OCCASIONAL ARTICLES

Pathology across Europe: differences and similarities 1 Haematology

This is the first in a series of four articles covering the major disciplines of pathology; the others will appear in the next three issues.

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The organisation of pathology across Europe differs from one country to another with a few similarities. Training will naturally follow organisation, the differences reflecting the management structure. The most fundamental difference is the separation, in some countries, of morbid anatomy with histopathology from clinical pathology, usually termed laboratory medicine. Basically, the latter includes the disciplines of clinical chemistry, haematology, medical microbiology and sometimes immunology or toxicology, or both. These disciplines may be combined but it is more usual for the combination to be clinical chemistry and haematology. Haematology has particular links with clinical medicine so that in some countries haemostatology and blood transfusion (transfusion medicine) are separate from haematology. Likewise, haematological malignancies may be part of clinical oncology. Clinical chemistry and microbiology tend to be split according to technology which may be similar so that combinations at that level may occur. Many posts in laboratory medicine are held by non-medical scientists. Pathology is constantly developing and disciplines are, therefore, changing, so that the detailed organisation in any one country is not constant. With this background, "harmonisation of pathology" in Europe seems to be a Herculean task.

Haematology

ORGANISATION

Organisation of haematology differs from one European country to another, and sometimes within one country, but basically takes two forms—either a combined clinical and laboratory haematology department (Britain, Denmark, Hungary, The Netherlands, Norway, Spain, Turkey) or a clinical haematology department with a separate haematology laboratory (West Germany, Italy, Sweden). In many countries the type of organisation depends on the size of the hospital (Belgium, France). University and larger hospitals usually have a combined haematology department; in the smaller hospitals, laboratory haematology is separate from clinical haematology.

Clinical haematology This may be a single department or divided into haematological malignancies (usually combined with oncology), haemostasis and thrombosis, and transfusion medicine.

Laboratory haematology Where this is separate from a clinical haematology department, it is part of a department of clinical biology (pathology), with haematology being a subsection of clinical chemistry. These may be large central laboratories or small private offices with a narrow range of tests.

Staffing of such departments is variable, often within the same country (as in France). There may be a medical head of department or it may be a non-medical science graduate or pharmacist (France). University and training hospitals usually have a medical head, but smaller "district" hospitals are run by a non-medical scientist. Many university hospital haematology laboratories and all blood transfusion centres are largely staffed by non-medical scientists. Where there is a medical head of department (Britain) most of the staff are medical laboratory scientific officers, some of whom are graduates.

TRAINING

Training in haematology follows the pattern of organisation in each country. The principal differences are those arising from separate and combined clinical and laboratory organisation. The other main differences are arrangements of accreditation, registration, and examination.

In all countries graduate or vocational training follows five or six years as an undergraduate, which may include one to two years as a pre-registration intern. This is followed by a period of internal medicine, followed by clinical haematology with a variable time in laboratory haematology, depending on whether the specialty is practised as combined with clinical haematology or clinical biology.

Internal medicine

In all countries there is rotation between medical specialties but the time differs widely from 18 months in Spain to five years in

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Accepted for publication
5 March 1990

Summary of training for specialists in haematology

Country	Time (years)		Research	Exam	Accreditation/ registration
	Internal medicine	Haematology			
Belgium	3	2	+	—	+
Britain	3	3	—	+	+
Denmark	5	2.5	—	—	+
FGR	4	2	—	+	+
France	2	2	—	—	+
Hungary	5	2	—	+	—
Italy	2	2	—	—	+
Netherlands	4	2	+	+	+
Norway	5	3	+	—	+
Spain	1.5	2.5	—	—	+
Sweden	5	2	—	—	—
Turkey	2	3	+	—	—

Sweden. Training is always in approved centres—either university departments of medicine or training hospitals. Completion of training may be marked by an examination (Britain and West Germany).

Clinical haematology

In all countries clinical haematological training comes at the end of training in internal medicine. The total length of clinical training varies from four to seven years, the time in haematology being two to three years. The main differences are the time in medical specialties other than haematology which can vary from 18 months (Spain) to five years (West Germany). In all countries training is in approved centres, either the university departments of medicine or training hospitals. Content of haematology is similar, the most extensive being West Germany with a set curriculum to include morphology and cytochemistry of peripheral and bone marrow cells, treatment and prognosis of thromboembolic disease, and chemotherapy of neoplastic diseases. In most countries the time of training in each subspecialty is a matter for the trainee to arrange, but most training programmes require some time to be spent in a haematology laboratory.

Combined clinical and laboratory haematology

This training usually lasts for three years, during which the trainee works in the wards, outpatients, and the haematology laboratory. Training includes clinical and laboratory diagnosis of haematological malignancies, haemostasis, and immunohaematology. Experience in laboratory blood transfusion may be obligatory (six months in Britain) as well as in emergency procedures both clinical and laboratory.

Clinical biology

Medical graduates entering training in clinical biology (clinical pathology) are rarely required to do a period in internal medicine. The time of their training is up to five years during which they will probably rotate through various other disciplines such as clinical chemistry, microbiology, finally concentrating on haematology

(in Belgium, three and a half years for laboratory haematology). In this latter situation some time may well be spent on ward rounds, outpatients, and in day hospitals. A wide freedom of choice between trainees and supervisor usually operates.

Non-medical graduates are usually trained as scientists over periods of three to five years, some specialising in one particular discipline. Research may well be an integral part of training but specific training in haematology is rare.

Research

Requirements of training in research, usually by evidence of publication, is necessary in some countries for accreditation or registration (Belgium, The Netherlands). In most countries research training is regarded as desirable but not obligatory (Britain).

Examinations

An examination as proof of training in haematology occurs in Britain, West Germany, Hungary and The Netherlands, where it is taken at the end of six years' combined clinical and laboratory training. The extent of the examination varies from an oral (West Germany) to an extensive three day practical, clinical, and oral examination (Britain). The examinations are usually conducted by medical colleges (Britain) state medical associations (West Germany), or the Society of Haematology (Spain). Only in The Netherlands is the examination a specific requirement for appointment to a permanent post, but in Britain and West Germany it is regarded as being desirable.

Registration/accreditation

There is wide variation in practice. Some countries have a specialist register which includes clinical haematology and clinical biology. Other countries accredit the individual of having had appropriate training for the specialty. Most have no formal approval system, relying on appointments committees to decide whether the candidate is adequately trained for the vacant post.

Haematology after 1992

Free movement of doctors within the EC over the past few years has not led to any great changes of organisation in medical practice in any country. If, however, a shortage of doctors developed in a specialty, it is likely that trainees from another EC country would migrate. With the overproduction of doctors in West Germany and Italy and the political changes in Eastern Europe this is becoming more likely, particularly with the absence of statutory specialist registration in the United Kingdom.

Moves to combine smaller haematology laboratories with those of other pathology disciplines are part of an ongoing rationalisation process which is financially driven and is applicable to all countries. The head of a clinical pathology (clinical biology) department is still likely to be medical, but replacement by a non-medical scientist could occur in some hospitals. A greater divergence of organisation within countries seems probable. The impact of 1992 is more likely to be on laboratory practice than on organisation. The introduction of increasing numbers of mandatory standards will have the effect of harmonising

methodology.

Regulatory harmonisation of training is unlikely but training schools such as the European School of Haematology in France, could have a harmonising effect. Organisational changes will themselves bring about inevitable changes in training programmes.

By the end of the decade, haematology in Europe will probably have become a clinical discipline on a specialist register. Large departments will be divided into haematological malignancy, some combined with oncology, haemostasis and thrombosis, and transfusion medicine. Each of these large departments would have a specialist laboratory, but routine tests would be performed in a central clinical pathology laboratory headed by a medically qualified person. In the smaller hospitals the haematologist will cover all clinical aspects of haematology but would be served for investigations by a clinical pathology laboratory headed by a non-medical scientist with largely graduate staff. The rate of change will vary considerably, both between and within the countries of Europe.