followed the "paediatric" course, the examination covers the same subjects, except that paediatrics are 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

Candidates who pass the final State Examination receive the diploma of *Vrach* (Physician), which entitles them to practise medicine in any part of the Soviet Union. 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 Science, 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.

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
ARMENIA Erivan Medical Institute Ul. Kirova 2 ERIVAN	G	1922	207	557 m 926 f	250	163	None
AZERBAIJAN Azerbaijan Medical Institute Ul. Kaganovicha 11/13 BAKU	G	1919	281	841 m 1529 f	500	372	None
BYELORUSSIA Byelorussian Medical Institute Bazarnaya ul. 10 MINSK	G	1921	273	1159 m 1184 f	500	401	None
Vitebsk Medical Institute Ul. Ochyabrya 14 VITEBSK	G	1934	114	427 m 524 f	300		None
ESTONIA Faculty of Medicine State University of Tartu TARTU	G						None
GEORGIA Tbilisi Medical Institute Ul. Lunacharskogo 12 TBILISI (TIFLIS)	G	1918	245	589 m 1330 f	200	321	None
KAZAKH S.S.R. Kazakh Medical Institute Ul. Furmanova 54 ALMA-ATA	G	1931	388	888 m 2293 f	650	470	None
Karaganda Medical Institute Ul. Kirova 18 KARAGANDA	G	1950	161	412 m 705 f	450		None
Semipalatinsk Medical Institute Ul. Schmidta 16 SEMIPALATINSK	G	1953	53	83 m 217 f	300		None
KIRGHIZIA Frunze Medical Institute Ul. Voroshilova 1 FRUNZE	G	1939	172	752 m 628 f	350		None
LATVIA Riga Medical Institute Bulvar Padomju 12 RIGA	G	1950	170	319 m 995 f	400	155	None

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
LITHUANIA							
Kaunas Medical Institute Ul. Mickiewicza 7 KAUNAS	G	1950	119	249 m 600 f	275	156	None
Vilnius Institute of Medicine VILNIUS (VILNA)	G						None
MOLDAVIA							
Kishinev Medical Institute Ul. Lenina 156 KISHINEV	G	1945	175	627 m 680 f	300		None
RUSSIA							
Archangel Medical Institute Pr. Vinogradova 51 ARCHANGEL	G	1932	116	168 m 881 f	200	109	None
Astrakhan Medical Institute Kamyshinskaya ul. 12 ASTRAKHAN	G	1918	116	244 m 790 f	200	125	None
Altai Medical Institute Ul. Lenina 40 BARNAUL	G	1954	23	300	300		None
Blagoveshchensk Medical Institute Ul. Lenina 90 BLAGOVESHCHENSK	G	1952	55	86 m 330 f	200		None
Chelyabinsk Medical Institute Ul. Kommuny 35 CHELYABINSK	G	1944	148	282 m 978 f	300	279	None
Chita Medical Institute Ul. Chkalova 126 CHITA	G	1953	37	42 m 159 f	200		None
Chkalov Medical Institute Sovetskaya ul. 6 CHKALOV	G	1944	121	286 m 812 f	250		None
Gorki Medical Institute Pl. Minina i Pozharskogo 10 GORKI	G	1920	269	701 m 1745 f	500	383	None
Irkutsk Medical Institute Nab. Angary 20 IRKUTSK	G	1930	225	288 m 1786 f	450	274	None

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
RUSSIA (continued)							
Ivanovo Medical Institute Ul. 12 Dekabrya 8/17 IVANOV	G	1930	211	283 m 1595 f	450	288	None
Izhevsk Medical Institute Revolutsionnaya 199 IZHEVSK	G	1933	112	235 m 741 f	200		None
Kalinin Medical Institute Sovietskaya ul. 4 KALININ	G	1954	64	132 m 726 f	250		None
Kazan Medical Institute Universitetskaya ul. 13 KAZAN	G	1814	289	586 m 1954 f	600	450	None
Khabarovsk Medical Institute Ul. K. Marxa 34 Khabarovsk	G	1930	145	281 m 1080 f	300		None
Kuban Medical Institute Krasnaya 1 KRASNODAR	G	1920	162	483 m 980 f	300		None
Krasnoyarsk Medical Institute Ul. K. Marxa 124 KRASNOYARSK	G	1942	146	197 m 888 f	300		None
Kuibyshev Medical Institute Artsibushevskaya 61 KUIBYSHEV	G	1942	283	546 m 1464 f	450	363	None
Kursk Medical Institute Ul. K. Marxa 3 KURSK	G	1935	147	380 m 869 f	300	113	None
First Leningrad Medical Institute (I. P. Pavlov) Ul. L. Tolstogo 6/8 LENINGRAD	G	1897	402	909 m 2379 f	600	531	None
Leningrad Institute of Paedia- trics Litovskaya ul. 2 LENINGRAD	G	1935	259	121 m 2012 f	450	327	None
Leningrad Institute of Sanita- tion and Hygiene Ul. Kurakina 1/3 LENINGRAD	G	1907	322	540 m 2123 f	600	402	None

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
RUSSIA (continued)							
Daghestan Medical Institute Ul. Levanevskogo 31 MAKHACH-KALA	G	1932	102	460 m 418 f	225		None
Molotov Medical Institute Kommunisticheskaya ul. 26 MOLOTOV	G	1916	239	390 m 2123 f	500	338	None
First Moscow Medical Institute (Order of Lenin) B. Pirogovskaya ul. 2/6 MOSCOW	G	1765	431	849 m 2962 f	700	583	None
Moscow Medical Institute of the Ministry of Health of the R.S.F.S.R. MOSCOW	G						None
Second Moscow Medical Institute (J. V. Stalin) M. Pirogovskaya ul. 1 MOSCOW	G	1906	419	488 m 2571 f	600	603	None
Novosibirsk Medical Institute Krasny prospekt 58 NOVOSIBIRSK	G	1935	230	404 m 1751 f	450	328	None
Omsk Medical Institute Ul. Lenina 9 OMSK	G	1920	239	423 m 1742 f	500	318	None
North Ossetian Medical Institute Pushkinskaya ul. 32/34 ORDJONIKIDZE	G	1939	109	290 m 630 f	200		None
Rostov Medical Institute Nakhichevansky pr. 38 ROSTOV	G	1915	268	606 m 1785 f	500	308	None
Ryazan Medical Institute Ul. Mayakovskogo 7 RYAZAN	G	1950	183	434 m 1181 f	400	203	None
Saratov Medical Institute Ul. XX let. VLKSM 112 SARATOV	G	1909	318	670 m 1973 f	500	444	None
Smolensk Medical Institute Proletarskaya ul. 3 SMOLENSK	G	1920	186	502 m 1162 f	400		None

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
RUSSIA (continued)							
Stalingrad Medical Institute Leninskaya ul. 34 STALINGRAD	G	1935	156	395 m 915 f	350	128	None
Stavropol Medical Institute Ul. Kaganovicha 8 STAVROPOL	G	1938	108	320 m 629 f	200		None
Sverdlovsk Medical Institute Ul. Kommunarov 1 SVERDLOVSK	G	1931	262	394 m 2051 f	500	369	None
Tomsk Medical Institute Timiryazevsky pr. 1 TOMSK	G	1888	263	281 m 1935 f	500	287	None
Bashkir Medical Institute Ul. Lenina 1 UFA	G	1932	156	102 m 945 f	300		None
Voronezh Medical Institute Studencheskaya ul. 8 VORONEZH	G	1918	225	502 m 1464 f	500	211	None
Yaroslavl Medical Institute Ul. Revolutsy 7 YAROSLAVL	G	1944	168	369 m 889 f	350		None
TADZHIK S.S.R.							
Stalinabad Medical Institute Ul. Kirova 10 STALINABAD	G	1939	164	627 m 697 f	300		None
TURKMEN S.S.R.							
Ashkhabad Medical Institute Novaya ul. 10 ASHKHABAD	G	1932	163	949 m 544 f	400		None
UKRAINE							
Chernovtsy Medical Institute Teatralnaya pl. 5 CHERNOVTSY	G	1944	163	576 m 812 f	275		None
Dniepropetrovsk Medical Institute Ul. Dzerzhinskogo 9 DNEPROPETROVSK	G	1916	311	743 m 1588 f	475	332	None
Kharkov Medical Institute Pushkinskaya ul. 80 KHARKOV	G	1805	381	861 m 2048 f	600	465	None

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
UKRAINE (continued)							
Kiev Medical Institute Ul. Shevchenko 13 KIEV	G	1841	508	1358 m 1877 f	675	641	None
Lvov Medical Institute Pekarskaya ul. 69 LVOV	G	1773	295	903 m 1601 f	550	285	None
Odessa Medical Institute Valikhovskiy per. 2 ODESSA	G	1900	279	850 m 1768 f	500	455	None
Crimean Medical Institute Bulvar Lenina 5/7 SIMFEROPOL	G	1931	182	446 m 936 f	300	160	None
Stalino Medical Institute Ul. Artema 57 STALINO	G	1930	192	421 m 1259 f	450		None
Stanislav Medical Institute Ul. Karpinskogo 7 STANISLAV	G	1945	152	744 m 666 f	300	218	None
Vinnitsa Medical Institute Ul. Lenina 57 VINNITSA	G	1932	152	715 m 751 f	300		None
UZBEK S.S.R.							
Andizhan Medical Institute ANDIZHAN	G	1955	23		200		None
Samarkand Medical Institute Br. Vseobucha 24 SAMARKAND	G	1930	114	550 m 518 f	200	157	None
Tashkent Medical Institute Ul. K. Marxa 68 TASHKENT	G	1919	388	1531 m 1625 f	750	485	None

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

Population	51 243 000
Medical schools	27
Physicians	44 585
Medical graduates per annum	2 248
Population per medical school	1 898 000
Population per physician	1 149
Medical graduates per 1000 physicians per annum	50.4
Population per annual medical graduate	23 000

Introduction

Medical education in the United Kingdom consists of a six-year course, leading to the university degrees of Bachelor of Medicine and Bachelor of Surgery.¹

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 pro-

¹ Sometimes abbreviated as M.B., Ch.B. or M.B., B.Chir.

fessor 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 upon the financial needs of the student and his family, some upon academic achievements, and others upon 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. The language of instruction is English.

School education

Primary and secondary school education in the United Kingdom each last six years. The average age for primary education is from 5 to 11 years, and for secondary education from 12 to 18. Attendance at school until the age of 15 is compulsory.

Conditions of admission

In order to obtain admission to a university in the United Kingdom, a student must either pass 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 secondary school course, generally at the age of 17 to 19. 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. Women are admitted on the same basis as men.

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.

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 to a 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 30 to 50 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 tutors² (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 regards 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 hospital he is head of his own unit only.

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

² The registrar or clinical tutor corresponds approximately in status to the *chef de clinique* in France and to the "resident" in the USA.

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

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 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 in order to be entitled to practise.

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.³ 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.⁴ The Society of Apothecaries of London also confers a registrable diploma—namely, the Licentiate in Medicine and Surgery of the Society of Apothecaries of London (L.M.S.S.A. Lond.).⁵

³ For Irish licensing bodies whose degrees and diplomas are registrable in the United Kingdom, see under IRELAND.

⁴ 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.

⁵ 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>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pounds)*</i>
ENGLAND AND WALES							
The Medical School University of Birmingham BIRMINGHAM 15	P	1825	88 f 146 p	567	110	90	60
Faculty of Medicine University of Bristol BRISTOL 8	P	1832	57 f 130 p	258 m 78 f	59	33	51
Faculty of Medicine University of Cambridge CAMBRIDGE	P	Twelfth century	92 f 20 p	507 m 50 f	220	150	85
The Welsh National School of Medicine 34 Newport Road CARDIFF	P	1931	38 f 71 p	428	65	65	65
School of Medicine University of Leeds Thoresby Place LEEDS 2	P	1831	100 f 80 p	323 m 80 f	75	60	60
Medical School University of Liverpool LIVERPOOL 3	P	1811	170	600	100	90	60
Charing Cross Hospital Medical School 62 Chandos Place LONDON W.C.2	P	1834	73	242	45	45	52
Guy's Hospital Medical School London Bridge LONDON S.E.1	P	1769	55 f 119 p	519 m 76 f	123	74	57
King's College Hospital Medical School Denmark Hill LONDON S.E.5	P	1831	18 f 50 p	168 m 31 f	52	68	55
The London Hospital Medical College Turner Street LONDON W.1	P	1785	54 f 61 p	388 m 72 f	90	96	56
The Middlesex Hospital Medical School Ridinghouse Street LONDON W.1	P	1835	63 f 50 p	329 m 91 f	80	80	50

* £1 = \$2.80

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pounds)*</i>
ENGLAND AND WALES (continued)							
Royal Free Hospital School of Medicine Hunter Street LONDON W.C.1	P	1874	48 f 90 p	96 m 411 f	71	69	55
The Medical College of St Bartholomew's Hospital West Smithfield LONDON E.C.1	P	1662	56 f 72 p	409 m 120 f	70	145	55
St George's Hospital Medical School Hyde Park Corner LONDON S.W.1	P	1733	14 f 64 p	128 m 21 f	42	40	63
St Mary's Hospital Medical School Norfolk Place Paddington LONDON W.2	P	1854	59 f 50 p	373 m 84 f	80	111	58
St Thomas's Hospital Medical School Lambeth Palace Road LONDON S.E. 1	P	Thirteenth century	52 f 59 p	361 m 52 f	78	81	58
University College Hospital Medical School University Street LONDON W.C.1	P	1828	7 f 60 p	267 m 48 f	80	80	60
Westminster Medical School 17 Horseferry Road LONDON S.W.1	P	1849	11 f 72 p	200 m 20 f	65	60	66
Faculty of Medicine University of Manchester MANCHESTER 13	P	1814	93 f 141 p	450 m 147 f	95	85	55
The Medical School King's College in the University of Durham Queen Victoria Road NEWCASTLE-UPON-TYNE	P	1834	70 f 74 p	325 m 100 f	80	85	45
Oxford University Medical School OXFORD	P	Thirteenth century	113 f 53 p	435 m 46 f	76	80	50

* £1 = \$2.80

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Pounds)*</i>
ENGLAND AND WALES (continued)							
Faculty of Medicine University of Sheffield 358 Mushroom Lane SHEFFIELD 10	P	1828	99 f 83 p	270 m 78 f	60	48	42
NORTHERN IRELAND							
Faculty of Medicine Queen's University of Belfast 25 University Square BELFAST	G	1849	76 f 12 p	448 m 82 f	108	80	50
SCOTLAND							
Faculty of Medicine University of Aberdeen Broad Street ABERDEEN	P	1494	245 f 73 p	346 m 118 f	81	68	42
University of St Andrews School of Medicine DUNDEE	P	1898	131 f 63 p	336 m 114 f	74	70	49
Faculty of Medicine University of Edinburgh 18 Teviot Row EDINBURGH 8	P	1725	222 f 120 p	959 m 218 f	186	148	40
Faculty of Medicine University of Glasgow GLASGOW	P	1451	107 f 209 p	827 m 230 f	166	147	47

* £1 = \$2.80

NOTE: The twelve London medical schools together constitute the Faculty of Medicine of the University of London.

UNITED STATES OF AMERICA

Population	164 924 000
Medical schools	85
Physicians	219 852
Medical graduates per annum	6 845
Population per medical school	1 940 000
Population per physician	750
Medical graduates per 1000 physicians per annum	31.1
Population per annual medical graduate . . .	24 000

Introduction

The medical course 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 where 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 state¹ or municipal governments, and the remainder by private non-profit corporations or religious organizations. 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 receives direct appropriations from the 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 auto-

¹ The term "state" in this sense refers to one of the 48 States or to Puerto Rico, and not to the United States Federal Government, which does not operate any medical schools.

nomous school, generally known as the Board of Trustees, or Regents, or Supervisors. That Board formulates the broad policies of the university or school, 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 runs from September to June, except that a number of schools now require all-the-year-round attendance during the clinical period.

The language of instruction is English. In Puerto Rico, a knowledge of Spanish is required in addition in order to facilitate contact with patients during a student's period of medical studies.

School education

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.

Conditions of admission

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 United States when he has completed his pre-medical work, that is, usually, during his third or fourth year at college or the 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.

With one or two exceptions, all medical schools are open to both men and women.

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 pro-

portions 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 Departments of Health and Social 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 licence rests with the individual states.

Qualification

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 which 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, in contrast to those who restrict their practice to a certain speciality. 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.

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
ALABAMA Medical College of Alabama BIRMINGHAM	GP	1943		281 m 15 f	79	73	
ARKANSAS University of Arkansas School of Medicine 1209 McAlmont Street LITTLE ROCK	GP	1879		297 m 20 f	92	62	

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
CALIFORNIA							
College of Medical Evangelists School of Medicine LOMA LINDA	P	1909	79 f 614 p	363 m 22 f	96	84	1291
School of Medicine University of California at Los Angeles Medical Center LOS ANGELES 24	GP	1951	157 f 439 p	156 m 12 f	49	36	234 (R) 584 (NR)
University of Southern California School of Medicine 2025 Zonal Avenue LOS ANGELES 33	P	1928	43 f 820 p	259 m 12 f	69	68	950
University of California School of Medicine SAN FRANCISCO 22	GP	1873	100 f 600 p	295 m 19 f	78	79	334 (R) 584 (NR)
Stanford University School of Medicine 2398 Sacramento Avenue SAN FRANCISCO	P	1908	101 f 325 p	216 m 20 f	58	62	870
COLORADO							
University of Colorado School of Medicine 4200 East 95th Avenue DENVER 20	GP	1883	170 f 530 p	292 m 23 f	85	72	665
CONNECTICUT							
Yale University School of Medicine 333 Cedar Street NEW HAVEN 11	P	1813	205 f 376 p	296 m 20 f	78	71	925
DISTRICT OF COLUMBIA							
Georgetown University School of Medicine 3900 Reservoir Road N.W. WASHINGTON	P	1849	620	412 m 29 f	113	110	960
George Washington University Medical School 1335 H Street N.W. WASHINGTON 5	P	1825	38 f 408 p	356 m 16 f	102	88	900
Howard University College of Medicine 520 W Street N.W. WASHINGTON 1	P	1869	61 f 96 p	263 m 26 f	76	68	587

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
FLORIDA							
University of Miami School of Medicine CORAL GABLES 34	P	1952	70 f 350 p	181 m 17 f	72	26	700
University of Florida College of Medicine GAINESVILLE	GP	1955	26 f	50 m 3 f	50		600 (R) 1200 (NR)
GEORGIA							
Emory University School of Medicine 36 Butler Street ATLANTA	P	1854	69 f 414 p	277 m 7 f	71	71	800
Medical College of Georgia University Place AUGUSTA	GP	1828	50 f 122 p	338 m 14 f	98	67	390 (R) 690 (NR)
ILLINOIS							
Chicago Medical School 710 South Wolcott Avenue CHICAGO 12	P	1912	50 f 375 p	282 m 1 f	72	73	725
School of Medicine University of Chicago CHICAGO 37	P	1932	237	268 m 18 f	73	71	900
University of Illinois College of Medicine 1853 West Polk Street CHICAGO 12	GP	1881	148 f 927 p	603 m 33 f	166	159	350 (R) 625 (NR)
Strich School of Medicine of Loyola University CHICAGO	R	1909	31 f 380 p	314 m 11 f	88	79	800
Northwestern University Medical School 303 East Chicago Avenue CHICAGO 11	P	1859	63 f 740 p	500 m 23 f	130	134	900
INDIANA							
Indiana University School of Medicine 1100 West Michigan Street INDIANAPOLIS 7	GP	1907	40 f 250 p	567 m 19 f	152	141	300 (R) 560 (NR)
IOWA							
State University of Iowa College of Medicine IOWA CITY	GP	1869	175 f	430 m 11 f	117	110	304 (R) 604 (NR)

<i>Name and address</i>	<i>Ownership</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
KANSAS							
University of Kansas School of Medicine KANSAS CITY 12	GP	1905	151 f 256 p	415 m 13 f	100	120	475 (R) 925 (NR)
KENTUCKY							
University of Louisville School of Medicine 101 West Chestnut Street LOUISVILLE 2	GM	1837	330	359 m 20 f	94	93	800 (R) 1200 (NR)
LOUISIANA							
Louisiana State University School of Medicine 1542 Tulane Avenue NEW ORLEANS 12	GP	1931	111 f 208 p	406 m 20 f	119	96	120 (R) 520 (NR)
Tulane University School of Medicine 1430 Tulane Avenue NEW ORLEANS 12	P	1834	238 f 329 p	496 m 15 f	129	124	900
MARYLAND							
Johns Hopkins University School of Medicine 710 North Washington Street BALTIMORE 5	P	1893	215 f 331 p	264 m 22 f	72	69	900
University of Maryland School of Medicine and College of Physicians and Surgeons 522 West Lombard Street BALTIMORE 1	GP	1807	440	364 m 11 f	96	99	533 (R) 783 (NR)
MASSACHUSETTS							
Boston University School of Medicine 80 East Concord Street BOSTON 18	P	1873	438	266 m 18 f	72	70	1000
Harvard Medical School 25 Shattuck Street BOSTON 15	P	1782	838	496 m 34 f	115	151	1050
Tufts University Medical School 136 Harrison Avenue BOSTON 11	P	1893	75 f 175 p	424 m 19 f	111	111	850

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
MICHIGAN							
University of Michigan Medical School ANN ARBOR	GP	1850	205 f 47 p	726 m 36 f	201	189	400 (R) 750 (NR)
Wayne State University College of Medicine DETROIT	GP	1868	91 f 419 p	268 m 13 f	74	63	537
MINNESOTA							
University of Minnesota Medical School MINNEAPOLIS 14	GP	1888	203 f 550 p	457 m 24 f	128	115	399 (R) 735 (NR)
MISSISSIPPI							
University of Mississippi School of Medicine OXFORD	GP	1903	16 f 20 p	129 m 5 f	77		410 (R) 610 (NR)
MISSOURI							
University of Missouri School of Medicine COLUMBIA	GP	1872	24 f 32 p	85 m 3 f	43		280
St Louis University School of Medicine 1402 South Grand Boulevard ST LOUIS 4	R	1903	50 f 460 p	470 m 9 f	122	114	890
Washington University School of Medicine 660 South Kingshighway ST LOUIS 10	P	1899	336 f 556 p	345 m 14 f	84	99	900
NEBRASKA							
Creighton University School of Medicine 302 North 14th Street OMAHA 2	R	1892	25 f 187 p	287 m 10 f	76	77	809
University of Nebraska College of Medicine 42nd Street at Dewey Avenue OMAHA 5	GP	1881	32 f 319 p	321 m 10 f	84	83	450 (R) 615 (NR)
NEW HAMPSHIRE							
Dartmouth Medical School HANOVER	P	1797	12 f 56 p	48 m	24		980

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
NEW JERSEY Seton Hall College of Medicine Jersey City Medical Center JERSEY CITY	P	1955					
NEW YORK Albany Medical College Union University 47 New Scotland Avenue ALBANY 3	P	1839	49 f 307 p	212 m 9 f	60	48	1000
State University of New York College of Medicine at New York City 350 Henry Street BROOKLYN 1	GP	1858	121 f 609 p	546 m 41 f	148	146	715
University of Buffalo School of Medicine 3435 Main Street BUFFALO 14	P	1846	25 f 580 p	283 m 13 f	80	62	875
Columbia University College of Physicians and Surgeons 630 West 168th Street NEW YORK 32	P	1796	126 f 1087 p	414 m 48 f	120	118	900
Cornell University Medical School 1300 York Avenue NEW YORK 21	P	1898	769	317 m 21 f	84	84	900
New York Medical College Flower and Fifth Avenue Hospitals 1 East 105th Street NEW YORK	P	1860	75 f 150 p	449 27 f	129	108	896
New York University College of Medicine 477 First Avenue NEW YORK 16	P	1841	650	490 m 37 f	129	140	1000
Albert Einstein College of Medicine Yeshiva University 1710 Newport Avenue NEW YORK 61	R	1955			56		
University of Rochester School of Medicine and Dentistry 260 Crittenden Boulevard ROCHESTER 20	P	1925	176 f 300 p	260 m 13 f	71	64	900

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
NEW YORK (continued)							
State University of New York at Syracuse College of Medicine 766 Irving Avenue SYRACUSE 10	GP	1872	90 f 231 p	272 m 14 f	76	71	715
NORTH CAROLINA							
University of North Carolina School of Medicine CHAPEL HILL	GP	1879	83 f 53 p	241 m 8 f	67	59	600 (R)
Duke University School of Medicine DURHAM	P	1930	120 f 20 p	301 m 13 f	78	80	900
Bowman Gray School of Medi- cine of Wake Forest College Everett Street and Hawthorne Road WINSTON-SALEM 7	P	1902	66 f 60 p	193 m 11 f	53	47	750
NORTH DAKOTA							
University of North Dakota School of Medicine GRAND FORKS	GP	1905	23 f	75 m 2 f	37		178 (R) 358 (NR)
OHIO							
University of Cincinnati College of Medicine Eden and Bethesda Avenues CINCINNATI 19	GM	1819	140 f 265 p	325 m 13 f	92	85	675 (R) 800 (NR)
Western Reserve University School of Medicine 2109 Adelbert Road CLEVELAND 6	P	1843	600	295 m 27 f	82	78	800
Ohio State University College of Medicine COLUMBUS 10	GP	1914	550	554 m 19 f	150	144	495 (R) 920 (NR)
OKLAHOMA							
University of Oklahoma School of Medicine 800 Northeast 13th Street OKLAHOMA CITY 4	GP	1900	590	366 m 13 f	100	96	450 (R) 800 (NR)

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
OREGON University of Oregon Medical School 3181 Southwest Sam Jackson Park Road PORTLAND 1	GP	1887	74 f 420 p	280 m 15 f	77	71	534 (R) 792 (NR)
PENNSYLVANIA Hahnemann Medical College Hospital of Philadelphia 235 North 15th Street PHILADELPHIA 2	P	1848	52 f 260 p	379 m 20 f	109	95	872
Jefferson Medical College of Philadelphia 1025 Walnut Street PHILADELPHIA 7	P	1825	380	677 m	174	171	800
University of Pennsylvania School of Medicine Thirty-sixth and Pine Streets PHILADELPHIA 4	P	1765	360 f 621 p	477 m 23 f	125	124	945
Temple University School of Medicine 3400 North Broad Street PHILADELPHIA 40	P	1901	80 f 221 p	467 m 21 f	132	125	800
Woman's Medical College of Pennsylvania 3300 Henry Avenue PHILADELPHIA 29	P	1850	28 f 221 p	182 f	51	40	800
University of Pittsburgh School of Medicine 3941 O'Hara Street PITTSBURGH	P	1886	560	351 m 12 f	100	87	700
PUERTO RICO University of Puerto Rico School of Medicine Ponce de León Avenue SAN JUAN	GP	1949	250	157 m 27 f	52	43	539
SOUTH CAROLINA Medical College of South Carolina 16 Lucas Street CHARLESTON 16	GP	1823	64 f 74 p	284 m 12 f	80	67	432 (R) 532 (NR)
SOUTH DAKOTA University of South Dakota School of Medical Sciences VERMILION	GP	1907	18 f 15 p	69 m 3 f	42		300 (R) 500 (NR)

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
TENNESSEE							
University of Tennessee College of Medicine 847 Union Avenue MEMPHIS 3	GP	1851	375	746 m 35 f	201	199	525 (R) 675 (NR)
Meharry Medical College 1005 18th Avenue North NASHVILLE 8	P	1876	55 f 67 p	245 m 14 f	67	62	623
Vanderbilt University School of Medicine Twenty-first Avenue South NASHVILLE 5	P	1874	187 f 263 p	194 m 10 f	51	51	810
TEXAS							
Southwestern Medical School of the University of Texas 2211 Oak Lawn DALLAS	GP	1943	79 f 469 p	370 m 24 f	102	98	110 (R) 360 (NR)
University of Texas Medical Branch 900 Strand Street GALVESTON	GP	1890	175 f 115 p	582 m 32 f	154	151	103 (R) 153 (NR)
Baylor University College of Medicine 1200 M. D. Anderson Boul- vard HOUSTON	P	1903	92 f 800 p	328 m 14 f	84	77	790
UTAH							
University of Utah College of Medicine SALT LAKE CITY	GP	1905	75 f 288 p	204 m 5 f	54	40	480 (R) 830 (NR)
VERMONT							
University of Vermont College of Medicine Pearl Street BURLINGTON	GP	1853	134	170 m 10 f	50	44	550 (R) 1000 (NR)
VIRGINIA							
University of Virginia Department of Medicine CHARLOTTESVILLE	GP	1825	76 f 33 p	278 m 11 f	76	61	464 (R) 864 (NR)
Medical College of Virginia Twelfth and Broad Streets RICHMOND	GP	1838	360	339 m 27 f	84	98	500 (R) 822 (NR)

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Dollars)</i>
WASHINGTON University of Washington School of Medicine SEATTLE 5	GP	1946	181 f 569 p	271 m 17 f	75	68	408 (R) 678 (NR)
WEST VIRGINIA West Virginia University School of Medicine MORGANTOWN	GP	1912	18 f 15 p	57 m 3 f	31		258 (R) 700 (NR)
WISCONSIN University of Wisconsin Medical School 418 N. Randall Avenue MADISON	GP	1925	133 f 23 p	299 m 26 f	82	79	340 (R) 660 (NR)
Marquette University School of Medicine 561 North 15th Street MILWAUKEE	P	1913	42 f 220 p	377 m 17 f	102	87	850

URUGUAY

Population	2 525 000
Medical schools	1
Physicians	2 231
Medical graduates per annum	80
Population per medical school	2 525 000
Population per physician	1 132
Medical graduates per 1000 physicians per annum	35.9
Population per annual medical graduate	32 000

Introduction

Medical training in Uruguay consists of a six-year course, leading to the degree of *Doctor en Medicina y Cirugía* (Doctor of Medicine and Surgery).

Administration

Although the University is under the jurisdiction of the Ministerio de Instrucción y Previsión Social (Ministry of Education and Social Welfare), 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 Consejos Directivos (Directive Councils) of the various faculties.

The Directive Council of the Faculty of Medicine consists of the Dean of the Faculty, and of 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 Directive Council, is elected by that body for a period of four years.

The academic year runs for nine months. The language of instruction is Spanish.

School education

The constitution of the Republic provides for free education at all levels, from primary school to university. Primary education is compulsory, and generally consists of a six-year course. *Liceos*, or secondary schools, give a six-year course, leading to the *bachillerato* (secondary school certificate).

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. There is no *numerus clausus*. Men and women are admitted on the same basis.

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; gastroenterology; 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 on 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 y Cirugía* (Doctor of Medicine and Surgery). This degree entitles the holder to practise medicine in Uruguay.

Name and address	Ownership	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees
Facultad de Medicina de la Universidad de la República Avenida General Flores, 2125 MONTEVIDEO	GN	1876	550	1895 m 330 f	200	80	None

VENEZUELA

Population	5 605 000
Medical schools	3
Physicians	2 939
Medical graduates per annum	223
Population per medical school	1 868 000
Population per physician	1 907
Medical graduates per 1000 physicians per annum	75.8
Population per annual medical graduate	25 000

Introduction

Medical training in Venezuela consists of a six-year course, leading to the degree of *Médico Cirujano* (Physician and Surgeon).

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. A *Consejo Académico* (Academic Council), 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 departments. Each faculty is administered by a dean, and each school by a director. A *Consejo de Facultad* (Faculty Council), elected from among the professors, assists and advises the dean.

The academic year runs from September to July and consists of 30 to 32 weeks, excluding the examination periods. The language of instruction is Spanish.

School education

Basic education in Venezuela consists of six years at primary school and five years at secondary school, leading to the *bachillerato*, or certificate of secondary education. The period of secondary education includes three years of general studies and two years of special studies, devoted to either the sciences or the humanities.

Conditions of admission

For admission to medical studies a student must be in possession of the *bachillerato* certificate in sciences. 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. Men and women are admitted on the same basis.

Curriculum

The curriculum is arranged as follows:

First year: anatomy; histology and embryology; biochemistry

Second year: physiology; microbiology; parasitology; biophysics

Third year: physiopathology; medical pathology (I); surgical pathology (I); pharmacology and toxicology; clinical semeiology and propaedeutics (I)

Fourth year: medical pathology (II); surgical pathology (II); tropical medicine; obstetrics; pathological anatomy; clinical semeiology and propaedeutics (II); clinical radiology; clinical traumatology and orthopaedics; clinical gynaecology

Fifth year: hygiene and social medicine; surgical techniques; forensic medicine and deontology; clinical obstetrics; clinical medicine and therapeutics (I), clinical cardiology; clinical phthisiology; clinical surgery and therapeutics (I); clinical urology

Sixth year: history of medicine; clinical paediatrics; clinical medicine and therapeutics (II); clinical dermatology and syphilology; clinical neurology and psychiatry; applied clinical therapeutics; clinical gastro-enterology; clinical ophthalmology; clinical surgery and therapeutics (II); clinical otorhinolaryngology.

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 subject 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

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* (Doctor of Medical Sciences), must write a thesis, under the supervision of a member of the teaching staff of the faculty.

<i>Name and address</i>	<i>Owner- ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees (Bolivares) *</i>
Facultad de Ciencias Médicas de la Universidad Central de Venezuela Ciudad Universitaria CARACAS	G	1827	280	1337 m 184 f	478	155	None
Facultad de Ciencias Médicas de la Universidad Nacional de Zulia Apartado 526 MARACAIBO	G	1946	63 p	285 m 58 f	137	28	570
Facultad de Ciencias Médicas de la Universidad de Los Andes Avenida Tulio Febres Cordero MÉRIDA	G	1805	26	507 m 70 f	100	40	100

* 3.35 bolivares = \$1.00

VIET NAM *

Population	26 000 000
Medical schools	2
Physicians	418
Medical graduates per annum	50 †
Population per medical school	13 000 000
Population per physician	62 201
Medical graduates per 1000 physicians per annum	119.6
Population per annual medical graduate	520 000

† Estimated

Introduction

The medical course in Viet Nam lasts for six years, and leads to the degree of *Docteur en Médecine* (Doctor of Medicine). There is now under consideration a proposal to shorten the course by one year and to include a period of compulsory rural practice.

Historical background

The Indochinese School of Medicine at Hanoi was created in 1902. It provided a four-year course from which *médecins indochinois* (Indochinese physicians) were 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 which had been established in that city in 1947. The combined faculty now forms part of the University of Viet Nam. At about the same time, a school of medicine was newly constituted in the University of Hanoi.

Administration

The University of Viet Nam, like its counterpart in the north, is Government-owned and operated. About two-thirds of the teaching staff are Viet Nameese and about one third French. The academic year runs from October to June, and is divided into four terms. For the time being, French remains the language of instruction.

* Most of the material contained in this chapter refers to conditions at Saigon only. Conditions at Hanoi may not be presumed to be the same without further corroboration.

School education

Primary education in Viet Nam lasts for five years. Secondary education lasts for seven years, and leads to the *baccalauréat*, or secondary school certificate.

Admission

In order to be admitted to the Faculty of Medicine and Pharmacy, a candidate must hold the *baccalauréat*, 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*.

Men and women are admitted to medical studies on the same basis.

Curriculum

The medical curriculum covers six years (twenty-four *inscriptions* and is arranged as follows:

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; obstetrics

Fourth year: medical pathology; surgical pathology; specialities

Fifth year: pharmacology; therapeutics; hygiene; forensic medicine; medical ethics; specialities

Sixth year: practical training as a *stagiaire hospitalier* (hospital probationer) at a hospital approved by the Faculty.

A student who has effected four valid *inscriptions* is eligible to sit for a competitive examination for appointment to an *externat*. After a student has completed the fourth year of the course and has served as an *extern* for at least one year, he may sit for a competitive examination for appointment to an *internat*. The duties of *externs* and *interns* in Viet Nam are similar to those in France. They are not required to serve the sixth year of the course as hospital probationers, since they have already performed this type of practical training work over a period longer than is, in fact, required in order to obtain their diploma.

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 June and July. A student who fails may sit for a supplementary examination in October. On completing the sixth year of the course, candidates must take clinical examinations in medicine, 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

After a student has passed all examinations, has completed his one-year service as a *stagiaire hospitalier*, or in an *externat* or *internat*, 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.

Name and address	Ownership	Year founded	Teaching staff	Total enrolment	Annual admissions	Graduates	Annual tuition fees (Piastrres)*
Faculté mixte de Médecine et de Pharmacie Université de Hanoi 11 Dai Lo Le Thanh Ton HANOI	G	1954	19	225 m 10 f	83	9	680
Faculté mixte de Médecine et de Pharmacie Université de Viêt-Nam 28, rue Testard SAIGON	G	1902	25	498 m 46 f			780

* 75 piastrres = \$1.00 (as on 1 July 1956)

YUGOSLAVIA

Population	17 267 000
Medical schools	6
Physicians	6 548
Medical graduates per annum	1 000*
Population per medical school	2 878 000
Population per physician	2 637
Medical graduates per 1000 physicians per annum	152.7
Population per annual medical graduate	17 000

* Estimated

Introduction

The medical course in Yugoslavia lasts for six years, with the exception of that provided by the Medical Faculty of the University of Skopljje, which is a five-year course only. The degree obtained is that of Doctor of Medicine, known as *Lekar* in Serbo-Croat, and as *Zdravnik* in Slovenian.

Administration

All the Yugoslav medical faculties are incorporated within the universities, which are financially supported by the Government. Medical faculties are governed by Faculty Councils and Faculty Administrations. Their executive officer is the dean. 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 in the Yugoslav medical faculties is Serbo-Croat, with the exception of that at Ljubljana, where the teaching language is Slovenian, and that at Skopljje, where the language of instruction is Macedonian.

School education

Primary education is provided free of charge, and is compulsory for all children between 7 and 15 years of age. Secondary education consists of two periods of four years each, leading to a final certificate, which gives access to the university.

Conditions of admission

Admission to the faculties of medicine is open to all candidates who have obtained their final secondary school examination certificate. The average age

for first-year students is 19. In principle, there is no *numerus clausus*, although a medical faculty, faced with a large number of applications, may restrict the number of admissions to its first-year class, thus necessitating a selection process. Women are admitted on the same basis as men.

Curriculum

The course of study in the six 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 and second years: physics; chemistry; biology; anatomy; histology; embryology; physiology; biochemistry; introduction to medicine

Third year: general pathology; microbiology; introductory clinical courses; history of medicine; medical statistics; pharmacology; hygiene and public health

Fourth and fifth years: pathology; pharmacology; internal medicine; surgery; gynaecology; obstetrics; paediatrics; ophthalmology; dermatology; otorhinolaryngology; radiology; psychiatry and neurology; stomatology; orthopaedics; forensic medicine; hygiene and public health

Sixth year: practical work in internal medicine; paediatrics; infectious diseases; surgery; obstetrics and gynaecology.

In some of the faculties, additional practical work is required during the summer recess.

Examinations

Examinations are held at the end of each subject period of the curriculum. A student who fails to obtain pass marks may sit for re-examination, but the number of times he may be permitted to do so is limited. During the first, second and third years of the course, students are not allowed to go on to the next year of the curriculum unless and until they have passed all their prescribed examinations for the preceding year. In the fourth, fifth and sixth years of the course, the order of subjects to be studied and of the examinations themselves is somewhat more flexible.

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

After a new graduate has received his degree, he must complete a one-year internship in a hospital. He is then eligible for registration, which constitutes a licence to practise medicine in Yugoslavia. This is granted by the Government, and no further examinations need be taken.

<i>Name and address</i>	<i>Owner-ship</i>	<i>Year founded</i>	<i>Teaching staff</i>	<i>Total enrolment</i>	<i>Annual admissions</i>	<i>Graduates</i>	<i>Annual tuition fees</i>
Medicinski Fakultet Univerzitet u Beogradu (Medical Faculty, University of Belgrade) Studentski trg 1 BEOGRAD	G	1920	79 f	3798 m 1659 f	1305	326	None
Medicinska Visoka Šola (Medical School) Vrazov trg 4/1 LJUBLJANA	G	1945	44 f 2 p	421 m 209 f	159	121	None
Medicinski Fakultet (Medical Faculty) RIJEKA *	G						
Medicinski Fakultet Univerzitet u Sarajevu (Medical Faculty, University of Sarajevo) Bolnička ulica 6 SARAJEVO	G	1946	79 f	491 m 208 f	283	20	None
Medicinski Fakultet Univerzitet vo Skopje (Medical Faculty, University of Skoplje) SKOPJE	G	1947	49 f 1 p	630 m 194 f	243		None
Medicinski Fakultet Sveučilište u Zagrebu (Medical Faculty, University of Zagreb) ZAGREB	G	1917	280 f 34 p	1162 m 517 f	374	490	None

* A branch faculty of the Zagreb University

ANNEXES

ANNEX 1. AFRICA: MEDICAL SCHOOLS AND PHYSICIANS

Country	Population*	Number of medical schools	Number of physicians	Annual number of medical graduates	Population per medical school *	Population per physician	Annual number of medical graduates per 1000 physicians	Population per new physician, i.e., annual graduate *
Union of South Africa	13 425 000	5	6 723	364	2 685 000	1 997	54.1	37 000
Madagascar, Comoro, Réunion .	4 983 000	1	594	15	4 983 000	8 389	25.2	332 000
Egypt	22 651 000	3	6 420	560	7 550 000	3 528	87.2	40 000
Belgian Congo and Ruanda-Urundi	16 526 000	2	673	10**	8 263 000	24 556	14.8	1 653 000
Sudan	8 900 000	1	110	14	8 900 000	80 909	127.3	636 000
Algeria	9 369 000	1	1 922	70	9 369 000	4 875	36.4	134 000
French West Africa	14 938 000	1	643	20**	14 938 000	23 232	31.1	747 000
Uganda, Kenya, Tanganyika, and Zanzibar	19 845 000	1	1 331	6	19 845 000	14 910	4.5	3 308 000
Nigeria	30 300 000	1	540	30**	30 300 000	56 111	55.6	1 010 000
Ethiopia and Eritrea	16 000 000	—	146	—	—	109 589	—	—
Morocco	8 340 000	—	948	—	—	8 798	—	—
French territories not otherwise listed	7 695 000	—	400	—	—	19 238	—	—
Rhodesia and Nyasaland	6 876 000	—	835	—	—	8 235	—	—
UK territories not otherwise listed	6 519 000	—	292	—	—	22 325	—	—
Mozambique	5 975 000	—	162	—	—	36 883	—	—
Angola	4 243 000	—	156	—	—	27 199	—	—
Gold Coast	4 125 000	—	227	—	—	18 172	—	—
Tunisia	3 680 000	—	566	—	—	6 502	—	—
Spanish territories	1 447 000	—	227	—	—	6 374	—	—
Italian Somaliland	1 269 000	—	68	—	—	18 662	—	—
Liberia	1 250 000	—	42	—	—	29 762	—	—
Libya	1 092 000	—	107	—	—	10 206	—	—
Portuguese territories not otherwise listed	754 000	—	35	—	—	21 543	—	—
South-west Africa	447 000	—	37	—	—	12 081	—	—
Tangier	183 000	—	80**	—	—	2 288	—	—
	210 832 000	16	23 284	1 089	13 177 000	9 055	46.8	194 000

* Figures rounded off to nearest thousand

** Estimated

ANNEX 2. NORTH AND CENTRAL AMERICA: MEDICAL SCHOOLS AND PHYSICIANS

Country	Population*	Number of medical schools	Number of physicians	Annual number of medical graduates	Population per medical school *	Population per physician	Annual number of medical graduates per 1000 physicians	Population per new physician, i.e., annual graduate *
Panama	886 000	1	238	20	886 000	3 723	84.0	44 000
Nicaragua	1 202 000	1	477	18	1 202 000	2 520	37.7	67 000
Canada	15 195 000	12	16 031	817	1 266 000	948	51.0	19 000
Mexico	28 849 000	18	14 221	1 100**	1 603 000	2 029	77.4	26 000
Honduras	1 608 000	1	138	14	1 608 000	11 652	101.4	115 000
United States of America	164 924 000	85	219 852	6 845	1 940 000	750	31.1	24 000
El Salvador	2 122 000	1	380	18	2 122 000	5 584	47.4	118 000
Dominican Republic	2 347 000	1	472	66	2 347 000	4 972	139.8	36 000
Jamaica and other UK territories	3 084 000	1	859	35	3 084 000	3 590	40.7	88 000
Guatemala	3 149 000	1	497	25	3 149 000	6 336	50.3	126 000
Haiti	3 506 000	1	300	38	3 506 000	11 687	126.7	92 000
Cuba	5 807 000	1	5 600	80**	5 807 000	1 037	142.8	73 000
Costa Rica	915 000	—	319	—	—	2 868	—	—
French territories	473 000	—	141	—	—	3 355	—	—
Netherlands Antilles	184 000	—	120	—	—	1 533	—	—
Greenland	25 000	—	19	—	—	1 316	—	—
	234 276 000	124	259 664	9 076	1 889 000	902	35.0	26 000

NOTE: As the Directory was going to press, information was received regarding the opening of two new medical schools—one in Mexico and the other in Costa Rica. Although reference has been made to these institutions in the text, they have not been included in the data tabulated above. Readers who wish to use these figures for statistical analysis should make the necessary modifications.

* Figures rounded off to nearest thousand

** Estimated

ANNEX 3. SOUTH AMERICA: MEDICAL SCHOOLS AND PHYSICIANS

<i>Country</i>	<i>Population*</i>	<i>Number of medical schools</i>	<i>Number of physicians</i>	<i>Annual number of medical graduates</i>	<i>Population per medical school *</i>	<i>Population per physician</i>	<i>Annual number of medical graduates per 1000 physicians</i>	<i>Population per new physician, i.e., annual graduate *</i>
Surinam	220 000	1	99	4	220 000	2 222	40.4	55 000
Bolivia	3 162 000	3	795	48	1 054 000	3 977	60.4	66 000
Ecuador	3 567 000	3	900	206	1 189 000	3 963	228.3	17 000
Paraguay	1 530 000	1	507	17	1 530 000	3 018	33.5	90 000
Chile	6 447 000	4	3 450	280**	1 612 000	1 867	81.2	23 000
Colombia	12 382 000	7	4 212	500**	1 769 000	2 940	118.7	25 000
Venezuela	5 605 000	3	2 939	223	1 868 000	1 907	75.8	25 000
Brazil	57 098 000	23	17 364	2 000**	2 482 000	3 288	115.2	29 000
Uruguay	2 525 000	1	2 231	80	2 525 000	1 132	35.9	32 000
Argentina	18 742 000	6	13 600	1 800**	3 124 000	1 378	132.4	10 000
Peru	9 213 000	1	1 964	150	9 213 000	4 691	76.3	61 000
UK territories	481 000	—	178	—	—	2 702	—	—
French Guiana	28 000	—	24	—	—	1 167	—	—
	121 000 000	53	48 263	5 308	2 283 000	2 507	110.0	23 000

* Figures rounded off to nearest thousand

** Estimated

ANNEX 4. ASIA, EASTERN: MEDICAL SCHOOLS AND PHYSICIANS

Country	Population *	Number of medical schools	Number of physicians	Annual number of medical graduates	Population per medical school *	Population per physician	Annual number of medical graduates per 1000 physicians	Population per new physician, i.e., annual graduate *
Portuguese India, Macao, Timor	1 309 000	1	143	16	1 309 000	9 154	111.8	82 000
Japan and Ryukyu Islands . . .	88 778 000	46	89 885	3 200**	1 930 000	988	35.6	28 000
Hong Kong	2 277 000	1	704	54	2 277 000	3 234	76.7	42 000
Philippines	21 440 000	6	11 698	1 350**	3 573 000	1 833	115.4	16 000
Cambodia	4 100 000	1	43	7	4 100 000	95 349	162.8	586 000
China (Taiwan)	8 617 000	3	3 264	125	2 872 000	2 640	38.3	69 000
Korea	30 000 000	6	6 000**	260	5 000 000	5 000	43.3	115 000
Pakistan	80 167 000	15	5 947	750**	5 344 000	13 480	126.1	107 000
Malaya and Singapore	7 057 000	1	1 184	50	7 057 000	5 960	42.2	141 000
Ceylon	8 385 000	1	1 542	100	8 385 000	5 438	64.8	84 000
India	377 000 000	43	52 262	3 000**	8 767 000	7 214	57.4	124 000
Burma	19 242 000	2	2 242	100**	9 621 000	8 582	44.6	192 000
Thailand	19 925 000	2	2 943	156	9 962 000	6 770	53.0	128 000
Viet Nam	26 000 000	2	418	50**	13 000 000	62 201	119.6	520 000
Indonesia	81 100 000	6	1 146	200**	13 517 000	70 768	174.5	406 000
China (Mainland)	582 603 000	35	30 000**	3 000**	16 646 000	19 420	100.0	194 000
Nepal and Bhutan	8 732 000	—	50**	—	—	174 640	—	—
Laos	1 360 000	—	43	—	—	31 628	—	—
UK territories not otherwise listed	1 109 000	—	90	—	—	12 322	—	—
Mongolian People's Republic . .	920 000	—	50**	—	—	18 400	—	—
Netherlands New Guinea	700 000	—	34	—	—	20 588	—	—
	1 370 821 000	171	209 688	12 418	8 016 497	6 537	59.2	110 000

* Figures rounded off to nearest thousand

** Estimated

ANNEX 5. ASIA, WESTERN: MEDICAL SCHOOLS AND PHYSICIANS

Country	Population *	Number of medical schools	Number of physicians	Annual number of medical graduates	Population per medical school *	Population per physician	Annual number of medical graduates per 1000 physicians	Population per new physician, i.e., annual graduate *
Lebanon	1 383 000	2	1 049	73	692 000	1 318	69.6	19 000
Israel	1 688 000	1	3 887	55	1 688 000	434	14.2	31 000
Iran	20 721 000	6	2 302	375	3 454 000	9 001	162.9	55 000
Syria	3 670 000	1	670	56	3 670 000	5 478	83.5	66 000
Iraq	4 948 000	1	833	47	4 948 000	5 940	56.4	105 000
Turkey	22 949 000	3	7 179	250**	7 649 000	3 197	34.8	92 000
Afghanistan	12 000 000	1	232	12	12 000 000	51 724	51.7	1 000 000
Arabian Peninsula (including Aden and Yemen)	13 272 000	—	250**	—	—	53 088	—	—
Jordan	1 384 000	—	209	—	—	6 622	—	—
Cyprus	514 000	—	340	—	—	1 512	—	—
	82 529 000	15	16 951	868	5 614 000	4 869	51.0	95 000

* Figures rounded off to nearest thousand

** Estimated

ANNEX 6. EUROPE: MEDICAL SCHOOLS AND PHYSICIANS

Country	Population *	Number of medical schools	Number of physicians	Annual number of medical graduates	Population per medical school *	Population per physician	Annual number of medical graduates per 1000 physicians	Population per new physician, i.e., annual graduate *
Iceland	154 000	1	195	18	154 000	790	92.3	9 000
Malta	320 000	1	293	37	320 000	1 092	126.3	9 000
Ireland	2 933 000	5	2 921	279	587 000	1 004	95.5	10 000
Saar	983 000	1	522	30	983 000	1 883	57.5	33 000
Switzerland	4 937 000	5	5 061	422	987 000	976	83.4	12 000
Norway	3 392 000	2	3 616	100	1 696 000	938	27.6	34 000
Netherlands	10 615 000	6	10 993	750**	1 769 000	966	68.2	14 000
France	43 022 000	24	39 356	3 000**	1 793 000	1 093	76.2	14 000
Sweden	7 214 000	4	5 433	280	1 804 000	1 328	51.5	26 000
Czechoslovakia	12 952 000	7	17 571	1 000**	1 850 000	737	56.9	13 000
United Kingdom	51 243 000	27	44 585	2 248	1 898 000	1 149	50.4	23 000
German Democratic Republic (E)	18 318 000	9	11 000**	1 000**	2 035 000	1 665	90.9	18 000
Finland	4 190 000	2	2 296	114	2 095 000	1 825	49.7	37 000
Denmark	4 439 000	2	4 769	257	2 220 000	931	53.9	17 000
Italy	47 679 000	21	57 610	3 800**	2 270 000	828	66.0	13 000
Belgium and Luxembourg	9 125 000	4	9 555	428	2 281 000	955	44.8	21 000
Austria	6 969 000	3	11 092	549	2 323 000	628	49.4	13 000
Hungary	9 691 000	4	11 400	260	2 423 000	850	22.8	37 000
Poland	26 500 000	10	16 056	700**	2 650 000	1 650	43.6	38 000
Germany, Federal Republic of (W)	51 707 000	18	69 411	3 246	2 873 000	745	46.8	16 000
Spain	28 756 000	10	29 138	1 000**	2 876 000	987	34.3	29 000
Yugoslavia	17 267 000	6	6 548	1 000**	2 878 000	2 637	152.7	17 000
Portugal	8 693 000	3	6 275	200**	2 898 000	1 385	31.9	43 000
USSR	214 500 000	69	273 600	15 000**	3 109 000	784	54.8	14 000
Romania	17 150 000	5	12 500**	350**	3 430 000	1 372	28.0	49 000
Bulgaria	7 500 000	2	4 800**	957	3 750 000	1 562	199.4	8 000
Greece	7 901 000	2	8 626	197	3 950 000	916	22.8	40 000
Albania	1 260 000	—	100**	—	—	12 600	—	—
Trieste	297 000	—	200**	—	—	1 485	—	—
	619 707 000	253	665 522	37 222	2 449 000	931	55.8	17 000

NOTE: As the Directory was going to press, WHO was informed of the existence of a medical school in Albania. Although reference has been made to this institution in the text, it has not been included in the data tabulated above. Readers who wish to use these figures for statistical analysis should make the necessary modifications.

* Figures rounded off to nearest thousand

** Estimated

ANNEX 7. OCEANIA: MEDICAL SCHOOLS AND PHYSICIANS

<i>Country</i>	<i>Population*</i>	<i>Number of medical schools</i>	<i>Number of physicians</i>	<i>Annual number of medical graduates</i>	<i>Population per medical school *</i>	<i>Population per physician</i>	<i>Annual number of medical graduates per 1000 physicians</i>	<i>Population per new physician, i.e., annual graduate *</i>
Fiji and other UK territories . . .	523 000	1	181	16	523 000	2 890	88.4	33 000
New Zealand and dependencies . .	2 116 000	1	2 920	100	2 116 000	725	34.2	21 000
Australia	8 987 000	4	8 500	625	2 247 000	1 057	73.5	14 000
New Guinea, Papua Nauru . . .	1 706 000	—	79	—	—	21 595	—	—
Hawaii	522 000	—	570	—	—	916	—	—
US territories not otherwise listed	138 000	—	52	—	—	2 654	—	—
French Oceania and New Caledonia	99 000	—	68	—	—	1 456	—	—
Western Samoa	93 000	—	43	—	—	2 163	—	—
New Hebrides	50 000	—	14	—	—	3 571	—	—
	14 234 000	6	12 427	741	2 372 000	1 145	59.6	19 000

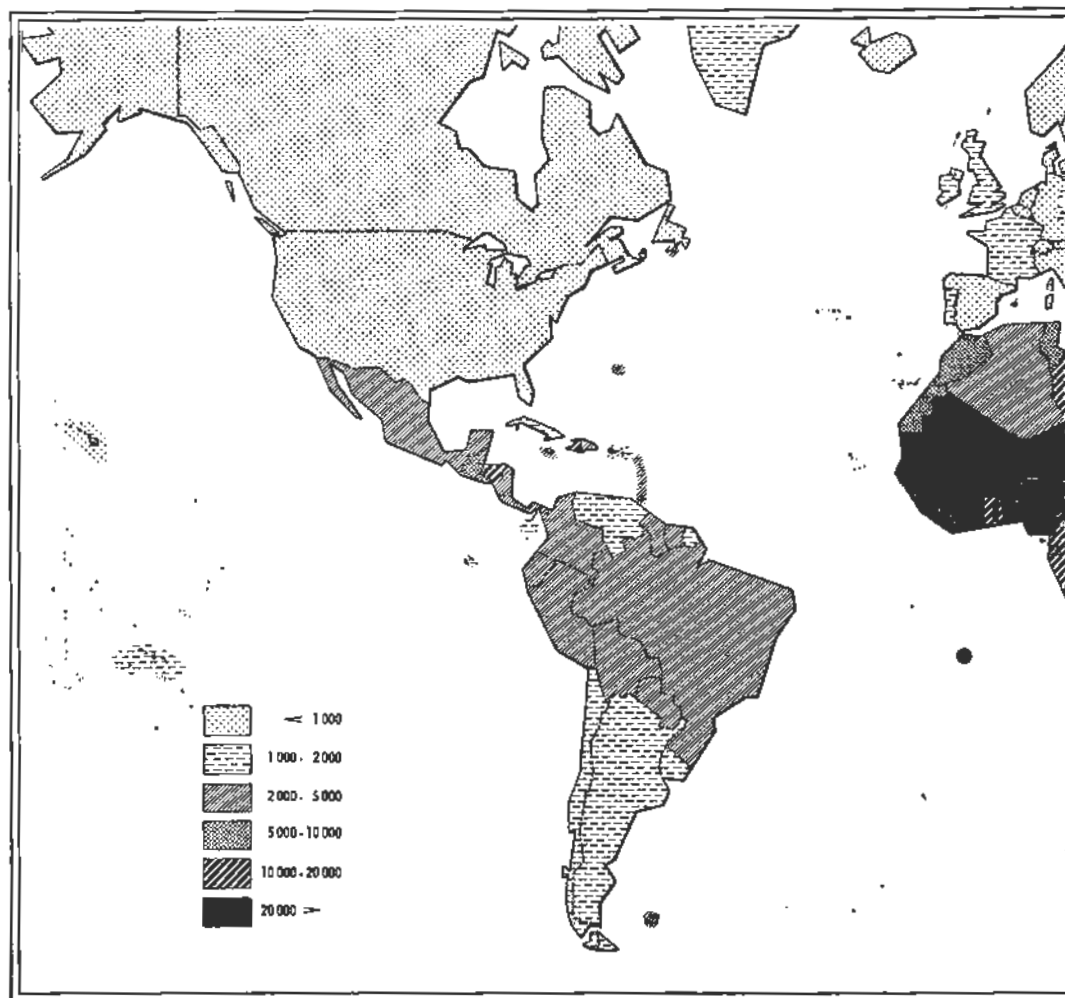
* Figures rounded off to nearest thousand

ANNEX 8. WORLD TOTALS

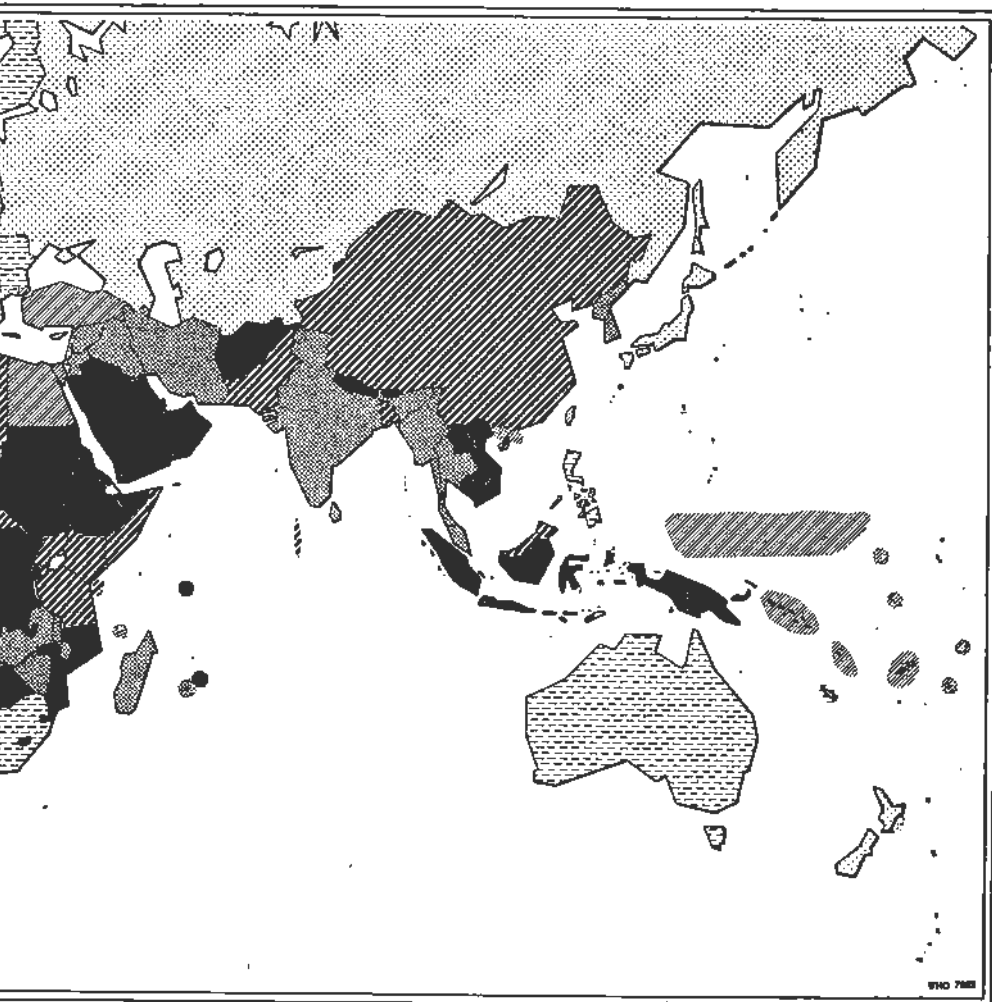
<i>Area</i>	<i>Population *</i>	<i>Number of medical schools</i>	<i>Number of physicians</i>	<i>Annual number of medical graduates</i>	<i>Population per medical school *</i>	<i>Population per physician</i>	<i>Annual number of medical graduates per 1000 physicians</i>	<i>Population per new physician, i.e., annual graduate *</i>
Africa	210 832 000	16	23 284	1 089	13 177 000	9 055	46.8	194 000
North and Central America	234 276 000	124	259 664	9 076	1 889 000	902	35.0	26 000
South America	121 000 000	53	48 263	5 308	2 283 000	2 507	110.0	23 000
Asia, Eastern	1 370 821 000	171	209 688	12 418	8 016 000	6 537	59.2	110 000
Asia, Western	82 529 000	15	16 951	868	5 614 000	4 869	51.0	95 000
Europe	619 707 000	253	665 522	37 222	2 449 000	931	55.8	17 000
Oceania	14 234 000	6	12 427	741	2 372 000	1 145	59.6	19 000
World total	2 653 399 000	638	1 235 799	66 722	4 160 000	2 147	54.0	40 000

* Figures rounded off to nearest thousand

ANNEX 9. POPULAT



PER PHYSICIAN



WHO 7888

ANNEX 10 DIVISION OF THE MEDICAL CURRICULUM, IN YEARS

Country	Pre-medical	Medical	Pre-medical and Medical*	Internship
Afghanistan	1	5	—	1
Argentina	—	6	—	1
Australia	1	5	—	—
Austria	—	—	5	3
Belgian Congo	—	—	6	1
Belgium	—	—	6	1
Bolivia	—	—	7	1
Brazil	—	6	—	1
Bulgaria	—	6	—	—
Burma	2	5	—	—
Cambodia	1	6	—	—
Canada	2	4	—	1
Ceylon	1	5	—	1
Chile	—	—	7	1
China (Mainland)	—	—	5	—
" (Taiwan)	1	4	—	1
Colombia	—	—	6	1
Cuba	—	—	7	—
Czechoslovakia	—	—	6	—
Denmark	—	—	7	1
Dominican Republic	—	6	—	1
Ecuador	—	—	7	—
Egypt	1	5½	—	—
El Salvador	1	4	—	1
Fiji	1	4	—	—
Finland	1	5	—	1
France	1	6	—	—
French West Africa	1	6	—	—
Germany: Democratic Rep.	—	—	6	1
Germany: Federal Republic	—	—	5½	2
Greece	—	6	—	1
Guatemala	1	5	—	2
Haiti	1	5	—	2
Honduras	—	—	7	—
Hong Kong	1	5	—	1
Hungary	—	—	6	—
Iceland	—	—	7	1
India	2	5	—	—
Indonesia	1	6	—	—
Iran	—	—	5	1
Iraq	1	5	—	—
Ireland	1	5	—	1
Israel	1½	4½	—	1
Italy	—	—	6	½
Jamaica	1	5	—	1
Japan	2	4	—	1
Korea	2	4	—	—
Lebanon (American University)	3	4	—	1
" (St Joseph's University)	1	5	—	1
Madagascar	1	4	—	—
Malta	2	5	—	—
Mexico	—	—	6	1
Netherlands	1	6	—	—
New Zealand	1	5	—	1
Nicaragua	—	—	7	1

<i>Country</i>	<i>Pre-medical</i>	<i>Medical</i>	<i>Pre-medical and Medical*</i>	<i>Internship</i>
Nigeria	1	5	—	—
Norway	—	—	6	1½
Pakistan	2	5	—	1
Panama	4	4	—	—
Paraguay	—	—	6	—
Peru	2	6	—	1
Philippines	2	4	—	1
Poland	—	—	5	1
Portugal	—	6	—	1
Portuguese India	—	5	—	½
Romania	—	6	—	—
Saar	1	5	—	1
Singapore	1	5	—	1
Spain	1	6	—	—
Sudan	1	5	—	2
Surinam	—	—	7	—
Sweden	—	6½	—	—
Switzerland	1	5½	—	—
Syria	1	6	—	—
Thailand	2	4	—	—
Turkey	1	5	—	—
Uganda	2	5	—	2
Union of South Africa	—	—	6	1
Union of Soviet Socialist Republics	—	—	6	—
United Kingdom	1	5	—	1
United States of America	3	4	—	1
Uruguay	2	6	—	—
Venezuela	—	6	—	—
Viet Nam	1	5	—	1
Yugoslavia	—	6	—	1

* The pre-medical and medical periods have been grouped together in this column, owing to the fact that no clear distinction is made between them in the medical schools of certain countries.