

Plastic surgery in the European Union

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Plastic surgery in the European Union
A study of development, training, manpowerplanning and
migration

Plastische chirurgie in de Europese Unie
Een studie van de ontwikkeling, de training, de
manpowerplanning en de migratie

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*Voor wijlen mijn vader,
mijn grote voorbeeld
en bron van inspiratie*

*Voor mijn moeder,
wegens haar onvoorwaardelijke
steun en geloof in mijn kunnen*

Contents

1	Introduction	
1.1	Objects of the study	1
1.2	Extent of the study and nomenclature	3
1.3	European Unification and the consequences for the medical specialties and plastic surgery; a brief review	4
1.3.1	Introduction	4
1.3.2	The free migration of doctors, standards of training, manpower control	4
1.4	Methods of investigation	5
1.4.1	Interviews	6
1.4.2	Survey on hand surgery	6
1.4.3	Fellowship awarded by the European Council in Strasbourg for a visit to three plastic surgical training centres in Germany	6
1.4.4	Survey of training centres within the European Community	6
1.4.4.1	Method of the survey	7
1.4.4.2	Population of the survey	7
1.5	Summary and conclusions	7
2	Plastic surgery, its history and definitions as used in the European Union (the original Common Market countries)	
2.1	Introduction	9
2.2	General history of plastic surgery	9
2.3	The history of plastic surgery in the European Union	14
2.3.1	General summary and comments concerning the historical development of plastic surgery in the different EU countries	23
2.4	The definitions of plastic surgery in the European Union, and the definition of plastic surgery as used by the Union of Medical Specialists (UEMS)	23
2.4.1	The discussion regarding a suitable definition for plastic surgery	27
2.4.2	Working definition of plastic surgery	28
2.5	Summary and conclusions	29
3	The state of the art of plastic surgery in the different EU countries	
3.1	Introduction	31
3.2	Influences of health care and insurance systems on plastic surgery	31
3.2.1	Comments	37
3.2.2	Market elements and privatization in the different health care systems	38
3.2.3	Conclusions	40
3.3	Review of the actual practice of plastic surgery in the different EU countries (the former EC countries)	40
3.4	Summary and conclusions	48
4	The relationship between plastic surgery and other specialties in actual practice	
4.1	Introduction	51
4.2	The dynamics of medicine	51
4.3	Data of hand surgery in daily practice using case studies	52

4.4	National data on hand surgery in The Netherlands	57
4.4.1	Clinical data obtained from the SIG	57
4.4.2	Data on day care hand surgery operations 1991-1995 (SIG, Utrecht)	60
4.5	Summary and conclusions	61
5	The training in plastic surgery in the European Union	
5.1	Introduction	63
5.2	Organization (national) of the specialist training	63
5.2.1	Who is responsible for the specialist training? (content, requirements)	64
5.2.2	Who is responsible for the registration in the various EU countries?	65
5.3	The general organization of medicine in the former EC and some historical notes	66
5.4	The formation of monospecialist committees and their significance for plastic surgery	67
5.5	The organization of the training in plastic surgery in the EU	69
5.5.1	Introduction	69
5.5.2	Total duration of plastic surgery training, including the common trunk of general surgery	70
5.5.3	Common trunk and the period spent before entering the specific plastic surgery part of the training	72
5.5.4	Contents of the training in the different EU countries (requirements for the trainees)	73
5.5.5	Requirements for trainers and training centres	77
5.6	Plastic surgery training in practice, including control of the progress and final performance of trainees in the EU countries	78
5.6.1	Introduction	78
5.6.2	The primary selection of trainees in the various EU countries	79
5.6.3	Continuing control and selection during the training and the final assessment	81
5.6.4	The final selection	83
5.7	The role of the European organizations (UEMS and European Specialty Boards) in harmonization and standardization of training and quality control	85
5.8	Quality control of the training	87
5.9	Additional training in plastic surgery and subspecialization	89
5.9.1	Undergraduate and postgraduate fellowships	89
5.9.2	Continuing education	90
5.10	Problems regarding the training in plastic surgery and their relationship with the effects of European Unification	94
5.11	Summary and conclusions	96
6	Manpower planning in the European Union	
6.1	Introduction	99
6.2	Determining factors for manpower planning	99
6.2.1	The supply	100
6.2.2	The demand	101
6.3	Manpower planning seen as a general problem	101
6.4	Medical manpower planning and the European Union (EU)	103
6.5	The situation in The Netherlands and the United Kingdom	105
6.5.1	Manpower control in The Netherlands	105

6.5.2	Waiting lists and limited lists, as a means of indirect influencing manpower control	106
6.6	Manpower planning in plastic surgery in the European Union	108
6.7	Manpower planning in the individual former Common Market countries	110
6.8	Summary and conclusions	115
7	Influences of a European Unification on migration in plastic surgery	
7.1	Introduction	117
7.2	The effects of European Unification on health care	117
7.2.1	Euromigration in plastic surgery	117
7.2.2	European survey (1991-1992) of training centres in plastic surgery	118
7.3	Employment: general situation in medicine and plastic surgery within the Common Market	126
7.4	Summary and conclusions	129
8	Plastic surgery and its challenges in the European Union, a discussion and reflection regarding its future role	
8.1	The problems facing plastic surgery in the European Union, considerations and suggestions to cope with these problems	131
8.1.1	The boundary problems	131
8.1.2	Different historical development in the EU countries	132
8.1.3	The problem of finding a suitable definition for the specialty of plastic surgery	132
8.1.4	The European Unification	133
8.1.5	The training in plastic surgery	135
8.1.5.1	The standardization of the training in plastic surgery	135
8.1.5.2	The requirements for the chiefs of training	137
8.1.5.3	The requirements for training centres	137
8.1.5.4	Examination as part of the evaluation of trainees and its value on national and European level	138
8.1.5.5	A European framework for plastic surgery, a coherent system of goals and final conditions	140
8.1.6	Subspecialization	143
8.2	Comparable problems in other specialties	143
8.3	Reflections on the future role of plastic surgery	144
8.4	Summary and conclusions	146
9	Summary and conclusions	
	Summary and conclusions	159
	Samenvatting en conclusies	153
	References	157
	List of abbreviations	165
	Supplement	167
	Contents	168
1	The codes of SIG of operations of the hand	169
2	Data on clinical and day care hand surgery operations performed between 1991 and 1994 by plastic surgery, orthopaedic surgery and general surgery	170

3	Questionnaire for the analysis of hand surgery	172
4	Information note - Europe, European medical bodies (general information for doctors) (1992) international department British Medical Association	173
5	Plastic surgery training in the EU countries	181
6	Logbook of the EBOPRAS	188
7	Requirements for the specialist fellowship exam (UK)	299
8	Questionnaire for the European survey	201
9	Summary of the findings of the survey (1991-1992) in tables	205
10	European diploma in Hand Surgery Examination Syllabus	214
11	Syllabus for training in aesthetic plastic surgery, recommended by the British Association of Aesthetic plastic surgeons	220
12	Requirements for Higher Specialist Training in Plastic Surgery	230
13	UEMS Charter on Continuing Medical Education (CME) in plastic surgery	237
14	Historical Development of the European Union	240
	Dankwoord	241
	Curriculum Vitae	243
	List of tables and figures	245

Introduction

1.1 Objects of the study

The aim of this study is to clarify the role of plastic surgery in the European Union (the former European Community). The idea is that this will lead to a better understanding of the specialty among laymen, colleagues and healthcare officials. To this end, the historical development of the specialty and its present day problems, including the European Unification and border zone activities by other specialties, will be discussed. Whenever possible, links and connections with the historical development and the boundary problems will be sought in the discussion of the subject under review, which subjects will be categorized under several headings. Also, the training in plastic surgery will be analysed and a comparison will be made concerning the various EU countries (the former EC countries). Furthermore, the effects of European Unification including the possible need for European standardization of contents and training of the specialty and manpower planning and migration within Europe will be discussed. Finally, recommendations will be made for the future development of the specialty.

Plastic surgery is an intriguing specialty. On the one hand it has experienced a tremendous development, on the other hand there are problems, due to its complexity (Luce, 1993), which require clarification. The need to discuss these problems is partly caused by the increasing media coverage of the aesthetic side of the specialty of plastic surgery and by the boundary problems with other specialties.

The historical development, as will be described in Chapter 2, is important because it teaches us that the pioneers of modern plastic surgery originated from other specialties – ear, nose and throat surgery and general surgery. They introduced their own background and experience and used their skills to develop the principles of treatment necessary to cope with the serious reconstructive problems presented by the victims of modern warfare. This could explain that plastic surgery really emerged as a boundary specialty that gradually secured a position among existing specialties. Therefore, attention will be drawn to the existing boundary problems related to plastic surgery, like for example aesthetic surgery and hand surgery and the subsequent difficulty and necessity in finding a common definition (Chapter 2) which is acceptable and applicable in the original EU countries.

The present position of plastic surgery in the various countries of the original EU countries and the differences in contents (Chapter 3) and differences in areas of interests (either reconstructive or aesthetic) can only be understood in the historical context of the specialty in the various countries.

The following problems will be discussed:

1. *The border zones with other specialties form a special problem for plastic surgery.* The problem arises as a result of the fact that the boundaries between the specialties are indistinct. Hand surgery is a perfect example of a branch of surgery practised by plastic surgeons, orthopaedic surgeons and general surgeons. Concern was raised regarding the position of a plastic hand surgeon (Chang, 1988). In order to obtain a better idea of hand surgery as practised in a small country, a survey was performed in two academic and two

general hospital centres for hand surgery in The Netherlands. The purpose of this survey of hand surgery was to get an impression of the amount of hand surgery performed in a plastic surgery practice. The referral patterns which could influence the number of hand surgery cases that are seen by plastic surgeons, will also be discussed. In some casualty departments plastic surgeons are consulted only after the surgical resident is allowed to refer the patient. Additional data on the amount of hand surgery between the three main specialties (general surgery, orthopaedic surgery and plastic surgery) in The Netherlands were obtained from SIG and these data (1980-1989 and 1991-1995) were analysed. Data obtained from Academic Hospital C (1992-1996) were used to compare its findings with the national findings of SIG in order to see whether hand surgical operations in a certain class of complexity were performed more regularly by plastic surgeons.

The delicate relationship with other specialties, such as the mother specialty of general surgery, as well as orthopaedic surgery, ophthalmology, dermatology (Philips, 1994) and ENT (Ear, Nose, Throat) surgery, will be discussed in detail in the appropriate chapters. It is sufficient to note that this situation has led to confusion among both colleagues and the general public concerning the scope of plastic surgery. When considering the need for plastic surgery services, it is a serious matter that even public health officials (Denyer and Gibson, 1993) claim that the fact that in a certain area "plastic" cases were treated by surgeons other than residents in plastic surgery was a reflection of the balance and expertise of those specialties in that particular area, even though the results of these operations were not monitored. The patients are often unaware of the fact that they are attended by physicians who are not properly trained for the job. This can cause serious concern and a justifiable plea has been made for better protection of the public (Greco, 1993). A concomitant problem, however, is the fact that in certain areas there are too few plastic surgeons. This makes it relevant to study available data on manpower planning (Luce, 1993; Krizek, 1994).

2. *The poor definition and description of the contents of plastic surgery in the EU* can be illustrated by the fact that there is a great deal of misunderstanding among laymen and medical colleagues alike about the significance of plastic surgery and what plastic surgeons can offer. Too often, plastic surgery is considered to be a synonym for cosmetic surgery. This false picture is created by glossy magazines and, unfortunately, sometimes by plastic surgeons themselves, seeking publicity. As evidenced by recent literature (Widgerow, 1994), this picture still exists and it underlines the need for a better appraisal of the work of plastic surgeons.

Ultimately, plastic surgery can offer invaluable knowledge to other specialties regarding wound healing and scarring; knowledge which should also be transferred to medical students (McGrouther, 1993). The importance of the biological and physiological background of these processes is evident in the steady number of papers and presentations during scientific meetings (the papers on basic research during the July and December meetings of the British Association of Plastic Surgery).

In order to present a working definition of plastic surgery, the several definitions used in the European Union were collected. The objective was to clarify and present a definition which would reflect the special character of the specialty. By defining its true contents, patients and colleagues should be made aware of the wide potential of plastic surgery as an innovative specialty.

3. *The training* Finding a general accepted training in plastic surgery according to European standards is the next problem for the specialty. A training of good quality and

well defined standards is necessary to safeguard the position of plastic surgery in relation to other specialties and to meet the demands of a clear definition of the specialty. The training should prepare the trainees (the future plastic surgeons) to be the ambassadors of their specialty and secure a position in the border zones with other specialties. It should provide the trainees with enough knowledge for their future jobs as independently operating plastic surgeons, able to practice the specialty in the broadest form.

Since a good training is so essential, a serious discussion of the training in the different member states of the former Common Market is necessary. In Chapters 3 and 4 important matters such as organization, duration, contents and harmonization of the training in the EU countries will be reviewed.

There has been extensive discussion in Europe regarding the training in plastic surgery (the Board meetings of the European Board of Plastic and Reconstructive and Aesthetic Surgery) and forms of advanced training in special aspects of plastic surgery (hand surgery). Lamb (1990) has made a plea for advanced training in hand surgery and for certification. His idea as an orthopaedic hand surgeon was later adopted in Germany by a plastic surgeon (Berger). Quality, however, should be the decisive factor in the success of the European Community (Cense, 1990) and this should also include the quality control of the training standards.

4. *The European Unification was thought to lead to an increased movement* of doctors and plastic surgeons within Europe in the early nineties. This was considered then to become a serious problem, therefore, migration was studied. In practice, this could mean the migration of doctors; either fully trained plastic surgeons or doctors seeking training elsewhere in the European Community. It could even include doctors who migrate and perform plastic surgical operations but have not received specific training.

To clarify these problems a European survey was performed. In this survey the need for emigration and immigration of fully trained plastic surgeons or doctors seeking training elsewhere in the European Community and all related issues were examined.

1.2 Extent of the study and nomenclature

In order to prevent misunderstandings regarding the different terms used in this thesis, the following explanation is necessary: The study was started in 1990. By that time "EC countries" was rightfully used consisting of Belgium, Denmark, France, Germany, Greece, Ireland, Italy, The Netherlands, Portugal, Spain and the United Kingdom. The twelfth country Luxembourg was excluded from most of the study, because of the lack of training facilities.

Though "EC countries" was perfect at the beginning of the study and was used both in Chapter 1 and 7 (the European survey), it was considered more correct to use the term "European Union and EU countries", following the Treaty of Maastricht in 1991. Sweden, Finland and Austria which joined the European Union in 1991, were excluded from the study. So geographically the study took place in Western Europe and more specifically in the original EU countries.

See for chronological participation of countries to the European Union and its preceding organizations Supplement 14.

1.3 European Unification and the consequences for the medical specialties and plastic surgery; a brief review

1.3.1 Introduction

For a better understanding of this difficult subject, it is necessary to summarize the key facts. European Unification is a process that is taking place very gradually. This process is so complicated that it was not completed by the tentative date of December 31, 1992, as proposed by the heads of States and governmental leaders during a European Top Conference in Milan in 1985, as the final date for the establishment of an internal market (the European Act). Indeed, when this study was started in 1990, there was a great deal of public discussion about the effects of a European Community and some were afraid of the possible consequences. This was apparent by articles in journals and newspapers. Considering the present situation, we see that the full impact of this process has not ended yet.

It should be remembered that the first initiative to unify Europe was the Treaty of Rome, signed in 1957 by the three Benelux countries, the Federal Republic of Germany, France and Italy. It provided for free exchange of people, goods and services between these countries. The Treaty of Rome was the founding act of the European Community and its opening words were (Denis, 1988): "The community has the task to institute a community market and, by gradually co-ordinating the Economic Regimes of the Countries, to stimulate the harmonic development of the economic activity within the whole Community, a steady and balanced stability, a greater stability, an increasing improvement of the standard of living and closer relationships between the Countries in the Community." It was predicted in 1990 (Cense), that there would be no preoccupation with the health care in 1992 within the European Community. The European Act (1985) did not mention health care either.

1.3.2 The free migration of doctors, standards of training, manpower control

The Directives 75/362 and 75/363 provided for the free migration of doctors within the European Community (Brearly, 1993) a practice which, in fact, has been going on since the Treaty of Rome (1957). Two articles in the Treaty of Rome are worth mentioning: Article 52 states that "Restriction on the freedom of establishment of nationals of a Member State in the Territory of another member state shall be abolished by progressive stages in the course of a transitional period. Freedom of establishment shall include the right to take up and pursue activities as self-employed persons." Article 57 was implemented to take up and pursue activities as self-employed persons and the Council stated that they would issue directives for the mutual recognition of diplomas, certificates and other evidence of formal qualifications (council directives 75/362/EEC, 81/1057/EEC, 82/76/EEC and 89/594/EEC) and directives for the co-ordination of provisions and regulations concerning the taking up and pursuit of activities as self-employed persons (75/363/EEC, 82/76/EEC and 89/594/EEC) (Commission of European Communities, 1990). While the importance of these directives for the free movement of doctors within the EEC was recognized (Abraham and Sansot in Guide to Health in Europe, ed. Mebazaa, 1992), it should also be noted that the directives applied only to nationals of member states. Furthermore, it involved qualifications awarded by a member state, but only those qualifications listed in the directive 75/363/EEC. This meant that the memberships and fellowships of the Royal Colleges of the United Kingdom and Ireland had no standing in Europe.

The Directives do not specify the standards required in order to reach specialist status in the different member states. Thus, the Directives are primarily intended to promote the free migration of physicians – which is an EC competence – and do not deal with educational

standards (Brearly, 1993). The EC avoids interfering with national law. It does not want to remove the differences between systems because, though there is a need to harmonize, there is no need to standardize (Pfeiffer, 1993). This could lead to concern within the United Kingdom (Brearly and Gentleman, 1991; Brearly, 1992) whether or not EC nationals with completed specialist training in their native countries have adequate clinical experience, since their training period is shorter than it would be in the United Kingdom. Furthermore it could lead to an unfair advantage for those EC nationals who could settle down earlier than their colleagues in the United Kingdom (Gruwez, 1992). The free movement of doctors could, furthermore, have an influence on manpower planning in Europe and could provide opportunities to those trying to escape the manpower control measures in their own country by getting specialist training in another member country of EC. They indicate only the minimum period of time that should be spent in training for the different medical specialties (for plastic surgery 5 years).

Until now, no figures were available which show that large numbers of doctors are migrating to other EC countries. However, in the United Kingdom (easily accessible because of language) there was an increase in the number of doctors from other EC countries from 77 in 1977 to 1309 in 1988 (Crisp, 1990). These last figures were supported by later reports (Brearly and Gentleman, 1991; Richards, 1991) drawing attention to a growing number of doctors from other EC countries, 1000 in the last 2 years. In the last 15 years, 1% of practising doctors settled down in other EC member countries; mainly in the United Kingdom (language) and Germany (economical reasons) (Blickle and Singer, 1989). Figures obtained from the *Ordre National des Médecins* (1995), show that the total number of doctors from other EC countries in France in relation to foreign doctors in general has risen from 11.5% in 1992 to 19.5% in 1994. However, they form only 1.72% of the total French medical work force of 184,516. In Germany, however, 7688 or 38.8% of the foreign doctors are from EC countries, which is 3.5 % of their work force. According to the Royal Dutch Medical Association, 55 doctors with a Dutch medical degree (artsdiploma) were registered in 1994 in France, 12 in Belgium, 99 in the United Kingdom, 4 in Sweden, 1 in Ireland and 11 in Germany. However, the reasons for migration were not available. Language problems did not seem to play a role for settling in France. The United Kingdom was apparently the most popular target for migration. Surprising were the low figures for Belgium and Germany where language problems were not likely to occur. This emphasizes the fact that there are regional differences in migration.

In view of the different standards of training within the EC, the emergence of organizations involved in raising the standards (the harmonization committee of UEMS and the European Boards) was just a matter of time. The details of this process will be given in detail in Chapter 5. The consequences of the free movement of doctors within the European Community, especially in relation to plastic surgery, will also be discussed later.

1.4 Methods of investigation

Various methods have been used in order to meet the objectives of the study, and they will be mentioned consecutively. The investigation was difficult since there is no extensive literature on the training and contents of the specialty in the various EU countries. Little is known about the impact of European organizations on the training. Little is known also about the consequences of European Unification. Methods of investigation were literature study, interviews, survey on hand surgery, a fellowship awarded to visit three training centres in Germany and a survey of training centres within the European Community. Regarding these methods the following remarks can be made.

1.4.1 Interviews

Interviews were conducted with people involved in European Organizations, such as the European Council in Strasbourg, UEMS in Brussels and Leuven, the Harmonization Committee, the European Board of Plastic and Reconstructive Surgery and the Monospecialist Committee for Plastic Surgery. The purpose of these interviews was to gain a deeper insight in the problems studied in the thesis. Our aim was to assess the impact of these different organizations on the formation of a European Community and, especially, on efforts to raise the standards of training.

1.4.2 Survey on hand surgery

As already discussed, one of the difficult issues of plastic surgery concerns the border areas with other specialties. In view of the fact that certain aspects of plastic surgery -- for example hand surgery -- were shared by other specialties, it was thought useful to conduct a small survey. The aim of the survey was to study the situation concerning hand surgery in The Netherlands. Two University and two General hospitals were visited where hand surgery forms a major part of daily practice. The surgeons in charge of hand surgery in these centres were sent questionnaires (see Supplement 3) which were later used as a basis for an interview. The information about the daily practice of hand surgery in these centres was collected, including the relationship between the specialists dealing with hand surgery and the future position of hand surgery, either as an independent specialty or as part of plastic surgery, orthopaedic surgery and general surgery.

Training in hand surgery as well as the role of hand surgery in the present training in plastic, orthopaedic and general surgery were discussed. Data from SIG (the Information Centre for Health care in Utrecht) were collected regarding the number of hand surgery operations performed by plastic, orthopaedic and general surgeons. These data represent the results of over 94% of the hospitals in The Netherlands.

1.4.3 Fellowship awarded by the European Council in Strasbourg for a visit to three plastic surgical training centres in Germany

The allocated period of time was too short to conduct a study of more than one country. Germany was an attractive country to visit, since plastic surgery was, until 1992, not an independent specialty in Germany, but a subspecialty of general surgery. It has developed under adverse circumstances and pressure of other specialties, especially general surgery. Information was collected by interviewing three heads of departments, attending theatre sessions and clinics and by analysing data from annual reports. The aim of the fellowship was to get a better insight in the practice of plastic surgery in Germany.

1.4.4 Survey of training centres within the European Community

The objective was to get a better idea of the trends within plastic surgery in regard to the effects of European Unification. This led to a survey focused on the following topics:

- European unification and plastic surgery: Would European Unification lead to increased migration for those working in the area of plastic surgery?
- The attitude towards the temporary and permanent arrival of plastic surgeons, trainees and doctors from other European Community countries, in order to work and/or look for a training post.
- The attitude towards immigration from other EC countries:
 - the possible advantages of immigration
 - the preferred country of origin of the immigrants
 - the reasons for being against immigration

- the countries that might cause problems either due to language problems or problems with qualifications and training
- The attitude towards emigration to other EC countries:
 - the willingness to settle permanently in another EC country
 - the preferred countries for emigration
 - the reasons for permanent settlement in another EC country
- The reasons for moving temporarily to another EC member state.
- The preferred topics for a fellowship in another EC member state and the preferred countries for a fellowship.
- The number of plastic surgeons, plastic surgical trainees and doctors from other EC countries in the hospitals of the respondents.
- The estimated number of plastic surgeons, plastic surgical trainees and doctors looking for training in plastic surgery, who want to move to another EC member state.

1.4.4.1 Method of the survey

Questionnaires, accompanied by a letter of explanation, were used. These were translated into English, German, French, Portuguese and Spanish.

The international character of the study made it impossible to visit all of the plastic surgical units within the European Community. The questionnaires were sent by mail to the trainers and trainees in plastic surgery. No questionnaires were sent to Luxembourg, since there are no training facilities for plastic surgery in that country. After one month, a second letter was sent as a reminder. Whenever possible, telefax messages and phone calls were used.

1.4.4.2 Population of the survey

It was decided to select the group most directly involved in the training: the heads of plastic surgical departments -- the Training Representatives in the United Kingdom -- and their trainees. The survey was conducted anonymously, so the questionnaires were not marked, though some of the trainers gave their names. Lists of the training centres were obtained including the names of the trainers and trainees and/or the number of trainees.

The ideal situation would have been to send questionnaires to all doctors working in plastic surgery, but it was decided that it would be best to send the questionnaires to the trainers, with the request to distribute them among their junior staff. This was done because the addresses of the training centres and the trainers were relatively easy to obtain. It was therefore possible to question more plastic surgeons and trainees at the same time which was thought to be a better way to collect data and points of view regarding certain matters. Most individual plastic surgeons have no dealings with training. It was reasonable to assume that questions concerning training and emigration could best be answered by people working in training centres. Furthermore, it would have been impossible for practical reasons to send questionnaires to all plastic surgeons and doctors trying to get a training post in plastic surgery anywhere in the European Community. The results of the survey will be discussed in the appropriate Chapters.

1.5 Summary and conclusions

The aim of this study was, first of all, to clarify the role and development of plastic surgery in the former European Union (the twelve original countries of the European Union, except Luxembourg). This is important since the media have created a one-sided "aesthetic" picture of the specialty, which has had a negative impact on the general image of plastic surgery for laymen and colleagues. The main problem is formed by the complexity of the

specialty and the border zones with other specialties. Therefore, it is difficult to clearly define the specialty and find an acceptable working definition.

A historical review of the development of plastic surgery in the former European Union was used to understand the complex role of plastic surgery among "neighbouring" specialties, and this review might explain the way plastic surgery is functioning in the various EU countries. The relationship with other specialties (the boundary problem) was studied in actual practice in a small survey on hand surgery.

European Unification could pose problems caused by the free migration of doctors (plastic surgeons, trainees) with different qualifications and clinical experience. This would lead to a growing need for standardization of training in plastic surgery in the different EU countries.

The second goal of the study was, therefore, to perform a comparative study of the training of plastic surgery in the EU in order to establish recommendations for the future.

European Unification and its major consequences for plastic surgery were analysed further: The free migration would also effect manpower planning, especially since it provides the possibility to overcome national manpower measures. Manpower planning in the former European Union is, therefore, studied separately.

Since few data on migration are available, a European survey of plastic surgery training centres in the twelve original countries of the EU, except Luxembourg, was conducted. The results were compared with available data. The results of this study will be presented in subsequent Chapters and whenever possible recommendations will be given.

Plastic surgery, its history and the definitions used in the European Union (the original Common Market countries)

2.1 Introduction

Plastic surgery is a complex specialty. Therefore, the different aspects of plastic surgery will be discussed in separate Chapters. The first part of this Chapter deals with the general history of plastic surgery and particularly the developments which were important for the birth of modern plastic surgery. This is followed by a review of the history of plastic surgery in the different EU countries. The history could help us understand the present situation of plastic surgery in the various EU countries. Historical links with the contents of plastic surgery and the definition of plastic surgery in those countries will be examined. The second part of the Chapter discusses the definitions used in the European Union, including the definition of the UEMS. The importance of a good definition of plastic surgery was already emphasized in Chapter 1, so finally a working definition of plastic surgery will be proposed and discussed.

2.2 General history of plastic surgery

Though it is impossible to maintain a strict separation between the reconstructive and the aesthetic part of the specialty, it is useful to mention certain important topics in both reconstructive and aesthetic surgery.

Furthermore, it is important to realize that even before plastic surgery was recognized, certain principles were known, especially regarding wound-healing and wound-care and the treatment of defects. The latter forms the basis of plastic surgery or as Ben Hur and Converse (1980) put it: "Plastic surgery is the art of surgery concerned with mending deformities and defects of the integument and underlying musculoskeletal framework, which may be either congenital or acquired." As far as the treatment of defects is concerned, a distinction can be made between:

- acquired defects (oncological, traumatic etc.); and
- congenital defects(e.g., cleft lip and palate, congenital deformities of hands).

In this historical review examples of the treatment of these defects will be given.

Knowledge regarding wound-healing was of paramount importance for the survival of the human species. This is the reason that descriptions regarding wound-healing and the treatment of wounds date back in history to 1600 BC in Egypt when linen and peels of potatoes and papaya fruit were used as bandages. In medieval times soldiers used spider webs for haemostatic effect. In the 16th century there was a breakthrough in the development of wound-healing and wound-treatment by Amboise Paré. He treated gun powder wounds and introduced the principle of careful cleansing of wounds and debridement of the wound edges (Artz, 1970). He also discovered the use of ligatures. Knowledge regarding wound-healing is also important before undertaking any reconstructive or aesthetic procedure.

Little is known about the beginning of aesthetic surgery. Aesthetic surgery of the face started in the Byzantine period (Paulus Aeginata, 625-690). Examples were the treatment of eyelid ectropion and facial wrinkles and the first description of a reduction mammoplasty. As mentioned earlier plastic surgery could be considered as surgery of defects. An example of treatment of acquired defects was found in the nose reconstruction in adulterous men, who underwent nose amputation (Sushruta, 600 BC). Sushruta used cheek flaps. It should be remembered, however, that modern aesthetic surgery as a discipline started after the Second World War.

Though plastic surgery was not yet known, the first systematical, theoretical and practical description of a reconstructive procedure concerned the reconstruction of an amputated nose, as first performed by Tagliacozzi in 1591. In his book "De curtorum per insitionem", Tagliacozzi described a reconstruction of an amputated nose by members of the Branca family, using a pedicled flap from the upper arm (Winters, 1975; Vrebos, 1980). He also described how this method could be used for the reconstruction of the upper lip.

Through the ages the influence of war on the development of reconstructive surgery was a well known phenomenon. In Roman times, however, only prosthetic substitution was known (de Santis, de Luca and Barnabeo, 1989). Both the seventeenth and eighteenth century were characterized by little progress in the specialty. This could be explained by ignorance and the absence of anaesthesia.

The **nineteenth century** brought new impulses for the development of reconstructive and aesthetic surgery. The first memorable fact was the introduction of the term "Plastic Surgery" by Zeiss in 1838. In a textbook, "Handbuch der Plastische Chirurgie", he described the reconstructive procedures of that time (for details please refer to §2.3).

Cleft surgery, which is also a method to reconstruct facial defects, was the area of expertise of many surgeons (Roux, Veau, Von Langenbeck, Passavant and Billroth). Though these men were general surgeons, they performed plastic surgical procedures. Nose reconstruction was further developed by Von Graefe, Bunker and Blasius (Vaubel, 1991) and by Carpué (Bennett, 1983). The importance of good wound-healing (necessary for closure of defects) for success in surgery was again emphasized by Dieffenbach, who also promoted research in new suturing techniques (instrumentation).

In hand surgery, Volkmann and Sudeck described serious disorders of the hand and Hansmann developed osteosynthesis for the fixation of compound fractures. Von Eschmarch designed a method for exsanguination of the hand, which is still indispensable in modern hand surgery. Schleich introduced a method for local anaesthesia. Reconstructive surgery of the thumb was first carried out in France by Huguier in 1852, later followed by Guermonez in 1885 and the Austrian Nicoladoni in 1897, who used structures from other parts of the body to reconstruct the thumb. In 1831, Baron Guillaume Dupuytren described to his students the results of surgical treatment of "Permanent Retraction of the Fingers", a condition later known as Dupuytren's contracture.

Joseph became one of the pioneers of aesthetic surgery (reduction mammoplasty and especially rhinoplasty) and Lexer started face-lifting, besides reduction mammoplasty (Vaubel, 1991).

All these operations were in fact plastic surgical operations and they were characterized by the fact that they were not organ-related. This is in accordance with the view that plastic surgery extends from head to feet (Kubacek, 1967). The operations were performed independent of general anaesthesia, but needed fine handling of the tissues and special

instrumentation (e.g., present day rhinoplasty forceps are still named after Joseph and the principles of palate closure of Von Langenbeck are still popular). Nevertheless the development of general and regional anaesthesia in the 19th century (Morton, Snow and McEwan) was important for the development of surgery, including reconstructive and aesthetic surgery, since it made lengthy procedures possible.

Important for the development of plastic surgery was also the possibility of transplanting tissues. This started with the use of skin grafts. The first non-clinical attempt was performed by Boronio, who did animal experiments in 1804. He preceded Bunger, who performed the first clinically verified free skin autograft in 1823. Reverdin (1869) was successful with epidermic grafts (pinch grafts). Ollier (1872) described in Lyon the transplantation of large sheets of epidermis. Wolfe (1872) introduced the first full thickness grafts. In 1886, Thiersch reported the use of large sheets of split thickness grafts (Rogers, 1959). The problem of graft rejection was later studied in the 20th century, with the development of immunology.

The **twentieth century** formed the start of modern plastic surgery. Again war brought new impulses for the specialty. The beginning of the century was dominated by the First World War, which prompted a further development of reconstructive surgery. One was faced with serious maxillofacial injuries (defects) and burns with severe loss of skin and metabolic disorders. There was a need for adequate treatment both on the Allied side and the German-Austrian side. Morestin in France was already experienced in the treatment of maxillofacial injuries and was the head of one of the special treatment centres of the French Army (Converse, 1967). Gillies, originally a British ENT surgeon, visited Morestin. He was determined to carry out the procedures he had witnessed during his visit. Back in the United Kingdom he co-operated with dental surgeons for the treatment of these injuries (Davis, 1946). He organized plastic surgery in the United Kingdom by establishing special treatment centres and was joined by McIndoe, Kilner and Mowlem. This included also the treatment of burns.

Esser, a Dutch surgeon, also paid Morestin a visit as he was influenced by Manchot, a French anatomist. Esser's contributions to modern plastic surgery are his skin graft inlay for creating a buccal sulcus and his description of arterial flaps of the face, the so-called biological flaps (Haeseker, 1983). Morestin and Sebileau in Paris convinced him of the need for thorough knowledge of the anatomy and cadaver studies before operating.

So the three pioneers of modern plastic surgery were Morestin, Gillies and Esser. Gillies wrote a book on the principles of plastic surgery (Gillies and Millard, 1957). At the start of the Second World War, plastic surgical treatment centres were set up in the United Kingdom. In the USA, Staige Davis published the first book on plastic surgery in the English language. The serious war injuries included severe burns with skin loss. Though throughout history many famous men, including Amboise Paré and Dupuytren, had described the different types of burns and had related the treatment to the severity of the burns, it was not until the twenties that burn problems were categorized (Artz, 1970). The problem of skin loss necessitated research on transplantation of skin and skin grafting. Special instruments were developed to speed up grafting procedures such as the so-called Humby knife (Wallace, 1988) and the Padgett-Hood dermatome. Since in burn injuries there is often a lack of the patient's own skin for grafting, the use of allografts was considered an option.

Co-operation with basic scientists experienced in immunology was, however, necessary to study this option (Shuster and Hoffman, 1994). The problems with burn treatment were

manifold and the need for co-operation with basic sciences such as biology and immunology proved to be indispensable. This research concerning a solution for allografts as a permanent coverage of skin defects still continues today.

The severe maxillofacial injuries made co-operation with oral and dental surgeons necessary. In World War II techniques for maxillofacial reconstruction were developed by Gillies, though credit must also be given to Lefort, a French surgeon, who performed research on fractured skulls (Waterhouse, 1993). After the Second World War, the development of craniofacial surgery was especially stimulated by the Frenchman Tessier.

Gillies and Esser laid down the principles of plastic surgery, e.g., the fine handling of tissues. Numerous plastic surgeons from other parts of Europe and the USA came to see Gillies and were influenced by him and his principles. They also encouraged others to perform research and one branch that changed the horizon of reconstructive possibilities was the development of microvascular surgery (O'Brien, 1992). Knowledge of the vascular anatomy of skin, muscles and bones, which formed the basis of the development of myocutaneous and fasciocutaneous flaps, was also essential for microvascular tissue transfer. Microsurgical techniques have now been introduced in other parts of surgery such as head and neck surgery in reconstruction of defects following tumour removal, in gynaecology and urology to reverse the effects of sterilization and in traumatology. So they represent special techniques developed in plastic surgery, which are useful to other branches of surgery.

Microsurgical research involved experimental and clinical work. It can be divided into three phases. In the first phase (the sixties), microsurgical instruments and microscopes were developed. Following experiments on animals in the laboratory, clinical application followed first with digital replantations and later replantation of limbs. In the seventies and eighties composite tissue transfers became popular, e.g., for head and neck surgery the use of the free radial forearm flap including bone for reconstruction of the mandibula. Free tissue transfer made reconstruction possible of severe limb injuries, where formerly amputation was unavoidable. Breast reconstruction using free tissue reconstruction is now available in special centres. Microsurgery has become an essential branch of plastic surgery. It has reached a high grade of sophistication though there are new challenges (e.g., pharmacological control of ischemic flaps). Still, there seems to be no end to the developments, including, for instance, laser-assisted suturing of micro-anastomoses and the use of the computer in teaching microsurgical skills.

An area that also benefited from the development of microsurgical techniques was hand surgery. Replantation of amputated fingers has now become common practice in plastic surgical teaching hospitals. Hand surgery has become very sophisticated with the development of new suture materials and bone devices. Instrumental in the progress of hand surgery was the impact of the national societies for hand surgery. The national societies organize scientific meetings. Part of these meetings is reserved for fundamental research, e.g., to discover factors which could be favourable for tendon healing without adhesions. Despite the modern techniques there are still conditions in hand surgery which are difficult to treat, e.g., reflex sympathetic dystrophy, which requires a multidisciplinary approach. Basic sciences such as immunology, genetics, physiology, pathology and anatomy can be helpful to solve some of these problems.

Yet another development that had an impact on reconstructive surgery was tissue expansion, which was considered to be a new concept (McGregor, 1990). Critics might argue that tissue expansion is not new, since it occurs every time in pregnant women. The

first clinical use of tissue expansion was the reconstruction of an auricle in the fifties (Neumann, 1957). In the eighties, however, the possibilities of the concept of gaining tissues was further studied especially regarding the possibilities in reconstructive surgery (Argenta, 1984). It is now a well recognized method, e.g., in breast reconstruction and even as adjunctive technique in free tissue transfer.

As far as aesthetic surgery is concerned there was a period of growth between the First and the Second World War. Joseph, who is considered by many as the father of modern aesthetic surgery, developed techniques for rhinoplasty and reduction mammoplasty. He organized courses attended by foreign plastic surgeons, including the German Aufrecht (Wallace, 1984). While Miller of Chicago published an article on the excision of bag-like folds (1906), the first removal of periorbital fat was described by the Frenchman Bourguet in 1924 (Adamson and Moran, 1993). Another French pioneer in aesthetic surgery, Madame Noel, published an extensive book two years later on aesthetic procedures which included pre- and postoperative photographs. She also discussed the important role of aesthetic surgery to society: physical appearance is important for the personality, enabling the patient to gain moral strength and confidence in life (Regnault and Stephenson, 1971). Later on, these ideas were developed further by the Italian Bardelli and the Dutch plastic surgeons Van der Meulen and Kon (see paragraph 3.2).

Technical developments in aesthetic surgery until recent times were manifold:

- In the early sixties medical grade silicone was introduced, which led to a discussion on possible health hazards of these implants in 1992 and to a ban by the American Food and Drug Administration of silicone breast implants for aesthetic purpose. This led to much anxiety for women all over the world and claims. It also caused a heavy debate between the branch of plastic surgery and health authorities. In some European countries the use of silicone breast implants has been stopped. New filling materials have been introduced (saline, triglycerides, and a mixture of saline and cellulose), but all still have their drawbacks. Recently the use of triglycerides has been stopped.
- In the seventies, eighties and nineties new techniques of breast reductions were introduced, leaving short scars (Regnault, 1974; Meyer and Kesselring, 1975; Lassus, 1981; Marchac, 1983; Lejour et al, 1990).
- Since in 1976 the French Mitz and Peyroni -- though some give credit to Tessier -- introduced the term superficial musculo-aponeurotic system (SMAS) as a means to produce more long lasting results of face-lifting, different methods were introduced, such as sub SMAS lifting, supra and subperiosteal face-lifting, each claiming superior results, though every technique has its disadvantages (complications; learning curve; results are surgeon-dependent).
- Body contouring using liposuction was first introduced by Fischer in Rome (1977) and later improved by the French Illouz (1989) and Fournier (1989). The size of canulas changed, the tumescent technique and superficial liposculpture was introduced by Gasparotti and Toledo, who claimed superior results, less age and skin dependent, and so was the possibility of large volume liposuction. At the same time lipofilling was introduced. The latest development was the introduction of ultrasound liposuction, which would give better skin contraction.
- In the nineties endoscopic techniques, already in use in gynaecology and general surgery, were introduced in aesthetic surgery to obtain good results using minimal incisions, e.g., to replace the traditional forehead lift.
- In the sixties the use of lasers for the treatment of dermatologic conditions was started. In the eighties new lasers were developed using the concept of selective

photothermolysis. In the nineties, skin resurfacing in treating ageing of the skin by the use of CO₂ or an Erbium laser gradually replaced conventional dermabrasion. Laser surgery has furthermore been used for treatment of eyelid surgery.

All these technical developments require additional training. Since in most plastic surgery centres, a larger part of the training is reserved for reconstructive surgery, the aesthetic part might be neglected (Nicolle, 1983). The field has become so extensive that during the formal plastic surgery training there will be too little time to cover these aspects.

Both in reconstructive and aesthetic (social) surgery the "old" principles of gentle handling of tissues, the avoidance of skin tension and the use of fine suture material remain valid even when new techniques are applied.

Summary

Plastic surgical procedures are very old and date back to Egyptian and Roman times. Interestingly enough, plastic surgery started indeed as surgery of defects (nose reconstruction). Certain sound principles of wound-healing, which form the basis of the specialty, were first adapted by Amboise Paré, but later incorporated in the principles of plastic surgery, described by Gillies and Esser. They stressed the need for fine handling of tissues with suitable instrumentation, the need for extensive knowledge of the anatomy including the vascular anatomy and cadaver dissections before starting new operative procedures. These principles both apply to reconstructive surgery and aesthetic surgery, even in this era of technological developments.

During the wars the need for large amounts of skin made the study of allografts including knowledge of immunology necessary. The search for better reconstructive methods, finer instrumentation (the microscope) and the knowledge of vascular anatomy led to the development of microvascular surgery. Nowadays, microsurgery is a well recognized technique also used by other specialties.

The new concept of tissue expansion proved to be a valuable tool in reconstruction. It is an example of the innovative character of the specialty. Techniques used in other branches of medicine, such as endoscopy and laser technology, were used to refine possibilities of aesthetic and reconstructive surgery. Aesthetic adjuvant techniques such as liposuction became sophisticated. Finally, though plastic surgery has become a technically demanding specialty with expanding possibilities, one should not lose contact with the sound principles of the specialty which needs a flexible and open mind and the basic sciences (e.g., anatomy, physiology, pathology, immunology, genetics) which provide a source for new discoveries and innovations. The developments in reconstructive surgery and aesthetic surgery urge the need for training, to integrate these changes. Otherwise other specialists could take over these areas definitively. More detailed information regarding the training will be given in Chapter 5.

2.3 The history of plastic surgery in the European Union

It should be emphasized that this review is by no means complete since relevant data were often unobtainable. Therefore, it is impossible to provide extensive information from all countries, especially when one tries to maintain the same classification as in the general history. When the historical development in one country follows the general pattern described in §2.2 it will not be mentioned in order to prevent unnecessary repetitions. History, however, cannot be separated from the further development of the specialty, especially after the Second World War. Countries which were traditionally more orientated towards the reconstructive part of the specialty will remain so, while countries with a

tradition of aesthetic surgery will be more inclined towards the aesthetic part of the specialty.

Contrary to the United States, where established plastic surgery units were present since 1937, plastic surgery training units in Europe, apart from some units in the United Kingdom and Italy, started after the Second World War. From the beginning of the formal training in plastic surgery, however, there were differences in duration, contents and organization. These aspects will be discussed in more detail in Chapter 5.

Apart from the differences in training standards and organization there were linguistic differences. The Belgian Coelst realized that the scattered publications of the pioneers in reconstructive and aesthetic surgery, which appeared in many languages, could be lost if not gathered in a scientific journal. So, in 1931 he established the first international journal of plastic surgery: "Revue de Chirurgie Plastique", fifteen years before the USA journal "Plastic and Reconstructive Surgery" and sixteen years before the "British Journal of Plastic Surgery". Since at the time there were surgeons with low ethical standards who misused the term "plastic", the Dutchman Esser suggested that Coelst change the name of the journal to "Revue de chirurgie structurée", in order to dissociate the true reconstructive surgeons from those surgeons with low ethical standards.

On the other hand, the differences in training standards and organization in the different EU countries led to the formation of UEMS (the European organization of Medical Specialists) in the early fifties. The Netherlands and the United Kingdom played a decisive role in convincing UEMS to accept plastic surgery as an independent speciality with a monospecialist section, seven years after establishing the first monospecialist sections in 1962. The European Unification with the possibility of migration of medical specialists and trainees from different countries and the lack of progress of the Advisory Committee on Medical Training within the UEMS led to the formation of the so-called Specialty Boards in the eighties and nineties. For plastic surgery, it meant the formation of EBOPRAS (the European Board of Plastic, Reconstructive and Aesthetic Surgery). More details can be found in Chapters 5 and 7.

All member countries of the EU are members of EBOPRAS. The post-war (Second World War) organization of plastic surgery in the various countries of the EU was difficult, but the national training authorities were assisted by the national societies for plastic surgery. Though their influence in the different EU countries might vary, they have in common that they are instrumental in the organization of the training. They can assist the training authorities and the chiefs of training in designing training programs and organizing scientific meetings, where new ideas can be presented and where trainees get the opportunity to present scientific papers and the results of research.

The European Unification in the 20th century and the introduction of European organizations dealing with the training of medical specialists and the proposals for training standards influenced the development of plastic surgery. Free traffic made it not only possible to follow fellowships abroad but also to visit international meetings across Europe. Nowadays, major international meetings are held in almost all European countries. In most countries of the EU, plastic surgery started in the 19th century and modern plastic surgery in the 20th century. Before that period, generally no data were available to my knowledge.

The following review represents the data collected from the various EU countries.

Belgium

Though the Flemish surgeon Jehan Yperman (1295-1351) made a full documented

description of a surgical repair of harelips, this was just an isolated historical finding. The history of modern plastic surgery in Belgium started when Maurice Coelst, a fully trained ENT surgeon who qualified in 1922, became aware of the shortcomings of his specialty and went to Joseph in Berlin where he specialized both in rhinoplasties, and in general reconstructive procedures (Vrebos, 1980). In 1955, he founded the Belgian Society of Plastic Surgery. Plastic surgery in Belgium has been recognized as an autonomous specialty since September 22, 1955. Today all aspects of plastic surgery are performed and new techniques are developed. There are ties with France and The Netherlands. These ties result in easier migration of trainees and plastic surgeons between these countries.

Summary

The main development of the specialty occurred in the 20th century. Ties with other EU countries have become important.

Denmark

Plastic surgery in Denmark followed the developments in Europe (in the beginning of the 19th century) such as the transplantation of tissue by Dieffenbach (Germany) and was also influenced by the work of Carpie in London (1811) and Zeiss in Germany (1830). The first reconstruction of the outer nose was performed in Copenhagen in 1843.

Today, almost all aspects of plastic surgery are performed. Cleft surgery is concentrated in Copenhagen. One of the Danish pioneers of cleft surgery was Fogh-Andersen. Cleft surgery is mainly concentrated in a multidisciplinary centre in Copenhagen. Not many countries have centralized multidisciplinary care in such a manner.

Summary

Reconstructive surgery played a more prominent role in the history of plastic surgery in Denmark than aesthetic surgery. There is centralization of multidisciplinary care.

France

In France, the surgeon Jacques-Matthieu Delpech (1772-1832) performed the first rhinoplasties in 1823 using the Indian method. Blandin (1789-1849) wrote a book on reconstructive surgery that was translated into German, signifying the French influence in those early days. Blandin also realized that flap survival was due to arterial blood supply.

As far as reconstructive surgery of the hand is concerned, see §2.2 (General history of plastic surgery).

The father of reconstructive surgery in France was Morestin (1915). It was his work which stimulated Gillies to visit him and start reconstructive surgery in the United Kingdom. Morestin successors in France were the famous reconstructive surgeons Dufourmentel, Ollier and Morel-Fatio. Veau and Roux were mentioned in §2.2. This tradition of great reconstructive surgeons has been continued up to the present day by Paul Tessier – the pioneer of craniofacial surgery. Pioneering work in microsurgery in France was performed by Becker, Baudet, Foucher and Gilbert. The latter two are orthopaedic surgeons, indicating that specialized areas cannot be confined to one single specialty.

One of the pioneers of aesthetic surgery was Madame Noel (1878-1954), who was the first person to publish a work on plastic surgery with pre-operative and postoperative photographs (Glicenstein, 1988). Other pioneers were Bourguet, who described the

first removal of periorbital fat in 1924 and also described the first minilift, and Passot, who performed the first procedure for rejuvenation of the upper face and recommended a procedure against crow's feet (Adamson and Moran, 1993).

Summary

In its history, France produced famous reconstructive surgeons and aesthetic surgeons. Its pioneers in reconstructive surgery influenced surgeons from other European countries.

Germany

In 1816, more than 200 years after Tagliacozzi (*Curtorum Chirurgia per insitionem*), renowned surgeons such as Von Graefe, began their operative work. Since there were no reliable anaesthetics or aseptics, there were no successful intra-abdominal procedures. One could only operate on the surface of the body (Schmidt-Tintemann, 1994). The first description of plastic surgery was written by Zeiss in 1838 in his "Handbuch der Plastischen Chirurgie" and read as follows: "The operative surgery can replace damaged noses, lips, cheeks, eyelids and several other parts by transplantation and healing of skin parts to the site of the defects in such a manner that the repulsive aspect can be improved and the functions of these damaged parts can be more or less represented by the newly formed parts." He explained the term "plastic" as "forming, moulding". In 1842, Dieffenbach used the term "Wiederherstellung" ("Reconstruction").

Plastic surgical methods were developed in the first two thirds of the 19th century by Von Graefe, Dieffenbach, Rust, Von Walther and Szymanovski. They published their experiences, along with drawings and patient histories, with inconceivable precision, and discussed their incisions. Meanwhile, there was a tremendous development in general surgery caused by the discovery of anaesthetics and aseptics which made time-consuming operations of the internal organs possible.

During the early 20th century, the development of general surgery was so spectacular that plastic surgery receded into the background.

During World War I, Lexer coined the term "Wiederherstellungschirurgie" (Reconstructive surgery). This also included the correction of congenital anomalies and surgery of tissue defects, malformations and motility disturbances. The term "Plastische Chirurgie", introduced by Zeiss in 1838, was superseded. The term "reconstructive surgery" created confusion because many surgical procedures can be described as reconstructive without being connected with plastic surgery. Thus orthopaedics, ENT and maxillofacial surgery introduced their own reconstructive procedures. During World War II, the war injuries made it necessary for general surgeons, orthopaedic surgeons and maxillofacial surgeons to treat soft tissue injuries of the face and limbs.

There was no development of independent treatment centres for plastic surgery like there was in the United Kingdom during World War II. Edgerton, on the other hand, talked about the function of appearance (Schmidt-Tintemann, 1994). Plastic surgeons in East Grinstead corrected the scars of war injuries and used new techniques and instruments to remove the visible effects of war. In Germany these same scars were considered to be "Narben des Stolzes" (scars of pride).

Due to the lack of training centres in Germany in the early fifties, today's leading plastic surgeons were all trained abroad in the United Kingdom or the USA (Schmidt-Tintemann, 1994), where plastic surgery was already established. In 1962, Lexer's school was continued in the formation of the "Deutsche Gesellschaft für Plastische und

Wiederherstellungs-chirurgie" as a section of the German Society of Surgery. The goal of this society was to bring together all the specialties dealing with plastic or reconstructive surgery (for example, ophthalmology, paediatric surgery, orthopaedic surgery, maxillofacial surgery, urology and gynaecology). General surgery in Germany, however, refused to see the importance of the fact that training and the quality of treatment in a surgical specialty can only be obtained when the representatives of this specialty can concentrate on their chosen subject: i.e. plastic surgery. Young colleagues who wanted training in plastic surgery went abroad but, as late as in 1971, German representatives for plastic surgery in Melbourne at a plastic surgical meeting, were maxillofacial (e.g. Schuchardt) or orthopaedic surgeons.

In order to protect the patients and their profession, a small group of plastic surgeons (Buck Gramcko, Muller, Zellner and Schmidt-Tintemann) formed the "Vereinigung der Deutschen Plastischen Chirurgen". This society was recognized in 1975 by the International Confederation for Plastic and Reconstructive Surgery as the official representative of plastic surgery of Germany. From this time on, modern plastic surgery could develop in Germany with all the new techniques, instruments and experience: the microscope, special instruments, stitching materials, expanders, lasers, experimental surgery, research and treatment of burns.

Apart from the technical aspect of the specialty, one should pay attention to the psychological aspect of the specialty (Schmidt-Tintemann, 1994). This means that complaints regarding, for example, appearance could have a deeper (psychological) background. The developments mentioned above and, especially, the treatment of burns in special centres, breast reconstruction, myocutaneous flaps, microsurgery and replantation and developments in aesthetic surgery have broadened the horizons of German plastic surgeons and have prepared them for a free market.

In May 1992, the situation changed drastically when it was decided in the Bundesärztekammer that plastic surgery is an independent specialty.

Summary

The situation in Germany is quite different from that in other EU countries. Until 1992, plastic surgery was part of general surgery. Therefore, reconstructive surgery was the main pillar in Germany. Aesthetic surgery started only in the 20th century. The existence of different provinces (Bundesländer) makes it difficult to implement national rules or European recommendations on training.

Greece

Plastic surgery was recognized as a subspecialty of general surgery in 1955. Between 1955 and 1984 it was practised by general surgeons and one had to finish the complete training in general surgery followed by 2 years in a plastic surgery training centre. Since 1984, plastic surgery has been a main specialty. There is little information regarding the development of the specialty. Many Greek trainees spent part of their training abroad, for example, in the United Kingdom or in the United States. Many trainees followed this example and went to the United Kingdom. Since plastic surgery was part of general surgery until 1984, the main pillar has been reconstructive surgery, though more emphasis is now placed also on aesthetic surgery. Greece has become a member of EBOPRAS and has been active in hosting meetings of international societies of hand, aesthetic and microsurgery.

Summary

The development of the specialty in Greece resembles that in Germany. It has resulted in more emphasis on reconstructive surgery.

Ireland

Obtaining data from Ireland was difficult, although there is a report on the development of plastic surgery in Dublin (Prendiville, 1988).

According to Celtic tradition, hospitalization in Ireland was first recorded in the Book of Invasions (1631). In 1710, Dr. R. Steevens introduced the voluntary hospital system and by 1800 cleft lips were repaired by Abraham Colles, using silver pins and screws.

In the middle of the 19th century, a large number of Indian rhinoplasties was performed.

Modern plastic surgery followed in the footsteps of Gillies, McIndoe and Mowlem. At present, the system and the scope of plastic surgery are comparable with that of Britain. This means that the emphasis has been on reconstructive surgery. Aesthetic surgery is performed in private hospitals.

Summary

The development of plastic surgery in Ireland followed in the footsteps of the development in the United Kingdom. There is a reciprocal recognition of exams. All Irish plastic surgeons and their trainees are members of BAPS.

Italy

The roots of plastic surgery in Italy date back to the work of the Sicilian Branca family in the 15th century (Mazzola, 1992 and Micali, 1993). They introduced the old Indian techniques of treating amputated noses from adulterous men to the Western world. The father of Italian plastic surgery was Gaspare Tagliacozzi (1545-1599), who wrote his book "De curtorum Chirurgia per insitionem" in 1597. See also §2.2, General history.

Signorini (1883) studied the work that the Englishman, Carpué, (1764-1846) did on the reconstruction of noses. Baronio performed the first non-clinical skin grafts in animals in 1804.

Modern plastic surgery in Italy started after the First World War, when there was a need to treat the mutilated. Like Gillies in the United Kingdom, the first Italian plastic surgeon, Sanvenero Rosselli (1897-1974) was by training an ENT surgeon. His work consisted of war traumatology, burns, congenital malformations, facial tumours and the closure of pharyngostomies. He was the first person to define plastic surgery: "Plastic surgery is that kind of surgery that, in its own way, is occupied in the restoration of the compromised or lost form and function" (Robutti, 1983).

Other eminent surgeons as well as Sanvenero Roselli, can be named who contributed to the development of plastic surgery in Italy (Micali, 1993): P. Sabattini, (1810-1864) pioneered the use of multiple tissue transfers by introducing a composite flap for upper lip reconstruction. This method was later reintroduced by Abbe (1898) and by Esser (1919). I. Tansini (1855-1943) designed the earliest version of the so-called latissimus dorsi musculocutaneous flap for breast reconstruction. Today, this is one of the most versatile flaps in plastic surgery and it is also used in free tissue transfer. Sterzi (1910) published a work on the subcutaneous anatomy, specifically of the superficial fascia, and Pieri, another anatomist, studied the vasculature of the skin and deeper tissues (Micali, 1993). This detailed information is provided as a reminder that today's

achievements are the results of those early pioneers. It emphasizes the importance of anatomy for good clinical practice.

Around 1931, when Coelst founded the journal "La Revue de Chirurgie Plastique" in Belgium, the following journals appeared in Italy: *Archivium Chirurgiae Oris* (1930), *La chirurgia plastica* (1935) and *Plastica Chirurgica* (1939). Following the founding of the American Association of Oral and Plastic Surgeons in 1921, Manna started the Italian counterpart in 1938 (Fittipaldi, 1981) and in 1936 Sanvenero Rosselli was one of the founding members of the European Society of Reconstructive Surgery.

Aesthetic surgery

Aesthetic surgery developed soon after the Second World War and this resulted in less interest in reconstructive surgery. Other specialists and doctors also perform aesthetic plastic surgical operations. As far as the relationship with other specialties is concerned, the following remarks can be made: Although plastic surgery and ENT surgery are two separate specialties in Italy, there are common interests. Collaboration is possible in nasal surgery, cleft and palate surgery, oral surgery, head and neck surgery and facial paralysis (Mazzola, 1992).

Summary

Italy played an important role in the development of plastic surgery in the European Union. Italian surgeons influenced surgeons in other EU countries.

The Netherlands

It is a little-known fact that in the 13th century, the first surgeon to treat harelips in Flanders was Jehan Yperman. The history and development of plastic surgery in The Netherlands is linked to the developments in the rest of Europe. Dutch doctors were eager to learn about new techniques and Vorstius (1566-1624) visited Tagliacozzi (1545-1599), famous for his book *De Curtorum Chirurgia per Insitionem*. Baten (1653) translated a book about burns by the German Hildanus (1560-1634).

Schröder (1833) was especially interested in nasal reconstruction and combined the findings of the Branca and Tagliacozzi families from Italy and the Englishman Carpué.

Although Thiersch, Reverdin, Ollier and Krause started the primary work abroad on the development of skin transplantation, the Dutchman Lanz made an important contribution in 1907 with the mesh graft. The surgical school of Vienna had a great influence on the development of general and reconstructive surgery. It was, therefore, no coincidence that the pioneer of plastic surgery in The Netherlands, Esser, had spent time in Vienna after his surgical training in Utrecht and, more importantly, Rotterdam. Esser's significance in the development of plastic and reconstructive surgery was briefly mentioned above and has even been the subject of a thesis (Haeseker, 1983). The introduction of a biological flap with an identifiable vascular pedicle – an example is the rotation flap of the cheek – is one of Esser's main contributions to plastic surgery. Esser, who was particularly trained in dentistry, designed the skin-graft inlay technique to reconstruct the buccal sulcus. His obscurity in his own country was most likely caused by his difficult personality and also by the fact that he did not publish in Dutch (Haeseker, 1983). Esser also recognized the importance of good co-operation with ophthalmologists, dental surgeons and general surgeons. Nowadays, these fields are considered to be a separate branch of surgery and this co-operation has been coined "collaborative surgery" (British Association of Plastic Surgeons, 1994) (see later under United Kingdom).

There was no organized plastic and reconstructive surgery as an independent subspecialty until the end of World War II (Winters, 1975). It is remarkable that even just after World War II, there were aesthetic surgeons working in mansions using local anaesthetics. In 1948, advertisements by doctors claiming that they could perform aesthetic plastic surgery, appeared in the *Nederlands Tijdschrift van Geneeskunde*. What we now see, is the emergence of private medicine in clinics (i.e. plastic surgery, ophthalmology, orthopaedic surgery, ENT and dermatology/phlebology). Plastic surgery began as an independent specialty when Koch returned from his training in the United Kingdom in 1945. Koch was not the only plastic surgeon who had trained abroad. Other eminent Dutch plastic surgeons (for example Raadsveld and Honig) followed his example, later becoming prominent teachers.

In 1962, when the UEMS decided to found twenty single specialty sections, they excluded plastic surgery. Both Hage from The Netherlands and Sandon from the United Kingdom played a decisive role in establishing the monospecialist committee of plastic surgery. The difficult starting period of plastic surgery as an independent specialty can be illustrated by the fact that three meetings were necessary before a study group with representatives from Italy, Belgium, The Netherlands, France and Germany made a final decision. The first meeting was in 1967 in Rotterdam. The situation at that time regarding recognition of plastic surgery and the duration of its training in the countries of the study group was assessed and laid down in a report (Van der Meulen, 1968). In 1968 the second meeting took place in Brussels. An agreement was reached the principle of a basic surgical training, common to all surgical specialties. In 1969 the third meeting took place in Brighton. Despite strong German opposition led by the maxillofacial surgeon Schuchardt (who expressed his anger by calling the decision "eine Schweinerei"), the orthopaedic surgeon Mittelmeier and the ENT surgeon Wullstein, who represented Germany in a study group on plastic surgery, the study group – under the initiative of Hage – published a report, which was accepted by the Council of the UEMS. So a monospecialist section of plastic surgery was finally founded on April 18, 1969 (Winters, 1975). Plastic surgery in the Netherlands followed the international developments in aesthetic surgery and reconstructive surgery. As mentioned earlier in this paragraph, the national societies of plastic and reconstructive surgery were important in the organization of the training in plastic surgery. Special interest in the aesthetic aspect of the specialty led to the foundation of the Dutch Society of Aesthetic Surgery.

Summary

Plastic surgery has a long history in The Netherlands. Its development was influenced by famous surgeons from Italy and the United Kingdom. During the World Wars and thereafter, reconstructive surgery formed the basis of the specialty. In the last decades aesthetic surgery has become more important.

Portugal

After the Second World War, plastic surgery started in Portugal. Although there is manifest progress and there are innovations in many areas – flap surgery, advances in remodelling the face and body (lipoaspiration) – presently, Portugal suffers from a lack of coherent planning in the organization and establishment of the specialty (Boleo-Tome, 1989).

Summary

Plastic surgery developed after the Second World War. There are still problems in the organization and planning of the specialty.

Spain

The Civil War (1936-1939) in Spain played the same role as the World Wars elsewhere; it was the driving force for the development of plastic surgery. Before that time, plastic surgery had been in the hands of general surgeons who used the basic techniques of plastic surgery in the treatment of their patients. In 1919 Cortes Llado, professor of surgical pathology of Sevilla, was attracted to the French school, where the First World War wounded were treated, because he was eager to obtain more knowledge about this branch of surgery. He visited Morestin and Sebileau and wrote a simple book; *Cirurgia Plastica-Facial* in which he stated that all plastic surgery is based on the possibility of moving or transplanting – under certain conditions – body tissues from one part of the body to another without damaging the tissues. Later he said that the primary goal of plastic surgery is the conservation of form, the morphological perfection of which, in the majority of the cases, can be combined with a physiological goal: the preservation or the repair of function.

Aesthetic surgery

Spain has been active in developing and adapting aesthetic surgical techniques. It hosts international meetings for aesthetic surgery.

United Kingdom

In the United Kingdom the Indian method of nose reconstruction was introduced by reconstructing the nose of an army officer with a forehead flap (Carpue 1764-1846).

The importance of Gillies, Kilner and McIndoe for the development of plastic surgery was already mentioned in §2.2.

In 1946, the British Association of Plastic Surgeons was founded with Gillies as its first president. From the beginning, the Association was involved in the careful planning of the units. Even in those early days, organization and adapting supply and demand played a role. The war-time units had to be equipped to deal with day-to-day problems, such as the treatment of congenital deformities (i.e. cleft surgery). Waiting lists were already present in 1946!

Teaching of staff and surgeons who would be able to perform skin grafts (e.g. in the treatment of burns during war-time) has always been a priority. Due to its commitment in training of overseas postgraduates and postgraduates from the EU, and its teaching system, the United Kingdom has become one of the frontrunners in plastic surgery.

The importance of plastic surgery for the medical profession was recently emphasized (McGrouther, 1993) in an article which stated that plastic surgery, by offering general knowledge on wound-healing and scarring, could provide the basic skills every doctor must acquire. Even now doctors from both overseas and the Common Market choose to train in the United Kingdom.

Aesthetic surgery

This part of the specialty has long been neglected in the United Kingdom. In recent years the situation has changed. The British Association of Aesthetic Plastic Surgeons was established, which organizes workshops and meetings.

Summary

The development of plastic surgery in the United Kingdom has been very important for the development of plastic surgery in other EU countries. Many trainers in plastic surgery in the other EU countries have spent time in the United Kingdom. Many trainees from other EU countries also spend time in the United Kingdom.

2.3.1 General summary and comments concerning the historical development of plastic surgery in the different EU countries

There is little information regarding the period before and during the 19th century. The development of reconstructive surgery of the face was stimulated by the work on nose surgery by Indian surgeons. This was later picked up in Italy, France, Ireland, the United Kingdom and The Netherlands. This proves the fact that certain reconstructive principles can be used and adopted anywhere. Reconstructive surgery was well developed in countries with a firm surgical stronghold such as Germany, France and the United Kingdom, often stimulated by war-time experience.

The development of aesthetic surgery, which started in the 19th century (Germany and France), was held back by the need for reconstructive surgery during war-time. However, in Germany the first surgeons who started aesthetic surgery were at the same time well-known reconstructive surgeons. It proves that the principles of wound-healing and treatment in reconstructive surgery can also be adopted in aesthetic surgery.

The specialty and its two pillars (reconstructive and aesthetic surgery) developed further after the Second World War and posed new challenges in training (see also Chapter 5). In some countries it was difficult for the specialty to become independent from general surgery (Germany and Greece). Especially in these countries other specialties were more likely to cross the boundaries of their specialty by performing plastic surgical operations. This trend, however, can be noticed in practically every country of the EU, especially in those countries where the training in certain aspects (for example, aesthetic surgery) was deficient. In countries with little or no historical background the development of plastic surgery started after the Second World War.

2.4 The definitions of plastic surgery in the European Union, and the definition of plastic surgery as used by the Union of Medical Specialists (UEMS)

The importance of a good definition of a specialty was emphasized in Chapter 1. The difficulty in finding a proper definition for plastic surgery is reflected in the fact that, although the Union of Medical Specialists (UEMS) has existed since 1958, it was not until 1989 that the members agreed on a definition:

“Plastic and Reconstructive Surgery is the specialty concerned with the management of acute and non-acute conditions which may be congenital or acquired as a result of trauma, disease, degeneration or ageing in patients of both sexes. Its aim is the normalization of appearance and the restoration or improvement of function and well-being.”

This definition was the result of a questionnaire sent to all representatives of the monospecialist committees of plastic surgery of the UEMS.

Before discussing the merits of this definition, it is worth establishing why the decision process was so difficult. It is possible that political reasons play a role: finding a common denominator that would suit every representative of each individual member country of the EU. On the other hand, differences in definition might reflect differences in the way plastic surgery is practised in each country. This would make it necessary to study the content of plastic surgery in each EU country.

Considering a definition, three main aspects must be included:

- the objectives (for example, reconstruction);
- the material object (for example, parts of the body, the face, the trunk);

- the technological and technical instrumentation and procedures (necessary to achieve the objectives; for example, the operation technique).

These aspects can be used as criteria to judge the merits of a definition. In the definition of the UEMS, the three aspects are included but the definition is quite broad. In the objectives, the true nature of plastic surgery is neglected. One could forget that it is, after all, a surgical specialty. The material aspect in the UEMS definition is also very general: acute and non-acute conditions can also apply to general surgery or orthopaedic surgery. The technical side is completely neglected. The only advantage of the UEMS definition is that it is so vague, that plastic surgery can easily claim certain areas. The disadvantage is that it does not substantially help patients or other specialists to understand the essence and necessity of plastic surgery. Therefore, after a discussion of the separate definitions of plastic surgery in the various EC countries, a more specific definition will be proposed. In this short review of the EU countries (the original EC countries), the definitions will be compared with the definition of the UEMS. Furthermore, it will be examined which of the three main aspects of a definition are present.

Belgium

The representative of Belgium at the UEMS claimed that the definition of the UEMS, as stated before, is sufficiently vague in its definition of the limits and wide enough to include the whole field considered to be the domain of plastic surgery.

Denmark

A descriptive definition was presented by the representative of Denmark.

In Denmark, the plastic surgical field of activity is composed of diagnosis and treatment of congenital or acquired external deformities and defects due to infection, necrosis, atrophy, hypertrophy, trauma, benign or malignant tumours or previous treatment, as well as conditions caused by ageing. Corrective surgery is applied when the normalization of deformity, displacement or malfunctioning is required. Reconstructive surgery is applied when recreation/re-establishment of the missing structures or function is required.

In this definition the term "corrective surgery" is used; this would apply to aesthetic surgery. Thus both the reconstructive aspect and the aesthetic aspect can be found. The goal and the material object are represented, but the technical side is not.

France

The French representative of the UEMS agreed with its definition. However, he preferred to add "Aesthetic" to the term "Plastic and Reconstructive Surgery" since in France, "Plastic and Aesthetic Surgery are inseparable". Officially, plastic surgery is denominated in French as

"Chirurgie plastique, reconstructrice et esthétique": the field of surgery covering the treatment of acquired and congenital abnormalities - tissue defects due to traumatism, surgery or other treatments (radiotherapy), benign and malignant tumours involving the skin and subcutaneous tissues and aesthetic problems involving ageing. In all of these conditions, plastic surgery aims to obtain satisfactory restoration of functions, form and aspect.

Almost the same criticism applies in the discussion of the definition of the UEMS. Goal and material aspect are reasonable. In this definition the technological aspect is missing.

Germany

In Germany, the following definition is used:

“Plastic surgery comprises constructive, reconstructive and plastic surgical procedures and aesthetic operations which repair or improve the visible form or function of the body.”

In this definition, plastic surgical procedures are mentioned. The question of whether these are exclusively meant for plastic surgeons will be discussed later. The material aspect is also represented in this definition. However, the goal – the specific target – is missing. It is not clear, for example, which conditions are treated (e.g., malignant diseases).

Greece

The definition used in Greece indicates that there are recognizable problems in plastic surgery (overlapping with other specialties) in that country:

“Plastic surgery in Greece is recognized as the restorative surgery of the whole body’s visible form. The noxious cause could be congenital abnormality, injury or burns, malignancy or physiological ageing. There is a tendency for overlapping in several fields such as ENT, paediatric, ophthalmic, orthopaedic and maxillofacial surgery. This is done by individuals rather than whole units, because there is a limited number of fully developed plastic surgery units.”

Though in this definition the goal and material aspect are well represented, technical aspects are not mentioned.

Ireland

In Ireland there are close links with the United Kingdom. Therefore, the definition will be discussed under the UK heading.

Italy

In Italy, plastic surgery comprises reconstructive, restorative and aesthetic procedures of visible morphology and function. This definition is quite brief, but includes the aesthetic part of plastic surgery (this definition was supplied by the Italian representative at the UEMS). The material object and the technological aspect are missing.

The Netherlands

The Dutch representative stated the following:

“Plastic surgery deals with restorative, form-giving and form-improving surgery. The specialty cannot be defined in a few words. It concerns:

- a. Hand surgery: trauma (including burns, fractures, tendon and nerve lesions), contractures, rheumatoid arthritis, congenital deformities, etc.
- b. Surgery of the skin, mucosa and other tissue defects: traumatic (including burns); post-oncologic surgery when, sometimes, muscle and bone must also be transplanted.
- c. Surgery of congenital deformities, such as clefts, hypospadias and epispadias.
- d. Form-restoring surgery, such as the reconstruction of the breast, auricle, nose, eyelid, mouth; excision of malformations due to haemangiomas, lipomas, neurofibromas, etc.
- e. Form-improving surgery, e.g., breast reduction. Aesthetic aspects are inherent to all facets of plastic surgery; the less the deformity to be corrected is abnormal in the eyes of others, the more one speaks of aesthetic surgery.”

The Dutch definition, therefore, is very descriptive in nature and reveals, in fact, the scope of plastic surgery in The Netherlands. It is a summary of the contents of plastic surgery rather than a clear definition.

Another descriptive definition was given by Van der Meulen (1990):

“Plastic surgery consists of social surgery (“aesthetic”) surgery and reconstructive surgery. Reconstructive surgery is intended to close teratogenic, traumatogenic and pathogenic defects of bone, nerves, vessels and skin by transposition, transplantation or replantation of tissue.”

Portugal

In Portugal, the following definition is used:

“Plastic and Reconstructive Surgery is the specialty that deals with the conservation, study, prevention and treatment of congenital and acquired abnormalities, of lesions caused by trauma or disease and of alterations caused by physiological ageing concerning the skin and immediate supportive structures, the object of which is to achieve full restoration of form, function and appearance of parts involved.”

Again, in this definition the reconstructive and aesthetic components are mentioned. In this definition the technological aspect is missing.

Spain

The Spanish Society of Plastic Surgery used a definition which appears to be more practical than the one used by the UEMS:

“Plastic Surgery is a field of surgery that deals with the correction of every congenital, acquired, tumoral or involutive process which requires repair or repositioning of the skin cover, or which affects the shape or body function. Its techniques are based on transplantation and modelling of tissues (plasties) on the one hand and on resection and grafting of tissues on the other hand.”

The material object in this definition is too restricted, since it seems confined to skin cover. The Spanish representative at the UEMS added that plastic surgery is a surgical specialty that consists of two indivisible parts:

Reconstructive surgery, by definition, includes the surgical treatment of congenital anomalies and deformities, which alters or repairs the function and the shape of any visible organ or region of the body, including the injuries and tumours which affect these same regions.

Aesthetic surgery comprises the surgical treatment of deviations from normality in shape (within each ethnic group), either constitutional or acquired in origin, which, because they affect, alter or impair the harmony, beauty or youthfulness of an organ or a region of the body, have psychological implications.

In this context, it is worthwhile to note that the Spanish representative recognizes the fact that aesthetic surgery could have positive psychological implications and is an inseparable part of plastic surgery.

United Kingdom

The representative of the United Kingdom at the UEMS stated:

“Plastic surgery is a specialty engaged in the treatment of acute and non-acute conditions involving repair, repositioning and refashioning of tissues. It has a collaborative relationship with almost all specialties and,

thus, may contribute to treatment of tissues in all parts of the body in patients of each sex and all ages.”

In this definition, aesthetic surgery is not mentioned specifically. However, the co-operation with other specialties is noted. In a booklet (*Plastic surgery in the British Isles, Present and Future*, 1994) explaining the work of plastic surgeons to NHS managers, the following definition was used:

“Plastic surgery can be defined as the branch of surgery concerned with restoration of form and function by reconstruction of congenital, traumatic and acquired conditions.”

In the definition of the United Kingdom the technological aspect is missing.

Recently a definition was presented in the Kay Kilner Prize essay 1999 (Hurren, 2000). It was stated that plastic surgery is first a type of surgery characterised by changing a patient's form or function back to normal or beyond. Second it is surgery that plastic surgeons do by definition (e.g. a wound excision and closure performed by a plastic surgeon is plastic surgery). Finally it is a surgical specialty.

In my view the definition is too simplified, since a dermatologist performing the same procedure could also claim it is dermatology since it has been performed by a dermatologist. Furthermore, again the technological aspect is missing.

2.4.1 The discussion regarding a suitable definition for plastic surgery

The whole discussion concerning a proper definition of plastic surgery, the results of the definitions given by the individual members of the monospecialist committees of the UEMS and the final definition of the UEMS pose a couple of problems which need attention. It is necessary, therefore, to search the literature for distinct views regarding this matter.

1. *The completeness or vagueness of the definition of the UEMS*

Looking strictly at the definition of the UEMS, one could argue that it is too vague. The management of acute and non-acute conditions resulting from congenital or traumatic causes can also be covered by general and orthopaedic surgeons. A vague definition could, therefore, make it easier for those two specialties to cross each other's boundaries, depending, of course, on where one considers these boundaries to be. There has already been a debate in a leading journal on whether or not cosmetic surgery can be claimed to be part of plastic surgery (Davis, 1991) and whether or not plastic surgeons have the right to prevent others from practising cosmetic surgery (Skanderowicz, 1991). The representative of Belgium, however, claimed that the definition of the UEMS is vague enough in its definition of the limits while being wide-ranging enough to include the whole field regarded as the domain of plastic surgery.

Some (Furlow in *Editorial P.R.S.*, 1992) challenge even the possibility of defining the specialty, by describing the anatomic areas of concern or the types of operations. They see this as impossible because other specialties already perform those plastic surgical operations. In the end, plastic surgery, in their view, would be defined only as surgery done by plastic surgeons. This certainly does not solve the problem if patients do not know what kind of operations plastic surgeons do.

2. *The discrepancy between the definitions given by the representatives of the different EC countries*

This discrepancy reflects differences of opinion between specialists in the different

countries concerning the scope of plastic surgery in their countries. While representatives of France, Spain, Germany, Italy and The Netherlands mention aesthetic surgery as part of plastic surgery, and Portugal and Greece mention the treatment of physiological ageing as part of plastic surgery, neither the UEMS definition nor the Danish definition mention these aspects as part of their definitions.

This discrepancy demonstrates the urgent need to reach agreement on a good working definition because it is the first step in achieving standardization.

3. *Did the fact that it took the UEMS 18 years to formulate an acceptable definition, raise any questions?*

First of all, is there a real need for a definition? The fact that patients are often unaware of the possibilities offered by plastic surgery and that colleagues also fail to see the benefits of referring patients with certain conditions, reflects the need for a proper definition. Plastic surgery should be a recognizable specialty with an identity.

Secondly, would patients within the European Community benefit from a proper definition? It is certainly beneficial to patients if they know how plastic surgery is defined both within the EC and in their own country. They could compare plastic surgery services offered in their own country with those in other countries, using these definitions. Of course, this could also be helpful when one needs to decide whether a plastic surgical activity – for example, difficult hand surgery – should be performed by a plastic surgeon, or a general surgeon or an orthopaedic surgeon.

Thirdly, what is so special about plastic surgery? Here, the innovative character of plastic surgery must be emphasized: the specialty called plastic surgery earned its right to exist by indicating the possibilities of repair of form and function by transfer of vital tissue (Mulder, 1994). The innovative character of the specialty should further be apparent by the process of change and renewal. This can only be achieved by experimental and clinical scientific work (Kon, 1992). It cannot, however, be stressed enough that plastic surgery would lose its power and influence without high quality, thorough training and inspiring teachers who mould the minds of their trainees in order to retain the innovative character and the pioneering nature of plastic surgery.

Moreover, it is essential to master the principles of plastic surgery which have been laid down by pioneers such as Gillies and transmitted to us by their disciples (Millard, 1985). This last point was emphasized by Bouman (1990), who, in his farewell speech, stated that the gentle handling of tissues should remain the mainstay for every plastic surgeon trainee. He also warned that new developments within the specialty should not interfere with teaching future plastic surgeons the basic techniques.

Now that we have studied the pros and cons of the different definitions, a descriptive definition will be proposed, which includes the field of work of plastic surgery.

2.4.2 Working definition of plastic surgery

“Plastic surgery concerns reconstructive and aesthetic surgery. It is a surgical specialty that seeks to improve or restore physical functions or to minimize disfigurement or scarring of the human body resulting from congenital or acquired defects and/or the effects of degeneration or ageing. Its technological instrumentation is surgery based on sound principles of wound healing and tissue repair.”

This definition includes the following three aspects:

1. The objectives: the specialty "seeks to improve or restore physical function or to minimize disfigurement or scarring of the human body resulting from defects which are congenital or acquired due to the effects from degeneration or ageing".
2. The material object: the human body seems to be a wide area, but it means that plastic surgery is not restricted to one organ or organ system, it is not only skin, bones, muscles, nerves, vessels. It can involve all systems, so knowledge of these systems is necessary in order to perform adequately.
3. The technological and technical instrumentation is based on the sound principles of wound tissues and repair. In history, those pioneers in either reconstructive or aesthetic surgery who chose to be innovative, made progress thanks to these principles.

Comments

It is very difficult to propose a good working definition. Any definition can only attempt to provide an adequate description of the contents and perhaps that should be enough. The true character of the specialty, however, is difficult to comprehend. For laymen, plastic surgery is synonymous with aesthetic surgery, which for many reasons can be called social surgery (see §3.2). Its aim is to correct deformities of eyes, ears, breast and abdomen, due to a deficiency or excess of tissues, often combined with functional disorders. The goal of the reconstructive part of the specialty is to close teratogenic, traumatogenic and pathogenic defects in bones, nerves, muscles, vessels and skin by transposition, transplantation or replantation of tissue. Combined therapy with other specialties is often necessary (Van der Meulen, 1990). This is also more of a description of the contents rather than a definition, though the technical instrumentation or the way defects are closed, is taught.

Regarding the definitions collected in the nine EU countries, the difficulties in establishing a proper definition were discussed. The lack of a proper definition also weakened the position of plastic surgery and made co-operation between specialties difficult since it is easier to cross ill-defined borders. In some of the definitions the contents of plastic surgery in that particular country were expressed. After studying the pros and cons of the definition of the UEMS, a working definition of plastic surgery was proposed. The disadvantage of this definition is still that it looks rather complicated. Any definition can only attempt to provide an adequate description of the contents of the specialty. The true character of the specialty, however, is difficult to comprehend. Perhaps the following description of Brent (1981) is useful: "Plastic surgery is an exacting way of thinking and a special approach to the handling of tissues, the repair of wounds and the reconstruction of deformities. It is the most diverse of all surgical specialties and its scope ranges from the top of one's head to the bottom of one's feet. It distinguishes itself from other surgical disciplines by the instantaneous, visual aesthetic physical result and often dramatic psychological change it affords the patient who has a deformity reconstructed. Plastic surgery needs to be innovative to survive."

2.5 Summary and conclusions

Considering the history of plastic surgery in the various EU countries it became clear that certain developments have a profound impact. Seven points arise:

1. There is an unmistakable influence of war-time experience (Lister, 1993) on the principles of wound treatment and reconstructive surgery, which form the basis of plastic surgery. The development of the other pillar of plastic surgery, namely aesthetic surgery, was also held back by war-time, though the same principles of wound-healing and treatment are the basis for aesthetic surgery. Because of the need for

reconstruction of seriously wounded or burned patients, the men who became pioneers of plastic surgery were originally trained in specialties. Some pioneers were ENT surgeons (Gillies, Coelst).

2. There is an important difference in the development of plastic surgery in countries where general surgery had a strong influence and in those countries where general surgery had no dominant position. In the United Kingdom plastic surgery had more power since the early days and head and neck surgery and burns reconstruction are almost the exclusive domain of plastic surgeons. In Germany and Greece, on the other hand, plastic surgery was a subspecialty of general surgery. Trainees in these countries had to fulfil their requirements for the general surgery training before entering plastic surgery. The weak position of plastic surgery in Greece and Germany led to a steady overlap of plastic surgical activities by other specialists.
3. The historical review made it clear that knowledge of the basic sciences was important for the development of the specialty. Without knowledge of the anatomy, Esser would not be able to design his biological flap. Knowledge of the vascular basis of tissues was necessary to create numerous flaps (skin, muscle, musculocutaneous, fasciocutaneous flaps and free tissue transfer) and was instrumental for the development of reconstructive surgery. Microsurgery would otherwise have no impact.
4. The development of other basic sciences such as immunology, biology, pathology was necessary to understand the basic principles of wound-healing and graft rejection. Examples could be found in burns (allografts) and in hand surgery (tendon healing).
5. In countries with little or no historical background of plastic surgery, the development of the specialty started after the Second World War. Since all countries of the EU are members of the UEMS and EBOPRAS, these European organizations might be helpful in organizing the training (see also Chapter 5).
6. Co-operation with other specialties proved to be useful during the Second World War and it tends to be important in the multidisciplinary approach of reconstructive problems. Techniques developed in plastic surgery are also useful in other specialties.
7. It is very difficult to find a good working definition. The definitions discussed all have their deficiencies. All of the definitions are essentially descriptive.

Even the proposed working definition has its drawbacks and looks rather complicated. The goal of the proposal, however, was to demonstrate that a definition should fulfil three criteria: it must have an objective, a material object and it must include technological and technical instrumentation. It should also make clear that plastic surgery is not automatically the same as aesthetic surgery and that it involves many aspects.

The state of the art of plastic surgery in the different EU countries

3.1 Introduction

In Chapter 2, the complexity of plastic surgery was illustrated by the different definitions used in the EU countries (the original EC countries). In Chapter 3 the actual practice of plastic surgery in these countries will be studied and a comparison will be made. This will include also the influence of the health care and insurance systems on plastic surgery and the contents of plastic surgery, particularly reconstructive surgery and aesthetic surgery.

3.2 Influences of health care and insurance systems on plastic surgery

Governments can take restrictive measures to control the costs of health care by reducing the number of operations covered by insurance and more specifically the operations which they consider “aesthetic” or not medically necessary. This would inevitably lead to privatization or treatment in private hospitals and clinics of patients who can afford it. However, those who feel stigmatized by their appearance and cannot afford expensive treatment, are left out. For this reason, Bardelli introduced the term “Social Surgery” for this group of stigmatized patients who avoid social contacts (Bardelli, 1935). Aesthetic surgery is often called social surgery because it is able to restore the balance between the patient and his surroundings (Van der Meulen, 1990). For example, young women with disproportionately large breasts often suffer not only from mechanical – shoulder, backache – problems, but are also hindered in their social contacts. For those women, this kind of surgery is not a luxury. The improvement of their physical proportions will also benefit their social well-being (Kon, 1992). It is, therefore, relevant to examine the way in which health care systems work within the EC and deal with aesthetic surgery. It is also relevant to see if there is room left for private medicine, since aesthetic or social surgery can be forced into a private setting (clinic, hospital). Closely linked to the trend for privatization of care is the introduction of the free market principle, which is dependent on the type of health care system.

The services rendered by plastic surgeons are also determined by the health care systems in their countries. For example, a plastic surgeon involved mainly in a national health care system will scarcely have any time left for cosmetic surgery in a private setting. However, the media – television (glamour) and popular magazines – have created an increased demand for cosmetic surgery. Though this is clearly a branch of plastic surgery, other doctors and specialists are very keen to fill the gaps left by the lack of manpower in plastic surgery. In some instances, patients will turn to those doctors and specialists for whom certain procedures, for example, aesthetic nose surgery, are covered by insurance. It will be less expensive for the patient, but the results can be disappointing.

Health care coverage in the European Community is primarily the concern of the individual countries. There are differences in organization, financing and delivery of health care. Basically there are 4 health care systems (see Figure 3.1):

1. a national health service;
2. a publicly funded system;

3. a social health insurance;
4. a mixed system.

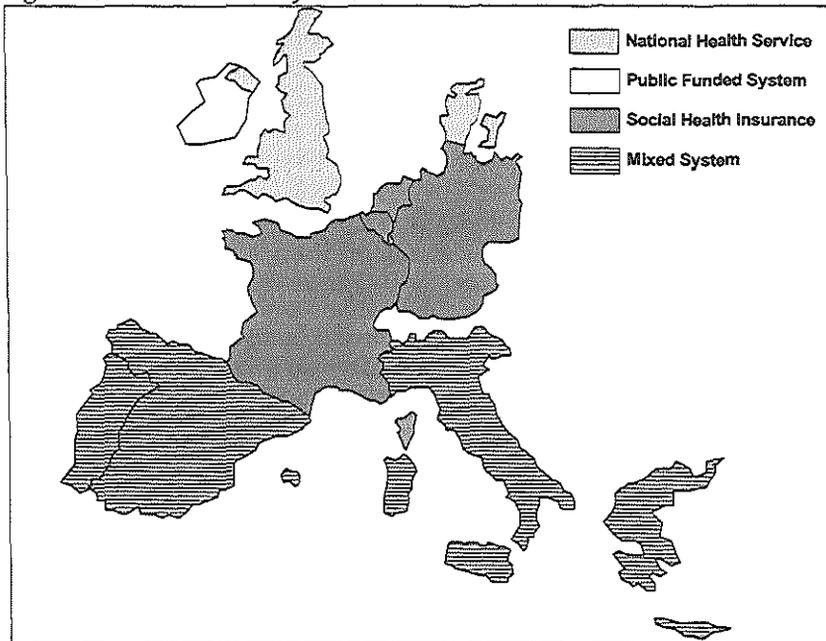
A national health service is characterized by universal coverage and universal financing. So everyone is covered by the insurance, irrespective of their income level. In a national health service the health care is offered in state-run hospitals and there is extensive financing by public funding.

A publicly funded system is funded out of general taxes. It could be called a social assistance system, since it is aimed at the poorest part of the population and is, therefore, related to income.

A social health insurance system is a compulsory insurance, paid by employers and employees.

The mixed system means a mixture between National Health Service Insurance and Social health insurance (Schneider et al., 1992).

Figure 3.1 Health Care systems in the EC member states



Source: Basys (Schneider et al, 1992)

In Figure 3.1 the countries are classified according to the predominant insurance system. In the individual countries, however, this classification is oversimplified, as will be demonstrated in the following short review of the health care systems.

Belgium

The system

A combination of a social health insurance (85%) and an independent medical practice (OECD, 1992) forms the basis of the financing. As the social health insurance is predominant, Belgium is part of the Social Health Insurance System. There is a

mixture of public reimbursement (patients pay for most ambulatory care and are partially reimbursed by the private insurance companies or "mutuelles") and the public contract model (the hospital costs are paid directly to the hospitals by the insurance companies). The system is controlled by the central and regional government and there is self-regulation by the insurers and providers (public health services, independent professionals delivering ambulatory care, private, non-profit hospitals and nursing homes).

Aesthetic surgery

Aesthetic surgery is not covered by the regular system. This type of surgery is performed in private clinics. There is room for private medicine; plastic surgeons and others provide cosmetic surgery in private hospitals and clinics.

Reconstructive surgery

Reconstructive surgery is covered by the social health insurance.

Denmark

The system

The health care system is based on a national health insurance. Therefore, Denmark is classified under the National Health Service System. However, 95% of the inhabitants have a free choice of doctors within a region. The national health service is part of the so-called integrated model (OECD, 1992), meaning that both the insurance coverage and the provision of health care are delivered by the same organization. Most medical specialists have a contract with the national health insurance (on a salary basis). One third is totally dependent on income from a private practice (Vreugdenhil en de Bruine, 1990). For those plastic surgeons who work mainly on a contract basis, it is much harder to spend time in a private practice.

Aesthetic surgery

Aesthetic surgery is not covered by the regular system. This type of surgery is performed in private clinics.

Reconstructive surgery

Reconstructive surgery is covered by national health insurance.

France

The system

The main source of financing is a social insurance (78.6%) with mixed private and public providers. Therefore, France is part of the Social Health Insurance System, since this is the predominant system. The situation in France is complicated: the system is based on public reimbursement in which compulsory or voluntary insurance leads to cash reimbursement of medical care to the patients. However, in public and private hospitals in France, the public contract model is also used, in which insurance companies pay the providers of care directly. Moreover, in the public hospitals the integrated model is used in which doctors work on a salary basis and hospitals on global budgets. Patients have the freedom to choose their own doctors (Vreugdenhil and de Bruine, 1990).

Aesthetic surgery

Aesthetic surgery is not covered by the regular system. This type of surgery is performed in private clinics. It is not only provided by plastic surgeons. In a report of the Direction de la Concurrence, de la Consommation et de la Repression des Fraudes of November 1994, they discovered – in 48 institutions for plastic surgery – that only

13 out of the 54 doctors were qualified plastic surgeons. While there are about 400 plastic surgeons in France, 4000 French doctors have insurance coverage for plastic surgical operations (reports *Ne.Tijdschr.Gnsk*, 1995, 139(9)). There are private clinics and hospitals where aesthetic operations can take place.

Reconstructive surgery

Reconstructive surgery is covered by the insurance system.

Germany

The system

The financing of health care in Germany consists of a so-called public contract model (OECD, 1992); a mixture of compulsory (75%) and voluntary (13%) insurance. The main source of financing is, therefore, a social health insurance. Patients have free choice of independently practising doctors. For hospital and ambulatory care, social health insurance funds ("Krankenkasse") patients have to go to the nearest hospital with suitable facilities. Doctors (general practitioners) have no access to hospital facilities, which leads to long referral lines and the duplication of tests and examinations. Plastic surgeons need a contract with the insurance companies, otherwise their fees will not be reimbursed. Private medicine is possible.

Aesthetic surgery

Aesthetic surgery is not covered by the insurance system. The private clinics are not only manned by plastic surgeons, but also by other specialists and doctors.

Reconstructive surgery

Reconstructive surgery is covered by the insurance system.

Greece

The system

There has been a National Health Service since 1983. The system in Greece can be divided into a three-tiered system. First of all, there is direct public provision by the Ministry of Health, mainly for the development of hospital services. Secondly, a public Health Insurance Fund (used by 99% of the population) provides hospital and ambulatory services. Thirdly, there is a private sector involving clinics and medical practitioners. Despite the existence of health insurance, the less privileged have less medical coverage. Furthermore, Greece has the lowest expenditure for health care – 5.1% (\$371 per capita) health care spending – of all of the twenty-four OECD countries (Schieber and Poullier, 1989).

Greece therefore has a system which has both characteristics of a system based on a national health service and a social health insurance and can, therefore, best be classified as having a mixed system.

Aesthetic surgery

Aesthetic surgery is not covered by the insurance system. There are private hospitals and clinics. These clinics are not only manned by plastic surgeons.

Reconstructive surgery

Reconstructive surgery is covered by the insurance system.

Ireland

The system

In Ireland, the main source of financing is the publicly funded system. Public and private institutions are combined (OECD, 1992). The Irish system is an example of the

social assistance system; the poorest one-third of the population is eligible for free health care services, funded out of general taxes. There are mainly public providers. Ireland relies on a mixture of public contract (direct payments under contract from the insurers, which are either compulsory or voluntary to the providers of services) and the integrated model (both the insurance coverage and the provision of care is delivered within the same system). Doctors are reimbursed on a salary basis and hospitals are funded by global budgets.

Aesthetic surgery

Aesthetic surgery is not covered by the insurance system. There are private clinics and hospitals, sometimes manned by other medical specialists.

Reconstructive surgery

Reconstructive surgery is covered by the insurance system.

Italy

The system

There has been a National Health Service (Servizio Sanitario Nazionale), financed by employers, employees, the self-employed, general taxation (health care taxation) and a contribution from the national government since 1978. So the main source of financing is a mixed system. It is, therefore, predominantly a mixed system and classified accordingly.

Aesthetic surgery

Aesthetic surgery is not covered by the insurance system. The demand for aesthetic surgery is high and the number of doctors who have liability insurance for it is larger than the actual number of registered plastic surgeons.

Reconstructive surgery

Reconstructive surgery is covered by the insurance system.

The Netherlands

The system

In The Netherlands, there is a combination of social and private insurance coverage, with mainly private providers (OECD, 1992). Health care is financed by social and private insurance contributions, combined with significant direct payments and government subsidies. Patients are reimbursed by their private insurance companies (reimbursement model). The health insurance funds pay GP's by capitation, specialists by fee for service and hospitals by payments according to the contract model. The price, volume and capacity of publicly and privately financed services are closely controlled by the Dutch government. The predominant system, however, is a social health insurance system and therefore The Netherlands are classified accordingly.

The government wants to cut down the costs of specialist care, and in order to achieve this, they are planning to abolish the fee-for-service principle. In future, the specialist must have local contracts with private insurance companies and health insurance funds. He would get a yearly lump sum in monthly instalments from these insurance companies. This would mean, in fact, a serious volume restriction and the loss of the doctor's autonomy. Due to the volume restrictions, doctors would not be able to offer patients the services they want, including the necessary operations. The difference between a salary-based specialist and a "free" specialist would disappear. Most plastic surgeons are based in hospitals.

Aesthetic surgery

Aesthetic surgery is not covered by the insurance system. Sometimes hospitals allow private medicine (surgery) within their institutions. The number of private clinics is rising, especially for laser surgery and liposculpture. Dermatologists, ENT surgeons, ophthalmologists and even general practitioners try to do aesthetic surgical procedures. This is comparable with the situation in other EU countries (for example, France, Italy, Germany, Belgium and the United Kingdom).

Reconstructive surgery

Reconstructive surgery is covered by the insurance system. However, sometimes certain procedures are not covered when performed by a plastic surgeon. This is predominantly due to the misconception that plastic surgeons only perform aesthetic operations.

Portugal*The system*

In Portugal, there is a National Health service. This system guarantees that all citizens, irrespective of their economic status, have access to preventive, curative and rehabilitative medical care. Furthermore, it guarantees a rational and efficient medical and hospital coverage throughout the entire country. The National Health Service is combined with a social insurance system and can, therefore, be classified as a mixed system.

Aesthetic surgery

Aesthetic surgery is not covered by the insurance system. There are private clinics and hospitals. These clinics are not only manned by plastic surgeons.

Reconstructive surgery

Reconstructive surgery is covered by the insurance system.

Spain*The system*

There is a compulsory national health system (Instituto Nacional de la Salud) (OECD, 1992). The system is financed by general taxation and social insurance contributions (Hurst, 1991). So, there is basically a mixed system. The ambulatory and hospital care are provided by salaried doctors and hospitals which are under global budgets (the integrated model). Some private and public hospitals receive funds according to the contract model. Moreover, there are additional voluntary payments with private insurance generally following the contract principle. Planning and regulation of the system is done by the Spanish government (Organizacion Medica Colegial, 1990).

Aesthetic surgery

Aesthetic surgery is not covered by the insurance system. There are private clinics and hospitals not only manned by plastic surgeons.

Reconstructive surgery

Reconstructive surgery is covered by the insurance system.

United Kingdom*The system*

The British National Health Service (NHS) offers comprehensive services to the entire population, financed mainly by general taxation. Until 1991, public hospitals were organized under the integrated model, with global budgets and doctors on a salary (Hurst, 1991). From 1991 on, general practitioners could become fund holding,

receiving a budget to buy medical care for their patients, including the use of hospital facilities. General practitioners could select medical specialists and hospitals for their patients. Between 1991 and 1995, many NHS hospitals became trusts. In 1997, the Labour government established primary care groups (alliances between groups of general practitioners, district nursing and home care) (Van Heteren, 1998).

Aesthetic surgery

Aesthetic surgery is performed in private hospitals and clinics, by consultant plastic surgeons as well as other doctors and surgeons.

Reconstructive surgery

Reconstructive surgery is covered by the insurance system.

3.2.1 Comments

In this review some key terms were used which might require further explanation (OECD, 1992). Naturally, the patients can pay out of their own pocket for their treatment. Mostly, however, a so-called third party payer is involved, meaning a public or private organization that pays or insures health care expenses. The source of finance for this third party payment is from voluntary (private) premiums or compulsory (public) contributions or taxes. The way these third parties provide their benefits differs:

1. Direct reimbursement of the costs of the health care services to patients is possible (Belgium, France);
2. There could be direct contracts (public contract model) with providers (for example, doctors), who receive work-related payments (Belgium, France, The Netherlands, Germany, Ireland, Italy, Luxembourg, the United Kingdom and Spain);
3. The providers of care could be owned or managed in an organization, for example the National Health Service. This so-called integrated model involves no work-related payment, but providers of care work on a salary basis (France, Greece, Italy, Ireland, Denmark, Spain, Portugal and the United Kingdom).

In most countries there is a mixture of payment models. Denmark, Greece, Ireland, Italy, Portugal, Spain and the United Kingdom have National Health Service systems, Ireland has a tax-funded system with important non-profit providers. Belgium, France and Germany are mainly financed by social insurance. In countries with Social Health Insurance the contributions are paid both by the employers and the employees.

In countries with a National Health Service, health care is provided by state hospitals, financed by public funding and one is entitled to health benefits independent of income. In countries in the southern part of the EC, where National Health Service was introduced later (Portugal, Greece, Italy and Spain), links can still be observed with the former social sickness funds. 30% of the population of the EC has commercial insurance and very often they provide supplementary services. This is achieved by non-profit organizations (Schneider et al, 1992).

It was mentioned that the main differences in the EC countries were the availability of services, the access to specialized services, the quality of services, the technological standards of health care offered, the comfort of the hospitals and nursing homes (Schneider et al, 1992). This would be caused by the variations in income per individual, but also by different views on health care and health care delivery. Schneider suggested that an adjustment in the economic standards would diminish the differences in health care expenditure.

3.2.2 Market elements and privatization in the different health care systems

There is a difference between countries with a National Health Service and countries with a health care financed by insurance companies. In countries with a National Health Service, one tries to strengthen the management of the NHS (units and hospitals would become self-governing). In the systems financed by insurance companies, one tries to introduce market elements and self-regulation. The financiers will try to buy care for their clients in a cost-effective way. There are also countries with a mixed system of National Health Insurance and Social Health Insurance, where either system can have greater influence. In all of these cases the central government plays an important role. To meet the increasing demand for health care and due to the lack of flexibility in the current health care systems, privatization could become popular. An example is cosmetic surgery, neglected and banned from insurance coverage but nevertheless of great importance to the patients' well-being. This surgery can be performed in a private and friendly atmosphere. Hermans and Paelinck (1990) gave an excellent overview concerning the way the EC countries are dealing with the implications of a free market for their individual systems:

In **Belgium** there is a trend to restrict government spending and health insurance expenditure, leading to strengthening of the private sector. There is a free doctor's choice and patients can choose their insurance.

In **Denmark**, with its well regulated national health care service and medical manpower-planning, competition for medical posts is controlled and there is little room for competition in health care.

In **France** one was not satisfied with the cost control methods of the government. The private sector could provide extra money for health care. The state is prepared to give up part of its financing power, to stimulate competition. Moreover, due to dissatisfaction with the situation in the hospitals (poor accommodation for patients and discontentment among the nurses), more doctors turned to private practice.

In **Germany**, major changes in legislation are necessary before market elements can be introduced. Doctors, working extramurally, are self-employed and paid by social and private insurance for every transaction.

In **Greece** there is a strong separation between the public and the private sector, and it is difficult for patients to select their doctor or hospital. Therefore, market elements are suppressed.

In **Ireland** there is a strong tendency towards deregulation and privatization (there is an increasing number of for-profit hospitals and general practitioners' services). Free market elements are used to improve cost-efficiency. The shortage on the national budget is the main reason for cutting the costs of health care.

In **Italy**, patients can choose their health care of preference, so either the public or private health care. There is a system of local health care units, in which some competition elements (for example, advertising) are allowed.

In **The Netherlands**, market elements always have played a role. In March 1987, the Dekker Committee proposed the so-called Dekker proposals, "Willingness to change", to cut down unnecessary hospital care with a premium, dependent on the providers of health care (the hospitals, the doctors and other health professionals). The consumer would be free to choose from the different insurers, the insurers would have the freedom to contract health professionals and look for cost-effective treatment for their consumers, for example, by trying to find solutions for the long waiting lists in the regular public hospitals and perhaps in future also in the private sector. The commission wanted a flexible system, with less regulating power of the central government and more responsibility for the consumers,

who will have to get used to the idea that certain costs will have to be paid out of their own pocket (a perfect example of this, is the fact that insurance companies are, from January 1991 on, no longer prepared to cover the costs of certain plastic surgical procedures, which they consider to be cosmetic) and also with more responsibility for the providers of care (the health professionals and the health institutions) and the insurers, who have to face more criticism from their consumers. In this system of freedom of choice, the central government would still play a role in safeguarding quality, accessibility and prevention. Simons (1990) adopted these reforms in his document, "Working for health care reforms", a campaign for health care and the social service aiming at four areas: prevention, care, patient/consumer and medical ethical matters. In the newly planned health reforms in The Netherlands, extramural treatment centres fit in the new insurance system. In the new system there are sufficient guarantees for accessibility, cost control and quality (Simons, 1991). There are many objections against the Dutch reforms: from political parties, the socio-economic council, the Dutch national organization of private health care insurers, the national society of general practitioners, the national specialist society and the Dutch society of medicine. The proposed health care reforms have, however, not been finalized.

In **Portugal**, the health care system is practically incompatible with the developments of market elements. Profit-making is rejected and the effects of price mechanisms are underrated as a determinant factor in the demand for and use of health care. Private health care is under government control and professionals in private hospitals also work in the private sector. Thus, there is no competition between hospitals.

In **Spain**, in the private sector, public means can be used for financing by special agreements with the national health care system. Private non-profit hospitals can be completely financed by public means, while they are still considered to be private hospitals. A large number of doctors works both in the public and in the private sector.

In the **United Kingdom**, the government is seeking to increase the efficiency of the health care system by enhancing the degree and nature of competition. Long waiting lists exist in the NHS and patients wanting cosmetic surgery have no choice but to look for treatment in the private sector. Within the present NHS system, important problems are the centralized governing structure and the low financial means (Editorial British Medical Journal, 1991). Due to the low budgets for the public sector, the private sector has grown faster in recent years than the NHS. The private sector is characterized by a type of care that is mainly intramural and pointed at individual screening. The volume of the offer in the private sector is growing and there is a change from non-profit provision to for-profit provision. The target is non-urgent surgery, for which long waiting lists exist in the NHS. The British public was dissatisfied with the financing of the NHS. For this reason, the government published the White Paper "Working for patients" in 1989. In this paper the important points are, respectively: The NHS management should be decentralized and streamlined, with less involvement of the central government and the regional health authority. Furthermore, the tie between clinical activities and the general management should be enforced, and finally, a regulated internal market within the NHS should be created by a separation between financing and offer and an increase of the competition between care providers (hospitals). Important for these plans were self-governing hospitals and funding and contracts for hospital services by the government and a central role for the general practitioner, especially for those so-called fund-holding general practitioners who get a certain budget, which they can spend for the hospital treatment of their patients. These fund-holding general practitioners can shop around for the best care for their patients. They can also contract private hospitals or specialists working in private practice. Compared with the reforms in The Netherlands, where insurance companies played a central role, which

companies can choose the providers of care, the regulating role in the United Kingdom is played by allocated hospitals and fund-holding general practitioners, who can buy care for their patients.

3.2.3 Conclusions

The health care systems considered are quite diverse, and sometimes different authors hold different views on the interpretation of the classification of the countries.

1. Countries with comparable health care systems could still have a different package also as distributors of services (Van Mosseveld and Bonte, 1996).
2. Countries which rely on their health care system differ in providing market elements and in offering the possibility of privatization. Indirectly they can thus influence the way plastic surgeons run their practice (hospital-based or private or a mixture of both).
3. Aesthetic surgery is not covered by any of the insurance systems. In all countries, however, there seems to be a growing need, which results in the involvement of other medical specialists and doctors (general practitioners) in aesthetic procedures. Aesthetic surgery can be performed in private clinics and hospitals.
4. Reconstructive surgery is covered by the insurance systems in all countries. However, in The Netherlands plastic surgeons are sometimes excluded from coverage of certain procedures (for example, exenterations of orbits).

3.3 Review of the actual practice of plastic surgery in the different EU countries (the former EC countries)

Introduction

In this paragraph the actual practice of plastic surgery in the member countries of the EU (the former EC) will be discussed. For every country it will be examined whether the reconstructive and aesthetic part or both parts of the specialty are represented. Whenever possible more detailed information will be given when there is more emphasis on either aspect or links will be discussed with the history of plastic surgery. It is inevitable that some countries provide more data than others. In some countries data regarding the volume of aesthetic and reconstructive surgery could be obtained. The absence or omission of certain topics (e.g., skin tumours) does not imply that they are not performed at all.

Belgium

Historical links

Since the founder of modern plastic surgery in Belgium was originally an ENT surgeon, there are links between the Belgian Society of plastic and reconstructive surgery and the Belgian Society of Oto-Rhino-Laryngology.

Spectrum of plastic surgery

Reconstructive surgery: hand surgery
microsurgery
head and neck surgery
breast surgery
burns
maxillofacial surgery
cleft surgery
genital surgery

Aesthetic surgery: face/breast/abdomen/limbs

Comments

There are differences between the units; some specialize in hand and microsurgery,

others in maxillofacial surgery and cleft surgery. Aesthetic surgery is performed in private clinics and hospitals. Belgium is a multilingual country, so there is exchange of trainees with France and the United Kingdom.

Denmark

Historical links

There is war-time experience in the treatment of burns.

Spectrum of plastic surgery

Reconstructive surgery: hand surgery
microsurgery
head and neck surgery
breast surgery
burns
maxillofacial surgery
cleft surgery
genital surgery

Aesthetic surgery: face/breast/abdomen/limbs

Comments

Considering the five units of plastic surgery, however, not all of the special aspects are represented in each unit. Subspecialization has taken place for many years in Denmark. Hand surgery and microsurgery are performed in the departments of hand surgery. Cleft lip and palate surgery is centralized in one department, the Rigshospitalet in Copenhagen. Burn surgery is centralized in two departments (Heidovre and Odense).

France

Historical links

France has contributed much to the history of plastic surgery, especially with respect to the aesthetic part of the specialty.

Spectrum of plastic surgery

Reconstructive surgery: hand surgery
microsurgery
congenital deformities of the face
breast surgery
craniofacial surgery
traumatology of the face
radiation lesions
skin tumours

Aesthetic surgery: face/breast/abdomen/limbs

Source: French society of Plastic, Reconstructive and Aesthetic surgery (Baudet)

Comments

There is a great deal of emphasis on the aesthetic part of the specialty, for example, the theory of plastic and aesthetic surgery of the face and neck, breast, abdomen, hands and limbs is taught. Thereafter, the subjects microvascular tissue transfer, radiation lesions and malignant skin tumours as well as angiomas, lymphangiomas and facial malformations and traumatology of the face are dealt with.

There are units in France which specialize in craniofacial (Paris) and reconstructive surgery (Bordeaux). Cleft surgery is often performed by paediatric or maxillofacial surgeons. Hand surgery is often performed by orthopaedic surgeons. There are also

influential societies for hand and microsurgery with annual meetings, as well as French journals on hand, microsurgery and aesthetic surgery.

Germany

Historical links

Germany has contributed much to the history of plastic surgery (see Chapter 2). However, these pioneers were mostly general surgeons and this has influenced the development of the specialty. In Germany, Schmidt-Tintemann (former chairman of the Department of Plastic Surgery of the Klinikum red. Isar of the Technical University, 1983) described the development of plastic surgery. She made a distinction between:

- a. reconstructive plastic surgery: an acquired deficiency of form or function following an accident or disease, will be restored;
- b. constructive plastic surgery: restoration of congenital malformation such as schizis, hand or facial malformations;
- c. anaplastic or aesthetic plastic surgery: its goal is to help patients who are, on subjective grounds, not satisfied with their appearance.

*Spectrum of plastic surgery**

Reconstructive surgery (81.8%) can be subdivided into:	
hand surgery	31.1%
microsurgery	6.4%
replantation	2.7%
breast surgery	18.6%
tumour	19.5%
congenital abnormalities	3.5%
Aesthetic surgery: (18.4%) of which:	
breast	30%
eyelids	15%
face-lifts	10%
rhinoplasties	13%
otoplasties	9%
abdominoplasties	10%

* source: M. Eisenmann-Klein (Journal German Association of Plastic Surgeons, 26-28 September 1991, no 10) There were no data on absolute figures, only on percentages. The total sum was 100.2%. This cannot be explained. These figures represent the situation per 1-1-1990.

Comments

Germany is unique in providing these data. From these data it can be concluded that hand surgery in Germany forms the main point of interest. Certain areas, however, are not exclusively covered by plastic surgeons. Aesthetic breast surgery, for example, is also performed by gynaecologists. Like in other countries, dermatologists, ENT surgeons and general surgeons often practise aesthetic surgery in private clinics. Head and neck surgery is part of oro-maxillofacial surgery. The differences between the units reflect the special interests of the heads of department of plastic surgery. Some units are mainly involved in hand or microsurgery and burns, others in cleft and maxillofacial surgery.

Plastic surgery in Germany has until recently been a subspecialty rather than an independent specialty. This caused difficulties for the position of plastic surgery in Germany. What is remarkable is the fact that data collecting was no problem. All data

of the different units have been filed and are computerized. Their strong organization should be an example for other EU countries. In Germany, as opposed to other countries, trainees usually have to move from one unit to another since only few units can supply the complete training. This, however, could be seen as an advantage, since these special units can offer the trainees a thorough education in certain aspects of the specialty.

Greece

Historical links

Though reconstructive surgery was practised during the Greco-Roman period, modern plastic surgery in Greece started after the Second World War.

Spectrum of plastic surgery

Reconstructive surgery: hand surgery
 oncology
 head and neck surgery
 burns

Aesthetic surgery: face/breast/abdomen/limbs

Source: Hellenic Society of Plastic, Reconstructive and Aesthetic Surgery

Comments

No detailed information is available. All aspects of plastic surgery are covered. However, some hospitals are specialized in certain aspects (i.e., oncology). Plastic surgery has been a subspecialty of general surgery and like in Germany this has influenced the development of plastic surgery and has given other specialties the chance to practise in certain border areas (aesthetic surgery, hand surgery).

Ireland

Historical links

Though plastic reconstructive surgery was performed (Indian rhinoplasties) during the 19th century, modern plastic surgery started after the Second World War, based on the heritage of the British pioneers (Gillies, McIndoe and Mowlem).

Spectrum of plastic surgery

Reconstructive surgery:

1. Congenital Abnormalities
 - a) facial: cleft lip and palate, craniofacial surgery
 - b) limb
 - c) genital
2. Trauma
 - a) facial injuries
 - b) hand injuries
 - c) skin-loss problems
 - d) replantation
3. Burns
4. Hand surgery: in Ireland this has traditionally been the field of plastic surgery (major hand mutilations, tendon and nerve repairs, congenital hand deformities and degenerative hand diseases).
5. Skin cancer (management of skin cancer, involving reconstruction).
6. Head and Neck Surgery (major facial deformities both congenital and post-traumatic). New techniques such as microsurgery and tissue expansion are used, treatment often involves close co-operation with other surgical disciplines.

7. Microsurgery: replantation, nerve repairs, tissue transfer in major limb and facial reconstruction.
8. Facial and other areas of reconstruction
 - a) post-traumatic
 - b) post tumour resection
 - c) residual congenital deformities
 - d) aesthetic (cosmetic)
9. Breast reconstruction
 - a) congenital aplasia
 - b) congenital asymmetry
 - c) virginal and mature hypertrophy
 - d) post mastectomy breast reconstruction
 Aesthetic surgery:
 - a) rhinoplasty
 - b) face-lift and blepharoplasty
 - c) abdominoplasty
 - d) breast surgery (augmentation and reduction)
 - e) liposuction

* source: Comhairle na n-Ospideal, Plastic Surgery Services, September 1991.

Comments

From this summary it can be concluded that both the reconstructive part and the aesthetic part of the specialty are performed. However, aesthetic surgery is performed mostly in private clinics and hospitals. The main emphasis, however, is on reconstructive surgery. Of the three major centres in Ireland – Dublin, Cork and Galway – the recognized training units are in Cork and Dublin. In Cork, however, the official training period is restricted to 2 years due to the lack of microsurgical facilities. Cork and Galway are mainly involved in soft tissue trauma – in Cork this was two-thirds of their total surgical workload while one-third was made up of elective cases. The problem in Dublin however, is that plastic surgeons lack involvement in accident and emergency work, possibly due to insufficient facilities and/or theatre time. The structuring of their positions as well as their commitments in multiple hospitals may serve to exacerbate the situation. Since the plastic surgery services in Ireland are seriously undermanned at consultant level, some of the plastic surgery work is, by necessity, done by general and orthopaedic surgeons (Comhairle na n-Ospideal, Plastic Surgery Services, September 1991). Due to lack of training facilities in Ireland, many Irish doctors try their luck in the United Kingdom.

Italy

Historical links

Italy has a long tradition of reconstructive plastic surgery (the Branca family, Tagliacozzi).

Spectrum of plastic surgery

Reconstructive surgery: hand surgery
 microsurgery
 traumatology
 treatment of burns

Aesthetic surgery: face/breast/abdomen/limbs

Comments

No data are, as yet, available on the differences between individual plastic surgical units in Italy. Aesthetic surgery, however, seems to be a problem in some government hospitals, which concentrate on the reconstructive part of the specialty. Aesthetic surgery is also performed by surgeons – or even dermatologists – without specific training (many more doctors other than the number of registered plastic surgeons are protected by medical insurance coverage for aesthetic procedures). Hand surgery is in decline. It has been practised by orthopaedic surgeons.

The Netherlands*Historical links*

Though before the 20th century, the development of plastic surgery in The Netherlands was influenced by the work of Tagliacozzi and Branca, modern plastic surgery started in the 20th century (late forties). The surgical school of Vienna (Lanz, Esser, and the British school of Gillies) had a great influence on the development of reconstructive surgery. So there was special emphasis on the reconstructive part of the specialty rather than on the aesthetic part.

Spectrum of plastic surgery

Reconstructive surgery:	hand surgery
	microsurgery
	congenital deformities: e.g., clefts
	head and neck surgery
	burns
	genital surgery
Aesthetic surgery:	face/breast/abdomen/limbs

Comments

In The Netherlands, plastic surgeons have to deal with general and reconstructive plastic surgery, hand surgery, burns, head and neck surgery, aesthetic and genital surgery. Moreover, trainees must learn the principles of microsurgery and use these in clinical cases during the last part of their training. During the training, however, there is little room for the aesthetic part of the specialty. This can be explained from the historical development.

There are differences between the various training institutions. However, no head of department will officially admit that his trainees lack experience in certain aspects of plastic surgery; i.e. cosmetic surgery (this is the case in nearly all training centres). In this respect, a computerized logbook, such as used in the United Kingdom, would solve the problem for those keen on obtaining data. Only very recently a computerized logbook was introduced according to the EBOPRAS standards. SIG, the Dutch information centre for health care, provides hospitals with data in a yearly report "trend". It reports the number of patients for certain operations, the number of operations and the days of admission for each operation.

Craniofacial surgery has evolved to a main topic in plastic surgery and is mainly concentrated in one unit, which is government-funded. So, officially one unit provides its trainees with experience in craniofacial surgery. Hand and microsurgery are performed in all units, though it can be said that some units deliberately give priority to hand and microsurgery, while others provide a more "general" training. As is the case in Germany, it is often the special interest of the head of the department that determines which part of plastic surgery will be taught. Gender dysphoria has been identified as a

problem that can be surgically corrected and these specific operations are mainly concentrated in one unit. Aesthetic surgery is performed in private clinics where there is little quality control. Sometimes even doctors with only basic qualifications are "trained" in clinics to perform aesthetic surgical operations. This trend, however, is not unique to The Netherlands; it happens also in other EU countries.

Portugal

Historical links

Modern plastic surgery started after the Second World War.

Spectrum of plastic surgery

Reconstructive surgery: traumatology of the face, hand, and skin as well as burns
neoplasia of head and neck and (in general) skin
surgery of the hand
congenital deformities: cleft lip, palate, syndactylies, hypospadias

Aesthetic surgery: face-lifts
rhinoplasties
breast operations
breast reconstruction
correction of the lower abdomen

source: Portuguese Society of Plastic, Reconstructive and Aesthetic Surgery

Comments

Microsurgery is not mentioned here. However, informal information concerning Portugal reveals that all units perform general plastic surgery and microsurgery, but some do not perform cleft surgery. Hand surgery is a field shared with orthopaedic surgeons. The health care and insurance systems and their financial influence have a relation with manpower planning (Chapter 6).

Spain

Historical links

As was mentioned in Chapter 2, the Civil War had great influence on the development of the specialty. Through contacts with the French school (Morestin and Sebileau), the basic principles of plastic surgery were discovered. Since the Second World War the development has gone further.

Spectrum of plastic surgery

Reconstructive surgery: treatment of burns
treatment of facial tumours and of all tumours which require complete resection and closure with plasties or grafts
treatment of facial and craniofacial congenital anomalies, as well as those regions in which it is necessary to provide skin cover
hand surgery

Aesthetic surgery: face/breast/abdomen/limbs

Source: Organizacion Medico Colegial, Serie Monografica de especialidades Medicas: Cirurgia Plastica Y Reparadora Nr. 14.

Comments

In Spain, the National Commission for Medical Specialties on Plastic and Reconstructive Surgery has issued a report, describing in great detail the contents of the specialty. The basic aspects discussed are: infections, basic surgical techniques, biological concepts of tissue transplantation, skin grafting, biology and application of muscle, myocutaneous and fasciocutaneous flaps, microsurgical techniques and their

use in free tissue transfer, suitable donor areas for flaps, burns, scar tissue and shock. The most frequently encountered theoretical and practical aspects in plastic surgery receive proper attention, as do topics such as treatment of wounds, the use of skin, bone and cartilage grafting, application of flaps and microvascular surgery in free tissue transfer, replantation and nerve surgery. Aesthetic surgery is often performed in private clinics and hospitals, sometimes by others specialists.

United Kingdom

Historical links

The development of plastic surgery, which was stimulated by the outbreak of the First and Second World Wars (Gillies, Mowlem, Kilner, McIndoe) was already described extensively in Chapter 2. The emphasis on the reconstructive side of the specialty, however, has a strong influence even today on the teaching of plastic surgery in the United Kingdom.

Spectrum of plastic surgery

The scope of the specialty was recently well covered (British Association of Plastic Surgeons, 1994). A distinction was made between:

- congenital conditions (cleft lip, palate, facial deformities), craniofacial defects, hypospadias and other genito-urinary anomalies, congenital hand deformities, congenital skin conditions;
- trauma (facial trauma, hand trauma, lower limb trauma and burns);
- neoplasms (malignant tumours of the skin, benign skin lesions, head and neck cancer, breast reconstruction after cancer treatment, reconstruction after cancer treatment);
- other conditions requiring reconstruction (rheumatoid arthritis, reconstruction of large defects, pressure sores and other chronic wounds), venous ulcers;
- aesthetic surgery (treatment of disfigurement);
- collaborative surgery: combined treatment with oncologists, dermatologists, rheumatologists and other medical disciplines.

According to the paper "Plastic Surgery in the British Isles 1990 and Beyond", issued by the British Association of Plastic Surgeons, the top five groupings or areas of main interest are:

- head and neck surgery
- cleft surgery
- craniofacial surgery
- hand surgery
- burns

In a leaflet issued by the British Association of Plastic Surgeons "Short term registrar posts for trainees from overseas", 16 units were listed, with their specific interests:

- 4 units specialize in burns
- 3 units specialize in head and neck surgery
- 1 unit specializes in hand surgery
- 2 units specialize in craniofacial surgery
- 1 unit specializes in hypospadias
- 1 unit concentrates on accident and emergency work
- 1 unit concentrates on congenital deformity
- 1 unit has no special interest

Comments

It is interesting to note that aesthetic surgery is not mentioned here. In a paper published on behalf of the British Association of Plastic Surgeons (Notice board: A new image for plastic surgery?, *Lancet*, 1991, Vol. 338, July 6, 48), it was stated that a National Health Service plastic surgeon spent 20% of his time correcting congenital abnormalities, 20% with the management of the after-effects of burns, 20% on reconstruction after tumourablation and 40% on repairs following trauma. Thus, it seems logical to conclude that those plastic surgeons who work solely in the National Health Service, would really not have much spare time for cosmetic surgery.

Compared with other EU countries, however, the United Kingdom has the most extensive list of reconstructive procedures. Furthermore, the United Kingdom is the only country where collaborative surgery or combined treatment with oncologists, dermatologists, rheumatologists and other medical specialists is mentioned. The willingness to co-operate with other medical disciplines was one of the findings in the report *Plastic Surgery in the British Isles 1990 and Beyond* (results of a questionnaire for consultants and trainees).

3.4 Summary and conclusions

There are different health care systems in the EU. In none of the countries aesthetic surgery is covered in the regular insurance system. Health care systems vary in the way they support privatization and market elements. Thus, they indirectly influence the way plastic surgery is exercised in the various EU countries. In all countries aesthetic surgery can be performed in private hospitals and clinics. Aesthetic operations are often performed by other medical specialists and doctors. There is, however, no quality control of the private clinics and hospitals.

A better name for aesthetic surgery would be social surgery, since it can restore the disturbed balance between the patients and their surroundings (Van der Meulen, 1990). Reconstructive surgery is covered in all EU countries as long as it is considered to be part of plastic surgery. The basic content of plastic surgery in the various countries consists of aesthetic surgery and reconstructive surgery, which are both based on the same principles of wound care and treatment (Chapter 2). Aesthetic (social) surgery does not receive the same attention in all EU countries, which could be explained historically.

It appears that in countries like the United Kingdom and Germany, more attention is paid to the reconstructive part compared to the aesthetic part of the specialty. This could be supported by data published in the *Lancet* (1991:338, 48) and figures obtained from a report in the *Journal of the German Association of Plastic Surgeons* (1991, 10). One might get the impression that aesthetic surgery also receives more attention in countries like France, Italy, Spain and Portugal than in countries like Denmark, The Netherlands, Greece and Ireland. The training in aesthetic surgery is often deficient in those countries, where there is more attention for reconstructive surgery. The contents of reconstructive surgery, however, vary in the different EU countries, as was shown in our review. These differences can be explained by studying the history of plastic surgery in those countries (historical links). Therefore, trainees cannot get the same exposure to all aspects of plastic surgery. There are also differences within the training institutes of one country. Problem areas include urogenital surgery, hand surgery, craniofacial surgery, head and neck surgery, cleft surgery and maxillofacial surgery.

All these topics form boundary problems with other medical specialties (see Chapter 1). In the United Kingdom consultant plastic surgeons and trainees are in favour of co-operation with these medical specialists. Both the deficient training in aesthetic surgery and the differences in contents of the training in reconstructive surgery require further attention and recommendations for improvement (Chapter 5 and 8).

The relationship between plastic surgery and other specialties in actual practice

4.1 Introduction

In this chapter we present data on the overlapping of specialties in certain border areas and more specifically on the relationship between plastic surgery, general surgery and orthopaedic surgery. Hand surgery forms a good example of a border zone where the three specialties perform operations and where not only the total number of operations can be studied, but also the kind of operations performed by the three specialties.

First we use data of hand surgery in daily practice using case studies from two general hospitals and two academic hospitals. Then these data will be compared with national data provided by SIG (the Dutch Information Centre for Health Care in Utrecht) of both clinical and day care patients between 1991 and 1995, and an academic hospital C, where clinical data were available on the period of time between 1992 and 1996.

The overlapping is not a phenomenon that is unique to plastic surgery. Internal medicine, cardiology and pulmonology face the same boundary problems. The phenomenon could be coined as the “dynamics of medicine”.

4.2 The dynamics of medicine

The borders of plastic surgery are vague: the aesthetic part attracts ENT surgeons, who feel that facial plastic surgery is a part of their specialty (Mazzola, 1992) and want this term publicly recognized (Adamson, 1991); dermatologists (Chrisman, 1988; Phillips, 1994) call dermatosurgery part of their specialty and even put dermatological surgery on their training programme (European training charter for medical specialists, 1995); gynaecologists do breast surgery and, last but not least, cosmetic surgeons claim to be better trained for this job than plastic surgeons (Skanderowicz, 1991). Although this statement was contested later (Davis, 1991), problems with aesthetic plastic surgery training within the National Health System had previously been identified (Nicolle, 1983). It emphasizes, however, the problem (Kon, 1992) that exists not only for aesthetic surgery, but also for hand surgery, craniofacial surgery and neck surgery: Is the present general plastic surgery training sufficient to meet the present-day demands or is additional training necessary? This will be discussed in the next Chapter. One could, however, state here that the special training of plastic surgeons not only teaches them to handle tissues with care, it also shows them how to handle complications. Other specialists may fall short in this respect.

We have chosen hand surgery as an example to study the relationship of plastic surgery with other specialties. In hand surgery plastic, orthopaedic and general surgeons offer their expertise. The patients are often unaware of who is capable of offering the best service. In some hospitals, there are no strict rules – which injuries will be treated by whom? – and the question of which specialty will start the treatment in the end depends on the casualty doctors (mostly general surgery residents) and their supervisors. The study of the situation in The Netherlands of hand surgery was carried out in a small survey of two general hospitals and two academic centres.

Hand surgery is restricted to the operative treatment of injuries of the hand (traumatology): skin loss, tendon, nerve and vascular injuries and fractures, and to elective surgery of congenital deformities of the hand as well as acquired and degenerative hand diseases. Operations of the hand in The Netherlands have been given special codes (830-839) by SIG (the Dutch Information Centre for Health Care). Details on this code system can be found in Supplement 1. Case studies were conducted in order to clarify the situation.

4.3 Data of hand surgery in daily practice using case studies

Methods:

- In 1991 questionnaires were sent to the plastic surgeons and the general or orthopaedic surgeons who were involved in hand surgery in two academic centres and two general hospitals (the exact text of these questionnaires can be found in Supplement 3).
- Appointments were made, whenever possible, to discuss the matter extensively.
- SIG (the Dutch Information Centre for Health Care) was contacted to obtain data concerning the three major specialties: plastic surgery, orthopaedic surgery and general surgery.

Aims:

- To obtain data and information from the four centres regarding the volume of hand surgery as part of daily practice as well as the formal, informal or non-existing agreements between specialists and general practitioners (referrals, type of surgery) concerning hand surgery.
- To gather views on training in hand surgery as part of the present training in plastic, orthopaedic and general surgery, or as a separate specialty with separate training centres and a European exam and certificate.
- To obtain data from SIG regarding the volume of hand surgery in the three major specialties (plastic, orthopaedic and general surgery) in The Netherlands (data from SIG). These data represent the results of more than 94% of the hospitals in The Netherlands.

Results:

Academic centre A:

40% of plastic surgery practice is hand surgery: it comprises 1200 out of the total number of 3000 operations performed every year. The number of consultations at the casualty department was 443; the number of acute hand operations was 450.

There are direct referrals to the plastic surgery department from general surgeons outside the hospital or from the casualty officer at the academic centre. No formal agreement exists with other specialists. The general surgeons in the academic centre refer almost all traumatology to the plastic surgeons. They restrict their activities to conservative treatment of hand fractures, excision of ganglia and the surgical treatment of extensor tendon injuries.

The neurological department refers patients with carpal tunnel syndromes to both plastic surgeons and neurosurgeons. There is no fixed referral pattern (i.e. personal preference, public relations of the department, easy access with public transport).

According to the head of department there should be good communication with the patient's general practitioner, who is usually only interested in whether proper care and follow-up care are guaranteed. Good public relations are needed in order to obtain intramural referrals (the residents should be available when necessary).

In his opinion the number of patients referred from other disciplines within the academic centre is adequate, in contrast, however, to the number of patients referred from outside the centre. Far too often, first-year surgical residents perform flexor tendon surgery or simply miss a diagnosis. There are referrals from the plastic surgical department to other disciplines (i.e. anaesthesiology; reflex sympathetic dystrophy) and to paramedics such as physiotherapists, occupational therapists and skin therapists.

According to the head of the surgical department, the present training in plastic surgery fulfils the requirements for hand surgery. He does not object to a separate training in hand surgery accessible to general surgeons, plastic surgeons and orthopaedic surgeons, nor to a European exam for a European certificate, nor to the idea of hand surgery as a separate specialty. It would help to establish replantation teams, consisting of certified hand surgeons in centres which deal with at least 25% of all hand surgery. A European certificate should not imply that foreign hand surgeons have the freedom to settle in this country.

Detailed figures were not available on the exact nature of the injuries treated by members of the department of traumatology of academic centre A. There are an estimated 1-2 extensor tendon injuries a week; about 100 operations a year.

Academic centre B:

Plastic Surgery:

This centre carries out 400-500 hand surgical operations a year, equal to 40% of the practice. Of the hand operations 80% was elective and only 20% consisted of trauma. There are no formal agreements with the other specialties, but the plastic surgeons perform the surgery on all nerve injuries, all flexor tendon injuries and all complicated fractures of the hand, including those with associated tendon, nerve injuries, viability problems and other soft tissue problems. All other skeletal injuries and finger-tip lesions were dealt with by general surgeons specialized in traumatology. There is a reasonably good relationship with the traumatology department.

They used to have combined hand clinics for trauma cases with the general surgeons and an occupational physician. The traumatology department also deals with elective hand surgery, especially fractures of the carpus, metacarpalia and osteotomies. The work of the plastic surgery department consists of replantation, revascularization, treatment of devitalized tissue, soft tissue injuries, tendon and skeletal injuries. On the elective side, they deal with congenital hand deformities (combined clinics with an occupational physician, an occupational therapist and a genetics counsellor), rheumasurgery, Dupuytren's disease, carpal tunnel syndrome, synovitis and arthrosis (arthrodesis of the carpus and wrist).

According to the head of department, patients are occasionally referred directly by a general practitioner or, normally, by the casualty resident, who is always supervised. Referrals to other plastic surgical centres take place when there is a lack of manpower or when a second opinion is needed. The supply of patients is sufficient, although they have the capacity to attend to more acute soft tissue trauma (soft tissue injuries, fractures, tendon and nerve injuries). According to the interviewed head of the plastic surgery department any future examination in hand surgery should be based on practice. In his view the quality level of plastic surgery in the training centres is adequate to teach hand surgery to trainees.

General Surgery (traumatology):

The department of traumatology treats about 2000 hand injuries a year, varying in degree from simple wounds to amputations of the hand.

Hand injuries in which nerve reconstruction or microvascular anastomoses are necessary, are treated by the plastic surgeon. Corrective osteotomies of the hand skeleton or arthrodesis are the specific interests of the traumatology department as are carpometacarpal dislocations and dislocation fractures. Only direct or late results of injuries – especially skeletal injuries, e.g., axial skeletal deviations and infection of the soft tissues – are treated (i.e. reposition and stabilization of skeletal injuries and decompression of soft tissues). All patients with hand injuries who have no specific referrals, are first assessed by a traumatologist. Once a week, patients are referred to the orthopaedic surgeon according to official agreements. In case of specific problems, treatment is transferred to the plastic surgeon.

There are no formal agreements with the plastic surgeons, but the above-mentioned rules of conduct are followed. In acute circumstances decompression of the carpal tunnel – i.e. in wrist fractures or serious blunt injuries – is performed by the traumatologist. The chronic carpal tunnel syndrome is directly referred to plastic surgeons or neurosurgeons. A small number of patients with old post-traumatic hand injuries is referred to the traumatology department by general practitioners. This number consists of patients with mallet fingers, axial skeleton deviations and pseudoarthrosis of the scaphoid bone.

General practitioners and general surgeons send in patients with post-traumatic problems of the hand or wrist for a second opinion. Patients with specific hand problems are referred to plastic surgeons by the traumatologists. The supply of patients with hand surgical problems could be better. Among the staff of the traumatology department, each member has his special interest.

The head of the traumatology department cannot judge whether the training in plastic or orthopaedic surgery fulfils the necessary requirements for hand surgery, but the training of general surgery is insufficient, especially regarding the assessment of indications for surgery; the conservative or operative treatment of injuries. This could be improved, but the level varies according to the interest of the teacher. Though the plastic surgeon we interviewed, who specializes in hand surgery, does not object to a separate training in hand surgery, a strong organization would be necessary and this could be initiated by an independent organization of hand surgeons. He reckons, however, that if that happened, a superspecialty would soon develop. In his view, financial motives could keep other specialists from referring patients to such a superspecialist (hand surgeons).

In hand surgery, good organization is necessary in order to offer 24-hour availability; in traumatology there is no urgency to treat all aspects of hand surgery. The best results for acute hand injuries are achieved by a team approach, which is more effective than using only the specific operative capacities of certain specialists. So even though co-operation is a vital condition for good treatment, it requires the devotion and interest of all the team members.

General hospital A:

Plastic Surgery:

Approximately 2000 operations a year are performed here, of which 500-600 are hand operations; thus, 25-30% of the practice is hand surgery. There are 200 casualty consultations; the remaining 400 consist of carpal tunnel syndromes, patients with rheumatoid hand problems and old hand injuries. Both aspects of hand surgery – traumatology and elective surgery – are treated. It is the opinion of the interviewed plastic surgeon that “hand” surgery starts from the elbow, since the forearm forms a functional unit with the hand.

There are no formal agreements with the general or orthopaedic surgeons who do the initial consultations at the casualty department and decide who will treat the patients. Generally, tendon and nerve injuries are left for the plastic surgeons.

Occasionally, the general surgeons do carpal tunnel release or treat Dupuytren's disease. There is co-operation with the orthopaedic surgeons in the treatment of rheumatoid hands and there are combined operating sessions.

The supply of patients is also dependent on the initiative of the patient, who can ask to be treated by a plastic surgeon. The referrals from general practitioners include all cases of Dupuytren's disease, tendon and nerve injuries, but many referrals are from general and orthopaedic surgeons. The plastic surgeons refer problem cases to centres in Rotterdam and Amsterdam (4 or 5 patients a year). Some patients are sent to the anaesthesiologist (pain clinics). Early referrals from other specialists are welcomed, in view of avoiding difficult secondary surgery.

As far as this training centre is concerned, the plastic surgeon interviewed thinks that the training in plastic surgery, as opposed to the training in general surgery, is sufficient to meet the demands of most hand problems. Special clinics for hand surgery depend on the willingness of insurance companies to cover the costs of treatment outside their geographical area. There is a fair chance of subspecialization – for example, for trauma or congenital deformities – in these centres. Good training is more important than the establishment of these hand surgery centres and barriers remain despite European certificates. It is probably still easier for a Common Market doctor to settle in The Netherlands, than for a Dutch doctor to do the same in, for example, France or Italy.

According to the plastic surgeon we interviewed a separate specialty in hand surgery would be attractive if there were sufficient patients (now only 1/3 of his practice). An official additional classification – for example, "hand surgery" – would be welcomed. It would need a logbook for hand operations as sole requirement and an exam would be necessary. In his view an "additional" certificate would then be issued by the Specialist Registration Board. Plastic surgery is especially suitable for the training in hand surgery, since plastic surgeons are used to treating their complications themselves using, for example, microsurgery. There is good co-operation with the occupational therapists and the orthopaedic surgeons.

General hospital B:

Plastic Surgery:

According to the plastic surgeon we interviewed, about 35% of his practice is hand surgery (for his partner working in a neighbouring hospital, it is 50%). There are referrals from the orthopaedic surgeons and the general surgeons and his partner has about 400 consultations a year from the casualty department. There is no formal agreement with the other specialists, but traditionally, they refer fingertip injuries, injuries to the volar surface of the hand and tendon and nerve injuries. The orthopaedic surgeons refer extensor tendon injuries and difficult fractures. The casualty officer, either acting as resident for general surgery or orthopaedic surgery, decides who will do the job. The co-operation with the orthopaedic surgeons is better than with the general surgeons and the former send in most of the referrals. Once a month there is a common consulting hour for all partners in the plastic surgery practice where they discuss problem cases (second opinions).

Summary hospital survey

Volume of hand surgery:

Academic centre A: 40% of the practice (1200 cases)

Academic centre B: 40% of the practice (500 cases)

General hospital A: 25% of the practice (500 cases)

General hospital B: 35% of the practice (numeral data were not provided despite multiple requests). They only provided the percentage and not the numeral data.

Comparing the two academic hospitals, we see that there is a larger number of acute hand operations in centre A (38%), than in centre B (20%). In centre B, there was more emphasis on elective surgery and there were combined clinics for congenital deformities. Due to lack of manpower the plastic surgeons in centre B had to restrict themselves to the more complicated hand injuries while the acute hand injuries in centre B were shared with the traumatology department.

In both academic centres, the heads of the plastic surgery departments thought that the level of plastic surgery was sufficient to fulfil the requirements for hand surgery. They did not object to the idea of a separate training for hand surgery open to candidates from plastic surgery, orthopaedic surgery and general surgery. The head of centre B stressed the need for the selection of good candidates, in view of the limited number of prospective training centres for hand surgery in The Netherlands. The head of centre A felt that a European certificate in hand surgery should not automatically imply the freedom to settle elsewhere in the Common Market.

General hospitals A and B have more in common than the two academic centres. In both hospitals 25-30% of the plastic surgery practice is hand surgery. There is, however, some disagreement on the role of plastic surgery; the plastic surgeon in centre B thought that hand surgery as a new specialty would undermine the mother specialty while the plastic surgeon in centre A felt that hand surgery would only be attractive if there were sufficient patients.

General comments:

Plastic surgeons from all of the centres complained about late referrals from other specialists. The co-operation with orthopaedic surgeons was, in general, better than with general surgeons.

During the interviews the following four points were emphasized:

1. The co-operation between the three specialties leaves room for improvement. Late referrals and insufficient final treatment results are the consequences of poor co-operation.
2. Hand surgery could either develop as an independent specialty or remain part of the three main specialties.
3. The key factors are good selection of candidates and good training. This training could be carried out within the specialty of plastic surgery.
4. Due to lack of manpower, certain tasks could be transferred from plastic surgery to other specialties.

These points can be clarified as follows:

- Ad 1. Academic centre B has combined clinics for difficult hand cases. They feel that it is useful to learn from each other's strengths and expertise.
- Ad 2. Since we began the research for this dissertation, major developments have taken place. Berger, a German plastic surgeon active in the organization of the European

Board Examinations, has developed an examination for a European Diploma in Hand Surgery (see Supplement 10). Strict criteria are applied and only those candidates in whose countries hand surgery is already a separate specialty are admitted to this examination without further training, provided that they have been exposed to orthopaedic and plastic surgery. By these criteria none of the Dutch plastic surgeons would qualify directly for this examination; they would need 2 years of 100% exposure in an accredited hand surgery unit. The same would apply to accredited general surgeons and orthopaedic surgeons. According to the rules of this examination, individuals whose training background does not match the criteria, could still submit an application and be assessed individually by the Qualifications Committee.

If everyone were to adhere to these rules, this development would signify an undermining of the value of accreditation in plastic surgery. It could be seen as a further example of the dynamics of border areas in medicine; in this case, hand surgery could develop so strongly that it would become independent. It remains to be seen whether or not this attempt of the FESSH (the European Federation of Societies of Surgery of the Hand) will result in better standards for hand surgery. The point will be discussed further in the paragraph on subspecialization.

- Ad 3. This point was partially explained already. According to the requirements of the FESSH, plastic surgery training alone would not be sufficient to qualify for a European Diploma. The question remains whether plastic surgeons who are still performing hand surgery should take this examination. Ideally, everyone with a special interest in hand surgery would have to take this examination. A logbook is also a requirement for candidates who want to take the exam. Selection of candidates for training in hand surgery is still a matter for the individual centres to decide.
- Ad 4. If the plans of the FESSH are realized, hand surgery will not be the domain of either specialty, and will only be practised by those trained in recognized hand surgery units. This would automatically mean that the demand for hand surgery could be met by these specially trained plastic surgeons, orthopaedic surgeons and general surgeons who are holders of the European Diploma of the FESSH. However, as long as the training in plastic surgery guarantees better preparation – better than, for example, general surgery – it is in the interest of the patients to supply adequate manpower. In countries with too few plastic surgeons, migration of well trained plastic surgeons from other EC countries might be a solution. Manpower and European migration, including the results of the European survey, are discussed below.

In order to compare these findings we obtained national data on hand surgery from SIG.

4.4 National data on hand surgery in The Netherlands

4.4.1. Clinical data obtained from the SIG

SIG (the Dutch Information Centre for Health Care in Utrecht) supplied additional data for the survey of the four centres in The Netherlands involved in hand surgery. These data concern hand surgical operations on patients treated between 1980 and 1989 by plastic surgeons, general surgeons and orthopaedic surgeons. Since 1980, more than 95%, and since 1986, more than 99% of the hospitals have sent their data to SIG. Thus, these data are quite representative of the hand surgery situation in The Netherlands. The following figures were obtained:

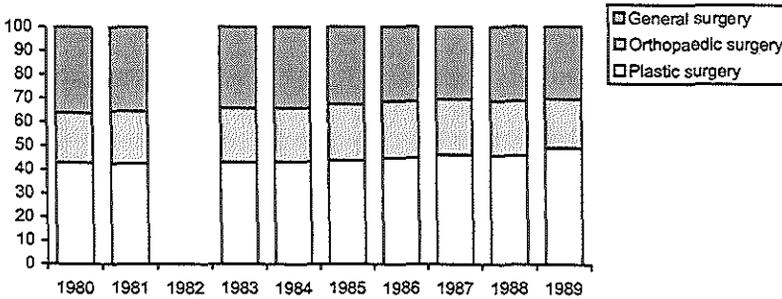
Table 4.1 Number of clinical hand surgery operations 1980-1989

	Plastic surgery	Orthopaedic surgery	General surgery	total
1980	42.9%	21.0%	36.1%	16367
1981	42.5%	22.1%	35.4%	16300
1982	no data	7094	6378	
1983	43.0%	22.9%	34.1%	19380
1984	43.3%	22.7%	34.0%	19548
1985	43.8%	23.7%	32.5%	18520
1986	44.9%	23.8%	31.3%	18164
1987	46.2%	23.4%	30.4%	17472
1988	46.0%	22.9%	31.1%	16974
1989	49.1%	20.6%	30.3%	17071

Source: SIG 1991

The number of hand surgical operations done by plastic surgeons almost equals the total number of operations done by general surgeons and orthopaedic surgeons. The figures were summarized in a histogram (Figure 4.1). This proves the prominent role plastic surgery plays in Dutch hand surgery.

*Figure 4.1 Number of hand surgery operations between 1980 -1989**



Source: SIG, Utrecht, The Netherlands

* There are no data on plastic surgery available for 1982, therefore no histogram was made

Since 1990 the code system of SIG has been changed. Compared to the old system it has become more detailed and instead of the old three-number system, a five-number system is used (e.g. 5.824.1 is primary repair of the flexor tendon of hand and wrist). SIG supplied data on the number of hand surgical operations performed by general surgeons, plastic surgeons and orthopaedic surgeons between 1991 and 1995 of both clinical patients and patients treated in day care.

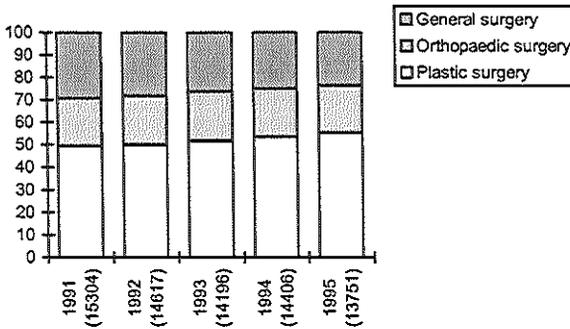
The following figures were obtained for clinical patients:

Table 4.2 *Number of clinical hand surgery operations 1991-1995*

	Plastic surgery	Orthopaedic surgery	General surgery	total
1991	49.4%	21.2%	29.4%	15304
1992	49.7%	22.2%	28.1%	14617
1993	51.5%	22.2%	26.3%	14196
1994	53.4%	21.7%	24.9%	14406
1995	55.3%	21.1%	23.6%	13751

These findings can be summarized in a histogram (Figure 4.2).

Figure 4.2 *Number of hand surgery operations between 1991 -1995*



Compared to the figures in Table 4.1, it is remarkable that the number of clinical operations seems to decrease. The number of operations performed by plastic surgeons is increased between 1991 and 1995, while the number of operations performed by general surgeons is decreased. The number of operations performed by orthopaedic surgeons, however, remains stable.

Looking at the type of clinical operations, the following tables were obtained. For reasons of clarity only one table concerning clinical hand surgery operations is presented here. The details of all of the clinical hand surgery operations can be found in Supplement 2. Surgery of the bony parts includes, for example, drainage, osteotomy, carpal row removal, internal fixation of fractures, arthroplasty, ligamentous repairs, introduction of joint prosthesis, arthrodesis and arthroscopy. Surgery of tendons, fascia and ligaments includes tendon repair, tenolysis, tendon transfers, ganglions but also amputation and replantation, revascularization and fasciectomy (Dupuytren). Surgery of nerves includes primary repair, transplantation, neurolysis, treatment of neuromas and decompression.

Table 4.3 *Clinical hand surgery operations 1995*

	General surgery	Orthopaedic surgery	Plastic surgery	total
median nerve decompression ¹⁾	27.3%	23.0%	49.7%	1638
bony structures ²⁾	26.2%	35.5%	38.3%	5217
muscles, tendons, fascia ³⁾	21.4%	10.2%	68.4%	6635
nerves ⁴⁾	3.4%	0.4%	96.2%	261
total	23.6%	21.1%	55.3%	13751

Legend:

- 1) Median nerve decompression means decompression of median nerve with and without synovectomy.
- 2) Surgery of bony structures means, for example, drainage, osteotomy, carpal row removal, internal fixation of fractures, arthroplasty, ligamentous repairs, introduction of joint prosthesis, arthrodesis and arthroscopy.
- 3) Surgery of muscles, tendons and fascia includes all operations of the soft tissues of the hand except surgery of the nerves and median nerve decompression. So this includes: tendon repair, tenolysis, tendon transfers, fasciectomy (Dupuytren), excision of ganglions and amputation but also revascularization and replantation.
- 4) Surgery of nerves includes primary repair, transplantation, neurolysis, treatment of neuromas and decompression of the ulnar nerve.

This classification was chosen for reasons of clarity. Details on the clinical hand surgery operations 1991-1994 can be found in Supplement 2.

4.4.2. Data on day care hand surgery operations 1991-1995 (SIG, Utrecht)

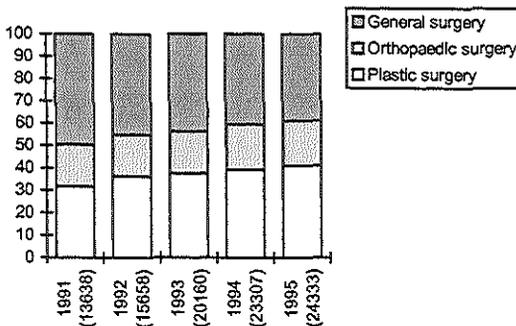
In recent years the number of surgical operations performed in day care has increased, and this has been stimulated by the Dutch government. Therefore the data provided by SIG should provide information regarding this trend in hand surgery.

Table 4.4 Number of day care hand surgery operations 1991-1995

	Plastic surgery	Orthopaedic surgery	General surgery	total
1991	31.6%	18.8%	49.6%	13638
1992	36.2%	18.5%	45.3%	15658
1993	37.4%	19.0%	43.6%	20160
1994	39.1%	20.5%	40.4%	23307
1995	40.9%	20.3%	38.8%	24333

These data can be summarized in a histogram:

Figure 4.3 Number of day care hand surgery operations between 1991 and 1995 in percentages



Again, the number of operations performed by general surgeons during the period 1991-1995 is decreased, while in the same period there is an increase in the number of operations performed by plastic surgeons and orthopaedic surgeons.

Looking at the type of operations, the following tables were obtained:

Table 4.5 Day care hand surgery operations 1995

	General surgery	Orthopaedic surgery	Plastic surgery	total
median nerve decompression	38.7%	26.3%	35.0%	7900
bony structures	36.8%	26.9%	36.3%	3710
muscles, tendons, fascia	39.5%	14.7%	45.8%	12639
nerves	2.4%	1.2%	96.4%	84
total	38.7%	20.3%	41.0%	24333

Again, the majority of operations in all groups is performed by plastic surgeons. One could criticize the data of SIG because most of the time the codes are completed by the medical registration in the hospitals. Normally, however, the specialists fill in the diagnosis and the secretaries of the medical registration receive special training from SIG. It is difficult, however, to introduce a watertight system. The operations are also not graded in increasing difficulty.

The findings of SIG concerning plastic surgery could be compared with the findings in Academic Centre C. Data of clinical hand surgery operations were provided from 1992 to 1996.

Table 4.6 Clinical hand surgery operations Academic Hospital C 1992-1996

	1992	1993	1994	1995	1996	total
median nerve decompression	20	30	34	48	45	177
bony structures	243	217	282	289	314	1345
muscles, tendons, fascia	472	772	728	817	934	3723
nerves	138	94	194	218	172	816
total	873	1113	1238	1372	1465	6061

Source: Staff Academic Centre C

Again, a gradual increase in the number of operations is observed. One should, however, consider that part of it might be due to better or more extensive classification and coding. In one single operation multiple hand surgical procedures could be performed, which need separate coding.

4.5 Summary and conclusions

The boundaries of plastic surgery with other specialties are vague. This is the reason why different specialties perform operations in the same border area (see also Chapter 1). Since hand surgery is a perfect example of a borderline problem between plastic surgery, orthopaedic surgery and general surgery, data regarding this subject were collected. In order to gain a better insight in this problem, a two-way approach was used.

Firstly, a survey was conducted among two general and two academic hospitals which are known centres for hand surgery. According to those who were interviewed, late referrals from other specialties remained a problem, sometimes resulting in a poor prognosis. More difficult hand cases were often referred to academic plastic surgery centres.

Secondly, numeral data were collected from SIG and an academic centre C in order to find useful trends. The data (1991-1995) obtained from SIG were interesting because they showed an increase both in the clinical cases and in the day care cases. However, the

increase in the number of day care cases surpasses that of the clinical cases. In the clinical cases, plastic surgery showed a steady increase in the total number of clinical cases in the period 1991-1995, while general surgery showed a decrease. The number of clinical cases treated by orthopaedic surgery remained fairly even.

In the day care cases the increase in cases may reflect the effect of the stimulation of the government to treat more patients in day care. There is a remarkable decrease in day care patients in general surgery from 49.6% in 1991 to 39.8% in 1995, while in the same period there is an increase in the number of cases treated by plastic surgery from 31.6% to 40.9%.

In overall figures, in all of the four different groups of operations, plastic surgery is the main contributor. Though one might argue that the data collection by SIG is sometimes performed by non-medical, but trained personnel, the large number of cases makes it possible to draw conclusions.

In the present classification, however, a classification of operations in increasing technical difficulty is still lacking. This could be helpful in organizing and harmonizing the training. Furthermore, the coding system could be improved. A classification in operations with grading for technical difficulty could also be related to the financial coding system as was suggested recently (Stevens and Hovius, 1997; Stevens, Slingerland and Hovius, 1997).

The training in plastic surgery in the European Union

5.1 Introduction

This Chapter studies the training in the various EU countries. The role of the European Union for the training is significant since European Unification offers the possibility of migration of plastic surgeons and trainees, while European directives do not deal with educational standards. These items will be mentioned in this Chapter.

The crucial role of the training in plastic surgery was emphasized in the previous Chapters. We mentioned both the boundary problems with other specialties (Adamson, 1991; Bailey, 1984; Regan Thomas, 1985; Regan Thomas and Graboyes, 1986; Philips, Pariser and Pariser, 1994) and the fact that one is working in areas traditionally covered by plastic surgery. Another problem was the fact that these specialties started to organize training in, for example, cosmetic surgery or even facial plastic surgery (Bailey, 1984, Regan Thomas, 1985). Moreover, in general plastic surgery training there is sometimes little room for specific areas (Nicolle, 1983) such as cosmetic surgery.

With this in mind, serious thought was given to the reorganization of the training in the various countries (the European Boards). A further stimulus for this reorganization is the fact that the level of training still varies from one EU country to the next. Consequently, one had to take a more critical look at the level of competence of doctors from other EU countries. It is, therefore, useful to review the training situation in plastic surgery in the different EU countries. The training will be analysed by examining several different aspects:

- the organization on a national and European level;
- the training programme including: duration, common trunk, requirements for trainees, requirements for trainers, requirements for training centres, supervised training and selection, exams, quality control, the adequacy of the training;
- postgraduate training (for example, aesthetic surgery and hand surgery);
- continuing medical education.

More detailed training requirements of the individual EU countries can be found in Supplement 5. The various general aspects of the plastic surgical training will be discussed in the following paragraphs.

5.2 Organization (national) of the specialist training

In order fully to appreciate the differences in plastic surgery training within the EU countries, it is necessary to understand the organization of the training of medical specialists on a national and European level. It is especially helpful to know how the decision-making takes place, since future changes and improvements in the training structures will depend on the acceptance by the organizations responsible for training in each EU country. Therefore, two main questions must be answered:

5.2.1 Who is responsible for the specialist training? (content, requirements)

The training can be state-controlled or controlled by a professional body (medical or academic).

Table 5.1 Responsibility for training in the EU countries

	The organization responsible for the training		
	State (Ministry)	Medical organization	University
Belgium	x		
Denmark		x	
France		x	
Germany		x	
Greece	x		
Ireland		x	
Italy			x
The Netherlands		.	
Portugal		x	
Spain	x		
United Kingdom		x	

Source: Information book 1958-1988 of the European Union of Medical Specialists (UEMS)

* N.B. Contrary to the findings of the Information book, a medical body – the Central College – is responsible for the training requirements; the executive body is the Specialist Registration Committee (SRC).

This table shows the differences between the EU countries. This lack of unity will not make future European Unification any easier. For a better understanding of this table – and to know why sometimes “state” was mentioned instead of “medical body” – (i.e., in The Netherlands), the following information is necessary:

- Belgium* “Le Conseil Supérieur des Médecins Spécialistes et Médecins Généralistes” determines the requirements, with ratification by the Minister of Social Affairs.
- Denmark* The Specialist Council of the National Board of Health monitors and develops requirements for specialist training.
- France* “l’Ordre des Médecins” determines the requirements in agreement and consultation with the “Medical Specialist Syndicate”.
- Germany* The requirements for the training are regulated in the “Weiterbildungsordnung” decided upon by the “Vertreterversammlung der Landesärztekammer”. The basis for the “Weiterbildungsordnung” is the “Musterweiterbildungsordnung”, discharged by the “Deutscher Arztag”.
- Greece* The Central Council for Health is responsible for determining the training requirements.
- Ireland* The Medical Council is responsible for determining the training requirements.
- Italy* The universities determine the training requirements.
- The Netherlands*
The Central College determines the training requirements. These requirements are determined in consultation with the Specialist Registration Committee with ratification by the Minister of Welfare, Health and Cultural Affairs.
- Portugal* The “Ordem dos Medicos” is responsible for determining the training requirements.
- Spain* The Ministry of Health and Education is responsible for the training requirements.

United Kingdom

The Joint Higher Committee of the Royal Colleges of Surgeons is responsible for the training requirements.

Luxembourg

The Minister of Health determines the requirements. However, Luxembourg has no training centres.

5.2.2 Who is responsible for the registration in the various EU countries?

Not only is it relevant to know which organizations are responsible for the organization of the training, but one should also be acquainted with the institutions responsible for the registration of the new specialists.

Table 5.2 - Responsibility for specialist registration in the EU countries

	The organization responsible for specialist registration		
	State	Medical organization	University
Belgium	x		
Denmark	x		
France		X	
Germany		X	
Greece	x		
Ireland	No specialist registration, but certificate of EC Specialist		
Italy			X
The Netherlands		X	
Portugal		X	
Spain	x		
United Kingdom	No registration, but accreditation of specialist training		

Source: Information book UEMS 1958-1988

In many instances, the organizing bodies are the same:

1. Belgium: the Ministry of Health
2. Denmark: the Health Authority
3. France: see elsewhere in this Chapter
4. Germany: " "
5. Greece: " "
6. Ireland: " "
7. Italy: " "
8. The Netherlands: The Specialty Registration Commission
9. Portugal: see elsewhere in this Chapter
10. Spain: the Ministry of Education
11. United Kingdom: no registration, but accreditation by the Royal Colleges of Surgery.

In order to gain a better understanding of this matter, the following should be noted: In the United Kingdom, accreditation is granted by the Royal Colleges of Surgery, while registration is a matter for the General Medical Council. Until recently, accreditation in the United Kingdom was necessary in order to obtain a consultant post. A person who had fulfilled the training requirements of the European Community for a specialist certification, could be denied accreditation and, thus, a consultant post. The reason is that the qualification 'medical specialist' is without legal standing in the United Kingdom. This

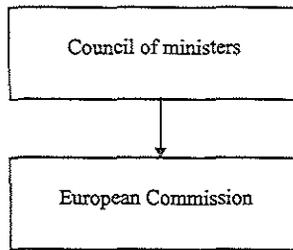
discrepancy was brought to the forefront in the case of dr. Goldstein, who challenged the decision to deny him work in the UK after he trained in the EC (Brearly, 1992).

In conclusion:

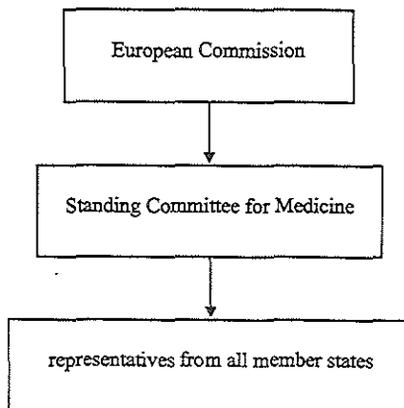
- Within the EU countries organizations with various backgrounds (state, university or medical organizations) are responsible for the contents and duration of the training. Therefore, a uniform system throughout the European Union is not available. This can be the source of problems when attempting to achieve European harmonization of the training.
- There are different organizations within the EU countries which are responsible for registration. These organizations are not necessarily the same as those responsible for the requirements for the training (content of the training).
- Since there are various organizations in the different EU countries that are responsible for the requirements and registration of medical specialists, background information is necessary regarding the organisation of medicine in Europe.

5.3 The general organization of medicine in the former EC and some historical notes

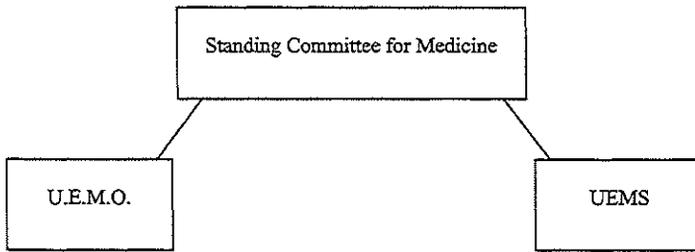
The present European organizations have their roots in the Treaty of Rome (1956), which provides for free exchange of people, services and capital within the European Economic Community. In 1957, the European Community was founded; the executive part of which was formed by the European Commission. This organ answered directly to the Council of Ministers.



The European Commission has direct links with the Standing Committee for medicine in the EU.



The Standing Committee is the mother organization for the European Society of General Practitioners (UEMO) and, more importantly, for the European Union of Medical Specialists (UEMS), which has existed since 1958.



The free exchange of people and services – the mutual recognition of qualifications of medical specialists – was effected by the Commission of the European Communities in the June 16, 1975 directive. *The directives of the EU, however, are only concerned with free migration and not with educational standards (Brearly, 1993).* The European Commission combined their directives with the establishment of the Advisory Committee on Medical Training in 1978.



The principal recommendations of this advisory committee were (1978, 1982 and 1985):

- Each state should have a competent authority to determine standards, inspect and recognize training centres, co-ordinate basic with specialist training, award certificates attesting legal qualification and establish relations with corresponding bodies in other member states.
- Trainee numbers must be related to training facilities and to the future need for specialists.
- Remunerated, full-time training with a service element is the norm.
- Trainees must progressively assume a greater degree of independent responsibility as their skill and experience grow.

Training should proceed via a common trunk from the general to the more specialized part. These recommendations, however, have not been widely implemented and the European Commission has not been prepared to bring them forward in new directives (Brearly, 1992).

For this reason, the UEMS started new initiatives. It was clear to them that setting standards for each specialty within the EU – including the duration and quality of training – would depend on the initiatives within each specialty. Only then conditions could be formulated which guarantee an equal exchange of medical specialists within the EC. For this purpose, the UEMS created the so-called Monospecialist Committees (MSC's).

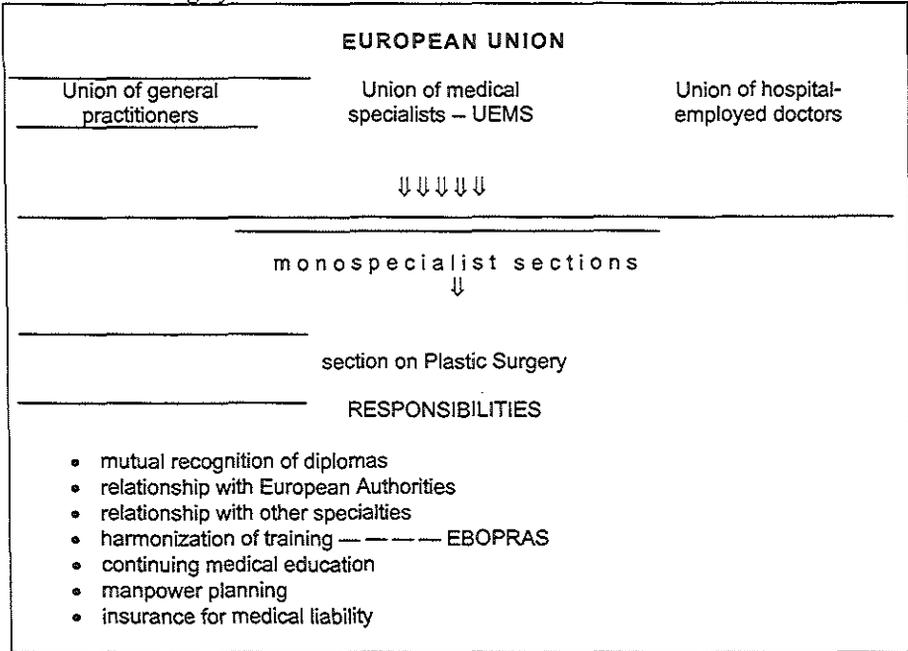
5.4 The formation of monospecialist committees and their significance for plastic surgery

In 1962, twenty MSC's were formed. Plastic surgery was not included because it was not formally recognized in all member countries as a separate specialty. In The Netherlands, it was Hage's initiative to put pressure on the UEMS to form a plastic surgery section (Winters, 1975).

It was not until 1969 that the board of directors decided to accept the report of a study group and to create a Monospecialist Committee for plastic surgery. *The aim of the monospecialist sections of the UEMS (Article 13 of the statutes) is to study the problems*

raised by the Treaty of Rome concerning the definition, training qualifications and exercise of the profession in that particular specialty (*Information book 1958-1988 of the UEMS*). Since the creation of the monospecialist section for plastic surgery, their responsibilities have increased. Nicolai (1995) presented a summary of this process in the diagram below.

Figure 5.1 *l'Union Européenne des Médecins Spécialistes and its Section in Plastic Surgery.*



Source: IPRAS Newsletter, (Feb. 1995)

Because little progress had been made by the Advisory Committee on Medical Training, the UEMS formed a Harmonization Committee. At this time, the Monospecialist Sections were also involved in developing training schedules. On June 16, 1975, the European Council decided to recognize plastic surgery as a separate specialty with free circulation among the member countries. However, it was not until 1992 that Germany recognized plastic surgery as a separate speciality. Until that time, it had been part of general surgery. The European Council also decided (75/363/EEC, Article 4) that the minimal full-time training for a plastic surgeon in the member states should be five years. This rule had *legislative power* in all member states which now adhere to this ruling and all have a full-time training period of at least 5 years. The Directive 75/363/EEC was confirmed by the Directive 93/16/EEC. In this Directive it was repeated that member states shall recognize each other's diplomas and certificates in specialized medicine and other former qualifications. The member state would ensure that the training leading to the diploma, certificate or formal qualification would meet the following requirements: It would contain 6 years of study within the framework of the training course; and it would be full-time in a University or teaching hospital. Again, there was no preoccupation with the quality of the training, so in 1993, the management of the UEMS decided to issue the European Charter for medical specialists. The goal of this Charter was the

harmonization and improvement of the quality of medical practice in the European Union. In the Charter the requirements for adequate training, which prepares specialists for practice of their specialty at an appropriate level in any member state of the EC (EU), is described. In the Charter the definition of the content of the training is described.

The Monospecialist Committee of plastic surgery was not pleased with the fact that within the EU countries, there were differences in duration of the training. This led to a discussion within the Committee which resulted (on December 12, 1989) in the advice to increase the training to six years: 3 years of general surgery (including branches of surgery other than plastic surgery, of which 6 months traumatology) and 3 years of plastic surgery. It should be remembered, however, that the MSC and the UEMS only have an advisory function. They have no influence on the final decision-making of the organizations responsible for the duration of training in the different EU countries. They cannot, therefore, force the national organizations to change the duration of their specialist training.

The European Board of Plastic, Reconstructive and Aesthetic Surgery (EBOPRAS) was founded in 1992, from the UEMS Monospecialist Committee for plastic surgery and, more specifically, the monospecialist Professional Advisory Body of the European Union. This Board has more practical implications and is more pragmatic than the Monospecialist Committee. Because of the fear that the Monospecialist Committee would not be able sufficiently to influence the training in plastic surgery and the effects of the European Unification (such as the migration of doctors), the European Board was founded. Its aim is to control and recognize the quality of plastic surgery in the member countries (Ioannovich, 1995). This can be achieved by supervising the quantity and quality of training through:

- a) The trainees' logbook;
- b) Accreditation by visits to the units;
- c) The examination held after receiving the National Accreditation Document (through examination or any other form of evaluation);
- d) Postgraduate courses, seminars and workshops.

Before discussing the training in plastic surgery in more detail, it is important to mention some features in the training system which, although not common to all, are considered to be important in some EU countries. A summary of the present training makes it clear that no training system is identical and European diversity (variety) is the rule. The specific details of the training will be given in the Supplement.

5.5 The organization of the training in plastic surgery in the EU

5.5.1 Introduction

After a general review of the specialist training and the organization of medicine in the EU, the training of plastic surgery in the EU will be described. The organization of plastic surgery training in the different EU countries will be discussed in the light of the European Directives. For practical reasons, we use terms normally used in the literature in connection with specialist training: i.e., duration and common trunk.

Before describing the different aspects of training in the EU countries, it is helpful to know which rules and requirements have been laid down in European directives. It is important to keep in mind, if we agree on future European harmonization of the training within the EC, the fact that the European Council issued a directive as early as on June 16, 1975 (75/363/EEC):

- Member states shall ensure that the training leading to a diploma, certificate or other evidence of formal qualifications in specialized medicine, meets the following minimal

requirements:

- it shall entail the successful completion of six years' study within the framework of the training course referred to in Article 1;
 - it shall comprise theoretical and practical instruction;
 - it shall be a full-time course supervised by competent authorities or bodies;
 - it shall be in a university centre, in a teaching hospital or, where appropriate, in a health establishment approved for this purpose by competent authorities or bodies;
 - it shall involve the personal participation of the doctor training to be a specialist in the activity and in the responsibilities of the establishments concerned.
- Member states shall make the award of a diploma, certificate or other evidence of formal qualifications in medicine referred to in Article 1.
 - Within the time limit laid down in Article 7, member states shall designate the authorities or bodies competent to issue the diplomas, certificates or other evidence of formal qualifications referred to in paragraph 1.

Directive 93/16/EEC was mentioned in paragraph 5.4.

These directives were only intended to make free migration possible (Brearly, 1993). Educational standards are not set and there is no clear definition to what extent the specialist training should be completed. It is, therefore, difficult to judge if a plastic surgeon trained elsewhere in the EC has the experience to practice outside his native EC country. With this in mind, the present status and the various aspects of plastic surgery training in the different EU countries can be studied.

5.5.2 Total duration of plastic surgery training, including the common trunk of general surgery

Table 5.3 Duration of training in the EU countries

Country	Total duration of study	of which
Belgium	6 years	3 years general surgery 3 years plastic surgery (including 1 year on a special topic of plastic surgery)
Denmark	7 years	2 years introduction in surgery 2 years general surgery 3 years of plastic surgery
France	5 years	2 years general surgery 3 years plastic surgery
Germany*	6 years	1 year general surgery 5 years plastic surgery
Greece	5 years	2 years general surgery 3 years of plastic surgery
Ireland**	7 years	2 years general surgery 5 years of plastic surgery
Italy	5 years	5 years plastic surgery
The Netherlands***	6 years	2 years general surgery 4 years plastic surgery
Portugal	5 years	2 years general surgery 3 years plastic surgery
Spain	5 years	2 years general surgery (basic specialties) 3 years of plastic surgery
United Kingdom*	8 years	2 years general surgery 6 years plastic surgery

* = Since 1992 the situation has changed; plastic surgery has become an independent specialty. Though there is still no uniform rule for all the provinces, the ratio of time spent in general surgery/plastic surgery has changed from 6 years general surgery, followed by 5 years plastic surgery, to 1 year general surgery followed

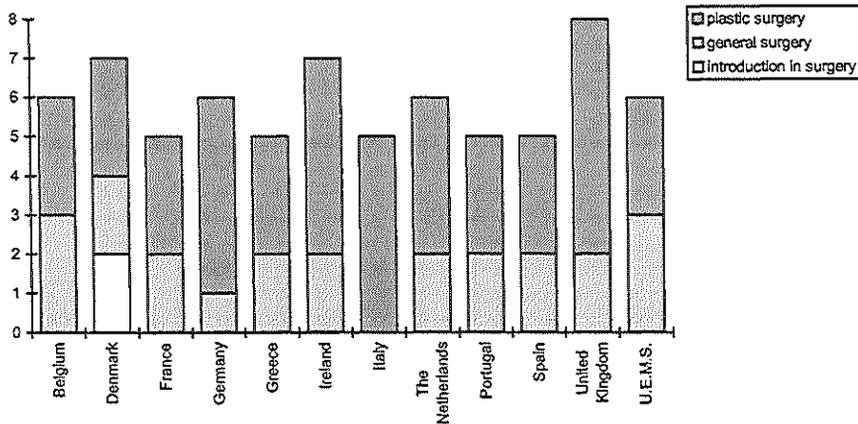
by 5 years plastic surgery. The period of time spent outside plastic surgery can be 2 years at most, one year of which is spent in general surgery and 6 months in ENT, maxillofacial surgery and/or orthopaedic surgery. During the transitional period, the old training schedule is still recognized. In some provinces of Germany the ratio will be 2 years of general surgery followed by 4 years of plastic surgery. 1 year of the training can be spent in a general plastic surgery practice.

** = Minimum duration

*** = Since 1997 the educational board (Concilium Plastico Chirurgicum) has accepted the proposal to change the ratio of time spent in general surgery from 3 years general surgery and 3 years plastic surgery, to 2 years general surgery and 4 years of plastic surgery. Furthermore, the EBOPRAS and FESSH logbooks have been accepted as guidelines for the contents of the training. The proposal, however, has not yet been implemented.

The present length of the training in plastic surgery in the member states and the length of training proposed by the monospecialist committee of the UEMS is shown in Figure 5.2. In all member countries except Italy, basic general surgery training is required, but its duration varies from eighteen months (France) to four years (Germany and Denmark).

Figure 5.2 Duration of training in plastic surgery in the EU Countries



Source: Information book UEMS 1958-1988, the German Association of Plastic Surgery and The Dutch Society of Plastic Surgeons.

*This figure represents the situation in Germany after 1992

Two years ago the UEMS, concerned with the Advisory Committee's lack of progress, formed the Harmonization Committee of the UEMS in order to further the harmonization of the theoretical and practical instruction of the specialist training. Its aim is to co-operate with the Monospecialist Committee in designing general rules for the specialist training. Three points are relevant here:

1. All countries have a minimal total duration of five years of training to become a plastic surgeon (European Council rule 75/363/EEC, Article 4).
2. The recommended total duration of six years (monospecialist committee of plastic surgery) divided into three years general surgery and three years plastic surgery is, thus far, complied with only in Belgium and The Netherlands.
3. In some countries the training is longer in total and in Ireland and the United Kingdom, for example, trainees are forced to stay in training posts until consultant vacancies arise.

This seems undesirable and creates disharmony with the other member countries.

5.5.3 Common trunk and the period spent before entering the specific plastic surgery part of the training

The term "common trunk" refers to the time spent in the mother specialty (general surgery) and does not reflect similarities in the contents of training. The term is used for all surgical specialties where general surgery is part of the training programme.

General surgery is compulsory in all countries of the EU except Italy. This creates disharmony between other training systems within the EU and Italy and could form a problem for further future standardization in training within the EU.

It has been claimed that common trunk training programmes must provide the trainees with knowledge, attitude, skills and values concerning the basic problems and objectives of general surgery that are mandatory for their training. Clear objectives concerning the contents of the common training programmes, including the selection of trainees and manpower planning, are necessary. As far as the contents of a surgical common trunk programme is concerned, the following objectives were suggested (Pissiotis, 1993):

1. Preoperative and postoperative surgical care
2. Surgical anatomy and embryology
3. Surgical physiology
4. Surgical microbiology
5. Basic surgical skills
6. Emergency surgery
7. Surgical intensive care
8. Trauma
9. Haemostasis and wound-healing
10. Clinical pathology
11. Clinical pharmacology

The quality of the common trunk programme is as important as the duration. This simply means that it does not matter whether the general surgery part (common trunk) is shorter in one country than in another as long as certain standards are met: i.e. the basic principles of wound-healing, traumatology, surgical anatomy and pathology. Nevertheless, the duration of the common trunk training period has also been a point of discussion outside the EU (Weeks, 1992).

It has been stated that a three year training period in general surgery was not necessary but that the plastic surgery training period should be extended. It has also been pointed out that training in plastic surgery should not only include development of technical skills, but also the knowledge of biological sciences. In this respect, dermatology is ahead of plastic surgery since dermatologists are among the leaders in the biochemistry of skin disorders (Weeks, 1992).

In The Netherlands, these topics have already been included in their basic surgical course, making it obligatory for trainees to study special syllabi covering the different topics. These topics form the basis for theoretical exams which the trainees have to pass in order to stay in the training programme. Some countries even have programme entrance examinations (e.g., France, Spain and Italy). The importance of research in basic sciences has been recognized in the USA and Europe. Germany and the United Kingdom, for example, actively stimulate trainees to participate in basic research projects (Pissiotis, 1993).

While most countries have the common surgical programme, in some countries it is possible to spend time in surgical subspecialties before entering the plastic surgical part of

the training. Apart from time spent in general surgery, trainees in some countries can temporarily gain experience in:

ENT	(France, Germany, Greece, Portugal)
maxillofacial surgery	(France, Greece, Portugal, Spain)
orthopaedic surgery	(Germany)
ophthalmology	(Portugal, Spain)
paediatric surgery	(Portugal, Spain)
stomatology	(Portugal)
research	(France, the United Kingdom, The Netherlands)
pathologic anatomy	(Portugal, Germany)
traumatology and orthopaedic surgery	(United Kingdom, Ireland, Spain)
urology	(Germany, Spain)
anatomy	(Germany)
anaesthesiology	(Germany)
vascular surgery	(Spain)
neurosurgery	(Spain)

In summary: apart from the variable time period spent in general surgery (see Figure 5.2), some countries offer their trainees the possibility of acquiring additional experience in other specialties and research. Practical skills courses were introduced in the United Kingdom.

5.5.4 Contents of the training in the different EU countries (requirements for the trainees)

As we mentioned in the introduction, *according to the directive of the European Council of June 16, 1975 (75/363/EEC), the training should comprise theoretical and practical instruction* (see Supplement 4). Because there is no sharp boundary between the requirements for trainees and the contents of the training, the term 'contents of training' can be used. The contents of the training consist of a theoretical part and a practical part. Details of the separate EU countries can be found in the supplement. However, a summary of the main facts is given below.

The *theoretical information* is either given in syllabi (Spain and Italy), or in theoretical courses (Belgium, The Netherlands, the United Kingdom). In France, there are theoretical classes on certain subjects. Sometimes a combination of methods can be used to acquire the theoretical knowledge required; in Denmark, reading the literature and doing research as well as attending courses, meetings and conferences are stimulated.

The subjects taught during the training coincide with the general contents of the specialty in the specific country, which mainly consist of reconstructive surgery and aesthetic surgery (see Chapter 3). In Ireland, for example, those subjects are:

- principles and practice of wound care and tissue transplantation;
- principles and practice of managing trauma and infection, involving skin as part of the injury;
- principles of management of maxillofacial trauma;
- congenital abnormalities (cleft lip, palate, craniofacial, genital);
- burns;
- hand surgery;
- skin cancer;
- head and neck surgery (including major reconstructions);
- microsurgery;

- facial reconstruction;
- breast reconstruction;
- aesthetic (cosmetic) surgery.

Naturally, this list can vary from country to country, depending on the differences in contents of the specialty. This list and that of other countries, however, lacks a clear structure and the topics are not related to a certain timetable or stage of the training.

In the United Kingdom a syllabus of training in plastic surgery was introduced leading to certification. The syllabus (see Supplement 12) is divided into training modules which are related to the first, second or third part of the training. Each module should include relevant anatomy, pathology, associated diseases, preoperative investigations and patient assessment, indications and principles of operations, recent advances and ancillary interventions (e.g., radiotherapy, speech therapy, physiotherapy).

The first part (years 1 and 2) of the training consists of introductory training modules of at least 6 months each in:

- principles of reconstructive surgery;
- principles of aesthetic surgery;
- management of acute trauma;
- administration and management;
- level 1 (basic) subspecialty training in:
 - burns part 1
 - paediatric plastic surgery
 - malignant skin tumours
 - head and neck tumours part 1
 - elective hand surgery part 1

The second part (years 3 and 4) consists of two categories of modules. The first category comprises applied reconstructive and aesthetic plastic surgery of face and lips, nose, eyelids, ears, breasts, trunk and limbs and surgical management of metastatic malignant disease of skin and soft tissues. The trainee should study this category of modules and develop practical experience in most of the operations. The second category consists of subspecialty modules:

- burns part 2;
- cleft lip and palate;
- reconstructive surgery of the genitalia;
- hand surgery part 2;
- oculoplastic surgery;
- head and neck surgery;
- aesthetic surgery;
- limb trauma.

The trainee should become familiar with these subspecialty modules but is not expected to have operative training beyond that of assisting. The second part is concluded by the Intercollegiate Specialty Examination.

The third part (years 5 and 6) consists of more advanced general training or subspecialty training (see modules of part 2). Training must take place in a unit approved for subspecialty training and can be outside the main training rotation. Familiarity with scientific publications and recent advances is needed and the trainee should know indications for and practice of relevant operations. Where appropriate, attachment to interfacing specialty (specialties) for extended training is possible.

So these modules form an example of a mixture of the required theoretical knowledge coupled with practical knowledge, all related to the stage of the training. Due to the modular system the training is divided over several hospitals (Units) which offer the trainee experience in that particular module. Competition is necessary for the trainee to gain access to the Units for a particular module. Especially in the latter stages of his training, the trainee can, therefore, choose his favourite subspecialty, provided that he wins the competition with other candidates.

The *practical* instruction can be given in logbooks. EU countries where a logbook was unknown, can use the logbook of the EBOPRAS, though this logbook does not take into account the differences in contents (e.g., the absence of, for example, craniofacial surgery or hypospadias operations in one country).

The EBOPRAS has summarized the main topics of the plastic surgery training in a logbook and has included the following subjects:

- trauma;
- neoplasia;
- hand surgery;
- miscellaneous: pressure sores;
surgery for facial palsy;
trunk reconstruction;
tissue expansion;
microvascular flap surgery;
aesthetic surgery;
- other procedures: scars, tattoo removal;
experimental research;
- teaching;
- microsurgical training.

Details of the EBOPRAS logbook can be found in the Supplement (part 6). A logbook could be very helpful in detecting weaknesses in a trainee's practical experience and might be an argument for a rotation to other Units. A logbook could further be improved by grading the operations according to complexity (Stevens and Hovius, 1997). This could be helpful in setting educational goals for trainees or assessment of their progress. It could even help plastic surgeons in proving "their professional value to the different national and international authorities".

The *differences in contents of the training* in the EU countries:

When we compare the contents of the training in the various EU countries, there are differences which reflect the differences in the contents of the specialty in the various countries (for example aesthetic surgery, hand surgery, hypospadias, craniofacial surgery, maxillofacial surgery, head and neck surgery and microsurgery). As examples of these differences, two problem areas will be studied :

1. the teaching of *aesthetic surgery* within the plastic surgery training;
2. the teaching of *hand surgery* within the plastic surgery training.

As far as *aesthetic surgery* is concerned, ample space is provided for the teaching of aesthetic surgery in France, Portugal, Spain and Italy. In the other countries, aesthetic surgery forms only part of the training but does not play a prominent role.

An example is the situation in the United Kingdom. The training in aesthetic surgery within the National Health Service is – according to some – deficient (Skanderowicz, 1991) and during the last meeting of the British Association of Plastic Surgeons, it was suggested by

the representative of the SAC that, in future, three or six-month training periods would be available for Senior Registrars in order to obtain more experience in aesthetic surgery.

The issue of the training in cosmetic surgery was the subject of a discussion in *The Lancet* between representatives of the British Association of Aesthetic Plastic Surgeons (Davis, 1991) and the British Association of Cosmetic Surgeons (Skanderowicz, 1991). While the former argued that the members of his association were very well trained (full accreditation as plastic surgeons, a logbook and a syllabus (Supplement 11), knowledge of the literature on aesthetic surgery, attendance of at least four international meetings on aesthetic surgery, recommendation by two full members), the latter argued that in the NHS, there was no room for a consultant plastic surgeon to perform aesthetic surgery. The new modular organization of the plastic surgery training in the United Kingdom seems a first step to improve this situation. Trainees in the United Kingdom, however, have to follow their consultants to their private hospitals and clinics where they perform aesthetic procedures.

As far as *hand surgery* is concerned: more space is provided in countries with less emphasis on aesthetic surgery (for example Germany, The Netherlands, Denmark, the United Kingdom). Even in these countries, however, it is difficult to find Units suitable for advanced training in hand surgery. In Germany for example, some Units have officially recognized training for a limited period, for example the Hand Surgical unit in Hamburg has recognition for only one year, because only one aspect of plastic surgery is practised. This is unique in Europe, but could be a problem when a visiting committee must decide which Units are eligible to train residents for the European Board Examination (see §5.6.4).

The way differences in contents could be overcome:

1. Rotational schemes for trainees within their own country or in other EU countries: Currently, some countries offer trainees the possibility to receive additional training in another member country. In Belgium, trainees may, with the permission of their trainer, spend part of their training elsewhere – i.e. in units in France and the United Kingdom – in order to obtain more experience in certain aspects of plastic surgery; including hand and microsurgery. A great deal depends on the personal initiative of the trainee and the co-operation of the head of department. In one unit, the training consists of 4 years of plastic surgery, one year is spent in a well-known British unit. The same is true for the United Kingdom and Ireland. Additional training within the same country is also possible: Rotation between Units to receive training in hand surgery is available in Germany. Generally there are no official rotation schemes but the resident can rotate among units, provided that he organizes this himself.

In Denmark, Senior registrars spend their training in at least two Units. In the United Kingdom and Ireland trainees are used to spend the last part of their training in another Unit and postgraduate fellowships are very popular there. On the contrary in The Netherlands trainees generally do not move to other Units, neither at home, nor abroad. There are no official rotation schemes between units, so it is difficult to gain experience outside one's own unit. One recent development in The Netherlands has been the establishment of one-day courses for trainees and plastic surgeons. Thus, it has become possible to exchange ideas on certain topics.

2. Co-operation with interfacing specialties (for example ENT, orthopaedic surgery). This opportunity was emphasized in the British modular training system, during the final part of the training, when trainees can spend time in subspecialties.

In conclusion:

- There are differences in the contents of training in the various EU countries, which

reflect the differences in the contents of the specialty (see also Chapter 3).

- These differences could be overcome by using rotational schemes for trainees on a national basis or on a European basis.
- A logbook with its restrictions could serve to detect weaknesses in the trainees' experience in certain areas and be a further argument for rotation.
- A modular training organization like in the United Kingdom could be helpful in combining theoretical and practical knowledge and relating it to the stage of the trainee's development. It is especially helpful in directing the trainee to his chosen subspecialty.
- The modular system is a recognition of the fact that due to the advances in several areas it is no longer possible to confine the training to one single Unit. So it will end the traditional training structure in many countries.
- Co-operation with interfacing specialties might be both an answer for a better subspecialty training and might help to avoid clashes in border areas (see also Chapter 1).

5.5.5 Requirements for trainers and training centres

Although most countries have no requirements for trainers, they do exist in Belgium and The Netherlands. Qualified trainers have spent a certain period of time in their specialty in order to gain sufficient experience. They also have didactic and educational qualities and have shown scientific interest (for example, a PhD thesis, presentation of papers and attendance of conferences). The desire for a medical audit and certification in some countries, as well as competition from other specialties, will, however, necessitate the application of certain standards. In view of the competition of other specialties, there seems little room for complacency. High calibre teaching and the performance of the teacher as a role model are vital for the future of the specialty (May, 1991). It should also not be forgotten that plastic surgery is a complex specialty. The right indication and the right attitude towards patients are often just as or more important than the operative or technical side. The trainee should, therefore, learn when to operate and when not (i.e. in cases of psychologically disturbed patients with unrealistic expectations). This important aspect of the teaching was emphasized in Bouman's (1990) final lecture.

The leader of a teaching programme should, therefore, have talent and enthusiasm (Zook, 1991). One should not underestimate the fact that a teacher's special interests can have a profound effect on the development of a trainee. In a number of countries (but not all) there are entrance requirements for the training which differ from country to country. For details, please refer to the supplement.

Again, this point should be more critically examined because quality control is of vital importance for the survival of the specialty. The quality of the training is directly related to the quality of training centres. EBOPRAS has recognized the importance of this quality control and supports the idea that requirements for training centres should be present in all EU countries. Funding should be made available because insufficient funds is one of the reasons for the absence of requirements for training centres (Zook, 1991).

On a European level the UEMS has laid down the following requirements in the European training charter for medical specialists (1995) regarding trainers and training institutions:

Requirements for teachers within the specialty:

- The chief of training should have practised the specialty for at least 5 years after specialist accreditation or should have completed a specific training programme before recognition as such. There should be an additional teaching staff. The teacher and the staff should be practising the specialty to its full extent. Subspecialized teachers may be

recognized by the National Authority (see §5.2.1 and §5.2.2.) for specific periods during the training.

- The teacher should work out a training programme for the trainee in accordance with the trainee's own qualities and the possibilities of the institution, which also complies with national rules and EC Directives and considers UEMS/European Board recommendations.
- The ratio between the number of qualified specialists in the teaching staff and the number of trainees should provide a close personal monitoring of the trainee during his/her training and provide adequate exposure of the trainee to the training.

Requirements for training institutions:

Specific rules should be laid down concerning:

- Recognition of training institutions for the specialty;
- The size and diversity of the training institution or group of institutions, the number of admissions to the institution(s) including day care, outpatient (ambulatory) activity and inpatient care, the number and diversity of practical procedures as well as appropriate access to other relevant specialties;
- Quality assurance in the institution. Visitation of training institutions by the National Authority should be conducted in a structured manner;
- There should be an internal system of surgical audit/quality assurance;
- The trainee should have space for practical and theoretical study and have access to national and international literature, by means of computer data bases.

In conclusion:

Most countries do not have specific requirements for trainers or training institutions. Teaching has more aspects than simply learning technical tricks; the trainer should teach the trainee an adequate attitude towards the patient and a good assessment of the possibility and even desirability of an operation. The UEMS has laid down specific requirements for teachers and training institutions. The implementation, however, depends on the co-operation of the National Authorities.

5.6 Plastic surgery training in practice, including control of the progress and final performance of trainees in the EU countries

5.6.1 Introduction

Having given a general description of the organization of plastic surgery training, the organization in the individual EU countries will be discussed in detail.

In the introduction to this Chapter, the problem is raised of other specialties setting up training programmes for their trainees in areas which are considered to belong to the field of plastic surgery (i.e. cosmetic surgery). It is, therefore, important for plastic surgery to have a well-balanced training programme, which would provide the trainee with enough background to meet such future challenges. In order to end up with competent and confident plastic surgeons, one should start with trainees who meet certain standards. They should be helped and supported during their training and, finally, the knowledge they acquired during the training must be tested. In other words, there should be a three-phased selection of trainees:

- a. the primary selection of trainees in the different EU countries;
- b. the selection during the training (selection in progress):
 - supervised training and evaluation;
 - theoretical and practical exams;

c. the final selection during the last year of the training:

- exams;
- proof of technical ability (logbook).

Finally, the consequences of European co-operation in plastic surgery training, such as proposed by the European Board of Plastic, Aesthetic and Reconstructive Surgery, will be discussed.

5.6.2 The primary selection of trainees in the various EU countries

The information presented is restricted to the data I was able to gather in the period 1990-1998.

- Belgium* Selection takes place through interviews by the heads of departments; there are no strict rules.
- Denmark* All trainees -- including those who intend to enter other branches of surgery -- have to compete first for training posts in general surgery. Then, after two years, those who qualify best can apply for a senior registrar post in plastic surgery. For the selection, the personal interview, as well as a combination of surgical experience, research and administrative experience -- plus the number of theoretical courses -- are taken into consideration.
- France* The trainees are chosen after a "conours" (competition) and judged by university professors.
- Germany* Trainees submit a personal application to the heads of departments of the training centres. Until 1992, candidates had to finish their complete general surgery training. Selection was sometimes conducted on the basis of experience in research. In some Units candidates had been rotating registrars from general surgery.
- Ireland* Their system is similar to that of the United Kingdom.
- Italy* Selection takes place after medical school. They must take a multiple choice exam and only those with top marks have a chance to be selected. Candidates have no previous general surgery experience.
- The Netherlands*

There is fierce competition among doctors who are newly qualified. These so-called "basisartsen" (doctors) aren't yet qualified to start a medical practice, but have to appear before selection committees either to be selected for a general practitioner's training or specialty training posts ("AGIO posts") or temporary non-training posts ("AGNIO posts") in hospitals. These residents in non-training posts hope to get a better chance at a training post and they get a very basic salary. General Surgery in The Netherlands has a selection procedure which will be discussed later in this Chapter. At this time, young people who want to start a training post in plastic surgery in The Netherlands can simply apply without any general surgery and without having to pass the general surgery test. It is then the trainer in plastic surgery who sets his own criteria for selection (e.g., research). Basic research can culminate in a PhD which is an advantage for candidates who want to enter a training programme.

Between 1983 and 1990, a new selection procedure for trainees in general surgery was used in The Netherlands. Though the results of this selection procedure were very promising, the trainers in general surgery decided to abandon the procedure because they didn't like the fact that they had no influence on the final selection of the candidate who was chosen by a

selection panel. Nevertheless, it is very useful to describe the method. The primary selection of surgical trainees in The Netherlands has been discussed above (Van de Loo, 1988). Because of the need for a selection procedure, a criterion analysis was done using the literature. The criterion analysis was necessary in order to design the selection procedure and test battery which ultimately led to application and evaluation. The selection used tests to examine:

1. Intelligence
 - verbal
 - three-dimensional
 - numerical
2. Operative skills
 - dexterity
 - psychomotor ability
 - attention and concentration
3. Stability and organization
 - emotional stability (stress tolerance)
4. Common sense (sound judgement)
 - organizing and planning ability (time management)
5. Work attitude
 - motivation (professional/academic)
 - accuracy and care
 - energy, drive, stamina
6. Co-operation
 - sociability (team spirit)
 - independence (leadership)
 - self-criticism
 - empathy (patients)

All those aspiring a surgical career are sent a questionnaire and asked to pay an entrance fee. The questions are criterion-orientated and confrontational, in that they bring the candidate face to face with the requirements of the profession and its training. This is followed by a psychological test designed for assessing cognitive factors -- verbal, three-dimensional and numerical reasoning -- by pencil and paper tests. Psychomotor co-ordination is tested by computer, followed by a secondary test -- a memory test -- to see if the candidate can co-ordinate two activities simultaneously. Finally, case studies are used, dealing with planning and patient care (written and verbal). The psychologist rates the sixteen criteria on a five-point scale and places the candidate in one of four groups: high chance of success in training and as a surgeon, probable success, doubtful success and unlikely to be successful. The central selection committee then decides which candidate will be invited to the panel interview. The panel selects the candidate for the training.

It would be wrong to think that as a result of this sort of testing, it is possible to describe the ideal profile of a surgeon, since a single prototype simply does not exist (Van de Loo, 1988). The disadvantage of this system is that the training surgeon does not choose his registrars. Graham and Deary (1991) have challenged the validity of Van de Loo's findings (Deary et al, 1992). They found no significant correlation between surgical ability

ratings and test scores and concluded that little advance will be made with the aptitude testing until there are more objective criteria of surgical ability in different surgical specialties. On the other hand, a new manual dexterity test was used for a group of participants in a microsurgical course (Murdoch et al, 1994). It was concluded that three-dimensional ability testing is related to (micro)surgical ability.

United Kingdom

Recently the organization of the training has been changed and this has influenced the selection procedures. After house officer jobs the candidate has to finish 2 years of basic surgical training, completed by a membership of surgery examination. The postgraduate dean who is on the selection committee has a strong influence in choosing the candidate.

UEMS

In the European Charter on specialist training (1995), it is stated in Article 1 that teachers and training institutions or other organizations select and appoint trainees who are suitable for the specialty concerned, in accordance with an established selection procedure. Furthermore, the selection procedure should be well-organized and application should be open to all persons who have completed medical training. This article is, therefore, open to different interpretations and it still leaves the national authorities much freedom. An established selection procedure can also be quite different in the EU member countries. On the other hand, it also implies that doctors who possess a recognized medical certificate, could apply for a training post in another EU country.

In summary, a couple of points can be mentioned:

- There are no general procedures for the selection of candidates;
- The time of selection varies;
- None of the countries meets all of the criteria set up in the European Charter.

Good and uniform selection criteria are important for the standardization of the training, but they are still absent in plastic surgery, as demonstrated above.

In some countries, admittance to the training takes place after the physician has finished a part of his general surgery training. In other countries, admittance is possible before any general surgical training, which then forms an integral part of the training. Examples of the latter can be found in Italy and The Netherlands, where selection of candidates takes place before they have the opportunity to gain surgical experience. In The Netherlands, however, the successful candidates start with a basic surgical training of three years. The general surgery trainers know beforehand that the trainee will then enter the subspecialty of plastic surgery. In conclusion there are no specific selection criteria in plastic surgery. The diversity of selection methods in the EU needs further attention, if real progress in standardization of training is aimed for. The matter will be discussed in Chapter 8.

5.6.3 Continuing control and selection during the training and the final assessment

In all countries, the training is intensely supervised. Plastic surgery is still very much a matter of acquiring operative skills. Hands-on training in a master-pupil relation is the rule. In The Netherlands and Denmark, this is also the means by which the student's ability to practise the specialty independently is assessed because, as yet, there are no exams in these countries. An obvious disadvantage of this system is the fact that there is no uniformity of knowledge among starting specialists (Wildevuur, 1995). Annual evaluation forms are mentioned in a study of the training for specialists in The Netherlands but their value has

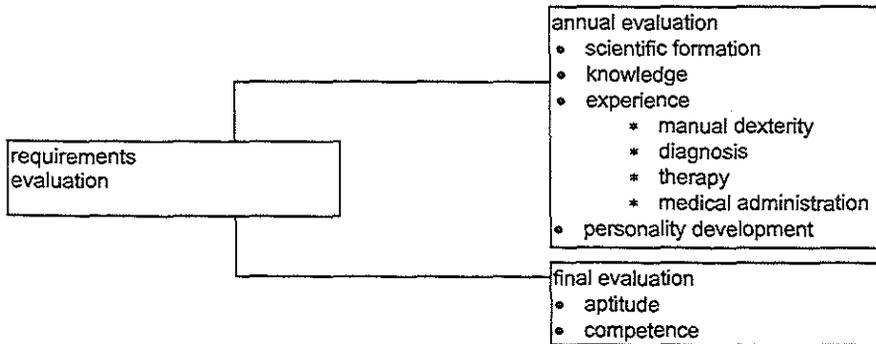
been questioned (De Roo, 1985) because they do not take into account the differences between the training units.

The Career Structure Committee, the Unit Representative and the SAC (Specialist Advisory Committee) supervise the well-organised training in the UK. They can advise the trainee during his career or intervene, if necessary. Denmark is also considering to appoint a tutor in each department, who would be involved in education. Supervised training can be a selection procedure during the training period as there is ongoing evaluation. The trainee should be tested on his practical and theoretical knowledge as well as on his experience. This could be evaluated by exams, a logbook, close supervision and annual evaluation.

In Belgium and Italy evaluation during the training takes place by means of multiple choice exams administered after the first and second year. In Italy, trainees get only two chances to pass these exams, after which they have to leave the training. In countries where supervised training and evaluation by the staff members of the department is the rule, a selective judgement is given after the first year (The Netherlands), when it is decided whether or not a trainee can continue. One of the dangers of this system is that subjective or personal motives can play a role if no objective means of testing are available.

According to De Roo (1985), who conducted an extensive study of this aspect of the training programme, a training committee for each specialty should be formed, although the final responsibility must still be in the hands of the medical specialist – i.e. the plastic surgeon – conducting the training. It was stated that even objective tests – as are used in the United States – have validity problems, and there is also the problem of the costs in replacing the Dutch system by the American. He proposed to add objective evaluation parameters to the personal evaluation. The requirements for judgement of the candidate specialist in The Netherlands were studied (De Roo, 1985) and the following requirements were proposed:

Figure 5.3 Requirements for evaluation of candidate specialists



This requires extra guidance during the training: In the United Kingdom a Career Structure Committee, which co-operates with the unit representative, counsels the trainees during their careers. In Belgium, there is no exam after the end of the period of general surgery, but during the three years of plastic surgery, there is a theoretical course and the trainee must pass exams after the first and second year. In Greece, there are also one-day courses for trainees because not all hospitals provide the same exposure to all aspects of plastic surgery. In The Netherlands, a theoretical course has been added to the traditional close supervision and annual evaluation. During this course, exams are taken. In the United Kingdom, the logbook system has been a success. It is a useful method which clearly shows any

shortcomings in the training. A lack of experience in cleft lip surgery, for example, can be anticipated by sending the trainee to another teaching centre temporarily. During this stage of the training, trainees can still receive a negative evaluation, which could force them to leave the programme. Operations are registered in all EC countries. A pre-printed training logbook is now used in all Common Market countries except The Netherlands. Here, trainees keep their own operation records and these are verified by the trainers.

Germany, Portugal and Spain require a certain number of operations in different categories (Supplement I). The United Kingdom uses the logbook (obligatory since January 1, 1990) as a means of quality control; i.e. control of the progress of the trainee and control of the unit to make sure that it offers enough variety in type and number of operations. In the United Kingdom, the logbook can also be used for the obligatory audit.

5.6.4 The final selection

The problems in obtaining criteria and standards for selection of candidates have been discussed above. Because of the various ways this is handled, it is extremely difficult to compare countries or establish comparable standards. Objective criteria and objective testing can be important in order to be able to evaluate a prospective trainee, a trainee or a future specialist. It is, therefore, no surprise that in most EU countries, examinations play a role in selection. The assessment during – and at the end of – the training is meant to establish whether or not the candidate has acquired sufficient skills to work independently as a specialist. Unfortunately, there is no uniformity among the examinations which take place in the various countries of the European Union. Therefore, the present situation must be studied.

The present situation

Before discussing this topic, it is useful to look at the present situation (Table 5.4). From this table we can see that eight out of eleven countries have final exams, including all of the English-speaking countries, which have a long-standing tradition of postgraduate exams.

Table 5.4 National exams in the EU countries

	National Exams
Belgium	+
Denmark	-
France	+
Germany	+
Greece	+
Ireland	+
Italy	+
The Netherlands*	-
Portugal	+
Spain	-
United Kingdom	+

* In the Netherlands it finally is decided to introduce an examination system, consisting of a two year cycle of selected topics assessed by examination and a final examination.

The examinations are conducted differently in each country:

Belgium: Examination at the end of the three-year theoretical course.

France: Examination at the end of the plastic surgery training. This examination consists of a written paper (an essay) and an oral examination (with patient files or patient analysis).

Germany: Examination after the period of general surgery and after the training in plastic surgery (written exams and slides).

Greece: Examination after the plastic surgery training (written and oral part).

Portugal: Examination after the training. The examination organized by the Medical Council consists of slides, curriculum vitae and patient analysis. The degree allows the plastic surgeons to work in hospitals and private practice. Moreover, there is a hospital degree, which allows them to work in State Hospitals. The only requirement there is an approved curriculum vitae.

United Kingdom and Ireland:

The Intercollegiate Specialty examination should be passed at the completion of part 2 (years 3 and 4) of the higher surgical training (for details, see Supplement 5). The trainee should have passed his MRCS exam after completion of his 2-year period of basic surgical training. This MRCS examination consists of two parts, the first part (written) consists of:

- a multiple choice examination, which contains:
 - Core modules:
 - traumatology
 - perioperative management
 - intensive care
 - tumours
 - System modules:
 - the moving system
 - the vascular system
 - head and neck area, endocrinology, paediatric surgery
 - urogenital system
 - A clinical part (5 case histories)

The second part is an oral examination, consisting of three exams of 30 minutes, dealing with anatomy, physiology and pathology.

Italy: Final examination following yearly multiple choice exams.

Denmark, Spain and The Netherlands were the only countries in the Common Market with no exams. Recently an exam structure was proposed in The Netherlands, by Commission One to the Concilium: From 1998 on, trainees who are accepted for full training in plastic surgery and who are in the general part of their training (common trunk) should be allowed to attend one-day postgraduate plastic surgery courses. Each course will be concluded by a multiple choice examination. During the total duration of the training (6 years), the trainee should pass 8 out of 12 multiple choice examinations. Until now, there were no consequences for a trainee who failed this requirement, but one possibility is an extended training period. There are no future plans in The Netherlands for a national examination. Instead, taking the EBOPRAS examination is considered as an alternative. EBOPRAS has introduced a list of subjects to be included in their examination (see Supplement part 6). The candidate should also meet the practical requirements by presenting an EBOPRAS logbook, signed by his trainer.

In countries where no examinations take place, annual evaluation and continuous assessment are used. However, both the examination system and the evaluation/continuous assessment systems have their pros and cons: In The Netherlands the value of the annual evaluation forms has been questioned because these forms do not take into account the differences between training centres (De Roo, 1985). In The Netherlands, some interest was expressed in favour of changing the system to one of objective testing, as is used in the USA and Canada,

even though this system has its reliability and validity problems – it lacks assessment by direct observation. It may, however, be advisable to maintain the present system in The Netherlands, with the addition of objective assessment methods (De Roo, 1985).

Continuous assessment has both advantages and disadvantages: “Continuous assessment does not allow for the fact that different people learn in different ways at different times. Nor does it take into account that the opportunities for certain parts of the training may vary between units. In an attempt to produce national acceptable criteria of assessment, a degree of pseudo-objectivity may creep in. Furthermore, unless the assessment is based on clearly defined, carefully gathered and analysed facts, the supervisor may literally not know what he is talking about and then there is a real danger of both favourable and unfavourable impressions being unjustifiable fossilized” (Timmons, 1984).

It has been suggested that the exam should consist of discussions of case reports treated by the candidate or cases in which the candidate has been involved in the operative treatment and follow-up. He should also present records of his operative experience. Some of the qualities for success in surgery are not truly examinable: “We are aiming for the highest standards throughout a lifetime of contributions to patients, the specialty, our colleagues, the hospital and to British surgery. In addition to the acquisition of factual knowledge, we require the development of problem-solving skills, attitudes to patient management, administrative ability and leadership” (Bodenham, 1981).

Assessment could be standardized by using a standardized logbook, e.g., the EBOPRAS logbook. This would at least allow the practical experience of the trainee to be checked objectively. A further improvement could be the introduction of a weighing factor for operations and a new coding system as suggested by Stevens (1997). Operations would then be coded according to complexity and this would replace outdated coding systems (e.g., in The Netherlands).

In conclusion:

- There is no uniformity regarding the final selection.
- While most of the countries, except Denmark and The Netherlands have national exams, the format of these exams varies.
- A further step towards standardization could be the introduction of the EBOPRAS examination as a replacement of the national examination.
- A more integrated systematic approach to the examination issue will be presented in Chapter 8.

5.7 The role of the European organizations (UEMS and European Specialty Boards) in harmonization and standardization of training and quality control

The different standards of specialist training in the EU have led to concern within the UEMS. For this reason, a harmonization committee was formed. The Harmonization Committee of the UEMS has made an inventory of all of the specialties which are recognized in all EU countries. The aim was to institute a voluntary European Exam which would help EU doctors to obtain easier access to hospital appointments in member states of the EU. The different training standards which exist, even within one country between Units, necessitated exchange of trainees, both nationally and internationally. This should, however, be planned carefully and on a European level (European Charter for Medical Specialists.) Differences in the standards of training produce specialists with varying clinical and theoretical experience and, therefore, the free migration of doctors from other

EU countries could have a negative effect on the standards of health care (Brearily and Gentleman, 1991). One possible solution to this problem would be to stimulate the exchange of trainees among the EU countries.

An example could be found in **internal medicine and urology**. The ongoing European integration – marked by the Single European Act and the Single Internal Market (since January 1993) – focused attention on the inter-European exchange of doctors, medical students and paramedical personnel (Karle, 1993). In internal medicine, a European exchange system for junior doctors was started in 1978 among centres in the United Kingdom, The Netherlands, Switzerland, Germany, Belgium and Italy (Van Ypersele and Dickinson, 1986, Van Ypersele, Wakeford and Allen, 1995). The exchange had clinical, research, educational and cultural objectives. In the survey, the experiences of participants and their chiefs of service were recorded and the strengths and weaknesses, as well as the problems linked to the scheme were noted. The most important gains experienced by the trainees were: improved knowledge and clinical skills (64%); the experience of other health care arrangements (60%); cultural benefits (47%); making friends and professional contacts (36%).

There were problems related to poor briefing, finances and bureaucracy. The most obvious difficulty was the language. Clinical experience was not the source of any difficulties, though there were administrative problems. The participants' reports of their experiences with the system were favourable and, on the whole, the exchange was regarded as a success. Cultural and practical differences, however, are not always easy to overcome (Klemperer, 1996).

In **urology**, an Exchange Programme Committee was formed in 1993 (Blandy), dedicated to the exchange of trainees among centres which, in future, will hopefully all be accredited (Matos Ferreira, Schröder and Nijman, 1996). The different contents of the specialty make standardization necessary. The introduction of the principles of a European Charter and a European logbook for the standardized collection of operation data is a first step. Standardized data collection would enable one to compare the practical experience of trainees and to detect weaknesses and strengths in their training programme. Therefore, it would indirectly help to find suitable Units for an exchange programme.

The urologists instituted an Education Committee of the European Board of Urology. This Committee will define the basic knowledge and capabilities expected of a "European urologist". It is responsible for the organization and execution of the European Board Examination and will issue the European Board Certificate of Urology (Fellowship of the European Board of Urology).

The anaesthesiologists founded a European Academy of anaesthesiology, which has the following objectives:

- To raise the standards of practice of anaesthesiology;
- To improve the training of anaesthesiologists;
- To encourage scientific meetings;
- To encourage research in anaesthesiology;
- To promote exchanges among anaesthesiologists in different countries;
- To advise relevant European organizations.

The monospecialist committee of plastic surgery also felt the need for standardization of training and quality control. Following the examples of urology and anaesthesiology, the European Board of Plastic, Reconstructive and Aesthetic Surgery was founded. One of the most important goals of the European Boards is to safeguard quality control.

5.8 Quality control of the training

Quality control can take place at different levels:

- the trainee (annual evaluation, exams, logbook);
- the teacher;
- the centres (facilities, e.g., library, possibility to attend courses, good working relationships between teachers and trainees).

Quality control can consist of monitoring :

- a. the trainee (i.e. Does the trainee get enough hands-on experience?);
- b. the teacher (i.e. Does he keep his knowledge up to date?);
- c. the training centre (i.e. How are the working conditions for the trainees? Is there a library?)

ad a. The monitoring of the trainee has been discussed in paragraph 5.6. There should be both room for personal evaluation and objective evaluation by keeping a logbook and/or examination.

ad b. The monitoring of the teacher is more difficult, in the EU there are only two countries (Belgium and France) which state that there is quality control of the teacher or head of the department responsible for the training. Nevertheless there are criteria, laid down in the European Charter for Medical Specialists, and further requirements will be discussed.

The European Charter for Medical Specialists (UEMS 1995) states that the chief of the training should have been a practising specialist for at least five years. The chief of training and the staff should be full-time practising specialists. Subspecialized trainers may be recognized by the National Authority for short periods during the training. The ratio between the number of qualified specialists on the teaching staff and the number of trainees should be small enough to provide close monitoring of the trainee during his/her training and provide adequate exposure of the trainee to all aspects of the training. These EU requirements have been followed by all specialties. However, it is up to the teachers to develop the training programmes. The trainer can have a profound influence on the development of the trainee; he should also know his responsibilities.

The fact that the trainer should be a role model for good clinical practice has been recognized in the European Charter for gynaecology/obstetrics. In this specialty the trainer is expected to have access to all aspects of clinical work and to be able to supervise the trainees. Didactic teaching is considered an important part of the training process. The trainer should lead small group sessions with contributions prepared by the trainees. He should give the trainee time for study leave, private study, research, opportunities for self-assessment and career guidance. The most important rights of the gynaecological trainer are: the availability of 10-20% of his time for teaching, adequately remunerated time for his own continuous education and the opportunity to attend courses for medical trainers.

So, it is obvious that in gynaecology/obstetrics much attention is paid to the quality of teaching. The idea of special courses for trainers was also propagated for general surgery teachers (Bulstrode and Holsgrove, 1996) and recommended in nuclear medicine. The quality of the teachers is seldom questioned, however, when one examines the teaching centres in general surgery in the EU, and interviewing the surgical trainees, some imperfections were noted (Gruwez, 1996): There were imperfections in the supervision of the trainee: In 55% of the training centres, trainees could not identify their trainer; in 50%, the opinion of the trainee was never asked; 47% of the trainees wished to have more experience or teaching; and 20% never had their work audited.

In plastic surgery, high-calibre teaching as well as role model performances are recognized as being important (May, 1991). Those who want to establish and maintain a quality residency training programme should possess both talent and interest in teaching (Zook,

1991). Teaching surgery is not only a matter of teaching techniques, but also of teaching attitudes and behaviour and is, therefore, a difficult task. So, in conclusion, teaching is not an easy task, since the trainer should be aware that he is a role model for the trainee. It includes not only the teaching of the technical side of the specialty, but also the teaching of attitudes and behaviour especially in relation to patients.

ad c. Regarding the training centre quality assurance should be the first priority of the training institution. The Charter on Training of Medical Specialists states that there should be rules concerning the recognition, size and diversity of the training institution (number of admissions, day care, ambulatory care, quality assurance in the institution).

Who conducts the quality control? The Netherlands, Ireland and the United Kingdom have "visiting committees". These committees follow the written instructions of the Specialist Registration Committee (The Netherlands) and the Specialist Advisory Committee (in Ireland and the United Kingdom). Quality control in the remaining EC countries is as yet undocumented. In The Netherlands and the United Kingdom, the Visiting Committees operate according to certain rules. The forms used by the Visiting Committee in The Netherlands have been discussed above (De Roo, 1985). There are forms for the trainer and the training centre (clinical aspects, outpatient facilities, records department, library, lay-out of the department and so on). The Visiting Committees have the power to suspend – or close – training facilities, if they are found to be inadequate (this happened in Ireland). On a European level, one of the goals of the European Board of Plastic, Reconstructive and Aesthetic Surgery (EBOPRAS) is quality assurance. This is achieved by visiting the units and awarding accreditation.

The next question would be: "Which organization would be most suitable to carry this out?" (see also Table 5.1) A medical body without political or religious influence would appear most suitable.

Quality control is considered to be of utmost importance within the National Societies of Medicine. For example, the Specialist Registration Committee in The Netherlands has established an accreditation system, valid for five years and renewable after that time. The specialist – in this case the plastic surgeon – should have a minimal amount of patient-related activities per week. At the same time he should collect credit points for attending national and international meetings. Quality control and quality assurance is also recommended in the European Charter of the UEMS (1995). According to the UEMS, the National Authority (see paragraphs 5.2.1 and 5.2.2.) is responsible for setting up a programme at national level for quality assurance of training and training institutions in accordance with national rules and EU legislation as well as considering UEMS/European Board recommendations. The National Authority together with the trainers and training institutions should implement a policy of quality assurance of the training. This may include visits to training institutions, assessments of the training, monitoring of the logbooks or other means. Visitations of training institutions by the National Authority should be conducted in a structured manner.

In conclusion:

- The value of quality control and assurance at all levels is widely recognized both by national societies of medicine and by European organizations such as the UEMS and EBOPRAS.
- The effectiveness of European recommendations for quality control, however, depends on the willingness of national authorities to co-operate with the UEMS and the European Boards.

5.9 Additional training in plastic surgery and subspecialization

5.9.1 Undergraduate and postgraduate fellowships

A fellowship can be defined as a certain amount of time (generally 6-12 months) spent in a certain branch of plastic surgery, (i.e. hand, micro or cosmetic surgery). It is meant to meet the individual's demand for additional training. It is closely related to our earlier remarks concerning subspecialization. These fellowships can be followed before or after registration or certification. In the USA, postgraduate fellowships are extremely popular. Fully-trained plastic, orthopaedic, ENT or general surgeons spend 6 to 12 months in their chosen branch of surgery. The importance of fellowship training has also been recognized by other specialties (Bailey, 1984). It not only provides additional training, but also offers favourable credentials which attract patients.

In the UK, trainees and – more often – Senior Registrars can apply for fellowships (recognized by the Specialist Advisory Committee) in the USA or elsewhere. These “fellows” tend to be more mobile than their peers on the Continent. However, when they train in other centres, they still need the approval of the Specialist Advisory Committee for it to count as part of their training. The hospital authorities consider it to be study leave and a temporary replacement is appointed. On the Continent, these fellowships can be seen as part of the trend for subspecialization. In Belgium, trainees are eager to get fellowships abroad either in France where there is no language problem or in the UK or Germany. In The Netherlands, Germany, Denmark and Portugal, this practice is not so common.

The objections to subspecialization also apply to fellowships. McCarthy (1985) examined the merits of post-residency fellowships and found that the strongest criticism relates to its potentially unfavourable impact on residency training: it limits the clinical and operative experience of the resident. “The most common reason given for the development of post-residency fellowships is the increase in the body of knowledge in plastic surgery. It provides for a combination of the general (residency) and specialized (fellowship) training. It utilizes the maximum educational benefit of a unique surgical experience and it helps the specialty of plastic surgery in those areas in which it is underrepresented. Specialization is the inevitable consequence of an enlarging body of knowledge.”

As far as the time schedule is concerned, it seems preferable to have postgraduate rather than pre-graduate fellowships since the graduate surgeon has already acquired the core knowledge; the broad knowledge of the specialty as a whole. Moreover, pre-graduate fellowships mean, in reality, a prolongation of the training and therefore some countries would be opposed to it.

The Dutch Society of Plastic and Reconstructive Surgery has recognized the need for differentiation in areas of special interest; especially for hand and microsurgery, aesthetic and craniofacial surgery – including the treatment of schizis (clefts). However, in view of the present structure of three years of general surgery and three years of plastic surgery, it was originally felt that it wouldn't be possible to include all these areas in the time schedule of the regular training. As mentioned before, the interests of the heads of department play an important role in determining the contents of the training. Every trainee should, however, develop his own areas of interest and the last year of his formal training would be suitable for this. It is especially important for future partnerships with other plastic surgeons to have different areas of special interest.

The European survey can supply additional information considered valuable among the respondents concerning fellowship subjects in other EU countries. Cosmetic surgery scores

high in all countries except the United Kingdom and Spain while hand surgery is popular in the United Kingdom and Portugal (see Table 7.17, Supplement 9).

Conclusions:

- Fellowships and subspecializations are becoming more and more important since the limited training period in general plastic surgery is insufficient to cover all of the new technical refinements and developments in all areas of plastic surgery.
- The differences in emphasis between training centres within one country, or within the EC, still form a problem. In The Netherlands, a committee was assigned to look into this matter. In the United Kingdom, rotation between units solved this problem.
- Fellowships should be well-organized, ideally on a European level, to ensure that good quality of training is guaranteed.
- Subspecializations in certain branches of plastic surgery – i.e. hand surgery and aesthetic surgery – need good quality control and therefore certification, following examination, by European organizations.

5.9.2 Continuing education

Apart from subspecialization, there is also the possibility of learning and acquiring new techniques within the specialty. Plastic surgery is a specialty which is constantly evolving and one cannot expect that residency can prepare one for an entire lifetime of practice. According to the Carnegie Commission on Higher Education, the “half-life” of one’s education is five years. As Broadbent (1976) put it: “Education must be continuous, for continually there are discoveries of relevance”. If a surgeon doesn’t want to get out of touch, it is mandatory that he keeps his knowledge up to date.

One example of quality improvement is continuing medical education. The phrase continuing medical “education”, not “training”, is important because “education” recognizes that something worthwhile and valuable must be passed on, while “training” is more about acquiring certain skills or performing certain tasks (Calman, 1993). Continuing medical education is mentioned as an important factor in maintaining standards of health care (Jones, 1993).

The Standing Committee for Medicine – Comité Permanente (see §5.3) – developed a clear definition of continuing education (Declaration of Dublin, 1993): “It is the activity by which a doctor, who is already fully trained and qualified to practice medicine, renews, extends, and updates his professional skills.” The term “education” refers to the increase in capability; i.e. knowledge, skill and attitude. It covers not only learning from instruction by others but also self-teaching. The Dublin declaration states that continuing medical education is both an ethical duty and an individual responsibility of every practising doctor throughout his professional career. The ultimate goal is to promote the highest possible standards of medical care by updating one’s scientific knowledge and technical skills. The means to gain continuing medical education are not limited to the established ways – reading books, professional magazines, journals, attending meetings and bedside discussions – but include also quality assessment evaluation meetings, private studies with audio-visual aids and self-assessment programmes.

The Advisory Committee of Medical Training (report XV/E/8414/94-FR, 1994), recommended the integration of continuing medical education in the basic training. Continuing medical education should remain an ethical obligation, submitted by the disciplinary authority of the profession. It should be on an individual and a collective basis. Each member state should provide the financial means for continuing education. There

should be diversified and multiple programmes in order to give every practising specialist a good choice. Every discipline should organize programmes adapted to its members, which should contain a certain amount of general basic information and show the general progress of the medical and biological sciences. Accreditation based on continuing medical education (3-5 years) can be seen as an addition to the basic or specialist diploma. A commission of appeal will deal with those specialists whose accreditation has not been prolonged. The need for continuing medical education has been recognized by various specialties (Blandy, 1993).

Continuing medical education can be seen as an addition to the standard training in the different countries. If organized on a European level, it could even ensure quality delivery of health care (Young, 1995). As was demonstrated in an experiment involving 20 European countries (Young, 1995), medical education could, in an advanced form, be undertaken effectively and efficiently by satellite transmission (EuroTransMed).

The success of continuing medical education in Europe – despite language difficulties – relies on the exchange of young specialists, the opening for inspection of training centres, the development of pan-European groups for professional exchange of ideas and, finally, the further development of computer technology and audio-visual systems for educational purposes (Atlay, 1996).

The importance of continuing medical education was also recognized by the Dutch Society of Plastic Surgery. Like in the United States, plastic surgeons should obtain a certain number of credit points by attending meetings at home and abroad. These credit points are necessary to obtain renewal of the specialist registration. Continuing medical education forms an essential part of quality assurance. Until recently the individual plastic surgeon used to handle his own standards based on visible results of his treatment (De Jong, 1997). Gradually the need for an overview of the professional activities of plastic surgeons was felt and this stimulated a quality assurance policy in The Netherlands.

A discussion within the hospitals on complications and clinical audits as used in The United Kingdom, is, however, still not introduced. In a proposal Coleman (1994) made a division into hospital-based activities (rounds, journal clubs, grand rounds, visits to other Units, teaching and research meetings, independent study, videos and audio-tapes, reading journals or textbooks, writing papers, editorial work, distance learning programmes) and courses and external meetings. An argument against this would be the fact that these requirements could in some countries only be met in large teaching hospitals. It does, however, mean that continuing education can be developed further.

The importance of continuing medical education (CME) was emphasized (Leibbrandt, 1998) in the Charter on CME in the European Union. He stated that migration of medical specialists in the European Union should be directly linked with the obligation for the specialist to follow CME programmes in his host country, which would facilitate his adaptation. At the same time the host country should provide him with counselling services and access to their CME programmes. So the need for CME is important also in a European perspective.

In the European Union the structure and registration of continuing medical education is still being developed. However, a definitive structure is lacking in each country. It is of European importance that the systems which are valid for one single specialty should be made comparable and exchangeable, while maintaining national responsibilities (Leibbrandt, 1998). Safeguarding of quality can be acquired by adapting a system of re-

registration, which is linked to the participation in continuing medical education activities and patient-based activities. On-site visitation of training centres by national authorities, preferably in co-operation with representatives of the European Board, is another example of safeguarding of quality. Ideally these systems should be adapted throughout the European Union.

Until recently there were no exams to test the knowledge of certified plastic surgeons and keeping up-to-date was one's own responsibility. In the United States, there are several ways to keep up-to-date: Continuing Medical Education (CME) 150 hrs/2 yrs is a system by which merit points can be obtained by attending meetings. There are also multiple-choice exams for self-assessment.

One can attend scientific meetings at home and abroad, as well as the various courses on hand surgery, microsurgery or aesthetic surgery. In the United Kingdom, there is a well-organized system of courses by the British Postgraduate Medical Federation. These courses are designed for senior residents and qualified plastic surgeons, in order to keep them up-to-date. They are highly popular – also among plastic surgeons from the Continent – and are often oversubscribed.

Other methods that are used to keep up-to-date are the self-assessment programmes from the United States, as mentioned above. These include problem-solving, making use of so-called Learning Resource Centres (LRC) with audio-tutorial and audio-visual facilities as well as Computerised Assisted Instruction (Edgerton, 1984). It might possibly be a good idea for the plastic surgery societies or for the monospecialist committees for plastic surgery to adopt these self-assessment systems.

Another possibility for continuing education is the formation of self-assessment groups. These may vary from formal discussions of complications – the audit system in the United Kingdom – to informal groups – the Alpine club – where a group of plastic surgeons discuss their best and worst results.

The advantage of self-assessment methods is that one can learn at one's own pace. It requires, however, a great deal of self-discipline. The advantage of scientific meetings and surgery courses is the exchange of ideas and the discussion of common problems with other colleagues. The best way to do this would be to pay working visits to well-known units and participate in operations. There would be practical difficulties for the plastic surgeon with a practice of his own but one must realize that continuing education is a necessary part of quality control.

An example of the different possibilities of CME programmes in the United Kingdom (source: Coleman, 1994 at a BAPS winter meeting):

Division of CME activity	Subdivision	Annual minimum hours
Hospital-based activities At least 4 of the subdivisions must be included	Clinical meeting Journal Club Grand rounds Visiting another Unit Being visited by an expert Teaching Research Meetings	10
Independent study At least 2 of the subdivisions must be included	Videos and audio-tapes Reading journals or textbooks Writing papers Editorial work Distance learning programmes	10
Courses & external meetings At least 2 of the subdivisions must be included	BAPS meetings BAPS advanced courses Subspecialty meetings "Craft" courses Regional meetings International meetings	20
Clinical audit		10

The importance of continuing medical education has gained recognition everywhere, e.g., in The Netherlands (Kwaliteitsbeleid Medische Specialisten, 1995). In its European Training Charter for medical specialists (1995) the UEMS stated:

"Continuing Medical Education (CME) is both a necessity and an obligation, which applies to the medical profession as much as to any other. The educational process lasts throughout the specialist's entire career, beginning with basic undergraduate training, carrying on through the specialist training and extending for the remainder of his professional life as Continuing Medical Education."

In many countries, Continuing Medical Education is part of the accreditation system and, therefore, no longer a mere ethical or moral obligation. The quality of CME should be controlled by the profession and more specifically by the Specialty Commissions for Quality Control (e.g., in The Netherlands). There must be a register of availability of continuing medical education activities. The European Board should co-ordinate these activities with the purpose of guaranteeing high standards of CME and postgraduate medical education. International exchange, necessary for CME, should be encouraged.

The UEMS introduced the foundation of the European Accreditation Council for Continuing Medical Education (EACCME). Its activities commenced in January 2000. This organization will be managed by the executive committee of the UEMS. Partners in the operation will be the national CME authorities and the professional specialist organizations and societies. The purpose of the EACCME will be the harmonization and improvement of the quality of specialist medical care. It will also improve the quality and accessibility of CME activities for specialists in Europe. In practice, nationally obtained CME credit points could be exchanged for European accreditation CME points. National

accreditation institutes would have to apply for EACCME accreditation. A new UEMS charter on Continuing Medical Education has also been introduced, using different levels of CME activities (see Supplement 13). This new development seems very promising, though the success of the initiative still depends on the willingness of the national authorities to participate.

In summary:

- CME is widely regarded to be both a necessity and an obligation.
- CME can be obtained in several ways: self-study of literature, journal clubs, attending national and international meetings, workshops, fellowships abroad, visits to well-known experts, audio-visual means, computer networks (e.g., Internet).
- CME should be controlled by a professional organisation.
- CME might include international exchange.

5.10 Problems regarding the training in plastic surgery and their relationship with the effects of European Unification

The lack of uniformity in the organization, contents and requirements for both trainees, trainers and training centres and selection methods for trainees, has already been discussed extensively above and needs no further introduction. It is more important to know why this produces difficulties for the European Union.

The answer can be found in the growing concern regarding the free "Euro" migration of medical specialists from one country to another. It is difficult to check the qualifications of those doctors and one must rely on the national specialist boards. Moreover, the above-mentioned differences in duration and contents of plastic surgery training, as well as the differences in requirements for trainees, trainers and training centres, make it difficult to compare the different standards of training in the EU countries. It is, therefore, not easy to standardize or harmonize the training or control the standards. Vague – or absent – selection criteria for prospective trainees also make it difficult to get the best people into the training programmes. This also forms a problem because there is increased competition from other specialties which try to prepare their trainees with special courses and workshops in areas traditionally covered by plastic surgery (e.g., hand surgery, aesthetic surgery).

What can be done to solve these problems?

Any attempt to improve standards in the plastic surgery training has first to overcome the following trouble spots:

The organization

The organization of the plastic surgery training is difficult. National organizations still determine the registration of specialists and there is no unity in the organizations responsible for the training and specialist registration. Therefore, implementing improvements is difficult.

The European Commission

Only the minimal duration of the specialist training is mentioned in the directives. There is no direct interest in the quality of the training and priority is extended only to the free traffic of professionals.

The UEMS

The UEMS lacks the power to implement changes and it can only list defects in training (Harmonization Committee).

In short, until recently the barrier to the organizations of a practical plan to improve and or control the standard of training was formed by the complexity of those organizations. The

European Board of Plastic, Reconstructive and Aesthetic surgery, founded in 1992, started to try to standardize the training by publishing European logbooks for trainees who want to take a European Board Examination. Though this examination is not compulsory, it is hoped it will serve as proof that those who passed this exam have met certain standards. Not only theoretical knowledge is tested; a European logbook must be presented with the number of operations performed in different categories.

The initiatives of the European Board of Plastic, Reconstructive and Aesthetic Surgery were meant to control the quality of plastic surgery, by introducing a logbook for trainees, accreditation of training centres by visiting committees, organizing a Board examination and by organizing post-graduate courses and workshops. However, a direct attempt to improve the content of the training in the different countries is lacking. Those who take the examinations still have different backgrounds (e.g., duration of training). Still, a high failure rate in the exams might stimulate those in charge of the training in a particular country, to upgrade the requirements for trainees in such a manner that future candidates could pass the examination.

What are the reasons for a critical review of the training?

In the introduction it was made clear why plastic surgeons should look critically at their training. Other specialists are all too eager to step onto this territory by, for example, preparing their residents for future work in cosmetic surgery. This represents a real danger for those plastic surgeons whose attitude towards aesthetic surgery is casual or derogatory or whose claim to do better than other surgeons in this field is not based on a thorough training (Reich, 1983). The problem of inadequate training programmes has been discussed above (Nicolle, 1983; Reich, 1983; Bennett, 1985).

What can be done to improve the training in plastic surgery?

- In order to survive the competition with other specialties, it is necessary to look for standardization and a well-organized training program with clear goals, clear directives and requirements for trainees. Steps have already been taken for certification in cosmetic surgery by "cosmetic surgeons" (a collective name for dermatologists, ENT facial plastic surgeons, general surgeons and others who do cosmetic surgery) (Bridenstine, 1989). In answer to this development, plastic surgeons in the United Kingdom have established the British Association of Aesthetic Plastic Surgeons, which has links with the International Society of Aesthetic Plastic Surgery. The training of aesthetic plastic surgery within the framework of plastic surgery was discussed in 1992 in Madrid during the 10th conference of the International Society for Plastic and Reconstructive Surgery. Important recommendations were made: the publication of a training syllabus (by the British Association of Aesthetic Plastic Surgeons), the publication of a logbook with recommended operative experience; the organization of work-shops for aesthetic surgery and possible certification of trainers, liaisons with national societies to help establish the importance of adequate training with organizations which regulate training such as universities, surgical colleges and governments; the promotion of the psychological benefits of aesthetic surgery.
- This basic training in plastic surgery should contain a surgical common trunk, closely linked to a sound knowledge of general and regional anatomy, physiology and wound healing. From these basics the different technologies can be learned. Certification as a conclusion of advanced training in certain areas seems unavoidable (Van der Meulen, 1999). Whether this could be in the form of modules like in the United Kingdom, is a matter of discussion. This could also include work in private clinics. Fellowships should be certified by the national organizations. Taking an examination in hand

surgery, for example, to obtain a European certificate requires more than only basic general training in plastic surgery. This means that following three years spent in plastic surgery, two years should be spent in special hand units. These are run by orthopaedic and general surgeons as well as plastic surgeons. Trainees in general or orthopaedic surgery can also take the exams after having spent two years in a special hand unit. The FESSH (European Federation of Surgical Societies of the Hand) has established an international examination since 1996 to obtain a European Diploma in Hand Surgery.

- National and international exchange of trainees should make advanced training accessible.
- Co-operation in the (advanced) training with other specialties could be sought.
- The above-mentioned items are so complex that a co-ordinated effort for a European system (framework) for plastic surgery would be advisable. This will be discussed in Chapter 8.

In conclusion:

Though the problems regarding the organization of the training in plastic surgery and of medical specialties in general were discussed in paragraphs 5.2, 5.3 and 5.4, the effects of European Unification and in particular the euromigration of doctors pose an additional challenge, since it is difficult to check the national qualifications (see also Chapter 7). One way of overcoming the differences in organization of training, is the establishment of a standardized way of registration. Trainees should use standardized logbooks and these logbooks should become a requirement before registration in any of the member countries can take place. The EBOPRAS has an important role to co-ordinate these activities in co-operation with the national training authorities.

The necessity of standardization of the training is also created by the growing competition from neighbouring specialties in problem areas (see also Chapter 1). Improvement in the training in plastic surgery not only requires standardization, but also special attention to advanced training in areas such as aesthetic surgery and hand surgery. An introduction of a modular training system (United Kingdom) (see also paragraph 5.5.4) could be necessary to acquire sufficient knowledge and experience even though it will mean training in different institutions and sometimes in co-operation with other specialties.

5.11 Summary and conclusions

The boundary problems with other specialties, regarding areas traditionally covered by plastic surgery, mentioned in Chapter 1 as the main problem for the specialty, emphasized the crucial role of the training in plastic surgery to meet the challenges from other specialties. When one considers to reorganize the training on a multinational (European) scale, however, the problems in the various EU countries should be discussed first.

In this Chapter the organization of plastic surgery training on a national and European level was studied. It can be concluded that there was no uniformity in organization due to the fact that in the various EU countries different organizations are responsible for the specialist training and for the specialist registration. Furthermore, the European Directives only mentioned minimum requirements for specialist training regarding the duration of the training. These Directives were only intended to stimulate free migration and do not set educational standards.

There are great differences in training programmes not only in duration of the programme and in the time spent in the common trunk (general surgery), but also in the requirements

for trainees, trainers and training centres, the selection of trainees and the assessment (exams or no exams). Moreover, training programmes can be changed (Germany, The Netherlands and the United Kingdom). Some countries offer their trainees the possibility of acquiring additional experience in other specialties and research. Practical skill courses were introduced in the United Kingdom.

The contents of the training in the different countries is also influenced by the contents of the specialty and, therefore, indirectly by the (historical) development of the specialty in these countries. In some countries the aesthetic part of the specialty has priority while in others the reconstructive part is more dominant. Plastic surgeons from the EU countries have, therefore, different training backgrounds and have met different educational standards. These differences could be overcome by using rotational schemes for trainees on a national basis or on a European basis. The use of a standardized logbook (for example the EBOPRAS logbook) could help to detect weaknesses in the trainee's experience in certain areas and can be a further argument for rotation. A more radical way of overcoming differences in educational standards would be to adopt the modular training system, as used in the United Kingdom. Theoretical and practical knowledge can be combined according to the stage of the training. In the latter phase of the training, the trainee could choose his area of interest or specialty mode, e.g., hand surgery, and follow advanced training in another Unit. Co-operation with interfacing specialties can also be encouraged when using this system.

As long as plastic surgeons remain in their own country, they can perform their work adequately. Bearing in mind the possible effects of free traffic of medical professionals and patients around Europe, these national qualifications might be inadequate. An active role of governments to promote standardization and to prevent unqualified doctors or those who lack proper training, to perform operations. Furthermore, present training standards might be insufficient to meet technological developments in borderline areas (for example, aesthetic surgery and hand surgery). Moreover, there is a growing demand for quality control and assurance, also on a European level. Continuing medical education is widely recognized as a means of quality control and has proved its value in the accreditation system in some countries. It can also be a stimulus to meet the challenges of a rapidly developing specialty.

Organizations such as the UEMS and the EBOPRAS try to standardize and harmonize the training. The EBOPRAS has introduced a logbook containing the necessary operative procedures a plastic surgeon should have performed in order to take the EBOPRAS examination. In future this examination could replace national examinations. In their efforts to harmonize and standardize the training in plastic surgery or to recommend quality control, the UEMS and the EBOPRAS have to co-operate with national organizations, since they have no power to implement changes. So any improvement in the training systems of the individual EU countries depends on the willingness of their national authorities to co-operate with those European organizations. When national authorities responsible for the registration of plastic surgeons use a standardized way of collecting the necessary operative data of the trainee, like the logbook of the EBOPRAS, this would be a first step towards harmonizing the training.

An integrated approach to co-ordinate the problems of a European training and examination framework will be discussed in Chapter 8.

Manpower planning in the European Union

6.1 Introduction

Manpower planning has been described as “continuously co-ordinating supply and demand of qualified people” (Poorter, 1983). With the creation of a European Union and the free traffic of qualified health professionals, this issue became more urgent. Some of the possible future problems related to increased migration of doctors within the EU can be prevented by manpower measures on a national and European level. Unfortunately, as mentioned before, free traffic of persons allows doctors to avoid the manpower problems in their own country. Furthermore, it is difficult to obtain data regarding manpower planning for medical specialists, let alone data on plastic surgeons. Manpower planning will, therefore, be discussed in more detail in the following paragraphs. First of all, the determining factors for manpower planning will be discussed. Secondly, manpower planning will be regarded as a general problem, not confined to one particular specialty. Thirdly, the medical manpower planning in the European Union will be reviewed. This is followed by the manpower planning in plastic surgery in the individual countries of the European Union. Available data will be presented. Since there are more data available from the United Kingdom and The Netherlands, these countries are presented as examples for manpower planning.

6.2 Determining factors for manpower planning

There are certain factors (Poorter, 1983) which are of importance for manpower planning for medical specialists. Though Poorter originally described these factors for the situation in The Netherlands, they are generally accepted elsewhere – basically, manpower planning depends on the supply and demand of medical specialists. Regulation and co-ordination of supply and demand is the final goal. It is, therefore, necessary to consider the factors relating to supply and demand, because they can provide instruments for improved regulation. The supply depends on the number of active medical specialists – not only the registered medical specialists, but also the trainees and prospective trainees. Lapré (1983) discussed the factors determining supply and demand of medical specialists:

The state

The State can have indirect influence (hospital beds, function planning) or direct influence (the number of specialists) on the demand for specialist services.

Funding

The limited availability of financial funding for health care is important for manpower planning. Increased costs of health care do not automatically lead to an increase in financial funding.

Capacity of medical schools

The level of medical specialist science and technique.

Capacity of the training centres for medical specialists

This will be determined by the possibilities for future consultant vacancies, which depend on the availability of financial funds.

The demand for specialist care

Waiting lists for certain procedures.

Other important factors are the following:

- a) On the supply side:
 - Changes in social regulations: For instance regulations to restrict the working hours for trainees with consequences for the workload;
 - The lack of financial funding, which can affect the training capacity;
 - The increase in the number of plastic surgeons working on a part-time basis;
 - The influence of European migration of plastic surgeons.
- b) On the demand side:
 - Demographic developments, such as the ageing of the population;
 - Developments on the medical-technical side;
 - Health care developments: the influence of hospital budgets, a possible future engagement with specialists working on a salary basis, the developments of intra- and extramural health care (private clinics) (see also Chapter 3).

The way manpower can be regulated in practice will be discussed in more detail in §6.3.

6.2.1 The supply

The control of the number of registered specialists

Rules and regulations can be used by the State to control the number of registered specialists. This would involve specialist exams, retirement age regulations, emigration or migration restrictions, the admission to active practice (registration, regulations for settling down) and the availability of active specialists (influenced by changes in workload, the move to part-time jobs or private practice and finally untimely death). Furthermore, measures can be taken to regulate the admission of specialists. This can be done by registration and by establishing rules for settling down, for the control of the number of vacancies and by establishing measures to change the availability of specialists by diversifying the activities and changing patient-related activities to non-patient related activities (Poorter, 1983).

In The Netherlands, function units were introduced as a measuring method for specialist functioning as related to the annual production of a specialist with a full-time working week. In practice, this would mean that one full-time specialist position (100%) could be divided into two part-time specialist positions of, for example, 40% and 60%. This creates possibilities for the inflow of young medical specialists. For example, in hospitals that have insufficient time or money for a full-time specialist post, the state can provide, for instance, a 0.6 function unit. Thus, a specialist would be able to work for $0.6 \times 5 \text{ days} = 3 \text{ days}$. Further control mechanisms include changes in insurance coverage (recently started in The Netherlands) and measures to restrict the cost of health expenditures. The factors influencing supply and demand are constantly changing, making it very difficult to predict the future.

Therefore, the Dutch Society of Plastic and Reconstructive Surgery asked NIVEL (the Dutch Institute for the study of Health Care) to issue a report on the future demand of plastic surgeons (Van der Velden and Hingstman, 1999).

Control of the number of trainees

This involves control of the capacity of medical schools and training centres for medical specialists as well as lengthening or shortening of the training (Poorter, 1983). Parkhouse and Menu (1989) edited a special report of the World Health Organization on Specialized Medical Education in the European Region. On the subject of manpower planning, they stated the following: "On the broader front of medical manpower planning there are important relationships between the requirements of specialist training and the requirements of patient service." These problems have been evident for many years in all

European countries. Attempts have been made in several European countries – per speciality – to find the relation between the number of places in training programmes and the need for different types of specialists. Thus, the number of career opportunities can be anticipated. Practically, this involves:

- looking at the number of training posts in relation to training capacity (i.e. the number of departments/ institutions able to provide good training);
- looking at the number of training posts in relation to the regional and national need for doctors in the speciality concerned.

This either means that these relationships coincide, which is most unlikely, or the gap between them serves as an indication for what is necessary for the future development and rationalization of specialist training. Similarly, calculations are often made concerning the number of specialists likely to be accommodated by the system over the next 10 to 20 years in relation to the number of graduates leaving medical school or arriving in the country from abroad. The prospect that there is, at least, some partial relief from the impending crisis is offered by the expectation that general practice will absorb most of those doctors who do not succeed in becoming specialists in a hospital-based discipline.

One wonders if Parkhouse's prediction in his special report for the World Health Organization, is true. In The Netherlands and the United Kingdom, for example, there already is a special training programme for doctors who want to become general practitioners. Future GP trainees have to apply for training posts. Thus, the situation is not so simple, and it provides an extra stimulus for migration to other Common Market countries by young doctors (see findings of the European survey). It is, therefore, not surprising that advertisements by British hospitals appear in Dutch and German medical journals, though they are offering non-training jobs. This confirms the findings of the European survey as far as preference for immigrant doctors is concerned.

6.2.2 The demand

In order fully to appreciate the demands of the patients, it is useful to have a complete picture of the contents of the speciality – e.g., plastic surgery – in a certain country.

A good example of this is the report issued by the Quality Insurance Committee of the German Association (21st Meeting of their Association, 26-28 September 1991). They conducted a survey among 72 members in which data were collected on the spectrum of plastic surgery. The various main points of interest were studied (see also paragraph 3.3.). The total number of patients treated for burns was 2,354, while the total number of plastic surgical patients was 236,347 with 30% clinical patients and 70% outpatients. In Germany the waiting time for consultations is 4.1 weeks, while for admission it amounts to 12.9 weeks.

The demand for health care services and consequently the demand for specialists can be influenced by changing the services covered by health insurance companies, by introducing patient contributions for certain services, by new medical developments and by changing the structure of health care.

6.3 Medical manpower planning seen as a general problem

The necessity of careful manpower planning is not only confined to plastic surgery. Problems with manpower planning in internal medicine have also been described, for example in The Netherlands (Elte and Hillen, 1993; Elte, 1994). On the one hand, there is the pressure to reduce the number of specialists, since governments have to cope with rising costs of health care (Table 6.1), while on the other hand, there is an actual need to

increase this number since there is, at the same time, a rising demand. Manpower planning, therefore, depends on finding the right balance between supply (e.g., the part of the costs of health care available for governmental funding of training institutions) and demand, which could also be influenced by restricting measures of governments. This can be illustrated in the following manner:

A study was conducted concerning the factors responsible for the increase in the costs of health care (Vreugdenhil and Bruine, 1990; Andersen Consulting Group, 1993). Among the factors mentioned were: ageing of the population, changing disease patterns (for example, increase in malignant diseases as well as chronic and infectious disease) and increased citizen expectations (due in part to developments in medicine and technology and better awareness of the possibilities of medical treatment). The growing expectations are certainly stimulated by the media; magazines, journals and television, for example, show operative procedures or prominent personalities who underwent plastic surgery. Ageing is especially important since it means that people need health care provisions for a longer period of time. It has been argued, however, that the rise of the costs of health care is largely independent of ageing. The ageing of the population would lead to a healthier, but more health care dependable population in the next decades (Van der Maas, 1989). This has consequences for all of the specialties. Furthermore, the development of medical technology (for example, new scanning techniques in internal medicine and new surgical techniques such as endoscopic surgery) would create a greater demand for specialists. Recently other important issues were introduced. The decrease in working hours (see §6.2), the participation of women, the need for part-time jobs and the management participation of doctors make it difficult to find criteria for a satisfying manpower control. As described in paragraph 6.2, government funding is an important determining factor in manpower planning. The following table presents an overview of the costs of health care as a percentage of the Gross National Product in The Netherlands and other Western countries.

Table 6.1 Costs of health care as a percentage of the Gross National Product in The Netherlands and some other Western countries

	1985	1990	1991	1992	1993	1994	1995	1996	1997
The Netherlands	7.9%	8.3	8.6	8.8	9.0	8.8	8.8	8.7	8.5
Austria	6.7	7.2	7.2	7.6	8.1	8.1	8.0	8.0	8.3
Belgium	7.3	7.5	7.9	8.0	8.1	8.0	7.9	7.8	7.6
Finland	7.3	8.0	9.1	9.3	8.5	7.9	7.7	7.8	7.4
France	8.5	8.9	9.1	9.4	9.8	9.7	9.8	9.8	9.6
Greece*	4.9	5.4	5.2	5.5	5.7	Data not available			
Spain	5.7	6.9	7.0	7.4	7.6	7.4	7.3	7.4	7.4
Sweden	9.0	8.8	8.7	8.8	8.9	8.7	8.5	8.6	8.6
United Kingdom	5.9	6.0	6.5	6.9	6.9	6.9	6.9	6.9	6.8
West Germany	9.3	8.7	9.4	9.9	9.9	10.0	10.4	10.6	10.7

Source: OECD Health Data 99; * source: OECD, 1996

Though this table shows a rise in the costs of health care in the different countries, it should be remembered that the contents and packages of health care systems vary, which makes international comparison difficult (Van Mosseveld and Bonte, 1996).

Regarding plastic surgery, the restricting measures of governments to reduce the cost of health care will, inevitably, lead to fewer possibilities for patients to have surgery. It could lead to the abolition of social surgery (Van der Meulen, 1990), even though it is an integral

part of plastic surgery. The rise in the number of private clinics and the tendency for other specialists and doctors who are not properly trained or qualified, to offer cosmetic surgery to patients, is a worrying development for plastic surgeons. It seems, therefore, advisable to maintain adequate manpower for plastic surgery. Areas previously covered by plastic surgeons – the treatment of burns, hand surgery and head and neck surgery – are in varying degrees covered by others. Reducing the numbers would eliminate the specialty altogether (Krizek, 1994). The example of medical audit in Britain demonstrates the need for quality control. This would also involve training programmes which deliver marginally trained plastic surgeons (Krizek, 1994). There are, however, also voices within the specialty who oppose the increase in the number of plastic surgeons and feel that quality (including training) should be more important than quantity (Editorial PRS, 1993; Van Raalte, 1993).

It is difficult to describe the ideal system. However, in an ideal situation governments would not prevent the development of a specialty by imposing measures to reduce the demand for specialist care. Supply and demand would be monitored by government officials and a commission representing the specialists. The involvement of the Dutch government in restricting the availability of “social surgery” for patients has been criticized. Nevertheless, this trend can also be found in the United Kingdom (Van der Meulen, 1990).

Since the ideal situation – an understanding between government (cost of health care), specialists (ideal numbers to provide the services) and patients (demand for more and better service) – does not exist, it is understandable that manpower planning is a very difficult task. An additional problem is that certain aspects of plastic surgery, such as cosmetic surgery, are difficult to estimate and can not be predicted by health care plans. They are controlled by the interests, needs and financial status of the patient (Ebert, 1994).

6.4 Medical manpower planning and the European Union (EU)

In the European Union there are no strict rules or exact data concerning manpower planning. However, supply and demand are also determining factors. It was recognised by the UEMS as early as in April 1989, in a meeting celebrating their thirtieth anniversary, that the supply and demand of doctors within the Common Market should be regulated centrally. Otherwise, the medical surplus would increase by 1992.

During the meeting of the UEMS, Des Marex (Editorial *le Pédiatre*, 1989) underlined the necessity of taking strict measures to control the supply and demand in all of the 12 countries of the EC at the same time. He stressed the need for a programmed number of trainees, taking into account the real demands in the Common Market countries. In fact, Des Marex mentioned one of the instruments which could be used to control the number of future specialists, namely, the supply: by controlling the number of trainees. Otherwise one might one day have to face the same problems that exist in The Netherlands, where the Dutch Society of Surgery decided drastically to reduce the number of surgical trainees and selected 16 trainees out of 150 candidates. A large number of these rejected candidates went to Germany for their training and returned afterwards, claiming a consultant post. This countered the effect of the reduction in the number of trainees.

This example not only illustrates the need for manpower planning, it also stresses the uncertain situation EU countries have to face when more countries join. Doctors from Eastern European countries, in particular, try their luck in the EU. Countries with former colonies, such as the United Kingdom and France, use the inflow of doctors from these places to relieve their manpower problems, especially in lower training. As was confirmed

by the European survey, the United Kingdom also considered the migration of doctors from other EU countries to be a welcome relief from their manpower problems.

In October 1991, a symposium was held in Florence organized by the Permanent Working Group of Junior Hospital Doctors (*Medical Manpower in Europe, 1991*). In a paper: "Medical Manpower in Western Europe: Towards a balance between supply and demand by the Year 2000", a study was presented (Saugmann, 1991) which aimed at determining the number of physicians in Western Europe, the distribution by age and sex and the number of unemployed doctors. From these statistics, a forecast of European manpower supply, with a particular view to the prospects for supply and demand by the year 2000, was made and various countries were compared. Professionals from 15 countries were used. In this study a decline of the growth of the supply of physicians was predicted by the year 2000. This prediction has been confirmed by a second study (Permanent Working Group of European Junior Hospital Doctors, 1996). However, the 1991 study was based on a calculated unemployment rate of approximately 2.3%, while the calculated unemployment rate between 1991 and 1994 was 2% per year. Therefore, the calculated growth in demand rate was 2.7% instead of 2.3% in order to reach equilibrium by the end of the century. Equilibrium would now be reached by 2003.

In 1994, there was a European medical workforce consisting of 1.148 million physicians, the equivalent of one physician per 314 patients (nation range 231-610). Women physicians comprised 31% of that total. 7.56% of the workforce (89,950 physicians) were unemployed (nations range 0-24.4%). Of the unemployed, 67% were Italian, 17% German, 7% Spanish, 3% Austrian and 2% Dutch. Unemployment was mainly confined to these five countries accounting for 96% of unemployed physicians in Europe (Poulsen and Christensen, 1996). These figures were obtained from a follow-up report of the Permanent Working Group of European junior hospital doctors (PWG). Since 1996 no more recent data could be provided and the PWG has not even decided on starting a new study. Data collecting has become very difficult and time-consuming. Moreover, detailed information regarding unemployment is no longer available in certain countries such as The Netherlands.

Data from the Ministry of Social Affairs and Employment of The Netherlands show that the overall unemployment among doctors in The Netherlands has decreased dramatically; from 1709 in 1989 to 806 in 1990 (Editorial LAD Ledenbulletin 1991). The reason for this decline could be that restricting the numbers of general surgery trainees, for example, finally became effective and more consultant vacancies became available. There was, however, no decrease in the number of unemployed junior doctors (661). This vulnerable group was the target for advertisements in English and German medical journals for non-training positions. These figures were collected at the beginning of the study. In a recent comment the LAD warned about a shortage of doctors of 5000 in the period 2005-2010 and a plea was made for a well organized manpower policy (LAD, 1999).

It has been stated that medical manpower in the nineties will increase by 1.85% per year (Saugmann, 1991), which is less than half of the average annual growth in the eighties. The average growth required to stop the unemployment before the year 2000 is 2.3% per year. In countries most affected by unemployment, it is 2-3.5% per year. The growth rate (supply) will decline sharply from 2.7% per year to 0.5% per year by 2000. Then, the workforce will consist of 1.24 million physicians, of whom 33% are women. The workforce will also display a progressive "seniorization". Beyond the year 2000, supply growth will be almost nil. The change in the manpower situation will start in the latter half of the nineties. The hidden variable which could explain these findings is the loss of active

manpower due to death-in-service and retirement, which will steeply increase by the end of the decade. The large influx into the profession, which began in the sixties due to the "baby boom", will be converted into an efflux.

In countries with a high unemployment rate at present, however, the situation is not easy. In West Germany in 1989, 8,100 physicians were registered as unemployed. The real number, however, would be 15,000. During the period 1990-1994, a 4% annual growth in demand volume was necessary to avoid a further increase of unemployment (Saugmann, 1991). In Italy, the universities have no information concerning the real number of medical students. It is expected that long-term unemployment and underemployment of physicians will continue to be widespread throughout the nineties. An improvement by the end of the century is only possible if the universities succeed in controlling their output.

In his study, Saugmann did not consider the changes connected to a European Common Market which might well influence the manpower planning in each country. During the symposium, however, this was not thought to be a problem since, at that moment, there were no signs of an increased migration from countries with high unemployment rates – such as Italy – to Scandinavian countries with low or non-existing unemployment rates. A complicating factor for future manpower planning could be, furthermore, the unstable political situation in Eastern European countries. Polish doctors and nurses already try their luck in Western Europe.

Thus far, it has not been possible to establish a common manpower policy for plastic surgery in Europe. The failure of a committee on manpower planning, within the EBOPRAS, to present a common policy was caused by the different views within the countries. It is, therefore, relevant to give an outline of the present situation using available data. Though in paragraph 6.2. the determining factors for manpower planning were described, the situation in The Netherlands and the United Kingdom will be used to give an example how manpower planning could take place. Details about the situation in The Netherlands and the United Kingdom will be given.

6.5 The situation in The Netherlands and the United Kingdom

6.5.1 Manpower control in The Netherlands

The Netherlands offer an example of how manpower control could take place.

1. The number of trainees

The number of trainees could be changed depending on the expected demand. Thus, a shortage of vacancies was expected for general surgeons, which resulted in a reduction in the number of surgical trainees (Bijnen, 1997). A smaller number of trainees would lead to a reduction in the number of trained medical specialists. Still, discrepancies can be noted between the number of surgical specialists. A comparison was made in the United Kingdom (Griffith, 1987) between the number of general surgeons, orthopaedic surgeons and maxillofacial surgeons and plastic surgeons.

Table 6.2 *The ratio of plastic surgery consultants to other specialty consultants in England and Wales (1985)*

plastic surgeons	1 : 10	general surgeons
plastic surgeons	1 : 7	orthopaedic surgeons
plastic surgeons	1 : 4	ear, nose and throat surgeons
plastic surgeons	1 : 3	oral surgeons

Source: Griffith (1987)

Though to my knowledge no more recent studies have been published in the United Kingdom and efforts to receive new data failed to produce results, more recent figures obtained in The Netherlands again show a disproportion between plastic surgery and other specialists.

Figures obtained from the databank of the Specialist Registration Committee in Utrecht per November 3, 1999 show the following number of registered specialists:

plastic surgeons	175	(1.11/100,000 inhabitants)
orthopaedic surgeons	466	(2.95/100,000 inhabitants)
general surgeons	1017	(6.45/100,000 inhabitants)
ENT surgeons	451	(2.86/100,000 inhabitants)
dermatologists	387	(2.45/100,000 inhabitants)
oral surgeons**	198	(1.25/100,000 inhabitants)

* Total population of The Netherlands per 1-1-99 is 15,760,225 (source CBS Leidschendam)

** Source: The Netherlands Society of Dentistry

So, plastic surgeons are outnumbered by other specialists.

2. The admission of specialists

Governmental influence is important for the measures regulating the admission of specialists. In The Netherlands the number of specialists within an area can even be restricted. Since hospitals are forced to cut down their costs (there is a budget from the government), vacancies are sometimes not filled and part-time jobs are offered. Creating part-time vacancies could lead to a shift towards non-patient related activities. In The Netherlands, recertification has been started, which also depends on patient-related activities.

3. Influencing the demands of health care and the demand for medical specialists

A dramatic change has taken place in The Netherlands since January 1991, regarding the cover of insurance companies for certain plastic surgical operations. In this way, the government hopes to cut down the costs of health care in The Netherlands. The importance of certain operations for people who suffer, for example, from various problems such as obesity, hypoplasia of breasts or baggy eyelids, is completely disregarded. An exception is made for people who suffer distinctly from mental disorders caused by these problems. There should be evidence that an operation would improve the mental state of the patient. A mental disorder is hard to assess, and in some cases referrals to psychiatrists are necessary. On the other hand, a mentally disturbed patient is, due to lack of co-operation or unrealistic expectations, not the ideal patient for a plastic surgeon. Thus, the whole exercise is to reduce the number of plastic surgical operations despite the fact that some people with real psychosocial problems caused by obvious abnormalities would benefit from an operation, but simply cannot afford it.

6.5.2 Waiting lists and limited lists, as a means of indirect influencing of manpower control

The consequence of this policy of introducing limited lists of procedures covered by insurance companies is that for certain procedures, there are waiting lists. This decreases the plastic surgery services available for patients. Though it seems unfair and frustrating for patients, it does not deter governments from their aim to cut down the costs of health care. Compared with The Netherlands, however, the situation in the United Kingdom is worse. The waiting lists are even longer, sometimes 5 to 10 years for specific deformities with low priority. The procedures considered to be cosmetic are rarely performed under the National Health Service.

The whole issue of waiting lists has led to fierce discussions in the medical journals. While some (Appleby, 1993) suggest that people who are on a waiting list for more than 2 years (of whom one third are plastic surgery cases) are in less urgent need of admission than others on the lists, others (Mahaffy, 1993; Murray, 1993) disagree with this view. The long waiting lists merely reflect the grossly inadequate number of trained plastic surgeons in Britain (Murray, 1993). But this does not seem to be the only reason: Yates (1991) presented a paper at the British Association of Plastic Surgeons Meeting in London (Inter-Authority Comparisons & Consultancy) concerning the waiting list initiative programme. In this programme, the government provides money to decrease the waiting lists. Yates suggested five causes for the existing waiting lists in the United Kingdom:

1. insufficient funding;
2. insufficient use of the system: beds, sessions, imbalance of the resources of the NHS;
3. a number of patients have died or disappeared;
4. the inability to define the boundaries of plastic surgery;
5. the separation of NHS and the private sector.

A study was performed regarding the attempts of the government in Britain to reduce surgical waiting lists (Yates, 1991). It has been concluded that the national waiting list initiative has not been successful and that plastic surgery should be excluded from it. The resources for the existing consultants should be improved before making new appointments. There is opposition to the idea of surgical priorities for waiting lists. During the meeting of the British Association of Plastic Surgeons in London (December 1991), the matter of accepting restrictions for placing cases on waiting lists was discussed. There was a general desire to create a limited list; in order to prevent later implementation of a limited list controlled by the government.

As discussed before, a limited list – with its advantages and disadvantages – has been accepted in The Netherlands. The advantage is that patients learn to accept the fact that certain “cosmetic” procedures are no longer covered. This would save the insurance companies money and help the government control the costs of health care. The disadvantages are that certain procedures, which are not covered by plastic surgery, are covered by other specialties (e.g. ENT). For example, a nose correction could be covered when performed by an ENT surgeon, but not covered if a plastic surgeon does it. One should, however, not forget that many people ask a plastic surgeon for help because they are so concerned with their appearance that they have become mentally imbalanced (Van der Meulen, 1990). Thus, the term social surgery was re-introduced (Bardelli, 1935).

A further disadvantage of a limited list is the fact that patients who still want cosmetic procedures performed, might fall into the hands of less qualified or trained doctors (Van der Meulen, 1990). The existence of long waiting lists for plastic surgery has led to an upsurge of cosmetic clinics, which are independent of governmental control and often manned by doctors not qualified for the work they are doing. In The Netherlands a National Council for Private Clinics has been formed. The purpose of this council is to visit the clinics (extramural treatment centres) in order to make sure that certain standards are met. Quality control remains the key issue. In the United Kingdom this has led to the government implementation of the medical audit. The definition of the medical audit is: the systematic, critical analysis of the quality of medical care, including the procedures used for diagnosis and treatment, the use of resources and the resulting outcome and quality of life for the patient (Medical Audit for plastic surgeons, 1991). Despite the significant increase of administrative work, the British government found it useful to make it obligatory for doctors to assess both their own performance and that of their departments.

One might argue that the time required for this might better be spent on direct patient care, although safeguarding the quality of care is beneficial for all those concerned in the long term.

In conclusion:

It is difficult completely to understand the results of the study of Yates. If a waiting list is not consistently reduced over a couple of years despite injection of money, the initiative is considered to be a failure.

6.6 Manpower planning in plastic surgery in the European Union

Literature on manpower in plastic surgery in the European Union or in the individual countries of the EU is scarce. Griffith (1987) wrote a report on the manpower situation in the United Kingdom and mentioned 118 consultant plastic surgeons, serving a population of 56 million (1:475,000) or 0.21 plastic surgeons per 100,000 inhabitants. Nicolai (1991) presented data for the UEMS which are summarized in the following Table 6.3.

Table 6.3 *The number of plastic surgeons (1991)*

EEC-country	Ratio of plastic surgeons per 100,000 inhabitants	Number of trainees in plastic surgery	Annual inflow of plastic surgeons
Belgium	0.70	12	4
Denmark	0.70	15	5
France	0.64	60	20
Germany	0.25	124	41
Greece	0.50	30	10
Ireland	0.26	4	1.3
Italy	0.73	190	63
Luxembourg	0.55	0	0
The Netherlands	0.67	15	5
Portugal	0.70	20	7
Spain	0.75	60	20
United Kingdom	0.20	150	50
Mean	0.56		

source: Nicolai J.P.A. (1991)

From this data it could be concluded that the following countries have approximately 0.7 plastic surgeons/100,000 inhabitants: Belgium, Denmark, France, The Netherlands and Portugal. Italy and Spain had the largest number of plastic surgeons/100,000 inhabitants, while Greece and especially Germany, Ireland and the United Kingdom had the smallest number per 100,000. These differences could be explained by either regional differences in demand or an insufficient supply of accredited plastic surgeons (the United Kingdom). The European National Associations affiliated with IPRAS presented the following recent data, which are summarized in Table 6.4 below.

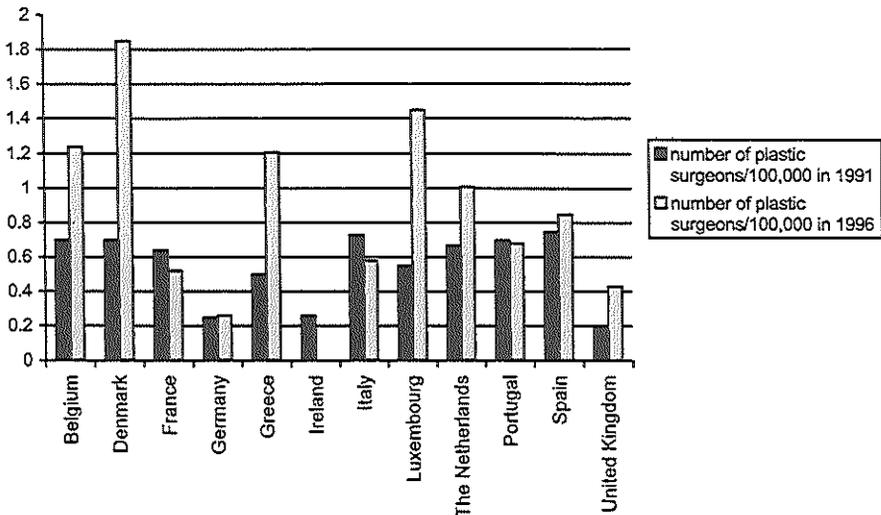
Table 6.4 The number of plastic surgeons (1996)

EU-country	Ratio of plastic surgeons per 100,000 inhabitants
Belgium	1.24
Denmark	1.85
France	0.52
Germany	0.26
Greece	1.21
Ireland	no data available
Italy	0.58
Luxembourg	1.45
The Netherlands	1.01
Portugal	0.68
Spain	0.85
United Kingdom	0.43
Mean	0.91

source: European Book of Plastic Surgery, European National Association affiliated with IPRAS (1997)
Source number of inhabitants: Statistics Netherlands 1996

These same figures can be found in a histogram, see Figure 6.1.

Figure 6.1 Number of plastic surgeons per 100,000 inhabitants in 1991 and 1996



Source: UEMS, Brussels, Belgium
European Book of Plastic Surgery, European National Association affiliated with IPRAS (1997)

If we compare these latter data with the data obtained from Nicolai, it could be concluded that there are some differences. First of all the last figures show a considerable increase in the ratio of plastic surgeons/100,000 inhabitants in Denmark 1.15 (164%), Greece 0.71(142%), Luxembourg 0.90 (164%), United Kingdom 0.23 (115%), Belgium 0.54 (77%) and The Netherlands 0.34 (51%), while there was a decrease in France 0.12 (19%) and Italy 0.15 (21%). Furthermore, there was a slight increase in Spain 0.10 (13%). Portugal 0.02 (-3%) and Germany 0.01 (+4%) remained fairly stable. It is difficult to

explain the trend. There might be an increased demand in those countries which show an increase. Another possible explanation could be a change in the rules for registration, though this seems unlikely, or perhaps, the data were collected in a different manner.

6.7 Manpower planning in the individual former Common Market countries

Introduction

The purpose of this review is to compare the individual countries. The questions important for this study were whether there is manpower planning and which measures were used.

Belgium

There is a possibility for trainees to go abroad for their training for one year, for instance to the UK or other countries. Official (government controlled) manpower planning does not exist, although economic factors play a role. The hospital budget often determines whether or not a new consultant plastic surgeon can be appointed. Formally, no barriers exist for doctors from other Common Market countries looking for training posts in plastic surgery. In practice, however, preference is given to Belgian medical graduates. Vacancies for the trainees abroad could be filled, which gives others the opportunity to fill in the vacant trainee spots in Belgium.

Denmark

Manpower planning is not effective, since doctors can obtain their specialization in Sweden and have it recognized in Denmark. The following data were provided to the Manpower Committee of the UEMS:

There are 5 hospital departments:

Rigshospitalet	58 beds
Odense hospital	48 beds
Hvidovrehospital	35 beds
Aarhus hospital	35 beds
Gentofte hospital	20 beds

The population of Denmark is 5,169,793; number of plastic surgery beds: 191; number of trainees: 13 (full-time trainees on the official government training programme).

France

In a thesis (Petit, 1999) several aspects of manpower in plastic surgery in France were discussed: the number of officially registered plastic surgeons in France, the activities of plastic surgeons in France, the trend towards subspecialization, the demography, the geographic spread, the ideal number of plastic surgeons and the training of plastic surgeons. In the last 18 years the number of plastic surgeons has tripled from 198 to 654. Considering the reasonable figure of one plastic surgeon per 100,000 inhabitants, the ideal number would be 600. A survey examining the activities showed that only 2% of the respondents were exercising plastic surgery to the full extent (hand surgery, aesthetic surgery and reconstructive surgery), 31% were dedicating their activities for more than 50% to aesthetic surgery and 62% of the respondents never performed hand surgery. So in France, there is a trend towards subspecialization. If the present growth in the number of plastic surgeons in France were to continue, there would be 1000 plastic surgeons in 2014. A plea is made to have less plastic surgeons, who would be better trained, all-round, better distributed over the regions, better organized and better known to the public.

Germany

There are only few data available. The German Association of Plastic Surgeons consists of 165 members. Plastic surgeons are needed in the southwestern part of Germany as well as in Berlin. Some data in Germany:

- The number of plastic surgery beds is 1,608 for 72 departments;
- The number of training institutions is 50;
- There are 230 so-called "guest doctors", who are, officially, not allowed to work.

Though currently there is no manpower planning, it seems advisable to regulate the uneven distribution of plastic surgeons.

Greece

No data are available to us.

Ireland

Manpower is insufficient (see Chapter 3). Plastic surgeons are unable to perform their traumatology duties due to insufficient manpower.

Italy

No data concerning manpower planning exist in Italy, and the number of plastic surgeons is still unclear. The official number seems to be somewhere between 500 and 1000, but the number of doctors performing plastic surgical operations is much greater.

The Netherlands

In The Netherlands, the Ministry of Welfare, Health and Cultural Affairs published a report on the estimated need for plastic surgeons using figures from 1983 to 1985. This report dealt with the duration of first visits to the outpatient clinics, the number of admissions, the number of consultations from other specialists and the number of clinical and outpatient operations. The demand for the above-mentioned categories was calculated, as well as the total demand in The Netherlands. They used these data to predict the number of specialists needed by 1990, 1995, 2000 and 2005. However, one can argue that the problem with this report was that it was based solely on figures; no variables were taken into account. In 1986, The Dutch Society of Plastic and Reconstructive Surgery rightfully pointed out that there could be developments influencing the working week and the time schedule of the plastic surgeon during the next 15 years: i.e., the increase in time needed for the first visit, the increased contribution of the management, the increase of administrative work (for public and private insurance), further specialization and technology, the increase in postgraduate teaching, symposia and meetings, the increase of specific questions from patients and, also, the increased bureaucracy.

In 1990, a Training Capacity Committee was formed. The goal of the committee was to find out how many plastic surgeons should be trained, how future trainees should be selected and how this could be regulated. They wrote an extensive working paper with interesting comments.

Before discussing the present capacity, they discussed the problem of the ill-defined territory of plastic surgery which is prone to intrusion by other specialties. They also discussed the growth potential for the future; increased demand for oncologic reconstructive surgery, smaller oncologic operations of the face, primary and secondary treatment of hand injuries and aesthetic surgery.

The growth restrictions on the specialty, including the fact that parts of plastic surgery are being taken over by other specialties and certain operations are no longer covered

by insurance, lead to a situation where some patients cannot afford certain operations. The suggestions of the Committee were intended to lead to the following positive developments:

- Retirement by the age of 60 and a decrease of the present workload from 60 hours a week to 40 hours a week. This would necessitate an increase of 50% in the workforce of Dutch plastic surgeons.
- There could be an annual outflow of four newly qualified plastic surgeons, with no increase in the number of plastic surgeons. If one considers the normal daily workload, there should be at least five and if one takes into consideration those who go into subspecialization and those who quit it should be even more than seven. Therefore, according to the Committee, the total training capacity in The Netherlands should be 21 trainees. The future development of extramural activities in The Netherlands and in Europe has been left out of the calculation, but the Committee consider these to be the minimum figures. The actual number of trainees is 26, though this number is variable due to unexpected vacancies.

The training capacity for general plastic surgery can be restricted by adding special areas of interest (i.e. hand surgery, microsurgery, reconstructive surgery and head and neck oncology), which need extra training. Prolongation of the training by one year, means a 25% reduction in the outflow of newly qualified plastic surgeons. The Committee suggested leaving the criteria for the general surgery part of the training to the Specialist Registration Committee. The trainee should have passed the exams in the basic course of general surgery (Verbeek, 1982).

As was, finally, the case in general surgery, the chiefs of training centres found it undesirable that a central committee made decisions concerning the selection of trainees and the regulation of training. They still wanted to have the final word in the selection of candidates. The head of the plastic surgery department chooses a candidate three years before the actual start of his training in plastic surgery. Selection takes place before the candidate has had a chance to obtain surgical experience. The candidate can, however, be tested at any time during his obligatory three years of general surgery and still be considered unsuitable. Therefore, a safety margin of 25% extra candidates would guarantee that one always has a pool of good candidates.

In The Netherlands, candidates unable to find regular training may temporarily acquire experience in AGNIO jobs (residents not in training). However, this is not at all a guarantee that he will eventually find a final training position. Doctors trying to find training in Belgium, Germany or the United Kingdom might face the same problems. However, those doctors who persevere and are able to get a training post in another EC country might return to The Netherlands and find a consultant post. This would undermine any manpower measures taken. In 1994, the Dutch Committee for hospital provisions published an important recommendation for the Minister of Health. They concluded that the number of outpatient visits in general hospitals per 100,000 inhabitants between 1983 and 1991 had risen by 21%. In The Netherlands, there is a system of function units. This can be defined as the production volume of a full-time specialist. In 1986, the Committee recommended one full-time plastic surgeon (function unit) for 190,000 inhabitants. In 1995, however, the number of function units was already 93, which was 12 (15%) higher than the calculated 81 (1 plastic surgeon per 190,000 inhabitants).

The Committee took into account the fact that the specialty had made important developments during the last ten years (the development of reconstructive surgery, reconstructive microsurgery and the increasing use of implants in aesthetic surgery). They made a distinction between centres offering "top care" (treatment of severe burns, craniofacial deformities, gender dysphoria and transsexuals as well as complicated congenital deformities of skin and hands, head and neck tumours, complicated hand injuries involving revascularization and replantation) and basic care (less complicated hand injuries, general hand surgery, benign and malignant skin lesions, smaller burns, aesthetic surgery and pressure sores).

They also noticed the development of aesthetic surgery and the increasing involvement of non-plastic surgeons in this area (ENT surgeons, maxillofacial surgeons, dermatologists, ophthalmologists and general surgeons). General surgery has the greatest overlap. In the view of the Committee, plastic surgical operations should be performed by plastic surgeons (quality of care). In the first instance, they recommended an increase of the number of plastic surgeons for top care from 25 to 40. By the year 2000, 175 plastic surgeons (1 plastic surgeon : 92,000) will be needed for basic and top care. On practical grounds, this is not realistic (present training capacity). Therefore, 130 function units were proposed (1:124,000).

In 1994, a report "Tellen & Passen" was issued by the council of the Dutch Society of Plastic and Reconstructive Surgery, since they were dissatisfied with the report of the Training Capacity Committee. They stressed the need for better insight in relevant facts such as numerical historical developments and a demographic description of the profession and the availability of future scenarios (pessimistic or optimistic). In their view multiple factors determine manpower planning.

- a. The training capacity in a hospital would be determined by:
 - the advice of the visiting committee;
 - the amount of work;
 - the available working hours (working hours decision);
 - finances from the capacity organ/training funds.
- b. The training capacity would be limited by:
 - the required ratio trainer/trainee;
 - the duration of the training.
- c. The number of training positions is determined by:
 - possible outflow:
 - retirement
 - early retirement
 - expected need in the future:
 - increasing technological developments
 - growth of population
 - ageing
 - number of women/part time jobs;
 - economical developments;
 - private clinics;
 - inflow from abroad.
- d. The number of training positions is reduced by:
 - governmental/insurance interference;
 - stop of vacancies.
- e. The need for plastic surgeons is based on:

- retirement/early retirement;
 - protection of professional territory;
 - report College for hospital provisions;
 - expected need:
 - increasing technological developments
 - growth of population
 - ageing
 - trend towards working in part-time jobs.
- f. The need for trainees is based on:
- amount of work;
 - working hours decree;
 - number of patient contacts;
 - supply of patients;
 - requirements training/duration of training;
 - number of part-time jobs;
 - scientific research.

A recent report was presented by NIVEL (Van der Velden and Hingstman, 1999). In this report special attention was paid to demand and supply. The demand would not only be influenced by developments such as available financial support (hospital budgets) and the development of the health care system (intra- and extramural care in hospitals and private clinics respectively). The influence of ageing would lead to an increase in demand by 2%. The need for plastic surgeons will also be effected by the handling capacity of patients, which is determined by the available working hours, the balance between patient-bound/not-patient-bound activities and the time necessary for a consultation or operation.

It is expected that there would be an increase in part-time appointments and an increase in non-patient-bound activities such as postgraduate education. The time spent for a patient would also increase. Depending on the expected scenario the increase of the number of plastic surgeons would range between 4.1% and 7.5%.

This would mean a difference of 9 extra trainee posts compared to the present situation. Since May 1999, the Dutch government has introduced a capacity organ, which consists of 5 chambers for each medical sector and a Plenary Organ. The Plenary Organ has representatives of the health professionals, the training institutions and the financiers. The Plenary Organ should design a capacity planning using data obtained from the chambers (Maassen, 1999). At the government's request the Plenary Organ could critically analyse manpower reports such as the latest NIVEL report. Reports like the NIVEL report could, therefore, be put aside by the government.

Portugal

There is no manpower planning in Portugal, though the government controls the number of consultants in the hospitals. At the moment, there is a surplus of consultants in some hospitals, but it is expected that new units will be built. There are Brazilian doctors in private practice, who benefit from the fact that there are no linguistic difficulties.

Some Portuguese doctors have spent part of their training in, for example, the United Kingdom but this is only recognized if the training was sponsored by the Portuguese unit. Doctors who try to find a post in Portugal after having spent time in plastic surgery outside the country can only enter private practice.

Spain

In Spain, the National Commission for Plastic Surgery presented recommendations for the most convenient number of trainees. However, the Ministry of Health does not always act upon the recommendations.

United Kingdom

In the United Kingdom, manpower planning for all specialties is in the hands of the Joint Planning Advisory Committee. Its purpose is to achieve an adequate supply and equitable distribution of higher specialist training posts among specialties and, geographically, to meet the career opportunities available for those training in a medical specialty. For doctors from the European Community who are trying to circumvent manpower restrictions in their own country, the future could be bleak since they have to compete with British doctors for a career post. Overseas doctors can, after a selection procedure, participate in a certification programme of three years rotational training, starting as a Senior House Officer and completing the training in a registrar job. The present problems the United Kingdom encounters in filling consultant posts have created an opportunity for foreign doctors on the certification programme to obtain a career post. However, this was not the original idea of the certification programme.

The lack of trained and trainee plastic surgeons has already been studied (Griffith, 1987). This situation leads to the necessity of defining specific priority conditions to be admitted for treatment without unreasonable delay (various cancers). This has resulted in long waiting lists for non-urgent surgery (in 1985, the average number on a plastic surgeon's waiting list exceeded 400, of which 60% had been waiting over 12 months for operative treatment). Griffith stated that the lack of government funding blocked the appointment of new senior registrars and, therefore, the appointment of new consultant posts; thus supporting the view that financial funding is very important for manpower planning (Lapr e, 1983).

Currently there are no special rules for manpower planning. There is a Special Workforce Advisory group, which issues annual reports with recommendations regarding the numbers of registrars/consultants. There are, however, no fixed criteria, though factors such as retirement, death and expansion of the system play a role.

6.8 Summary and conclusions

If one studies the existence of manpower planning and particular measures, manpower planning is only known in The Netherlands, the United Kingdom and Spain. In The Netherlands determining factors are well studied. However, no specific measures seem to be effective. Any manpower planning depends on multiple factors such as age of retirement, technological developments, increased demand for certain procedures or for certain provisions such as availability of private clinics and new specialist positions. The training capacity also depends on multiple factors such as available working hours and financial funding. Definite measures are, therefore, difficult. It seems advisable closely to watch necessary data on an annual basis (number of plastic surgeons, supply of trainees, number of retirements and availability of jobs). Since the subject is so complex, specific measures on a European basis seem impossible. Determining factors like supply and demand are constantly changing.

Moreover, governments still have the power to control the funding necessary for the medical schools, the training of medical specialists and indirectly the demand for specialist care. An increase of the costs of health care has been found in several countries of the EU,

despite the fact that health care systems differ in contents and are therefore difficult to compare.

Factors to which the rise in the costs of health care might be attributed, may be found in the ageing of the population, changing disease patterns and, particularly important for plastic surgery, increased citizen expectations.

Prognostic studies of medical manpower in European countries are difficult to obtain, and the Permanent Working Group (PWG) studies of 1991 and 1996 showed that there would be an equilibrium between demand and supply of the medical workforce by 2003. It is difficult to recommend special manpower measures. A Specialty Workforce Advisory Group (SWAG.), which advises on medical education, training and staffing such as in the United Kingdom, could be a good step in the right direction.

Despite attempts, such as those undertaken in The Netherlands (the 1999 NIVEL report), to determine the future need for plastic surgeons, the scenarios remain speculative and dependent on the strengths of the parameters. One should always take into consideration the individual variability of the surgeons. Furthermore, the geographic spread (some hospitals have no plastic surgeons), the possible influence of European migration and the activities of other specialties on certain areas of plastic surgery must be taken into account.

In the last meeting of The Netherlands Society of Plastic Surgery on November 4th, 1999, the common opinion was that there should be an increase in the training capacity though the employment chances should be guaranteed.

And yet, the government still has the right to reject a report of NIVEL, on the grounds that it was commissioned by only one party (the Dutch Society of Plastic Surgery), and to ask the Capacity Organ for a second opinion.

Influences of a European Unification on migration in plastic surgery

7.1 Introduction

In this chapter the Euromigration in plastic surgery was studied using a European survey. For this survey, questionnaires were sent to training centres throughout the former EC (the current EU). Migration is directly related to the employment situation in some countries and therefore the employment situation within the Common Market was also studied. The findings of the European survey were summarized in tables, which can be found in Supplement 9, but the main conclusions will be given in this Chapter. In order to avoid confusion it must be emphasized that, while in paragraph 7.2.1 the present term EU is used, in paragraph 7.2.2, dealing with the results of the survey, the term EC (European Community) will be used instead of EU (European Union). This was done because of the fact that at the time of starting the survey, the correct term was EC (European Community).

7.2 The effects of European Unification on health care

The effects of European Unification on the health care system were mentioned briefly in Chapter 1. If one considers the practical consequences of European Unification on health care, migration of doctors and free traffic of patients (especially in the border areas), free traffic of goods (medicines, equipment and instruments) and free traffic of services (international health insurance companies), have to be studied. However, in this Chapter we decided to restrict ourselves to the migration in plastic surgery.

The following points can be traced directly to European Unification:

Euromigration of doctors – This item will be discussed in a separate paragraph.

Euromigration of patients – This trend can already be observed in border areas in The Netherlands. Patients can choose the hospital and the doctors with the best service (no waiting time or preferential treatment). The possible influx of patients from Eastern Europe was mentioned above (Singer, 1990).

Free traffic of goods – One can expect medicines, equipment and instruments to be more readily available at more competitive prices.

Free traffic of services – Patients are able to benefit from insurance companies, which can offer medical coverage throughout the European Union.

7.2.1 Euromigration in plastic surgery

If one examines the uneven distribution of plastic surgeons within the EC countries (see Tables 6.2 and 6.3), it would seem logical that the possibility of working in another country has led to the increased migration of plastic surgeons from one EU country to another. During the December 1994 meeting of the British Association of Plastic Surgeons, this view prevailed. During this meeting an increase in the number of training facilities was strongly advocated in order to counteract the influx of plastic surgeons from other EC countries. However, it is not only the influx of qualified plastic surgeons that is relevant. For a better understanding of the problem, we should differentiate between three groups of migrant doctors:

1. The first category is the group of doctors seeking specialist training in plastic surgery outside their home country in another EU country, in order to get a specialist certificate, which is valid and recognized throughout the EU. Subsequently, upon returning home, they would be able to claim a consultant post. However, these doctors have to comply with the training regulations in their home country. For example, in the United Kingdom EC doctors have to compete with British graduates for training posts. Nevertheless, the organizations which regulate the training and recognition in the home country – for example, the Specialist Registration Commission in The Netherlands (see Chapter 5) – have the freedom to require an extra training period; for example, 6 months in a recognized unit. There are also examples of British doctors who, after fulfilling the training requirements in The Netherlands, use a Dutch certificate to obtain a British certificate.
2. The second category is the group of trainees in plastic surgery in one Common Market country who, for various reasons, spend time in another member state. In the United Kingdom and Belgium, trainees have the opportunity to take part of their training in another member state.
3. The third category is the group of plastic surgeons from EU countries looking for employment in other member states. Exact data are lacking.

Another key question is: why do doctors choose to migrate?

- a) Avoidance of manpower measures in their own country. The UEMS has recognized this fact and during a conference commemorating the 30th anniversary of its foundation (Editorial *le Pédiatre*, 1989), the consequences of the medical surplus were discussed as well as the urgency to put an effective system into practice for coping with the effective supply and demand for doctors. To date, there is still no European manpower planning and it is a telling sign that within the European Board of Plastic and Reconstructive Surgery, all efforts to develop a common manpower policy have failed thus far.
- b) The unemployment rate among junior doctors in The Netherlands has led to migration to countries such as the United Kingdom, Germany and, to a lesser extent, Belgium. (There already is a considerable number of Dutch medical students in Belgium, because Belgium has no *numerus clausus*.)

Finally, it is useful to know why trainees temporarily move to another EU member country (temporary work, fellowship, training?). The types of fellowships shed some light on the various weaknesses in the training system as well as the special interests of the trainees.

7.2.2 European survey (1991-1992) of training centres in plastic surgery

Introduction

As was described in Chapter 1, a survey was conducted in order to obtain information on the issue of Euromigration in plastic surgery, since there are no data available regarding this topic. Though in Chapter 1 the key points of the survey, the method of the survey and the population were mentioned, they will be repeated here briefly. It should be remembered that the survey expresses the views of the respondents.

Method

Questionnaires were sent to the heads of departments of plastic surgery, requesting them to distribute them among their trainees. Details of these questionnaires can be found in Supplement 8. In these questionnaires the following points were raised:

- the influence of European unification on the increase of migration of plastic surgeons, plastic surgical trainees and doctors looking for training in plastic surgery;
- the attitude towards temporary migration;

- the advantages of immigration;
- the disadvantages of immigration;
- the preference for certain native EC countries;
- EC countries that may could cause problems with respect to immigration;
- the preparedness for permanent emigration to another EC country;
- the countries most preferred for immigration;
- the reasons for permanent settlement in another EC country;
- the reasons for moving temporarily to another EC country;
- the favourite topics for a fellowship;
- the present number of foreign medical graduates from other EC countries in the hospitals of the respondents.

Population of the survey

The survey was restricted to those directly involved in the training: the heads of plastic surgical departments and their trainees. No distinction was made between the questionnaires answered by the trainers and the trainees in order to maintain anonymity.

Results of the survey

First of all it is important to know what the participation rate was. The findings are summarized in Table 7.1. An overall response rate of 40% for an international survey seems reasonable.

Table 7.1 Summary of the participation in the survey

countries	number of questionnaires sent	number of questionnaires returned	percentage of questionnaires returned
Belgium	30	20	67
Denmark	18	15	83
France	98	24	24
Germany	109	53	49
Greece	56	31	55
Ireland	2	2	100
Italy	371	106	29
The Netherlands	32	18	56
Portugal	51	22	43
Spain	63	31	49
United Kingdom	98	50	50
Total	928	372	40

The following points were discussed in the questionnaires:

1. The influence of European unification on the increase of migration.
The respondents were strongly (77%-92%) persuaded that European Unification led to increased migration (Table 7.1, Supplement 9). The strongest supporters were in the United Kingdom (92%), Greece (97%), Ireland (100%) and France (96%), while support for this view in Germany was expressed by only 72% of the respondents. Details can be found in Supplement 9.
2. The attitude towards temporary migration.
In the survey a distinction was made between the temporary migration of three groups: plastic surgeons, plastic surgical trainees and newly qualified doctors looking for training posts, from other EC countries (later the original EU countries). In the tables

this last category is meant whenever the term "doctors" is used.

While the majority of the respondents (81%) was in favour of the temporary arrival of trainees, there was less enthusiasm for the temporary arrival of plastic surgeons (72%) and doctors looking for a training post (68%). The strongest support for the temporary arrival of the three groups was in the United Kingdom (94%, 86% and 92%) and France (96%, 88% and 88%). Though there was strong support for the arrival of the first two groups in The Netherlands and Denmark, the rates of 61% and 60% show less support for the temporary arrival of doctors looking for training posts. Respondents in Spain were in favour of the temporary arrival of trainees, but less for plastic surgeons and doctors looking for a training post. For details, please refer to Supplement 9, Tables 7.2 and 7.3.

3. The advantages of immigration

Again a distinction was made between plastic surgeons, trainees and doctors looking for training posts from other EC countries (the original EU countries).

A. The advantages of the arrival of plastic surgeons for the respondents.

The stimulation of international exchange was considered the principal advantage by 68% of the respondents. It was not seen as a solution to manpower problems (8%) and there was also not much support for the view that it could have a positive influence on the training (47%), but it could be an enrichment of knowledge and expertise (66%). For details, see Table 7.4 in Supplement 9.

B. The advantages of the arrival of plastic surgical trainees from other EC countries.

The main advantage (62%) in the opinion of the respondents was the stimulation of international exchange. There was little support for the view that it would be a solution to shortage of manpower (10%), knowledge and expertise (28%).

In the United Kingdom respondents were more positive and considered a solution to manpower problems (34%), an enrichment of knowledge and expertise (54%) and a positive influence on the training (44%) to be advantages as well. For details, see Supplement 9, Table 7.5.

C. The advantages of the arrival of doctors looking for a training post from other EC countries.

Here, the main advantage was stimulation of international exchange (51%) and little support was expressed for the view that it would be a solution to a shortage in manpower (5%), an enrichment of knowledge and expertise (19%) or a positive influence on training (27%). In the United Kingdom there was more support for the view that it could be a solution to the shortage in manpower (24%) and that it could have a positive influence on training (44%). See also Supplement 9.

4. The disadvantages of immigration

In the questionnaires a distinction was made between plastic surgeons, plastic surgical trainees and doctors from other EC countries (the original EU countries) looking for training posts. The following points were discussed:

- a negative effect on employment opportunity rates;
- problems with qualifications;
- linguistic and cultural problems;
- a negative effect on the training facilities of the respondents.

A. The disadvantages of the immigration of plastic surgeons from other EC countries.

Of those respondents who were against the arrival of plastic surgeons from other

EC countries, 40% mentioned a negative effect on employment. Looking at the individual countries: 55% of the Belgian respondents mentioned a negative effect on employment, as did 100% of the Irish respondents, 60% of the German respondents and 55% of the Spanish respondents.

Problems with qualifications were expected by 42% of the British respondents and 100% of the Irish respondents; overall, however, only 12% of the respondents shared this view. Only 7% of the respondents feared linguistic and cultural problems, including 28% of the Dutch respondents and 50% of the Irish respondents.

Only 8% of the respondents feared a negative effect on training possibilities, and 17% feared a negative effect on income. This latter group contained 40% of the Dutch respondents and 100% of the Irish respondents. Details can be found in Supplement 9, Table 7.7.

B. The disadvantages of the immigration of plastic surgical trainees from other EC countries.

The negative effect on employment was mentioned by respondents from The Netherlands (40%), Germany (40%), Ireland (100%), the United Kingdom (30%) and Spain (26%) and overall by 19% of the respondents. Overall, only 7% of the respondents expected linguistic and cultural problems; among those were 16% of the French respondents and 50% of the Irish respondents. 22% of the Dutch and 22% of the British respondents expected problems with qualifications. Details can be found in Supplement 9, Table 7.8.

C. The disadvantages of the immigration of doctors looking for training facilities in another EC country

21% of the respondents mentioned a negative effect on employment (40% of the Dutch respondents and 100% of the Irish respondents). 17% mentioned a negative effect on training opportunities and 13% of the respondents expected problems with qualifications (50% of the Irish respondents and 28% of the Dutch respondents).

5. The preference for certain native EC countries of the immigrant doctors (plastic surgeons, trainees and doctors looking for a training post). The respondents could indicate their preference for certain EC countries.

38% of the respondents mentioned the United Kingdom as most preferred country of origin of immigrant doctors. This was followed by France (31%), Germany (31%), The Netherlands (19%), Belgium (19%) and Spain (15%). Least preferred were doctors from Greece, Portugal and Ireland. For details, see Supplement 9, Table 7.10.

6. EC countries that may cause problems for immigration.

The respondents had to give their opinion regarding the native EC countries of the immigrant doctors (the three groups mentioned earlier). A distinction was made between:

A. EC countries where training and qualifications could cause problems.

20% of the respondents shared the view that Greece could cause problems, 18% mentioned Portugal, 14% Spain, 10% Italy, 5% The Netherlands, 5% Denmark, 3% Germany, France and Ireland and 0.5% mentioned the United Kingdom. So Greece was mentioned most often, followed by Spain, Portugal and Italy.

While 39% of the Dutch respondents, 100% of the Irish respondents, 40% of the Belgian respondents, 46% of the British, 25% of the German and 37% of the

French respondents mention Greece as a country where training and qualification could be a problem, respondents from Greece mention the United Kingdom (93%) and France (2%). Respondents from Portugal mention Germany (27%), Denmark (45%) and Belgium (14%). Thus there is mutual distrust between Western and Southern European countries. For details, see Supplement 9, Table 7.11.

- B EC countries where language and culture could cause problems.
- Immigrants from the following countries could, according to the respondents, cause linguistic and cultural problems: Greece (16%), Portugal (15%), Spain (14%), Denmark (14%), The Netherlands (13%) and Germany (11%). So not only Southern European countries are expected to cause linguistic and cultural problems, despite the fact that Greece is again mentioned most often. For details, see Supplement 9, Table 7.12.
7. The preparedness for permanent settlement (emigration) in another EC country.
The willingness of the respondents to settle in another EC country is summarized in Table 7.13 of Supplement 9. It was difficult to draw conclusions since the response rate to this part of the survey was low (60/369). The highest percentage of respondents who were prepared to migrate, were from Greece (39%) and France (42%). The lowest rates were from the United Kingdom (10%), Denmark (6%), Germany (9%) and Italy (9%). One possible explanation for this is the language barrier.
 8. The countries most preferred for immigration.
The order of preference of EC countries for immigration can be found in Table 7.14 (Supplement 9). The United Kingdom had the highest score, followed by France and Belgium. It is not surprising that the United Kingdom is the favourite country, because, historically speaking, the plastic surgery centres in the UK, which flourished during the Second World War, had the greatest impact on the development of plastic surgery in Western Europe. Another factor which might influence the preference for the United Kingdom is the fact that English is taught at most schools across Europe.
 9. The reasons for permanent settlement in another EC country.
The reasons for permanent settlement in another EC country are summarized in Table 7.15, Supplement 9. Overall, there was an even distribution of reasons for permanent settlement: more interesting work (21% of the respondents), better working conditions (20% of the respondents). A better financial perspective was not the main reason for migrating since it was chosen by only 13% of the respondents. Some respondents mentioned overall living conditions, freedom for the profession, a more tolerant society or even a better climate; all of which are non-material conditions. There was a low response rate in the UK. Whether or not this reflects a reluctance in the UK to leave the country is not clear. On the other hand, there are data (Richards, 1991) indicating that British doctors do not show much interest in working abroad.
 10. The reasons for moving temporarily to another EC country (Table 7.16, Supplement 9).
Three items were queried: temporary work, fellowship and training. Temporary work was the main reason for respondents from Belgium (65%), Germany (60%) and The Netherlands (72%) and the second most important reason for those from Italy (54%). A fellowship scored high among respondents from Belgium (60%), Germany (53%), Greece (65%) and The Netherlands (61%). Training, as a reason for moving, scored high in Germany (66%), France (66%), Greece (65%) and Italy (64%). Overall, training was the most prevalent reason for a temporary move for 58% of the respondents.

11. The favourite topics for a fellowship.

In general the two most favourite topics were cosmetic surgery (46%) and reconstructive surgery (48%). Hand surgery was the most favourite topic for respondents from the United Kingdom (62%) and Portugal (59%). For more details, see Supplement 9, Table 7.17.

12. The present number of foreign medical graduates from other EC countries in the hospitals of the respondents.

The number of immigrant medical graduates from other EC countries was summarized in Table 7.18, Supplement 9. Exact figures were difficult to obtain. Some countries, such as Denmark, Greece and Ireland, had no immigrant doctors. Looking at the figures obtained from the respondents, there are 26 plastic surgeons staying temporarily and 13 plastic surgeons staying permanently; furthermore 34 trainees staying temporarily and 10 staying permanently; and finally 35 doctors looking for training staying temporarily and 8 staying permanently.

The United Kingdom, with 44 foreign medical graduates, is ahead of France, with 30 foreign medical graduates, Germany with 22 and The Netherlands with 14. The largest part of the foreign medical graduates in the United Kingdom – 37 out of 44 – consists of trainees or doctors looking for training. The number of plastic surgeons staying temporarily in France is 12, which is greater than the number in the United Kingdom, which is 5. These figures are, of course, estimated numbers and only give a momentary impression. However, they confirm the United Kingdom to be the favourite country for training/additional training.

Conclusions

There was strong support (77%-92%) among the respondents for the view that European Unification would lead to increased migration. The majority (81%) of the respondents was in favour of the temporary arrival of trainees, but there was less support (72%) for the arrival of plastic surgeons. According to 68% of the respondents the arrival of plastic surgeons could stimulate international exchange. The main advantage of the arrival of trainees was, according to 61%, the stimulation of international exchange, which was also the main advantage (51%) for the arrival of doctors looking for a training post.

The disadvantage of the immigration of plastic surgeons was, according to 40%, the negative influence on employment opportunity rates. Overall there was little fear for qualifications (12%) or linguistic or cultural problems (7%) of immigrant plastic surgeons. The disadvantage of immigration of plastic surgical trainees was, according to 19% of the respondents, the negative effect on employment opportunity rates and 7% feared linguistic and cultural problems. 22% of the Dutch and British respondents feared problems with qualifications. The disadvantage of doctors looking for training posts was, according to 21% of the respondents, the negative influence on employment opportunity rates. 17% mentioned problems with training facilities and 13% expected problems with qualifications.

The most preferred native country for immigrant doctors (all three categories) was the United Kingdom (38%), followed by France (31%) and Germany (31%). Greece, Spain, Portugal and Italy were mentioned most often as countries where training and qualifications of immigrant doctors (all three categories) could cause problems. Cultural and linguistic problems, however, were not only expected from immigrant doctors from Greece, Portugal and Spain, but also from Denmark, The Netherlands and Germany. The

highest percentage of respondents prepared to migrate were from Greece and France, the lowest rates were from the United Kingdom, Denmark, Germany and Italy.

Reasons for permanent settlement in another EC country were evenly spread between finding more interesting work and better working conditions. A better financial perspective was not the main reason for migrating. The most important reason overall for a temporary move to another EC country was training. The two most favourite topics for a fellowship abroad were cosmetic (aesthetic) surgery and reconstructive surgery. Exact figures regarding the number of foreign medical graduates (the three categories) from other EC countries are difficult to obtain and are merely an estimation by the respondents. The number of permanently emigrating plastic surgeons and trainees, however, is low compared to the number of those staying temporarily.

As was mentioned before, the survey was a reflection of the views of the respondents regarding the effects and motives for Euromigration. Therefore, additional information was obtained from VWS (J. Poorter).

The data provided concerned the number of EU doctors (all categories) who are fully qualified to practice in another EU country, the number of EU plastic surgeons who are fully qualified to practice in another EU country and the number of EU medical specialists who are fully qualified to practice in another EU country, related to the country inflow.

Table 7.2 Number of doctors (all categories) who are fully qualified to practice in another EU country, according to country of inflow

time period	'76 - '96	1992	1993	1994	1995	1996	1997	1998
Country of inflow:								
France	1,881			120	114	70		
Italy	804	74	58	51	59	40	81	60
The Netherlands	1,482	69	89	62	60	76	161	195
Belgium	1,577	188	149	137	126	100	149	128
Luxembourg	712	6	18	15	48			
United Kingdom	15,269	1,053	1,157	1,371	1,796	2,049	1837	1576
Ireland		28	53	45	33	50	73	56
Denmark	366	53	45	21	48	108	73	65
Greece		189	162	133	101	93	92	219

Source: Ministry of VWS (J. Poorter, 1998)

*=76-95

These figures support the findings in the survey regarding the United Kingdom. France is second, followed by Belgium and The Netherlands. Apart from the situation in the United Kingdom there is no steady increase in migration since 1992.

If we consider the country of origin of the doctors entering the United Kingdom, Table 7.3 provides additional information.

Table 7.3 *Inflow of doctors into the United Kingdom, according to the country of origin*

time period	'76 - '96	1992	1993	1994	1995	1996	1997	1998
total inflow	15,269	1,053	1,157	1,447	1,796	2,067	1,836	1,578
Medical degree obtained in :								
Germany	3,722	189	254	422	617	626	552	411
Greece	2,462	179	201	203	244	299	273	291
Ireland	2,266	197	167	151	195	209	218	192
The Netherlands	1,830	92	113	147	215	231	130	110
Spain	1,555	192	191	170	152	228	162	109
Italy	1,662	101	120	149	159	209	232	198
Belgium	706	43	49	56	66	70	80	97
France	430	24	28	38	31	38	49	54
Denmark	194	16	19	19	11	10	15	17
Portugal	181	20	15	14	25	19	18	14

Source: Commission of Higher European Officials (Ministry of VWS, J. Poorter, 1998)

* = Only the 10 most contributing EU countries

So the top six countries contributing to the inflow of doctors in the United Kingdom are: Germany, Greece, Ireland, The Netherlands, Italy and Spain. As far as the inflow of plastic surgeons who received their certificate in another EU country is concerned, the following figures were obtained:

Table 7.4 *The number of EU plastic surgeons who are fully qualified to practice in another EU country, according to the country of inflow*

time period	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
country of inflow										
Belgium	0	*	0	0	0	3	1	*	1	*
Denmark	0	0	0	0	1	1	0	*	1	*
France	0	0	0	*	*	*	*	5	*	*
Luxembourg	0	0	0	0	0	1	0	*	*	*
The Netherlands	1	0	*	2	1	2	1	1	6	*
Spain	*	0	1	*	*	*	*	*	2	*
United Kingdom	0	*	*	1	3	2	3	7	11	*

Source: Commission of Higher European Officials, Ministry of VWS (J. Poorter, 1998)

* = information not available

The absolute numbers remain low (less than 10 a year). France (5) and the United Kingdom (7) are the most popular countries for immigration of plastic surgeons. The United Kingdom, again, is the most favourite country of inflow, which supports the views of the survey. There is no inflow known in Greece and Portugal. Figures from Germany are absent.

If the total number of EU medical specialists is considered, the following data can be obtained:

Table 7.5 The number of EU medical specialists who are fully qualified to practice in another EU country, according to the country of inflow.

time period	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Country of inflow										
France*	48	33	36					871		
Italy	54	39	45	55	32	31	40	48	58	76
The Netherlands	32	35	39	39	51	40	25	32	24	42
Belgium	45	49	34	14	31	46	32	26	30	32
Luxembourg	19	18	10	16	21	35				
United Kingdom*		10	15	27	48	97	83	237	326	
Denmark	7	3	5	5	5	11	10	17	8	17
Greece*	43	21	18		27	15		24	27	15
Spain*		49	42					263	139	
Portugal*		3	4							

Source: Commission of Higher European Officials, Ministry of VWS (J. Poorter, 1998)

* = Annual information was not completely available

From this table it can be concluded that the United Kingdom show a steady increase in the number of immigrant EU medical specialists since 1992. One might, therefore, suggest that the foundation of the European Union could have had a stimulating effect on migration.

7.3 Employment: general situation in medicine and plastic surgery within the Common Market

The following topics are important in considering future trends in migration and attempts to regulate the number of plastic surgeons within the European Union.

Unemployment:

It is difficult to obtain data concerning unemployment of plastic surgeons. Such data might be important because they could provide the cause for migration. The United Kingdom and Ireland used to have a situation where Senior Registrars who could not move to consultant posts were blocking promotions for their junior colleagues. Now, with the recent expansion of the specialty in the UK, there are not enough trainees to fill the consultant vacancies and even overseas trainees can be considered for a consultant post. This change in the employment situation – in this case by expansion of the specialty – makes it difficult to make a realistic projection of future vacancies, especially since the increase might be temporary.

In The Netherlands, trainees who have fulfilled their training period can stay in their teaching hospital for a limited period of time, unless they desire a career as an academic plastic surgeon. In The Netherlands and in Belgium, there are no reports concerning unemployment among plastic surgeons. According to the Danish Society of Plastic and Reconstructive Surgery (chairman dr. K.T. Drzewiecki), there is no unemployment in Denmark either.

Exact data on other EU countries are not yet available. One of the problems of any study on medical manpower and unemployment is that the definitions have not been agreed on (Brearly, 1991). The Permanent Working Group of Hospital Doctors therefore adopted the following definitions for the employment status.

*Employment status***Unemployment:**

A doctor is considered unemployed if, on a specified date, he or she is eligible to practice but is involuntarily without any form of remunerative work.

Misemployment:

A doctor is considered misemployed if, on a specific date, he or she is unable to find work as a doctor, but obtains an income by working in a capacity not requiring a medical qualification.

Underemployment:

A doctor is considered underemployed if he or she is unable to find medical work during part of the normal working week or if he or she is unable to find sufficient work to yield a remuneration appropriate to his or her experience and seniority.

Long-term unemployment:

A doctor is considered long-term unemployed if, while having been eligible to practice, he or she has been involuntarily without any remunerative medical work for a continuous period exceeding six calendar months.

The main reason for introducing these separate definitions is that problems are not only caused by doctors who are long-term unemployed.

Despite attempts to obtain a standardized definition of the employment status, it is still difficult to get exact data on employment and underemployment – often even a bigger problem than unemployment. The problem of underemployment was also discussed in Florence (Salgueiro, 1991). Salgueiro studied the medical manpower situation, the number of unemployed doctors and the cause of medical underemployment using questionnaires. Denmark and France were among the countries with little or no unemployment or manpower problems. Even in this study, not all countries provided figures. However, alarming numbers of underemployed doctors were found in Spain (20% : 20,000 doctors), Belgium (19% : 7,000 doctors) and Italy (13% : 30,000 doctors) (Salgueiro, 1991). The group hardest hit by underemployment are the junior doctors who find themselves in jobs without real career prospects. Furthermore, overproduction of doctors – the main reason for underemployment – constitutes a waste of important investments in basic medical training, especially in view of the reduction in the costs of health care (Salgueiro, 1991). The best available estimates of the employment status are, once again, from the Permanent Working Group of European Junior Hospital Doctors (Table 7.6).

Table 7.6 Medical demography of the European Community

Country	Medical workforce	pop/doc*	no. (%) of unemployed doctors
Belgium	35000	290	
Denmark	14505	340	70 (0.5%)
France	164022	336	1000 (0.6%)
Germany	192480	332	15400 (8.0%)
Greece	35000	290	not available
Rep. of Ireland	5571	628	0
Italy	230265	248	40000 (17.3%)
Luxembourg	700	534	not available
The Netherlands	29867	492	600 (2.0%)
Portugal	24503	389	0
Spain	131684	296	6000 (4.6%)
United Kingdom	101369	562	300 (0.3%)

* Heads of general population per head of active physicians

Source: Permanent Working Group of European Junior Hospital Doctors (1989)

These data show that Italy has the largest number of unemployed doctors (40,000) while Portugal and Ireland have none. Again, what these figures mean within the context of European Unification is still a matter of speculation. No one knows, at present, the exact number of doctors in Italy and Greece. Germany had difficulty reducing the number of students in medical schools. As a consequence, there is overproduction of doctors and growing unemployment.

New data were obtained from a follow-up study of the medical Manpower in Europe by the year 2000 (PWG, 1996) and a new table can be formed which can be compared with Table 7.6.

Table 7.7 Medical demography of the European Community (1996)

Country	Medical workforce	pop/doc*	no. (%) of unemployed doctors
Belgium	no data available		
Denmark	15000	358	-2.6
France (est.)	180322	321	0.5%
Germany	285923	282	5.2
Greece	no data available		
Rep. of Ireland	5858	610	0
Italy (est.)	247021	231	24.5
Luxembourg	no data available		
The Netherlands	37179	414	4.6
Portugal	22621	437	0
Spain	126017	310	4.7
United Kingdom	113136	510	-0.9

* Heads of general population per head of active physicians

est. = estimated

Source: Permanent Working Group of European Junior Hospital Doctors (1996)

The fact that data from countries are unavailable or estimated, proves the difficulty in making prognostic studies of medical manpower. Comparing the data of Table 7.7 with those of Table 7.6, one can see a decline in unemployment in Denmark, France, Germany, a slight increase in Spain (4.7) but a rise in Italy (24.5) and The Netherlands (4.6).

There has been growing concern in the United Kingdom concerning the inflow of 1000 medical practitioners annually from Common Market countries during the last two years (Brearly, 1991). This indeed confirms the findings of the European survey mentioned earlier: the United Kingdom is a very popular country for immigration. Remarkably enough, this flow does not reflect the degree to which individual member states are (sometimes grossly) overdoctored (Richards, 1991). Most of them came from Germany (500) with The Netherlands, Greece and Spain in second, third and fourth position. Put into perspective: of the European workforce in 1990 (figures from the Permanent Working Group of Hospital Doctors), 6.1% (64,500) were unemployed. Of the unemployed, 60% were Italian, 23% German, 9% Spanish, 2.9% Austrian and 2.6% Dutch.

This supports the view that medical manpower planning does not receive much priority among national governments or the European Commission. Though it was stated, during the last 10 years, only France has made a serious attempt to reduce the overproduction of doctors (Brearly, 1991), a *numerus fixus* has been introduced in other countries, as well.

Each of the member countries of the EU has had a different approach to the control of the number of medical students. A *numerus fixus* related to manpower needs is being used in

Denmark and the United Kingdom. A numerus fixus related to educational capacity has been applied in Germany, Ireland, The Netherlands and Spain. Other measures have been taken in Greece and Italy, but no details are available here. Still, it is important to look into the matter of manpower planning in more detail, since it might have repercussions for the migration of doctors within the EC.

7.4 Summary and conclusions

Euromigration of doctors working in plastic surgery, is one of the consequences of European Unification according to the respondents of our survey. Looking at the available data, however, the actual number of migrating plastic surgeons to other EU countries is still very low (less than 10). Data obtained from the Ministry of VWS confirm the findings of the survey that the United Kingdom is overall the most favourite country of inflow for EU medical specialists and other EU medical graduates. Comparing data before and after 1992, the numbers of migrating EU medical specialists and EU graduates, however, show, apart from the United Kingdom, no increase in immigration of those doctors. Considering a longer period of time 76-96, the United Kingdom, with 15,269 immigrant EU medical graduates, is again ahead of France (1,881), Belgium (1,577) and The Netherlands (1,482). There are no data, however, from Germany.

In the survey most respondents were in favour of the temporary arrival (immigration) of EU trainees in plastic surgery and doctors seeking a training post, despite the fact that those who were opposed to this immigration feared a negative effect on employment opportunity rates and deficient qualifications and linguistic and cultural problems caused by these medical graduates. The respondents mentioned aesthetic surgery and reconstructive surgery as favourite topics for a fellowships, expressing their need for international exchange. This is in line with the growing need for better and standardized training in order to overcome gaps and deficiencies in national training programmes (Chapter 5). Trainees should get the opportunity to receive additional training elsewhere, especially if we consider the difficulties mentioned in Chapter 5. Euromigration, backed by national training organizations, could provide these opportunities.

Plastic surgery and its challenges in the European Union, a discussion and reflection regarding its future role

8.1 The problems facing plastic surgery in the European Union, considerations and suggestions to cope with these problems

In this Chapter the problems facing plastic surgery in the European Union will briefly be summarized to clarify the role of plastic surgery as was the aim of the study. Possible recommendations for relieving the problems will be provided, since clear-cut solutions are not always available. Comparable problems in other specialties and their way of dealing with these problems will also be discussed.

8.1.1 The boundary problems

The boundary problems regarding plastic surgery were discussed in Chapters 1 and 4. With respect to aesthetic surgery, an increasing number of specialists and general doctors perform this type of surgery. Although they often perform these operations without proper basic training in plastic surgery, some specialties (ENT and dermatology) are well organized and have developed specialized training including workshops and certification schemes.

Examples of boundary problems in reconstructive surgery are hand surgery, maxillofacial surgery, cleft lip and palate surgery and head and neck surgery. In order to examine this phenomenon of cross border activities or overlapping areas of interest – also called the dynamics of medicine – we chose to focus on hand surgery, since this area is relatively well circumscribed. Data obtained from SIG show an increase in the total number of hand surgery day care and clinical cases during 1991-1995. During this period, the increased number of patients with hand surgical problems was mainly treated by plastic surgeons. This could be explained by an increase in referrals from other specialists and doctors to plastic surgeons. One of the remarkable findings resulting from our own survey on hand surgery was the problem of late referrals. Even in the hands of experienced operators this can lead to a poorer prognosis. When we review the data of SIG, we should be aware that the operation coding system is still not perfect. Classification of operations in increasing levels of technical difficulty is still lacking. Proposals for a new coding system related to the complexity of the operations have been laid down in The Netherlands but not yet implemented. This new coding system could be used as a model for a European system. This could serve as a positive impulse for further harmonization.

Considerations:

The boundary problems are an unavoidable phenomenon. This phenomenon is part of the dynamics of medicine (see Chapter 4, §4.2) and is also present in other specialties (e.g., internal medicine versus other specialties). It is inherent to medicine in general. A determining factor in the origin of the boundary problems (see Chapter 4) is the technological development within the specialties, e.g., new operation methods and/or more sophisticated diagnostic methods, examination facilities and finer instrumentation. These techniques can be mastered by many specialties and contained within the mother specialty or they can lead to the formation of a new subspecialty (e.g., gastroenterology from internal medicine) or they can be mastered by several specialties (e.g., hand surgery by both plastic,

general and orthopaedic surgeons). A higher level of training and/or reserving more time for this during the training (subspecialty modules within the mother specialty) might help to meet these challenges. Otherwise, subspecialization for doctors who are only interested in one aspect of the specialty, will ultimately even lead to the possible desintegration of the specialty. Other possible factors related to boundary problems are aspects such as market elements (patient demand), unfamiliarity of the patient with the possibilities of a specialty and traditional referral patterns by general practitioners or by the receiving residents in the hospital.

Therefore, attention has to be concentrated on the following possibilities to enhance the development of plastic surgery:

- One should try to keep ahead of other specialties by stimulating the innovative character of the specialty. This would mean research and co-operation with basic sciences to improve the outcome of operations or to design new methods for aesthetic and reconstructive procedures;
- One should look for co-operation with other specialties in multidisciplinary teams (Hurren, 2000). Within academic centres and hospitals one should agree on areas that are specifically suited for one specialty (e.g., flexor tendon surgery/microsurgical reconstruction/breast reconstruction) and areas which can best be treated in a co-ordinated fashion (e.g., cleft/lip and palate surgery, rhinoplasty, head and neck surgery);
- One should have a critical look at the training and be prepared to improve its quality. There is no room for complacency. The existence of the specialty depends on a high quality training, sufficient to meet external demands.

8.1.2 Different historical development in the EU countries

The different historical development in the EU countries (Chapter 2) has led to different contents and, therefore, different standards of training for plastic surgery.

Considerations:

The different historical development in the EU countries has influenced the contents of the specialty and therefore also indirectly the needs and requirements for the training in the various countries. They result in variable standards of training. There is a need for standardization of the training, preferably on a European level (European Boards), but in co-operation with national (local) authorities. In a European context, a discussion regarding the contents of the specialty should be stimulated.

Cultural and linguistic differences could also play a role in the different historical development. A serious attempt should be made to remove these barriers. There still are differences in the English, French, German, Spanish and Italian medical literature. Literature should be made available by translation. Ideally the literature required for a plastic surgical trainee should be standardized, though this might prove difficult for practical reasons. A comparable curriculum in a European framework with a generally accepted module of theoretical knowledge could be better (see § 8.1.5.5).

8.1.3 The problem of finding a suitable definition for the specialty of plastic surgery

The problem of finding a suitable definition for plastic surgery is in fact a consequence of the differences in historical development in the EU countries and the different contents of plastic surgery in those countries. It is, therefore, difficult to propose a common definition. The problem of a vague definition for plastic surgery can result in overlapping of certain areas (e.g., aesthetic surgery) by other specialties. This problem has been discussed

extensively in paragraphs 2.4, 2.4.1 and 2.4.2. We concluded that the definition of the UEMS was still too vague, so we proposed a working definition.

As was discussed in Chapter 2 (paragraph 2.4), a definition should contain three aspects:

- the objectives
- the material object
- the technological and technical instrumentation

The definitions used in the EU countries, as discussed in Chapter 2, were all deficient in one or more of those aspects. A systematic approach to the problem forces people to give a better description of the role of plastic surgery in their country, which would form the basis for a discussion in the European Union (e.g., European Boards).

Because the contents of plastic surgery is so wide and the definition cannot be described in a few words, most of the proposed definitions in paragraph 2.4. were descriptive. A good summary of the contents of plastic surgery was given in the definition, proposed by the Dutch representative of the UEMS, which mentioned hand surgery, surgery of the skin, mucosa and other tissue defects, surgery of congenital deformities and form-giving, such as breast reconstruction and form-restoring surgery, such as breast reduction. However it is impossible to put all these aspects of plastic surgery in one good working definition. In our proposed preliminary working definition the objectives, material object and technological and technical instrumentation can be found (see §2.4.2).

A good working definition seems to me therefore:

“Plastic surgery consists of reconstructive and aesthetic surgery. It is a surgical specialty that seeks to improve or restore physical functions or to minimize disfigurement or scarring of the human body resulting from congenital or acquired defects and/or the effects of degeneration or ageing. Its technological instrumentation is surgery based on sound principles of wound healing and tissue repair.”

8.1.4 The European Unification

The European Unification was briefly described in Chapter 1. It is a complex process, started with the Treaty of Rome in 1957, which provided for the free exchange of people, goods and services. Its main aim was to create a community market and by co-ordinating the economic regimes within the community, to stimulate the harmonic development of the economic activity within the community. This would ultimately lead to increasing improvement of the standard of living and closer relationships between the member countries. Though there was no preoccupation with health care, the Treaty of Rome created the opportunity of free traffic of doctors (trainees and specialists), irrespective of their training and certificates.

European migration, with free traffic of doctors with different training standards, selection methods, training methods and contents of the specialty, was a consequence of European Unification. The free traffic of doctors, trainees and specialists – already sanctioned by the Treaty of Rome in 1957 – was confirmed in 1975 in Directives 75/362 and 75/363. Those migrating doctors came, not only from countries with different health care (see Chapter 3) and training systems (using variable evaluation methods and selection criteria for trainees) but also with different views on the definitions and contents of the various medical specialties. The need for quality control was not taken into consideration in those Directives. Directives 75/362 and 75/363 were intended to promote migration and did not deal with educational standards (Brearly, 1993). The inflow of doctors, trainees and specialists with varying degrees of clinical experience led to concern especially in countries with a traditional inflow of foreign doctors (Brearly and Gentleman, 1991).

The study of the influences of European Unification on the development of plastic surgery formed the basic issue of our European survey. The Euromigration of doctors (plastic surgeons, trainees and doctors looking for training posts in another EU state) was studied in questionnaires sent to trainees in all original member countries of the EU. This included also questions regarding the attitude towards migrating doctors and the need/desire for migration for variable reasons.

Though the survey was an expression of the views of the respondents, some findings are worth mentioning. The findings in our survey underlined the fact that migration at the moment is in general not significant (apart from the migration to the United Kingdom). These findings were supported by data obtained from the Ministry of Health, Welfare and Sports (V.W.S.).

Regarding migration in plastic surgery, the following findings and views were collected in our European survey (see Chapter 7):

- Migration, either permanent or temporary, is a consequence of European Unification. Free migration could lead to loss of employment opportunities;
- Temporary migration of doctors looking for a training post in plastic surgery, and trainees was approved of by most of the respondents;
- There was less approval for the permanent migration of these groups or the temporary or permanent migration of plastic surgeons from other EU countries (the former EC countries);
- Objections were caused by fears concerning a negative effect on employment opportunity rates, problems with qualifications, a negative effect on training facilities and linguistic and cultural differences. The latter problems were especially mentioned by the British respondents;
- The United Kingdom was chosen as most favourite country for immigration;
- Favourite topics for temporary migration for training or fellowship included both reconstructive surgery and aesthetic surgery;
- The migration of plastic surgeons and trainees to other EU countries (the former EC countries) did not seem to involve large numbers.

When these findings are analysed, it appears that most respondents mention the United Kingdom as host country for temporary work and training, because it offers a suitable cultural and linguistic environment. But the British respondents expressed their concern regarding the immigration of doctors with "inadequate" qualifications especially from countries with different cultural and linguistic backgrounds, different contents of the specialty (see Chapter 3) and different training standards (Chapter 5).

Regarding migration the following conclusion can be drawn: Though migration is insignificant at this moment, the situation might change in the future; therefore it might be advisable to design future rules and regulations for migration on a European level and ultimately to agreements for European manpower planning. Therefore, one should at least try to collect data and statistics on migration (European Board), in view of possible later effects of migration on manpower planning. Recommendations for training standards will be discussed separately in §8.1.5.1.

Regarding manpower planning for plastic surgery, several trends play a role (see Chapter 6) as mentioned in the report "Tellen & Passen" (Council of the Dutch Society of Plastic and Reconstructive Surgery, 1994). New trends form the increase in supply, e.g., caused by an increase of the number of women and the creation of part-time jobs and the increase in demand, e.g., by private clinics. These trends also occur in other countries of the EU.

Moreover, several scenarios can be applied in order to try to predict the future demand for plastic surgeons and the necessary adjustment of the training capacity (the 1999 NIVEL report). Future scenarios can, however, prove to be impractical due to insufficient funding and are speculative unless the government provides enough backing of a recognized organization such as the Capacity Organ (see Chapter 6).

The national manpower planning for plastic surgery has consequences for international migration, because a *numerus fixus* for trainees can be circumvented by doctors looking for training posts in other EU member countries. Training standards and contents of the specialty have been discussed in Chapters 3 and 5. Manpower planning on a European level is difficult, since supply and demand are constantly changing. Trainees sometimes try to dodge national manpower measures by training in another EU country. Furthermore, it is hard to obtain data regarding the number of trainees and the number of plastic surgeons. These problems have been discussed in Chapter 6. Ideally, a European Board should have access to national data, including statistics, and be able to detect countries where there are insufficient trainees and plastic surgeons to meet the demand and also countries with a surplus of trainees and plastic surgeons. So there is a need for better co-ordination and consultation on a European level. The European Board should, of course, co-operate with the national authorities responsible for the training and the governments, which can indirectly influence the training capacity by supplying or not supplying the necessary funds or by restricting the working hours for doctors. Despite the problems, which common European training policy and manpower policy would meet, it seems indispensable that one tries to uphold quality standards. A stronger central European impact would prevent governments from squeezing training programmes of certain specialties. Furthermore, the willingness to standardize and harmonize training programmes would make further exchange of trainees easier. One of the consequences is, therefore, to convince others (colleagues, authorities, patients) of the value of European co-operation.

8.1.5 The training in plastic surgery

The problems regarding the training in plastic surgery will be discussed in the following paragraphs. In paragraph 8.1.4. we have discussed that though the migration of plastic surgeons at the moment is small (see also Table 7.4.). We can expect that migration will increase and become much more important in the future, especially when new countries will be admitted to the European Union because of the free traffic of people. Therefore, it is necessary that there will be an agreement regarding the training and the examinations, leading to standardization.

8.1.5.1 The standardization of the training in plastic surgery

There are differences in the standards of training both nationally and internationally. These differences reflect the differences in contents of the specialty and the fact that trainers can have a profound impact on the character of the training, e.g., by showing more interest for either the reconstructive aspect of the specialty or the aesthetic aspect. Another problem is created by the differences in the organization of the training and the different national organizations responsible for training and specialist registration (see Chapter 5). The conditions for standardization of the training should be examined carefully and critically. The following aspects can provide possibilities for standardization:

- Exchange of trainees (§5.9.2 and §5.10);
- Selection methods and criteria for trainees (§5.6);
- The requirements for the trainers, training centres (§5.5.5);
- The selection of literature (§5.5.5);

- Standardization of the assessment (§5.5.4);
- Courses for trainers (§5.5.5 and §5.8);
- Common trunk of the training (§5.5.3 and §8.3);
- The possibilities of the Internet (§5.9 and §8.1.5.6);
- International coding systems (§5.5.4);
- The development of a generally accepted European framework for the training in plastic surgery, which should include the above-mentioned items with special focus on the provision of theoretical (e.g., a list based on the EBOPRAS examination syllabus) and practical knowledge and experience (e.g., a European logbook for necessary procedures) (§8.1.5.5);
- And finally, generally accepted terms for certification. This could include examination procedures as a valid assessment of practical and theoretical knowledge (§5.6 and §5.9.2).

All these possibilities for standardization require the close co-operation of a Central Monitoring Authority (e.g., the European Board), as recommended in the Charter of Medical Specialists, with the national authorities. These points were already discussed in Chapter 5.

Before one starts to explore the possibilities of an exchange of trainees it is necessary to standardize the quality of the trainees, by trying to find acceptable common selection criteria, possibly based on the European Charter of Medical Specialists (see Chapter 5).

In the European Charter on specialist training (1995), Article 1 states that teachers and training institutions or other organizations should select and appoint trainees who are suitable for the specialty concerned, in accordance with an established selection procedure. Furthermore, the selection procedure should be well-organized and application should be open to all persons who have completed medical training.

This Article is open for different interpretations and it still leaves the national authorities much freedom. An established selection procedure can also be quite different in the EU member countries.

No specific selection criteria are mentioned for plastic surgical trainees in the European Union. The training post is advertised and the trainee is appointed by an appropriately constituted selection committee in open competition. So, in conclusion, the national authorities and the central monitoring authority (EBOPRAS, UEMS) should show willingness to co-operate and find ways to harmonize and standardize the training both nationally and internationally. Subsequently, valid selection criteria should be defined for the trainees in all specialties. These criteria must involve all aspects of medical practice.

The assessment can be standardized by introducing common computerized logbooks and by improving operation codes, possibly related to the complexity of operations (Stevens and Hovius, 1997). Further standardization could be achieved by coding of the patient diagnosis and the required treatment (Stevens et al, 1998). For the standardization of the theoretical knowledge it might seem helpful to use the same mandatory literature. Instead of mandatory literature, however, it is far easier and more practical to realize a European framework of goals and objectives for plastic surgery. Furthermore, the necessary theoretical knowledge for plastic surgery can be contained in a theoretical knowledge module. This module could – apart from written material – also include seminars, workshops and scientific meetings on a European level. This might be a useful task for a European Board. The standardization of operation methods would also be difficult; however, better co-ordination of international congresses with ample time for discussion, combined with live surgery and video sessions, would be a way to enhance the possibility of standardization. One could also select simulation methods. Teachers can guide their

trainees in adapting the operation methods to the circumstances. Examination techniques are also variable, since some countries and centres have insufficient experience in postgraduate examinations. Standardization of the assessment is necessary, whether or not this would be a national or a European examination (will be discussed). When trainees are unable to find or receive adequate training in their own training centre or lack experience in certain aspects of the specialty (as demonstrated by their logbook), exchange of trainees or short training periods in other centres seems a good solution.

Examples could be found in internal medicine and urology. In internal medicine a European exchange system of junior doctors was started in 1978, but was stopped due to lack of co-operation of the hosts. The trainees were generally very positive regarding the exchange (Van Ypersele and Dickinson, 1986; Van Ypersele, Wakeford and Allen, 1995). Cultural and practical differences are not always easy to overcome (Klemperer, 1996).

8.1.5.2 The requirements for the chiefs of training

The European Charter for Medical Specialists (UEMS 1995) states that the chief of the training should have been a practising specialist for at least five years. The chief of training and the staff should be full-time practising specialists. Subspecialized trainers may be recognized by the National Authority for short periods during the training. The ratio between the number of qualified specialists on the teaching staff and the number of trainees should be small enough to provide close monitoring of the trainee during his/her training and provide adequate exposure of the trainee to all aspects of the training. These EU requirements have been followed by all specialties. However, it is up to the teachers to develop the training programmes, and the trainer can have a profound influence on the development of the trainee.

The fact that the trainer should be a role model for good clinical practice has been recognized in the European Charter by gynaecology/obstetrics. In this specialty the trainer is considered to have access to all aspects of clinical work and be able to supervise the trainees. Didactic teaching is considered an important part of the training process. The trainer should lead small group sessions with contributions prepared by the trainees. He should give the trainee time for study leave, private study, research, opportunities for self-assessment and career guidance. The most important rights of the gynaecological trainer are: the availability of 10-20% of his time for teaching, adequately remunerated time for his own continuous education and the opportunity to attend courses for medical trainers.

In plastic surgery, high-calibre teaching as well as role model performances are recognized as important (May, 1991). Those who want to establish and maintain a quality residency training programme should possess both talent and interest in teaching (Zook, 1991). Teaching surgery is not only a matter of teaching techniques, but also of teaching attitudes and behaviour and is, therefore, a difficult task. So, in conclusion, teaching is not an easy task, since the trainer should be aware that he is a role model for the trainee. It includes not only the teaching of the technical side of the specialty, but also the teaching of attitudes and behaviour especially in relation to patients.

8.1.5.3 The requirements for training centres

Quality assurance should be the first priority of the training institution. The Charter on Training of Medical Specialists states that there should be rules concerning the recognition, size and diversity of the training institution (number of admissions, day care, ambulatory care, quality assurance in the institution). Visitation of training should be structured. The quality of training can be checked by special committees of the European Boards. The European Boards promote on site inspection of the training institutions, and ophthalmology and otorhinolaryngology already comply with this recommendation. Moreover,

otorhinolaryngology is creating a programme for quality assurance, which not only includes inspection of training institutions in the EU, but also the issue of certificates of European recognition.

Inspection of training centres by national authorities, which is already customary in The Netherlands and the United Kingdom, can also be undertaken in other countries of the EU. Co-operation between the National Authority and the European Boards is possible, as was suggested by dermatology-venereology and general surgery. An important tool for on site inspection is the introduction of a European logbook for trainees. This would help not only to monitor the progress of trainees, but also the weak points in the training. When the number of certain operations are low, an advice could be given regarding improvement of the training. He/she could temporarily be given the opportunity to increase his/her practical experience in another Unit.

8.1.5.4 Examination as part of the evaluation of trainees and its value on national and European level

The value of standardization of the assessment of trainees in the European Union was already mentioned (§5.7 and §8.1.5.1). It is a matter of discussion which methods for assessment are best suitable. In the present situation member countries of the EU cannot do without national exams. In The Netherlands a new exam structure was recently introduced, using the results of multiple choice exams following a scientific meeting dedicated to selected subjects. Two exams are scheduled per year. In total four out of six exams have to be passed in three years. There are no formal consequences yet. Some countries have a long established exam structure, even with fellowship exams. In these countries there will be less need for a further "European" examination (see Table 8.1) though the need for standardization remains.

In plastic surgery, the European Board of Plastic, Reconstructive and Aesthetic Surgery has set up a European Board examination. The first examination was held in 1994. There were 37 applicants and 29 laureates (passing rate 78%). Further examinations were held in consecutive years in 1995 (36 applicants and 21 laureates, or a passing rate of 75%) and in 1996 (29 applicants and 21 laureates or a passing rate of 72%) and in 2000 (27 applicants and 16 laureates or a passing rate of 59%). From these figures one can conclude that the number of applicants remains between 29 and 37, while the passing rate is between 59% and 78%.

Table 8.1 Number of laureates

Year	1994	1995	1996	1998*	total
Country					
Belgium	10	3	2	2	17
France	10	6	8	7	31
Germany	0	1	4	1	6
Greece	1	3	3	6	13
Italy	5	8	1	0	14
The Netherlands	0	3	0	0	3
Portugal	1	0	0	0	1
Spain	1	0	2	1	4
Switzerland	0	3	1	1	5
United Kingdom	1	0	0	8	9
Total	29	27	21	26	103

Source: Newsletter EBOPRAS at IPRAS meeting June 22-25, 1997, Lisbon/ *Education Board EBOPRAS.

From this table it can be concluded that the number of participants is low. Most laureates came from France, Belgium and Italy.

In Urology, the number of candidates has dropped from 1019 in 1992 to 100 in 1995 (Matos Ferreira et al, 1996). A reason for this dramatic drop is difficult to find. On the other hand, the costs involved in organizing these examinations are rising. These figures are still higher than in plastic surgery, even considering the fact that urologists outnumber plastic surgeons (in The Netherlands by a factor 3). However, in plastic surgery the number of candidates and laureates remained rather constant.

There are, however, a large number of opponents to European examinations. They give priority to the evaluation of specialist training programmes as proposed by the Medical Federation for Medical Education. They oppose the idea of organizing European Examinations, since they claim that this would mean intensive investment in testing expertise which could better be spent for improvement of the quality of training. Organizing European postgraduate courses at various centres with specific goals and programmes is one way to do this. Furthermore, the various training centres should be tested to make certain that they fulfil certain standards (Karle, 1993).

Those in favour of European examinations can claim that taking, for example, the EBOPRAS examination, requires specific theoretical knowledge and demonstrated sufficient manual dexterity. So the examination could serve as an instrument to obtain consensus regarding the training requirements (the Annual Report of the Dutch Plastic Surgical Council, 1996). Switzerland has adopted the European examination as their final national examination. Small countries lack the knowledge and or necessary infrastructure to start their own national examinations. The present EBOPRAS examination is for them a perfect solution to assess their trainees.

The introduction of the present European examinations such as the EBOPRAS examinations as final examination in one EU state for e.g. Urology, can lead to legal problems, especially when it is used as a complete replacement of a national examination. The reason is that the national organization responsible for the specialty registration can refuse such a move if it is not supported by the European lawmakers in Brussels.

So regardless of the fact that in my view European examinations in the present form have no background of a sound educational system such as a proposed European framework for plastic surgery, the present European legislation prevents the complete replacement of national exams by EBOPRAS exams. Here lies a task for the national governments to commit the legislators in Brussels to adapt European law to the necessity to introduce standardisation in the assessment of specialty training and future general accepted European examinations and certificates. So only when a strong generally accepted European training system exists, the formation of a European examination is worthwhile.

In conclusion there are still difficulties in the organization of European examinations. In their present form they do not appeal to the prospective candidates, which is evidenced by the low number of candidates. A possible explanation is the fact that in certain countries such as the United Kingdom there already exists a solid national examination system. Moreover, there is no real need for British trainees to look for job opportunities in other EU countries. So the stimulus for passing a European examination is not strong. It might, therefore, be better to create the conditions for European examinations by setting up a system with solid goals and final terms for plastic surgery, in which the national societies will participate accepting a final European examination as the qualification necessary to register as a plastic surgeon. This system will be fully discussed in the next paragraph.

8.1.5.5 A European framework for plastic surgery, a coherent system of goals and final conditions

In order to make it worthwhile for all member countries to participate in a European framework for plastic surgery, it must be made obvious what the advantages are of European standardization. One must, therefore, be aware of the present challenges for any plastic surgeon in the EU in the absence of European standardization. These challenges have been mentioned earlier in this study and even in this Chapter (§8.1.1). The main challenge however, is the national concern about the migration of plastic surgeons with unclear qualifications and experience from other EU countries. Though the number of migrating plastic surgeons was small (1-11) a year, see Table 7.4, the problem remains that those migrating doctors possess certificates, which are hard to control. Even language tests for EU citizens are forbidden under European law. The other challenges mentioned in this Chapter (§8.1.1) need attention since they support the demand for a European framework for plastic surgery.

The free migration of plastic surgeons within the EU with unclear qualifications was the main problem of European Unification and one of the main problems mentioned in our study (see also Chapter 1). A systematic and coherent European approach, presented in a European framework for plastic surgery, could overcome this problem and also address the other problems mentioned. When we look for a European approach, we have to discuss the goals, conditions and essential components of such a framework.

Goals of a European framework for plastic surgery

- The main goal of such a framework will be -- analogous to the statement of McGrath (American association of Academic Chairmen of Plastic Surgery) -- to educate and train European plastic surgeons broadly in the art and science of plastic and reconstructive surgery and to develop a competent and responsible plastic surgeon with high moral and ethical character capable of functioning as an independent surgeon.

In order to achieve this goal:

- The training in the different countries of the EU should be analysed (see this study and Petit, 1999) in order to find recommendations for improvement and standardization of the training and ultimately a generally accepted European training system for plastic surgery.
- This analysis of the training should include all aspects (the contents, the requirements for the trainees, the quality of teaching, the quality of the teaching centres, the possibility of continuing medical education).
- The evaluation and assessment methods of trainees should be analysed and national examinations compared.
- The national examination system should be improved and adapted to generally accepted standards.
- Once generally accepted standards for training and examination(s) have been developed, the newly qualified plastic surgeon will meet European requirements. This will make it easier to accept migration of plastic surgeons between EU countries and would make it easier to agree on manpower issues.
- The European framework for plastic surgery should also finally lead to a better way of defining the specialty by proposing clear objectives and showing the technological possibilities it possesses.

Main conditions for a European framework for plastic surgery:

- The willingness of the national authorities to ensure that the training programmes (see Chapter 5) in plastic surgery will co-operate on a European level;

- The willingness of the national authorities to promote that training programmes in plastic surgery look critically at their training system and improve weaknesses in their system;
- Good co-operation between European organizations, such as UEMS and EBOPRAS for supervision of national exams, on site visits of training centres;
- A sound financial funding to cover necessary costs. One could think of a combination of national governmental funding, combined with European funding (UEMS, European Council).

Essential components of a European framework for plastic surgery are:

- Changes in the traditional organization of the training in plastic surgery by starting national training programmes on a modular basis (see Chapter 5, the new system used in the United Kingdom). In the British system, basic surgical training – common to all surgical specialties – is followed by higher surgical training in plastic surgery. Each phase of the training is divided into modules, representing the topics which are required to be studied, and completed by exams. The technological developments and the diversity of the specialty make it impossible to provide all aspects of plastic surgery within one Unit;
- International co-ordination of exchange programmes. The possibility of exchange programmes was mentioned in the Training Charter of the UEMS. It is a natural consequence of the previous point. Trainees should get the opportunity to enhance their practical and theoretical experience of the specialty. Problems related to financing should be dealt with on a European level. Exchange would be made easier if countries would standardize the contents of their specialty (see also Chapter 3);
- Stimulation of a co-ordinated system of continuing medical education as part of quality control by organizing postgraduate courses.

The problem of different contents of the training has been recognized by the UEMS, which issued a Training Charter. The Directives (Brearly, 1993) did not deal with the content or quality of the training. They indicated only the minimum duration of the training. However, even between two European organizations there was a difference of opinion regarding the duration of the training for plastic surgery. While the European Committee (D92248) recommended a minimum of five years, the Advisory Committee proposed 6 years.

The design of a European framework for plastic surgery:

The structure of the basic medical training in The Netherlands as described in Framework 1994 Medical training, final conditions for the medical study, forms a good example for the design of a future European framework of plastic surgery. In this booklet a list of conditions and a list of skills is mentioned, which each student should know for a certain medical discipline. Each item is divided into required levels of knowledge and skills. Other examples include the recommendations on undergraduate medical education, published by the Education Committee of the General Medical Council (1993). The essential knowledge and skills from all fields of medicine is contained in a mandatory core curriculum. In the core curriculum distinct goals concerning knowledge, skills and attitudes are defined and finalized in clear objectives. This is followed by a problem-oriented system of study modules, e.g., communication skills, human biology, human disease.

The English modular training system for plastic surgery has been developed from this undergraduate English medical education. It could well serve as a role model for a future European framework for plastic surgery.

However, the creation of a future European framework for the training in plastic surgery will need the full co-operation of the national training authorities and European organizations such as UEMS and EBOPRAS.

Any new curriculum, however, should meet future demands. It should be problem-based learning, meaning that one should forget the traditional training system, based on passive consumption of facts. Critical thinking and a scientific approach should be stimulated. There should be an integration with basic sciences and room for behavioural sciences and contact with society or primary health care (Ludvigson, 1999). It should be flexible and able to integrate the knowledge of different clinical disciplines and basic sciences on different levels. The learning should be progressive and during the course learning material should be revisited in different levels of complexity (Bligh, 1999).

A curriculum should have clear goals and outcomes, it should help the learning process of trainees, should make clinical and other learning opportunities available and meet the trainee's needs. These opportunities can be enhanced using information technology-based learning (e.g., simulation technology). However, new techniques should not be used as a replacement of the experience with the real patient, but rather serve as a contribution (Harden, 1999). Looking specifically at the possibilities of a design for a training framework, the European Charter is only a beginning, since it only offers a blunt summary of desired topics. No attention is paid to the existing cultural differences. In a core curriculum, generally desired training outcomes (modules) can be formulated. The system, however, should be flexible enough to accommodate cultural differences between the EU countries.

One should be aware that plastic surgery training involves a basic surgical part (common trunk) and a specialist part. Whether or not general surgery would be the most suitable party to deliver the basic surgical training for the plastic surgical residents has been a matter of discussion (Van der Meulen, 1999). Both parts require theoretical and practical knowledge, which can be classified in necessary learning modules as proposed in the United Kingdom (see Chapter 5). These modules should be agreed upon on a European level, in order to achieve a standardized input of knowledge. The system requires flexibility since one centre will be unable to provide all the necessary modules. The required level of knowledge should be graded according to the stage of the training as in the Dutch "Framework 1994 for medical training".

To reach the goals of the European framework for plastic surgery, there must be sufficient input of theoretical and practical knowledge. The list of necessary subjects can be found in the EBOPRAS examination syllabus or in the specialist section of the European Charter for medical specialists, but for the training they need to be specified in greater detail. Useful information can be found in Chapter 3, regarding the state of the art of plastic surgery in the EU.

It is beyond the scope of this thesis to propose a list of theoretical and practical skills which each plastic surgeon trained in the EU should possess. Here lies a task for the national authorities in co-operation with European organizations like UEMS and EBOPRAS. It should include the main pillars of reconstructive surgery and aesthetic surgery. The task can be difficult since the contents of the specialty varies in the EU (see Chapter 3). As far as the practical knowledge is concerned, a computerized coding system for diagnostic and therapeutic reasons, as proposed by Stevens can be used.

A standardized European coding system for diagnosis and operative procedures would make standardization of the training and assessment of the trainee and the training centre much easier. The non-technical aspect of the training should not be forgotten; a plastic surgeon should always first be a doctor and then a surgeon. It requires communicative skills and the ability to develop moral and ethical values. The role of the teacher in this

aspect is important (see also Chapter 5). There should, therefore, be a place for medical audit in each hospital.

The examination system

Regular and final assessments are necessary to be able to fulfil the goal of educating a competent plastic surgeon. Assessment should take place at regular intervals and this requires a system of examinations. This would be difficult in countries without a tradition of postgraduate exams. In the first instance good quality national exams should be started, possibly ultimately leading to a European exam.

The instrumentation of the European framework

New technologies can be used (see also §8.1.5.6.). The necessary knowledge should be acquired by means of a well organized system of seminars, workshops and other postgraduate courses. Continuous medical education should be the mainstay for quality control. European organizations such as UEMS and EBOPRAS should be actively involved. The technological developments make adaptation of the training programmes necessary. Serious thought should be given to the British modular training system, where trainees are given the time and opportunity to familiarize themselves with these techniques. The traditional view that all training can be given in one Unit has to be abandoned. Fellowships in other Units and the attendance of special workshops, followed by examination and certification, are possible. The use of modern techniques of telecommunication, for example Internet, CD-ROMs, teleconferencing and the use of computer simulation is possible. Even today it is already possible to study microsurgical techniques using a computer-assisted video microscopy set-up (Franken et al, 1998).

In conclusion

A European framework for plastic surgery, involving a coherent system of goals and final conditions, will be a formidable challenge for the near future. It is the pathway towards standardization of the training and opens possibilities for migration on a European level.

8.1.6 Subspecialization

The technological developments in medicine proceed very fast. Examples are the use of endoscopic techniques and laser technology in different specialties such as general surgery, gynaecology, ophthalmology, dermatology and plastic surgery. Due to the unavoidable learning curve, extra training is needed, which is not always available during traditional training. These technological developments and the ongoing trend for subspecialization form a direct threat to the existence of mother specialties, such as plastic surgery. Moreover, other specialties and those calling themselves "cosmetic surgeons" offer workshops in these areas.

Considerations:

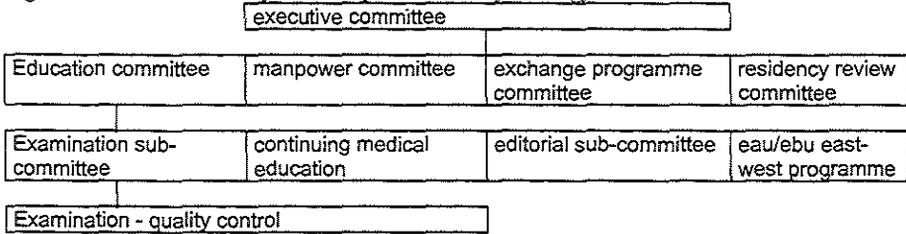
Subspecialization seems to be unavoidable. Plastic surgery, however, should try to integrate this by reorganizing the training, by allowing trainees to spend their last year in a chosen area of interest (see the United Kingdom).

8.2 Comparable problems in other specialties

The opportunity to use exchange programmes to counteract differences in training standards can be found in internal medicine and urology. Urology is an example of a specialty where one has recognized the problem of differences in training standards. An Exchange Programme Committee was formed in 1993 (Blandy), dedicated to the exchange of trainees between centres which, in future, will hopefully all be accredited (Matos

Ferreira, Schröder and Nijman, 1996). The Exchange Programme Committee is one of the committees of the well-structured European Board of Urology (Figure 8.1).

Figure 8.1 Structure of the European Board of Urology



source: Matos Ferreira, Schröder and Nijman, 1996

The aim of the Exchange Programme Committee is to stimulate, organize and, whenever necessary, support postgraduate urological clinical and scientific exchange. Participants can obtain postgraduate training in general urology or a more specific field. They can work from three months to one year in a urological institute (Camey et al, 1992).

Another solution to the problem of the differences in standards of training is to harmonize and standardize the training. Harmonization and standardization are difficult processes, which need the full co-operation of the national organizations since neither the UEMS nor the European Boards have power of decision in the EU countries (Pfeiffer, 1993). Nevertheless, it has been difficult (UEMS/Section Orthopaedic Surgery), due to economical, organizational, cultural, legal and other differences which still exist between countries of the EU, to realize the proposed training programmes.

8.3 Reflections on the future role of plastic surgery

When we consider the history of plastic surgery, its development in the first and second World War and its struggle to become an independent specialty, we can recognize its achievements and its present position in a thriving profession which initiates innovations in the surgical field. It has brought reconstructive surgery to a higher level and the developments in reconstructive surgery had also positive influences on the development of aesthetic surgery (see Chapter 2). However, there is a danger ahead: the surgeon himself could harm the image of the specialty, by enhancing the aesthetic side of his specialty, while neglecting the less lucrative reconstructive side (Van der Meulen, 1999). It emphasizes the difficult role plastic surgery has to fulfil. Fragmentation, which can already be found in general surgery could lead to the desintegration of the specialty. We must respond to this danger and never try to sever the bonds which unite us as general plastic surgeons. Then we are prepared to cope with the earlier mentioned boundary problems with other specialties and problems in finding a suitable working definition. So plastic surgery should first of all try to maintain its "difficult" identity and find areas that fit a future working definition. Colleagues and patients should be aware that plastic surgery is not only aesthetic surgery, though the media, including television and glossy magazines, try to convince us otherwise. The modern trends are, therefore, fixed on the aesthetic aspect of the specialty. Due to the increasing publicity, the demand for aesthetic surgery is increasing. The question is whether plastic surgeons are able and willing to respond to this demand and whether the present training is sufficient to provide trainees with enough experience in aesthetic surgery. One solution might be to subspecialize after the regular basic plastic

surgical training. Other specialists and general doctors are already keen on starting aesthetic surgery and are even organizing themselves.

One aspect, however, that should not be forgotten, is the fact that basically both the aesthetic and the reconstructive aspect of the specialty share the same roots and should follow the same principles. The inheritance of the pioneers of modern plastic surgery who laid down sound principles of tissue handling should not be forgotten, nor should the co-operation with basic sciences in developing innovations. Basic sciences should also be helpful in finding improvement in wound-healing, essential to successful reconstructive and aesthetic surgery.

In this sense new medical developments such as a better knowledge of biological processes which control the cell mechanisms causing cancer, the mechanisms of body repair and tissue engineering to synthesize living tissue and ultimately organs from living cells, create exciting perspectives for future plastic surgery (Hurren, 2000).

The dangers that surround the specialty are especially those regarding an increasing trend in subspecialization. Subspecialization seems inevitable, since the use of new technologies and developments within the specialty make it almost impossible to be at the same time an expert in microvascular reconstruction and in craniofacial deformities. Subspecialization will also increase the possibility of overlap of specialties in certain areas. Probably the best approach to this problem is constructive co-operation in multidisciplinary teams, rather than deadly competition. This will provide patients with high quality care.

Plastic surgery can arm itself against these trends by reorganizing and modernizing its training, changing the traditional concept of one teaching hospital during the whole training, into a modular system with a list of necessary topics and courses and rotation to different medical centres. This would give the trainee the opportunity to discover areas of interests without leaving the mother specialty and by exchanges with other Units at home and abroad (for example, the EU).

In a future new training system attention should be paid to a common trunk involving the basic principles of surgery, including topics such as emergency care, intensive care, wound healing, immunology and anatomy. Part of the training should be devoted to the different organ systems and new technologies, leading to surgery in regional subspecialties. Every part of the training should be completed by certification (Van der Meulen, 1999).

We can also ask ourselves what can save the specialty in the future? First of all we should realize that we are part of a rapid changing world. Globalization is an inevitable fact of life. In the EU we will encounter the consequences of migration of doctors and though the migration of plastic surgeons is small at the moment, no one could predict future developments, especially when Eastern European countries will join the EU. It would again increase the fears of the migration of doctors and medical specialists with inadequate qualifications and or clinical experience and also have an effect on the manpower planning. Therefore, there is a need for standardization. Migrating doctors should be able to meet certain professional standards. Governments should take their responsibility to change European laws in Brussels in order to make future assessment of professional standards of migrating plastic surgeons from other EU countries possible. The globalization will certainly also lead to movement of patients looking for specialist care. The information technology will even facilitate this movement. Governments should ensure that high quality care is guaranteed by taking steps in Brussels and by propagating standardisation of specialist care in the EU. They should also prevent doctors with inadequate training to

perform surgical operations which need formal training and stimulate surgical societies to redemarcate their specialties by certification. We as plastic surgeons should look for a coherent system of goals and objectives contained within a European framework.

A coherent system of goals and objectives, contained within a European framework of plastic surgery, could be instrumental in standardizing the training and in improving the quality of the training. Modern technology such as the use of the Internet, virtual reality for simulation of operations and teleconferencing, could also be used to remove cultural and linguistic barriers. These were also mentioned by the respondents in our European survey (see Chapter 7). Continuous medical education is a necessary tool for the quality control of plastic surgery.

Improving the quality of the training in plastic surgery and the specialty as such is necessary in this age of increasing accountability. If plastic surgery takes this seriously, it will have a bright future.

8.4 Summary and conclusions

A European framework for plastic surgery, involving training and examination, could be very helpful in reducing the following problems concerning the complex role of plastic surgery and the consequences of its position in the European Union (European Unification).

In order to understand the complex role of plastic surgery, knowledge of the historical development leading to the present state of the art of plastic surgery is very important. Boundary problems with other specialties are unavoidable, but instead of rivalry, co-operation in training with possible exchange programmes is needed.

Concern regarding the migration within the European Union, results in a critical analysis of the training standards of plastic surgeons in the different EU countries. These standards are again due to differences in the development of the specialty in those countries, resulting in different needs (aesthetic or reconstructive). Recommendations should be laid down in a European Charter but always in co-operation with national authorities.

Though a good definition has practical value, patients and colleagues should be aware of the objectives, the material object and the technological and technical instrumentation of the specialty. In other words, they should be aware of the full potential of the specialty of plastic surgery. The first step for standardization of training would be the uniform presentation of operative data by a computerized logbook. Further monitoring systems could include a coding system, related to the complexity of the operation, and a diagnostic coding system related to treatment plans for more effective patient management and analysis (European Board). However, there is also a need for adequate selection of trainees, good training guidance and a final selection by examination. The issues concerning European examinations have been discussed in §8.1.5.5. An examination should be the final touch of a well established European training and examination system.

The clarification of the role of the migration of plastic surgeons and plastic surgical trainees from countries with different training standards within the EU was one of the aims of this study. Migration as a consequence of European Unification does not seem to involve large numbers of doctors (the European survey and Commission of Higher European Officials, Ministry of VWS, 1998). The only trend was the steady increase since 1992 in the number of EU medical specialists migrating to the United Kingdom. The collection of future statistics may be useful to discover new trends. As mentioned before, a European

framework for plastic surgery as a coherent system of goals and final conditions, could well resolve any concern regarding disadvantageous effects of free migration of plastic surgeons and trainees. Manpower planning is still rather inconclusive, which might explain the difficulties in establishing a European manpower policy. A European manpower policy could be necessary to counteract possible future increase in migration. Manpower planning could be inconclusive, since it is influenced by many factors which change supply and demand, e.g., an increase in the number of women, part-time appointments and a rise in the number of private clinics.

The technological developments in every aspect (aesthetic and reconstructive) and the growing pressure (the trend for subspecialization, e.g., hand surgery), make it necessary for the trainee to acquire his knowledge in specialized units or even private hospitals (clinics). A good organization of the training is therefore necessary. A modular organization of the training as used in the United Kingdom could be adopted in other countries. What is important is the co-operation of national authorities responsible for the training. A European Board could furthermore stimulate the principle of quality improvement and the safeguarding of quality. In practice this means that one should be aware of the importance of continuing medical education and one should be aware of the need for re-registration. On-site visits of the training units by European representatives in co-operation with national authorities, is also part of the safeguarding of quality. Experiences of other specialties (urology) have shown the importance of a well-organised Board, with committees dealing with every aspect of the training.

The above-mentioned items could well be contained in a future European framework of the training in plastic surgery. One should, however, be well aware of the difficulties. Cultural and linguistic differences will remain, as well as political and national interest and systems. However, if we intend to take plastic surgery to a higher level, common efforts to standardize and to design common manpower policies seem inevitable. Other specialists are eager to step into areas which were traditionally considered to belong to plastic surgery. They even make adaptations for their training. A more problem-related, modularly organized training system would be able to provide the trainee with the possibility to adapt his training to his wishes. The problem of the exchange of trainees, however, could be that the role model function of the trainer is lost.

In this respect, the quote of McGrath during the 12th congress of the International Confederation for Plastic, Reconstructive and Aesthetic Surgery (July, 1999) is worth mentioning:

"Residency training in plastic surgery is designed to educate and train physicians broadly in the art and science of plastic and reconstructive surgery and to develop a competent and responsible plastic surgeon of high moral and ethical character, capable of functioning as an independent surgeon."

Summary and conclusions Samenvatting en conclusies

The aim of the study is, in the first place, to clarify the role of plastic surgery within the European Union and the related problems and challenges such as migration. The media have introduced a one-sided "aesthetical" image of the specialty. Therefore, a negative general picture of the specialty has been created in the minds of patients and colleagues. Plastic surgery is a complex specialty, based on two pillars: reconstructive surgery and aesthetic surgery. This complexity necessitates the description of the problems in consecutive Chapters, concluded by a final Chapter which contains recommendations. The problems will be discussed in a historical perspective. The first problem involves the boundary problems with other specialties, e.g., in hand surgery and aesthetic surgery. The second problem is related to the first. It concerns the difficulty in finding a good definition and description of the contents of the specialty. Training plays a role in confining these problems. A training of good quality is necessary in order to cope with the competition in these border areas with other specialties. The European Unification provides another dimension to the problems mentioned above. Consequently, the negative effects of European migration play a role, such as fears concerning less qualified plastic surgeons and the possible consequences for the national manpower planning. Positive influences, however, such as the acquisition of specialized knowledge by means of fellowships in other countries or the exchange of trainees, should also be mentioned. The European Unification would therefore be a stimulus to reach standardization and an improvement of the quality of the training. In order to understand the diversity within the European Union, the different health care systems in the various member states were briefly discussed.

The study is subdivided into different Chapters, which each represent different aspects:

In Chapter 1, the description of the problem presentation and the aims of the study are complemented by information regarding the acquisition of data: the investigation methods: literature study, interviews with persons with specialized knowledge of European medical affairs, a survey on hand surgery, a European fellowship awarded by the European Council in Strassbourg for a visit to three plastic surgical training centres in Germany, and a survey of training centres within the European Community, using questionnaires for trainees in order to collect data regarding European migration and desires regarding the training.

In Chapter 2, the historical development of plastic surgery is described. After a presentation of the general history of plastic surgery, the development in the separate member states is discussed. Next, the definitions used to describe plastic surgery were discussed. From a historical perspective, there is a definite positive impact of war-time surgery on the development of plastic surgery. In countries with general surgery in a dominant role, plastic surgery has difficulty in developing as an independent specialty. Besides the importance of the knowledge of anatomy for the development of plastic surgery, other basic sciences such as immunology, biology and pathology have played a part, especially in gaining a better understanding of wound-healing processes. The advantages and disadvantages of the known definitions are described. The proposed

definition seems rather complicated, but it contains the objectives, the material object and the technological and technical instrumentation to achieve the objectives.

In Chapter 3, the state of the art of plastic surgery in the different EU countries is discussed. There are different health care systems within the European Union. To a greater or lesser extent they support privatization and the development of market elements. Indirectly, they influence the way plastic surgery is exercised in the various EU countries. This involves the question as to where plastic surgery can be performed and by whom. A distinction can be made between countries where reconstructive surgery and those where aesthetic surgery receives priority. The contents of plastic surgery are different in the member states and even within one country. Trainees often lack exposure to all aspects of plastic surgery. The universal problem of boundary areas between plastic surgery and other specialties can vary from country to country due to differences in contents per country. So the problem can involve, in a variable way, aesthetic and hand surgery, but also urogenital surgery, head and neck surgery, cleft lip and palate surgery and maxillofacial surgery. All these areas can be overtaken by other specialties. It shows the importance of finding a good working definition of plastic surgery to indicate its contents and aim. In order to master these areas plastic surgical trainees should have the possibility of exchange with other training centres. Whenever possible co-operation with specialties should be sought in multidisciplinary teams. Certification in these regional areas is also desirable.

In Chapter 4, the relationship between plastic surgery and other specialties resulting in overlapping in certain border areas, is examined more thoroughly. Hand surgery is an example of a border area. Firstly, the position of hand surgery in two general hospitals and two academic hospitals was studied: A common problem is caused by the late referral by other medical specialists to the plastic surgeon. Even in the hands of a plastic surgeon, experienced in hand surgery, late referral can lead to a worse prognosis for the patient. Secondly, data were collected from SIG and a third academic centre. The data of SIG concern the period 1991-1995. In this period, an increase is found in the number of clinical hand surgery operations and day care hand surgery operations. This increase is found for those operations performed by plastic surgeons. A decrease is found in clinical and day-care operations performed by general surgeons. The number of clinical and day-care operations performed by orthopaedic surgeons remained relatively unchanged. The findings of SIG are comparable with the data obtained from academic centre C in the period 1992-1996. A plea is made in favour of a better coding system than the one used by SIG. This coding system should include a grading system, according to the complexity of the surgery. It could well be adapted to the financial coding system.

In Chapter 5, the training of plastic surgery within the European union is studied. There is no uniformity, neither in the total duration of the training, nor in the duration of the common trunk of basic general surgery training, nor in the requirements for trainees, trainers, training centres, selection of trainees or assessment methods (whether or not combined with a formal examination). Changes have been introduced in the training in plastic surgery in Germany, the Netherlands and especially the United Kingdom. The modular training system in the United Kingdom in particular offers the trainee more opportunities, since the traditional pattern of a single training institute for the whole duration of the training is abandoned. Considering the different priorities (aesthetic or reconstructive) in the different training institutions, a modular training system seems desirable both on a national and a European level. European organisations such as EBOPRAS and UEMS should then also co-operate in an integrated way.

In Chapter 6, the **manpower planning in the EU** is discussed. Specific measures are currently rather ineffective. Indeed, migration within the European Union offers the opportunity to follow a medical specialist training elsewhere in the European Union, interfering with national manpower measures. Therefore an extensive study of all possible factors which can effect supply and demand, is necessary. On a European level the reports of the Permanent Working Group of Junior Hospital Doctors offer some information on future scenarios regarding unemployment among doctors. On a national level a study is difficult since, for example, in the Netherlands there is no detailed information available regarding unemployment among doctors. Reports regarding the demand for plastic surgery, such as the recently introduced report of NIVEL, provide the professional group with the opportunity to choose the highest variant (e.g., an increase of the number of trainee vacancies by 9 per year). The practical (within existing training institutions) and financial realization, however, is by no means secure. Moreover, the government can always check each report using organizations such as the capacity organization in the Netherlands. It has the opportunity to interfere with the planning of the training capacity. Manpower planning depends on many variants: the age of retirement, technological developments and the demand for special procedures, the presence of accommodations such as private clinics. It is therefore difficult to provide an efficient manpower planning. Nevertheless it remains prudent to provide recommendations based on sound reports and studies.

In Chapter 7, the **influences of European unification on the migration within plastic surgery** are studied. To this end the results of a European survey are discussed. In this survey, using questionnaires, the possible positive and negative effects of European migration were studied. The data from the survey show that the number of migrating plastic surgeons is small. The favourite country for migration is the United Kingdom. This is supported by data from the Ministry of Health care, Welfare and Sports. The survey shows a preference for the temporary arrival of trainees and doctors looking for a training post. Those against migration argue that migration could lead to unemployment. Problems could be expected from the arrival of doctors with insufficient qualifications. Furthermore, language and cultural problems could arise. If one were to consider migration, fellowships in aesthetic and reconstructive surgery would be favourite topics. Euromigration would therefore provide opportunities for complementary training, provided that it would be regulated within existing national training organizations.

In the final Chapter 8, the **problems explained in previous chapters were summarized**. One of the aims of the study has been to clarify the complex role of plastic surgery. Both parts of the specialty, the reconstructive and aesthetic part, have to deal with cross border activities. This problem is exacerbated by technological developments and the need for subspecialization. Co-operation in the training facilities with other specialties and exchange programmes of trainees would counteract this challenge. Directly related to the difficulty in defining the border zones of the specialty, is the defining of the specialty itself. Though a good definition would be of practical value, the description of aims, objectives and technological and technical instrumentation of the specialty would lead to a better awareness of the possibilities of plastic surgery both among patients and colleagues. The next aim of the study has been to try to study the effects of European Unification on plastic surgery. Firstly, the European migration is studied. Data were collected in a survey using questionnaires. Though until now only small numbers of plastic surgeons are involved, this could change when on a European level exchange would become popular. In relation to the migration, concern exists regarding the qualifications and clinical experience of immigrating plastic surgeons. Thus, the need arises to standardize the contents and methods

of training and to create guarantees for the quality of training. This would be possible by introducing suitable selection methods within the training. These high-quality selection methods for candidate trainees would provide a stimulus for manpower planning on a European level. All could be regulated in a well planned and European financed, European framework for plastic surgery. This European framework would consist of a coherent system of goals and final conditions. In this system, not only a different approach of the training with a modular system and European coding system could be adapted, but also the need for quality control and continuing medical education. National organizations, involved in the training, should participate. Based on this framework with its system of goals and related educational instrumentation, assessment is possible on a national level. A European visiting committee would be able to judge whether these national assessments fulfil European standards. The introduction of European examinations appears to have stable but limited response; probably because the technical organization encounters difficulties. Moreover, the added value of an additional European qualification has not been recognized by potential examination candidates. The realization of a solid European framework of objectives, combined with better educational techniques, should, at any rate, improve the national level of training. In the first instance this would be a better option than to try to realize often costly European examinations.

In a perspective of the future of plastic surgery it must be realized that migration and globalization makes standardization of training and professional care inevitable. In this age of accountability patients will demand the best care they can get. Governments should be actively involved in standardization. They should take steps in Brussels in order to make assessment of migrating EU plastic surgeons under European law possible. They should also stop the possibility of doctors to perform surgical operations without any formal training. So plastic surgeons and governments both have the obligation to take their responsibility to ensure good plastic surgical care for the patient.

Samenvatting en conclusies

Het doel van de studie is in de eerste plaats om de rol van de plastische chirurgie binnen de Europese Unie en de problemen en uitdagingen zoals migratie, die daarmee gepaard gaan, duidelijk te maken. De media hebben een eenzijdig "esthetisch" beeld van het specialisme gegeven, waardoor er een negatief algemeen beeld is ontstaan van het specialisme, zowel bij patiënten als bij collega's. Plastische chirurgie is een complex specialisme, gebaseerd op twee pijlers: de reconstructieve chirurgie en de esthetische chirurgie. Deze complexiteit maakt het ook noodzakelijk om de problemen in achtereenvolgende hoofdstukken te beschrijven om uiteindelijk te komen tot een afsluitend hoofdstuk met aanbevelingen. De problemen worden zoveel mogelijk in een historisch perspectief besproken.

Het eerste probleem dat besproken wordt, is dat van de grensgebieden – b.v. de handchirurgie en de esthetische chirurgie – met andere specialismen. Het tweede probleem, dat hiermee samenhangt, is het vinden van een goede definitie en beschrijving van de inhoud van het specialisme. De opleiding speelt bij de beheersing van deze problemen een rol. Om de competitie in deze grensgebieden aan te kunnen is een kwalitatief goede opleiding noodzakelijk. De Europese eenwording geeft nog een extra dimensie aan de eerder geschetste problemen. Als gevolg hiervan gaan de negatieve invloeden van Europese migratie een rol spelen, zoals de vrees voor minder gekwalificeerde plastisch chirurgen en de eventuele gevolgen voor de nationale manpower planning, maar ook positieve invloeden als het verwerven van gespecialiseerde kennis door fellowships in andere landen of internationale uitwisseling van assistenten. De Europese eenwording zou daarom een stimulans kunnen zijn om te streven naar standaardisatie en kwaliteitsverhoging van de opleiding. Om de diversiteit binnen de Europese Unie te begrijpen worden in het kort de verschillende gezondheidsstelsel en de organisatie van de specialistenopleiding in het algemeen en van plastische chirurgie in het bijzonder, bestudeerd in de diverse lidstaten.

De studie wordt ingedeeld in verschillende hoofdstukken, welke elk een apart aspect behandelen.

In hoofdstuk 1 wordt naast het beschrijven van de **probleemstelling en de doelstelling van het onderzoek ook ingegaan op de data-acquisitie**: de gebruikte onderzoeksmethoden: literatuurstudie, interviews van personen werkzaam op Europees gebied, een onderzoek van een aantal handchirurgische centra, een Europees fellowship voor de bestudering van een aantal plastisch-chirurgische centra in Duitsland en ten slotte een Europese enquête onder assistenten in opleiding in de plastische chirurgie om data te verzamelen betreffende Europese migratie en wensen ten aanzien van de opleiding.

In hoofdstuk 2 wordt de **historische ontwikkeling van de plastische chirurgie** beschreven. Na een algemeen overzicht wordt de ontwikkeling in de afzonderlijke lidstaten besproken. Vervolgens wordt ingegaan op de gebruikte definities. Uit historisch oogpunt is er een duidelijk positieve impuls geweest van de oorlogen op de ontwikkeling van plastische chirurgie. In landen waar de algemene chirurgie een dominante rol heeft gespeeld, heeft de plastische chirurgie moeite gehad zich als een zelfstandig specialisme te ontwikkelen. Naast het belang van de kennis van de anatomie voor de ontwikkeling van de plastische chirurgie, hebben ook andere basiswetenschappen als immunologie, biologie en pathologie een steeds belangrijker rol gespeeld, onder meer voor een goed begrip van de wondgenezing. De voor- en nadelen van de gebruikte definities worden beschreven. De voorgestelde definitie lijkt ook gecompliceerd, maar bevat wel de doelstelling, het doel (object) en de technologieën en technieken om de doelstelling te bereiken.

In hoofdstuk 3 wordt de status van de plastische chirurgie in de verschillende EU-landen besproken. Er bestaan verschillende gezondheidssystemen binnen de Europese Unie. Deze ondersteunen in verschillende mate privatisering en marktwerking. Op die manier beïnvloeden zij indirect de wijze waarop de plastische chirurgie in de diverse lidstaten wordt uitgeoefend. Dit heeft vooral betrekking op de plaats waar plastische chirurgie kan worden verricht en door wie. Er zijn landen waar reconstructieve chirurgie de boventoon voert en landen waarin meer aandacht voor esthetische chirurgie is. De inhoud van de plastische chirurgie verschilt in lidstaten en zelfs binnen een land. Assistenten krijgen daarom vaak niet te maken met alle aspecten van de plastische chirurgie. Het verschil in inhoud kan er ook toe leiden dat het universele probleem van grensgebieden met andere specialismen per land kan wisselen. Dit geldt voor esthetische chirurgie en handchirurgie, maar ook voor urogenitale chirurgie, hoofd-/halschirurgie, schizischirurgie en maxillofaciale chirurgie. Al deze gebieden kunnen in meer of mindere mate worden overgenomen door andere specialismen. Het toont het belang van een goede werkdefinitie om inhoud en doel van het specialisme plastische chirurgie aan te geven. Om de gebieden goed te beheersen moet voor assistenten plastische chirurgie uitwisselingsmogelijkheden met andere centra worden geschapen. Waar mogelijk moet met andere specialismen samenwerking worden gezocht in multidisciplinaire teams. Certificering in deze regionale gebieden is daarnaast wenselijk.

In hoofdstuk 4 wordt de problematiek van de grensgebieden tussen plastische chirurgie en andere specialismen nader bestudeerd. Dit gebeurt met als voorbeeld de handchirurgie. Allereerst is de positie van de handchirurgie in een tweetal perifere plastisch-chirurgische praktijken en twee academische plastisch-chirurgische opleidingscentra onderzocht. Een gemeenschappelijk probleem vormt de late verwijzing van andere medische specialisten naar de plastisch chirurg. Dit kan zelfs bij een in de handchirurgie ervaren plastisch chirurg tot een slechte prognose leiden. Op de tweede plaats zijn data van het S.I.G. verzameld en van een derde academisch centrum. De gegevens van het S.I.G. hebben betrekking op de periode 1991-1995. In deze periode wordt een toename gevonden van de klinische opnames en de dagbehandelingen. De toename vindt men bij de plastische chirurgie zowel bij de dagbehandelingen als bij de klinische opnames. Een afname van klinische opnames en dagbehandelingen wordt gevonden bij de algemene chirurgie, terwijl die bij de orthopedie relatief constant zijn geweest. De bevindingen van het S.I.G. zijn vergelijkbaar met de data van academisch centrum C in de periode 1992-1996. Er wordt een pleidooi gehouden voor een beter coderingssysteem dan dat van het S.I.G., met een classificatie naar moeilijkheidsgraad. Dit kan men aansluiten aan het financiële coderingssysteem.

In hoofdstuk 5 wordt de opleiding van de plastische chirurgie binnen de Europese Unie bestudeerd. Er is geen uniformiteit, noch in totale duur van de opleiding, noch in de tijdsduur van de basisopleiding algemene chirurgie, noch in eisen voor assistenten, opleiders, trainingscentra, selectie van assistenten of beoordelingsmethoden (al dan niet met examen). Veranderingen zijn opgetreden in de opleiding plastische chirurgie in landen als Duitsland, Nederland en vooral het Verenigd Koninkrijk. Vooral het modulaire trainingssysteem in het Verenigd Koninkrijk biedt de assistenten meer mogelijkheden, omdat het traditionele patroon van één enkel opleidingsinstituut voor de duur van de hele opleiding verlaten wordt. Gezien de diverse prioriteiten (esthetisch of reconstructief) in de diverse opleidingsinstituten lijkt een modulaire opbouw niet alleen op nationaal niveau, maar ook in Europees verband wenselijk. Europese organisaties als de E.B.O.P.R.A.S. en de UEMS zullen dan ook moeten samenwerken voor een geïntegreerde aanpak.

In hoofdstuk 6 wordt de **manpower planning in de EU** besproken. Specifieke maatregelen zijn op dit moment niet effectief. Migratie binnen de Europese Unie maakt het immers mogelijk om elders in de Europese Unie een opleiding tot medisch specialist te volgen. Daarom is een uitgebreide studie van alle mogelijke factoren die een invloed op vraag en aanbod kunnen hebben, noodzakelijk. In Europees verband geven alleen de rapporten van de Permanent Working Group of Junior Hospital Doctors enige inzicht in toekomstscenario's betreffende werkeloosheid onder artsen. Op nationaal niveau wordt dit bemoeilijkt doordat er b.v. in Nederland geen gedetailleerde data beschikbaar zijn betreffende werkeloosheid onder artsen. Rapporten over behoefteraming binnen de plastische chirurgie zoals het onlangs verschenen N.I.V.E.L.-rapport, hebben als nadeel dat de beroepsgroep wel kan kiezen voor de hoogste variant (b.v. een toename met 9 opleidingsplaatsen per jaar) doch dat de realisering zowel financieel als praktisch (ruimte binnen de bestaande opleidingsinstituten) niet vaststaat. Bovendien kan de staat via bepaalde organen (zoals het capaciteitsorgaan in Nederland) elk rapport weer laten toetsen en dus ingrijpen in de opleidingsplanning. Manpower planning hangt af van veel variabelen: leeftijd van pensionering, technologische ontwikkelingen en de vraag naar bepaalde procedures, voorzieningen zoals de aanwezigheid van privé-klinieken. Bovendien kan de regering altijd de trainingscapaciteit controleren, doordat zij de training financiert. Daarom blijft het moeilijk tot een efficiënte manpower planning te komen. Het blijft evenwel verstandig om op grond van goed gefundeerde rapporten en studies aanbevelingen te doen.

In hoofdstuk 7 worden de **invloeden van de Europese eenwording op de migratie binnen de plastische chirurgie** behandeld. Hiertoe worden de resultaten van een Europese survey besproken. Hierin wordt gevraagd naar de gevolgen en voor- en nadelen van Europese migratie. De data uit de survey tonen een gering aantal migrerende plastisch chirurgen. Het favoriete land voor migratie is het Verenigd Koninkrijk. Dit wordt door cijfers van V.W.S. ondersteund. Uit de survey is een voorkeur gebleken voor de tijdelijke komst van assistenten en dokters op zoek naar een opleidingsplaats. Tegenstanders van migratie hebben op werkgelegenheidsproblemen, insufficiënte kwalificaties en taal- en cultuurproblemen gewezen. Indien men zelf zou migreren, zouden fellowships in esthetische chirurgie en reconstructieve chirurgie favoriet zijn. Euromigratie zou dus mogelijkheden kunnen bieden voor extra training, mits gereguleerd binnen de bestaande nationale opleidingsorganisaties.

In het afsluitende hoofdstuk 8 worden de **in eerdere hoofdstukken gepresenteerde problemen kort samengevat**. Een van de doelen van de studie is geweest om de complexe rol van de plastische chirurgie duidelijk te maken. De beide delen van het specialisme – het reconstructieve deel en het esthetische deel – hebben te maken met grensoverschrijdende activiteiten. Dit wordt nog versterkt door technologische ontwikkelingen en de behoefte aan subspecialisatie. Als antwoord hierop zouden opleidingssamenwerking met andere specialismen en uitwisselingsprogramma's voorop moeten staan. Direct samenhangend met de moeilijke afgrensbaarheid van het specialisme, is het geven van een goede definitie. Hoewel een goede definitie van praktisch nut is, zou ook omschrijving van doelstellingen, object en gebruikte technologieën en technieken al kunnen leiden tot bewustwording van de mogelijkheden van plastische chirurgie bij patiënten en collega's. Het volgende doel van de studie is geweest de gevolgen van de Europese eenwording voor de plastische chirurgie te trachten weer te geven. Allereerst wordt daarbij de Europese migratie bestudeerd, waarvoor data zijn verzameld in de survey. Hoewel tot op heden alleen sprake is van kleine aantallen plastisch chirurgen, zou dit kunnen veranderen indien in Europees verband meer

aan uitwisseling wordt gedaan. Samenhangend met de migratie, bestaat de bezorgdheid over het opleidingsniveau van immigrerende plastisch chirurgen. Hierdoor ontstaat de noodzaak de inhoud en methoden van de opleidingen gelijk te trekken en waarborgen te scheppen voor de kwaliteit van de opleidingen. Dit laatste zou mogelijk zijn door hantering van geschikte selectiemethoden binnen de opleidingen. Kwalitatief goede selectiemethoden van de kandidaten voor een opleiding zouden ook een aanzet geven tot manpower planning op Europees niveau. Al deze zaken zouden echter in een goed opgezet en mogelijk Europees gefinancierd, Europees raamwerk voor plastische chirurgie geregeld kunnen worden.

Dit Europees raamwerk houdt een coherent systeem in van doelstellingen en eindtermen. In dit systeem zou ook een andere aanpak van de training met modulaire opbouw en Europese codering passen, evenals de vraag naar kwaliteitsbewaking en voortdurende nascholing. Hierin zouden de nationale verenigingen moeten participeren. Op grond van dit raamwerk met zijn systeem van doelstellingen en daaraan gekoppelde onderwijsmaterialen is toetsing mogelijk op nationaal niveau. Een Europese visitatiecommissie zou dan kunnen beoordelen of deze toetsingen op nationaal niveau ook aan Europese normen beantwoorden. Het opzetten van Europese examens blijkt in de praktijk op stabiele, maar beperkte respons te kunnen rekenen, waarschijnlijk ook omdat de goede organisatorische en technische basis ontbreekt en de eventuele kandidaten de noodzaak ervan niet inzien. Het tot stand komen van een goed Europees raamwerk van doelstellingen, gekoppeld aan betere onderwijstechnieken moet in ieder geval het nationale niveau van de opleidingen verbeteren. Dit heeft in eerste instantie de voorkeur boven het streven naar vaak kostbare en daarom moeilijk te realiseren Europese examinering.

In een toekomstperspectief van plastische chirurgie moeten we ons bewust zijn van het effect van migratie en globalisering. Dit maakt standaardisatie van de opleiding en de patiënten zorg onvermijdelijk. In deze tijd van het verantwoordelijkheid moeten afleggen voor geleverde zorg, zullen patiënten de beste zorg eisen die ze kunnen krijgen. Regeringen moeten actief bij de standaardisatie betrokken raken en in Brussel stappen ondernemen om het testen van migrerende plastische chirurgen uit andere EU staten onder de Europese wetgeving mogelijk te maken. Zij moeten ook artsen de mogelijkheid onthouden om zonder formele training chirurgische operaties te doen. Aldus hebben plastisch chirurgen en regeringen een gemeenschappelijke verantwoordelijkheid voor goede plastisch chirurgische zorg.

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List of abbreviations

AGIO	Assistent Geneeskunde In Opleiding: term, used in The Netherlands for doctors holding a specialty training post
AGNIO	Assistent Geneeskunde Niet In Opleiding: term, used in The Netherlands for doctors holding a temporary post in a hospital (not recognised for training).
BAPS	British Association of Plastic Surgeons
BAAPS	British Association of Aesthetic Plastic Surgery
CBS	Central Bureau of Statistics in The Netherlands
EAU	European Association of Urology
EBOPRAS	European Board of Plastic, Reconstructive and Aesthetic Surgery
EBU	European Board of Urology
EC	European Community
ENT surgery	Ear, Nose and Throat Surgery
EU	European Union
FESSH	European Federation of Surgical Societies of the Hand
GDP	Gross Domestic Product
KNIL	Royal Dutch Indies Army
KNMG	Royal Dutch Medical Association
LAD	Dutch National Association of Salary based doctors (contrary to doctors who are free entrepreneurs)
OECD	Organisation for Economic Co-operation and Development
MSC	Monospecialist Committee of the UEMS
NHS	National Health Service
NIVEL	The Dutch Institute for the Study of Health Care
NVPC	The Dutch Society of Plastic Surgery
PWG	Permanent Working Group of Junior Hospital Doctors
SAC	Specialist Accreditation Committee
SIG	Dutch Information Centre for Health Care
UEMO	European Union of General Practitioners
UEMS	European Union of Medical Specialists
VWS	Dutch Ministry of National Health Care, Welfare and Sports

List of centres of reference:

Academic Centre A	Academic Hospital Free University Amsterdam
Academic Centre B	Academic Hospital Groningen
Academic Centre C	Academic Hospital Dijkzigt, Rotterdam
General Hospital A	Catharina Hospital, Eindhoven
General Hospital B	Bronovo Hospital, Den Haag

Supplement

Supplement

Contents

1	The codes of the SIG of operations of the hand	169
2	Data on clinical and day care hand surgery operations performed between 1991 and 1994 by plastic surgery, orthopaedic surgery and general surgery	170
3	Questionnaire for the analysis of hand	172
4	Information note-Europe, European medical bodies (general information for doctors) (1992) international department British Medical Association	173
5	Plastic surgery training in the EU countries	181
6	Logbook of the EBOPRAS	188
7	Requirements for the specialist fellowship exam (U.K.)	199
8	Questionnaire for the European survey	201
9	Summary of the findings of the survey (1991-1992) in tables	205
10	European diploma in Hand Surgery Examination Syllabus	214
11	Syllabus for training in aesthetic plastic surgery, recommended by the British Association of Aesthetic plastic surgeons	220
12	Requirements for Higher Specialist Training in Plastic Surgery	230
13	UEMS Charter on Continuing Medical Education (CME) in Plastic Surgery	237
14	Historical development of the European Union	240

The codes of the SIG of operations of the hand

Operations bones

830 incision and excision of bony parts

831 reconstruction of bony parts

833 operative treatment of fractures and luxation fractures

834 incision and excision of joints (including arthrotomy and synovectomy)

835 arthrodesis of wrist and hand

836 remaining operations of joints

Operations muscle, tendons, fascia, bursae

837 incision and excision of muscle, tendons, fascia, bursae of the hand

838 remaining operations of muscle, tendons, fascia and bursae of the hand

Amputation, exarticulation

839 amputation, exarticulation and replantation of hand or fingers

Operation nerves

040 exploration of nerves

044 nerve repair

046 neurolysis

048 nerve transplantation

Data on clinical and day care hand surgery operations performed between 1991 and 1994 by plastic surgery, orthopaedic surgery and general surgery

Table 2.1 Clinical hand surgery operations 1991

	General surgery	Orthopaedic surgery	Plastic surgery	total
median nerve decompression	37.1%	25.9%	37.0%	2098
bony structures	29.7%	35.7%	34.6%	5211
muscles, tendons, fascia	27.8%	10.7%	61.1%	7798
nerves	5.1%	2.0%	92.9%	197
total	29.4%	21.2%	49.4%	15304

Table 2.2 Clinical hand surgery operations 1992

	General surgery	Orthopaedic surgery	Plastic surgery	total
median nerve decompression	34.4%	27.6%	38.0%	1823
bony structures	29.0%	37.3%	33.7%	5259
muscles, tendons, fascia	26.7%	10.7%	62.7%	7293
nerves	6.2%	0.4%	93.4%	242
total	28.1%	22.2%	49.7%	14617

Table 2.3 Clinical hand surgery operations 1993

	General surgery	Orthopaedic surgery	Plastic surgery	total
median nerve decompression	32.6%	25.2%	42.2%	1779
bony structures	26.6%	35.7%	37.7%	5533
muscles, tendons, fascia	25.0%	10.9%	64.1%	6661
nerves	4.4%	2.7%	92.8%	223
total	26.3%	22.2%	51.5%	14196

Table 2.4 Clinical hand surgery operations 1994

	General surgery	Orthopaedic surgery	Plastic surgery	total
median nerve decompression	29.0%	26.6%	44.4%	1727
bony structures	28.0%	35.7%	36.3%	5309
muscles, tendons, fascia	22.2%	10.9%	66.9%	7121
nerves	5.2%		94.8%	249
total	24.9%	21.7%	53.3%	14406

Table 2.5 Day care hand surgery operations 1991

	General surgery	Orthopaedic surgery	Plastic surgery	total
median nerve decompression	42.5%	24.5%	3.2%	4420
bony structures	43.7%	27.7%	28.6%	1845
muscles, tendons, fascia	55.4%	13.1%	31.4%	7347
nerves	3.8%		96.2%	26
total	49.6%	18.8%	31.6%	13638

Table 2.6 Day care hand surgery operations 1992

	General surgery	Orthopaedic surgery	Plastic surgery	total
median nerve decompression	39.4%	25.8%	34.7%	4705
bony structures	38.3%	27.6%	34.1%	2203
muscles, tendons, fascia	50.6%	12.4%	36.9%	8678
nerves	2.8%	2.8%	94.4%	72
total	45.3%	18.5%	36.1%	15658

Table 2.7 Day care hand surgery operations 1993

	General surgery	Orthopaedic surgery	Plastic surgery	total
median nerve decompression	40.0%	25.4%	34.6%	6392
bony structures	35.1%	28.3%	36.5%	2925
muscles, tendons, fascia	48.3%	12.9%	38.7%	10758
nerves	1.2%	1.2%	97.6%	85
total	43.6%	19.1%	37.3%	20160

Table 2.8 Day care hand surgery operations 1994

	General surgery	Orthopaedic surgery	Plastic surgery	total
median nerve decompression	39.8%	25.5%	34.7%	7864
bony structures	35.0%	29.5%	35.6%	3409
muscles, tendons, fascia	42.7%	14.8%	42.6%	11952
nerves		8.5%	91.5%	82
total	40.4%	20.5%	93.1%	23307

Source: S.I.G. Utrecht, The Netherlands

Questionnaire for the analysis of hand surgery in daily practice

Aim: to question those directly involved in hand surgery

1. Can you indicate what percentage of your practice is taken up by hand surgery? (consultations / surgery).
2. Can you deliver figures: for example, the number of casualty consultations regarding hand surgery or the number of hand surgical operations a year?
3. Which parts of hand surgery do you perform? (elective surgery or traumatology). Please elaborate upon this.
4. How is the reception of acute hand trauma cases organised in your hospital? Who determines who will be in charge of the treatment?
5. Are there formal agreements in your hospital among medical specialists regarding the kind of hand one is involved in? (for example, carpal tunnel releases or surgery of rheumatoid arthritis). When there are no formal arrangements, can you indicate which factors play a role in the supply of hand surgical patients?
6. How is the external referral pattern organised (the direct referrals from general practitioners)? How is the internal referral pattern organised (within the hospital)?
7. Do you refer hand surgical patients: if yes, then indicate the type, the reason for referral and the medical specialist to whom the patient is referred.
8. Do you find your number of hand surgical patients sufficient?
9. Does the present training in plastic surgery, orthopaedics and general surgery respond to the demands of everyday hand surgery?
10. What is your opinion concerning a separate training in hand surgery with a European exam and certificate?
11. Should hand surgery remain part of certain specialties or become recognised as a separate specialty?
12. Why is your specialty especially suited to hand surgery?
13. Would you like to co-operate with other specialties in the field of hand surgery?
14. Can you provide exact data when anonymity is guaranteed?

**Information note-Europe; European medical bodies
(general information for doctors) (1992)
international department
British Medical Association**

1 Introduction

This document is intended to give a brief explanation of the composition and work of various European medical bodies to which the British Medical Association is directly affiliated or whose work is likely to be of interest to the Association and to doctors in the United Kingdom. Those included can be divided into three categories:

- (i) statutory bodies funded by the European Commission;
- (ii) voluntary bodies of which the British Medical Association is the member for the UK;
- (iii) voluntary bodies of which the British Medical Association is not a member, but whose work is known to the Association and of relevance to medical practitioners in the United Kingdom.

The list is not intended to be exhaustive, but to cover the main medico-political and professional bodies. There are undoubtedly many specialised bodies with which the Association is not in regular contact, and it would be impossible to include them all. Appendix I gives a list of other UK organisations which may have links with comparable European bodies.

2 The British Medical Association and Europe

The British Medical Association has had a mechanism for monitoring European Community affairs for the last 30 years, established long before Britain finally joined the Community. The Council first appointed an ad hoc committee "to consider the medical implications of entry into the European Economic Community and to report" in 1962. The Committee on the Common Market became the Committee on the EEC, with expanded membership and terms of reference, in 1971, as the UK approached membership of the Community. In 1990 it became the European Communities Committee, in keeping with current usage. In 1992, a re-evaluation of the Association's approach to European affairs led to the creation of a new European Committee with a broader remit.

The European Committee has the following terms of reference:

To pursue the interest of the association in Europe; to inform Council of the implications of proposed EC legislation and Europe-wide health issues; and to advise Council on the appropriate courses of action to address these.

The Committee is comprised of representatives of the main areas of practice in the UK - general practitioners, hospital consultants, junior doctors, public health physicians, medical academics and occupational physicians - as well as representatives of the Association's medical Ethics Committee and Board of Science and Education. It will meet 4-6 times per year.

3 Statutory Bodies

3.1 Advisory Committee on Medical Training (ACMT)

The advisory Committee on Medical training was set up in 1975, following the adoption of the "Doctors' Directives" (75/362/EEC and 75/363/EEC), to advise the European Commission on matters relating to training. The "Doctors' Directives" provide for the mutual recognition of medical qualifications within the European Community. The full remit of the Advisory Committee, as set out in the Council Decision which established it in 1975, is as follows:

- "to help to ensure a comparably demanding standard of medical training in the Community, with regard both to basic training and further training"

The means by which it is to fulfil this remit are also set out as follows:

- exchange of comprehensive information as to the training methods and the content, level and structure of theoretical and practical courses provided in the Member States;
- discussion and consultation with the object of developing common approaches to the standard to be attained in the training of doctors and, as appropriate, to the structure and content of such training;
- keeping under review the adaptation of medical training to developments in medical science and teaching methods."

The practising profession, i.e. doctors in active practice, the medical faculties of universities, i.e. as bodies conventionally responsible in most EC countries for both undergraduate and postgraduate medical training, and "competent authorities", i.e. the regulatory bodies nominated to process applications for registration by doctors from other EC countries, are all represented on this Committee, whose opinion the Commission is obliged to take into account. member states are normally represented by one delegate and one alternate from each category.

Nominations to the Committee are made by national governments, usually on the advice of an appropriate body, such as the BMA in the case of the practising profession. Members serve three-year terms. The Committee is funded and serviced by Directorate-General III of the Commission, whose responsibility for the "Internal Market and Industrial Affairs" includes responsibility for matters relating to the liberal profession and the mutual recognition of diplomas. However, many fears have been expressed recently about the level of the Commission's funding and support, the inadequacy of which appears to be preventing the Committee from fulfilling its remit. Strong representations are being made by the British medical association and others and the situation now seems to be improving.

Since its establishment the Committee has produced a number of reports and recommendations, the most recent dealing with the training of doctors in cancer. It has produced three reports on specialist training, in 1979, 1983 and 1985, whose recommendations the British Medical Association is anxious to see implemented in all EC member states. These recommendations include:

- The establishment of competent bodies to set and enforce standards;
- The establishment of a common trunk where possible;
- Inspection of training posts / centres.

The area is now being examined once more by a special working group. Working groups

are also currently examining basic training and continuing medical education and should report in the near future.

3.2 Committee of Senior Officials in Public health (CSOPH)

The Committee of Senior Officials in Public health was also set up at in 1975, as a result of the adoption of the "Doctors' Directives". "Public Health" should be interpreted in its broadest sense; the Committee is made up of senior civil servants with responsibility for national health care systems. The UK is represented by a senior official of the Department of Health. At the time of establishment, the Committee's remit was defined as follows:

- to discover and analyse any difficulties which might arise from the implementation of Directives 75/362/EEC and 75/363/EEC;
- to collect all relevant information on the conditions under which general and specialist medical care is given in the Member States;
- to deliver opinions which could guide the Commission's work with a view to amendment of the above-mentioned Directives.

The "Doctors' Directives" were followed by similar legislation governing nurses, midwives, dentists and pharmacists and other health professions will now be covered by the 1989 "general system" directive on mutual recognition of higher education diplomas, with the result that the Committee's remit has broadened since 1975.

3.3 Other Advisory Committees

Those health professions covered by directives similar to the "Doctors' Directives", i.e. dentists, nurses, midwives and pharmacists, have their own advisory committees with remits similar to those of the ACMT. It appears that these committees have also been experiencing problems with the level of funding and support allocated to them.

4 Professional bodies to which the BMA is affiliated

The organisations described below are all non-governmental and funded by members' subscriptions. They should not be confused with any statutory bodies.

4.1 Standing Committee of Doctors of the EC (CP)

The Standing Committee, or "Comité Permanent", is an umbrella organisation which acts as the "voice" of the whole profession in Europe. It was established in 1959 by the medical organisations of the six countries which signed the Treaty of Rome in 1957 (Belgium, France, Germany, Italy, Luxembourg, Netherlands) and increased in size as other countries joined the European Community. Its current terms of reference are as follows:

- a) to study and promote the highest standard of medical training, medical practice and health care within the European Community;
- b) to study and promote the free movement of doctors within the European Community;
- c) to represent the medical profession of member states at European Community level.

The sectoral organisations mentioned in the document, i.e. the UEMS, UEMO, PWG, FEMS, AEMH, and CIO, are all represented at its meetings by liaison officers and normally channel their own recommendations through it, to enable it to make recommendations on their behalf to the appropriate EC institutions. Its member organisations are required by its statutes to be the most representative medical organisations of the 12 EC member states - hence the BMA for the UK. Medical organisations from many non-EC European countries are also involved as observers.

The Standing Committee has recently conducted a radical overhaul of its working methods in order to increase its effectiveness. This followed expressions of concern by some members about the efficacy of its lobbying of EC institutions and the extent of awareness among these institutions and other relevant bodies of its activities. As a result of this exercise, the standing Committee now has the following four main subcommittees, supported by a consultative group of lawyers and ad hoc working groups established to carry out specific tasks:

- Professional Training, Continuing Medical education and Medical Audit;
- Medical Ethics and Professional Codes;
- Organisation of Health Care, Social Security, Health Economics and Pharmaceutical Industry;
- Medical Practice, Preventive Medicine and the Environment

These subcommittees meet twice a year. The main decision-making bodies, which hold one meeting each, are the Heads of Delegations and the Plenary Assembly. To the latter the BMA sends a delegation which is representative of all major crafts. The Joint Consultants Committee, the Royal College of General Practitioners, the Medical Women's Federation and the General medical Council are also invited to send representatives if they wish to do so.

Each member organisation holds the presidency for a period of 3 years on a rotating basis. The Portuguese organisation succeeded the Spanish one in January 1992. A permanent office in Brussels was established at the same time, with the purpose of improving links with European Community institutions and increasing awareness of the Standing Committee's activities. It will also aid continuity and provide a permanent point of contact for interested organisations. The office is staffed by one full-time employee at present, but staffing may expand in the future.

The Standing Committee works mainly by issuing statements and declarations, of which the 1989 "Madrid Declaration" on doctors, ethics and torture has aroused the most interest recently. Its 1990 report on the care of elderly also aroused great interest, although unfortunately no English translation was ever published.

4.2 European Union of Medical Specialists (UEMS)

As its name suggests, the UEMS represents specialists, the term "specialist" not being defined in any detail. It is concerned with the interest of specialists, the quality of specialist care and co-operation within the medical profession in the EC. It was also founded in 1959 and is the oldest of the European medical bodies. Its member organisations are the national professional associations representing specialists.

The main organs of the UEMS are its Management Council - its plenary body - and its Enlarged Bureau - its executive committee. In addition, there are currently 28 "monospecialist sections" which study issues relating to training and practice in specialties which are recognised in at least two-thirds of EC member states (although specialties recognised in a minimum of two member states can be included in the "Doctors' Directives"). Twenty-eight is not a finite number, as there are many candidates for new sections. recent examples include Occupational Medicine and Clinical Genetics. The most recent to achieve success was Nephrology. However, the process of establishing a new section is not an automatic one, even if a specialty is recognised in eight or more EC countries. The UEMS is becoming increasingly concerned about the proliferation of

sections, and is anxious to prevent the - structure from becoming unwieldy. In some cases the creation of a sub-section within an existing section may be the preferred option.

The monospecialist sections report to the management Council. Two delegates are nominated by each member state; of these, one is supposed to be a practising specialist, the other from a university medical faculty or training institution. Nominations to the monospecialist sections are normally made in the UK by the relevant Royal Colleges and channelled by the BMA as the member organisation. For example, nominations to the section for Internal Medicine are made through the Royal College of Physicians.

The UEMS has been concerned for some time with standards of specialist training. A Harmonisation Committee has been examining the possibilities for the harmonisation of specialist training in EC member states. The development which has aroused the greatest interest - and, in many areas, controversy - has been the creation of a mechanism for the establishment of "European Boards" within the monospecialist sections. The main stated purpose of the Boards is to guarantee high standards of specialist care throughout the European Community by ensuring that training itself is of the highest possible standard. It is hoped that the Boards will work closely with the Advisory Committee on Medical Training and the European Commission to ensure that proposals to raise training standards are implemented.

The boards are still evolving, some at a much faster pace than others, and many questions about their functioning remain to be answered. The most controversial aspect has been the provision for boards to introduce their own qualifications. There has been widespread opposition to the notion of European examinations, which have already been established (independently of the UEMS) for Urology. It has been emphasised by the UEMS that each Board is free to draw up its own system for the assessment of qualifications, and that European Board qualifications are intended neither to replace national qualifications nor to be prerequisite for migration. Doctors in training grades will be represented on each Board via the Permanent Working Group of European Junior Hospital Doctors.

The UEMS has a permanent administrative secretariat in Brussels, based on the premises of a Belgian specialist organisation.

4.3 European Union of General Practitioners (UEMO)

The UEMO represents general practitioners and its members are professional associations representing general practitioners. It was established in 1967. The BMA is the member for the UK, but representation is shared with the Royal College of General Practitioners. Its principal objectives include the study and promotion of the highest standard of training, practice and patient care, the defence of the role of general practitioners in the health care systems, the promotion of ethical, scientific, professional, social and economic interests of European general practitioners and the securing of their freedom of practice in the interest of the patient. Its statutes have recently been revised to permit organisations from all European countries to become members.

The UEMO campaigned actively for the 1986 directive (86/457/EEC) on specific training for general practice and is now seeking to ensure that the directive is implemented in all EC member states, and if possible to ensure that the minimum training period for general practice is extended from two years to three. It has recently completed an extensive policy document which will serve as a basis for its future work, and a report on the training of trainers. It is also working on issues such as the use of computers in general practice and quality assurance (medical audit). It has good relations with the EC's Advanced

Informatics in Medicine and Europe Against Cancer programmes. Its main decision-making body is its Board, which meets twice a year.

During the 1970s and 1980s the UEMO produced a number of publications, including "A Guide to the Registration Requirements for Doctors of the European Communities and Information concerning Access to medical Practice in the Social Security Systems" (1985) and "The Position of the General Medical Practitioner and General Practice in the Health Care Systems of the European Community" (1986). The first of these is currently being updated. Two special publications were produced to mark the organisation's twenty-fifth anniversary in 1992, a book entitled "The Future of General Practice in Europe" and a bound edition of the revised statutes.

The presidency and secretariat are held by member organisations for four years on a rotating basis. The Danish Medical Association took over from the German organisation in January 1992. The British Medical Association held the presidency and secretariat from 1983 to 1986.

4.4 Permanent Working Group of European Junior Hospital Doctors (PWG)

The PWG was established in 1976. It has an EC subsection, but includes professional organisations representing doctors in training grades in seven non-EC European countries as well (Austria, Finland, Iceland, Norway, Sweden, Switzerland, Slovenia). It is expanding rapidly, particularly as a result of changes in Central and Eastern Europe, and recent meetings have been attended by a number of guests. Observer status was recently granted to the Estonian junior doctors' organisation. The PWG's aims are as follows:

- to improve the relationship between junior hospital doctors in European countries;
- to exchange information on, and develop a common approach to, problems of mutual interest, such as medical education, specialist training and working conditions;
- to improve and protect the standards of health care in Europe;
- to further the professional interest of junior hospital doctors in Europe.

The group holds two plenary meetings each year, hosted and chaired by each member organisation in turn. It has a number of subcommittees and small working groups examining matters relating to medical manpower, quality assurance (medical audit), European Community affairs and postgraduate training.

The PWG has produced a series of booklets entitled "Where Do I Ask?" for junior doctors wishing to work abroad, available from the European Committee secretariat of the BMA, and has for some time been planning an updated "Migrant Doctor" series, giving an introduction to the health care and training system in each country. Its recent Policy Statement on Postgraduate Medical Education was very well-received and was published in the UK in the journal "Medical Education". This was followed by a Policy Statement on Postgraduate Medical Education in General Practice. Its major project recently has been a study of medical manpower in Europe, the results of which were summarised in a special booklet, prepared by the Danish delegation and also available from the BMA secretariat.

The secretariat of the PWG is currently based in Switzerland, having previously been based at the BMA office in Glasgow.

5 Professional Bodies to which the BMA is not affiliated

5.1 European Association of Senior Hospital Physicians (AEMH)

The AEMH was established at the beginning of the 1960s. According to the most recent version of its statutes, it has eleven member organisations, including three non-EC countries. No organisations are listed for the UK and the Irish Republic. As its title suggests, it represents doctors holding senior positions in hospitals, probably at consultant level, although hospital structures vary from country to country. It sets out its aims as follows:

“The Association shall provide for the reciprocal exchange of information on all questions concerning the hospital field. It shall study conditions affecting the practice of medicine in hospitals and systems of hospital organisation in the various European countries. It shall aim to provide those interests with collective representation in dealings with international bodies concerned. It shall also propose to undertake studies, in conjunction with other hospital groups, on methods of promoting the collaboration which is indispensable to the profession.”

Provision is made in the statutes for a general assembly to meet at least once a year. The Association is funded by members' subscriptions; however, a permanent secretariat has recently been established, financed exclusively by the German member organisation.

The AEMH is represented at meeting of the Standing Committee of Doctors of the EC and regularly presents reports to these meetings. Recent motions have concerned the professional independence of hospital doctors vis-à-vis external authorities, the overall responsibility of the consultant (or equivalent) for the diagnosis, treatment and rehabilitation of patients and the need to ensure that practices requiring specialist knowledge are only undertaken in hospitals by those who have obtained the necessary qualifications.

5.2 European Federation of salaried Doctors (FEMS)

The FEMS was founded in 1964, after two years of preliminary work. It produces a regular information bulletin, which lists its members. Its Articles of Association are reproduced in the October 1990 edition. Seven countries including Austria, appear to be represented. Membership does not seem to be limited to one organisation per country; four Italian, two Austrian and two Portuguese organisations are listed. The UK is represented; the Medical Practitioners' Union is listed as a founder member and the Hospital Consultants' and Specialists' Association as the current member.

The Federation is registered in France and has a registered office there; its officials are elected for four-year terms of office. Its stated aim is to study and defend the interest of salaries doctors and to improve their working conditions “from the psychological, medical and material points of view”. It states clearly that it does not seek to promote salaried practice at the expense of private / self-employed practice.

The FEMS is also represented at meetings of the Standing Committee of Doctors of the EC and makes regular reports. It has recently called for a re-evaluation of the way in which the numbers of medical posts in hospitals are calculated and has expressed concern at the increase in the number of clinical specialties and their “cloistered” outlook.

5.3 **Conférence Internationale des Ordres (CIC)**

The concept of a medical "order" is not easy to translate; it is chiefly in use in the Latin-based languages and the secretariat of the CIC is held by the French member organisation. However, it seems to denote organisations established to enable the medical profession to regulate itself. The functions of the French "Ordre" are defined by law and include the upholding of the morality, probity and dedication essential to the practice of medicine, the adherence of doctors to professional and ethical codes and the defence of the honour and independence of the medical profession.

The organisations represented at the CIC, which was established in 1971, all have some responsibility for the registration of doctors and for professional / ethical codes and disciplinary matters. the General Medical Council is the member for the UK. Other EC countries do not all make the same distinction between "GMC" and "BMA" roles, so in the case of many countries the CIC member organisation will also be the official member of the Standing Committee of Doctors of the EC.

The aims of the CIC are the study of practical measures to be taken by "orders" to implement EC legislation and the upholding of standards of medical practice to protect the interest of patients. Its members regularly exchange data, although not yet in a standardised format, about the registration in their countries of doctors from other EC member states, and a wide range of professional and ethical issues are considered.

The Conférence des Ordres is represented at meetings of the Standing Committee of Doctors of the EC and present regular reports.

6 **Further Information**

Further information about organisations included in this booklet may be requested from the European Committee secretariat of the British Medical Association. Appendix II gives a list of addresses and telephone numbers.

Plastic surgery training in the EU countries

Belgium

- Duration of training: 6 years: 3 years basic training in general surgery; 3 years of plastic surgery in a unit recognised by the Ministry of Health (one of the 3 years can be spent in a specialised branch, i.e., surgery of the hand)
N.B. With permission of the trainer this time can be spent abroad. Some units have exchange programs with the UK.
- There are specific requirements for the trainees (an apprentice book, presentations of papers and publication of at least once article). In November 1989, the Educational Commission (Collegium Chirurgicum Plasticum) implemented a 3-year theoretical course in plastic surgery with a yearly evaluation and a (multiple choice and oral) final examination. Three months before the exam, the candidate must present case studies on ten patients. The title and certificate of plastic surgeon is bestowed upon the candidate by the Ministry of Health after six years of training, satisfactory final exam, and following a positive report from the commission, regarding his progress.
- There are requirements for the trainers and their departments.

conclusion

This 6 years training scheme is well in line with the proposals of the UEMS: a good theoretical course and objective testing of the trainee by yearly and final exams.

Denmark

- Duration of training: 6 years: 3 years of general surgical or orthopaedic training and 3 years of plastic surgery; theoretical knowledge is acquired by reading literature, attending courses, meetings, conferences and research activities. The training consists of three phases:
phase 1: minimum of 6 months in a dept. of plastic surgery, minimum of 12 months in a dept of general surgery; trainee learns common surgical and plastic surgical conditions and basic surgical principles.
phase 2: 27-30-month rotation between plastic surgery and other surgical specialties; there is always a 12-month assignment in plastic surgery necessary before phase 3.
phase 3: 21-month assignment to a minimum of two different departments of plastic surgery as Senior Registrar; the knowledge, principles and methods acquired during phases 1-3 are actively and, in general, independently practised in the treatment of plastic surgical conditions
- The trainee must keep a logbook of operations
- There is no formal examination but continuous assessment during all the phases.

conclusion

The 6 years training scheme is in line with the proposals of the UEMS, but there is no objective testing by exams. There is a all-round training with rotation and the assignment to different plastic surgical departments ensures that the trainee is exposed to many aspects of plastic surgery.

France

- Duration of the training: 5 years for certification for plastic, reconstructive and aesthetic surgery. The requirements are:

1. Theoretical teaching (250 hrs): grafts, burns, scars, radiation lesions, tumours, hemangiomas, lymphangiomas, as well as plastic and aesthetic surgery of the face, neck, breast, abdomen, hand and limbs.
2. Practical training of at least two years in a recognised plastic surgical department, one year in a ENT, maxillofacial department or research lab.
3. Before starting his internship in plastic surgery the candidate must have spent at least 1.5 years in gastrointestinal surgery as well as in orthopaedic and traumatologic surgery.
4. Theoretical training in traumatology, surgical emergencies, surgical anatomy, pathology and operative procedures and methods must have taken place, before the candidate can be registered for the specialist certificate.
5. A written essay and discussion of patient files or case histories is used to ratify the training.

conclusion

The duration of training is only five years. There is emphasis on the aesthetic aspect of the specialty, rotation between surgical specialties is possible, research is also appreciated. There is a final exam.

Germany

- Duration of the training is 6 years: 1 year of general surgery followed by five years of plastic surgery. Until May 1992, plastic surgery was a subspecialty of general surgery and was not recognised as an independent specialty. This prevented the mutual recognition within the EC countries. It is now an independent specialty and in the new system, the proposals of the UEMS will probably be followed.
- The content of the training consists of: the acquisition of special knowledge of the normal anatomy; pathology of face, neck, breast, genitalia and extremities and the diagnosis of disturbances of these areas; principles of wound healing; transplantation, free and pedicled flaps and the use of alloplastic material; knowledge of indications for reconstruction; dressing techniques; knowledge of psychosomatic disturbances of patients with congenital malformations or acquired defects.
- A detailed list of the number of operations are a prerequisite for sitting the final exams: 60 operations in the head and neck region (aesthetic, congenital, traumatic), 30 breast operations including reconstructions, 35 hand surgical operations, 10 operations of the nervous system, 45 traumatology cases, 110 plastic surgical operations including 20 local and distant flaps, 10 transplantations (bone, cartilage, nerve), 20 burns cases, 10 microsurgical cases, 50 further operations. This operation catalogue is strictly adhered to; sometimes exchange between units is necessary to reach the number of operations on this list.
- There is a final exam which includes slides and discussion of a specific topic: for example, nose operations. The recognition is given by the various Landesärztekammer, which also nominate the plastic surgery commissions whose task it is to review the progress and the exam performance of the candidate.

conclusion

Because plastic surgery was part of general surgery, the weak position of plastic surgery resulted in multiple cross-border activities from other specialties.

Greece

- Duration of the training is six years: two years of general surgery and three years of plastic surgery; two semesters of rotation in other surgical specialties, e.g. E.N.T.. There is a State exam consisting of a theoretical, practical and oral part

- Each plastic surgical department has a registrar, senior registrar and a consultant.
- The heads of the department are appointed by the Ministry of Health and should have been in practice for at least six years
- There are no standard written requirements for trainees, though all aspects are covered.
- There are no visiting committees to check standards in the hospitals
- It is possible to do the entire training outside Greece

conclusion

There is a lack of standardisation and no quality control

Ireland

- Duration of training: at least seven years, of which two years of general surgery
- Ireland is a member of the BAPS and the rules and requirements for the United Kingdom apply.

Italy

- Duration of training: five years; general surgery is not required, but a short rotation in general surgery is possible
- Every year there is a multiple choice exam and the trainee can repeat an exam only once.
- At the end of the training the trainee must present a thesis.
- There is a large syllabus describing the theory classes: in the first two years, there is emphasis on biology, anatomy, patho- physiology (burns), general surgery, orthopaedics; in the last three years, surgical techniques (plastic surgery, aesthetic surgery, microsurgery) and additional methods (physiotherapy, technical applications of plastic surgery, cryobiology)

conclusion

The theoretical course looks well-organised with valuable topics, the absence of general surgery as preparation for plastic surgery is, however, a regrettable omission. The duration of the training is short and not in line with the UEMS proposals.

Luxembourg

There are no training centres here.

The Netherlands

- Though the duration of the training is still six years; three years basic training in general surgery followed by three years of plastic surgery, the educational board (Concilium Chirurgicum) has accepted the proposal to change the training schedule into 2 years of general surgery followed by 4 years of plastic surgery. This proposal, however, has not been implemented yet.
- During the basic training in general surgery, the trainee must familiarise himself with surgical thinking as well as the basic principles of wound and fracture treatment, infection, shock treatment and ventilation. he must gain the necessary practical knowledge and learn the complications of anaesthesia, the principles and techniques of resuscitation, become aware of the activities of orthopaedics and urology and attend meetings with the ENT, oral and maxillofacial surgery, ophthalmology, neurosurgery and rehabilitation/physiotherapy. He must participate in the theoretical basic course of surgical specialties organised by the Collegium Chirurgicum Neerlandicum. For the three years of training in plastic surgery, he must learn the basic techniques of free and pedicled tissue transfer. The simplest of these techniques should be performed in the first year. In the second year, he must master

microsurgery, both experimentally and clinically. In the third year, he must apply these techniques independently and set up an operating plan himself. In the third year, he must become experienced in writing medical and insurance reports.

During his training, the trainee should perform at least 100 sufficiently varied clinical operations a year in general and reconstructive plastic surgery, hand surgery, burns, head and neck surgery, genital and aesthetic surgery. He must perform at least 50 outpatient surgical operations a year. Some of the above-mentioned operations should be performed in the third year in co-operation with other specialists. He should have the care of at least 10 clinical patients during the whole training. He should do the follow-up of his clinical patients at the outpatient clinics. He should attend the postgraduate educational sessions organised by the Dutch Society of Plastic and Reconstructive Surgery. At least once during his training, he should present a topic on plastic surgery for a group of plastic surgeons in a national or international scientific meeting. Furthermore, the trainee should publish an article in a scientific or medical journal on a topic in general or plastic surgery. The trainee should present a list of operations of sufficient variety and number to the Visiting Committee (for quality control of the unit). He should send a review of all his scientific activities and a list of operations to the Specialist Registration Committee to obtain registration. Recently the use of the standardised EBOPRAS logbook (see Supplement 6) has been implemented for the trainee. This logbook makes comparison between Units possible and is an objective way in measuring operative experience. At the same time, his trainer must send a form stating that the candidate is capable of carrying out the specialty of plastic surgery independently. The modular system of training, as will be used in the United Kingdom (see later information), is under consideration for application in the Dutch situation. In the Netherlands there is still no final specialty exam, though one is introducing a system of theoretical examinations, following one day courses on specific topics.

conclusion

In the Netherlands, finally, it has been decided to introduce an examination system consisting of a two year cycle of selected topics assessed by examination and a final examination.

Portugal

- Minimum duration of training: five years; two years of general surgery, followed by three years of plastic surgery. During the two years of general surgery, it is obligatory to follow an apprenticeship of two months of Pathologic Anatomy. During the three years of plastic surgery, the following apprenticeships are recommended:
 - 2 months paediatric surgery
 - 2 months of stomatology
 - 1 month of ENT
 - 1 month of ophthalmology
- An apprenticeship at the department of oncologic surgery of the head and neck, is always possible.
- To obtain the title of plastic surgeon, it is necessary to pass an exam. The Board of Plastic Surgery issues a Council Degree which is valid in the public (state hospitals) and private sector. The exam consists of slides, a discussion of patients and the curriculum vitae.
- The apprenticeships must be followed in hospitals which are recognised by the Executive National Board of the Medical Council (Ordem dos Medicos).
- The directors of the services are responsible for the apprenticeships.

- There is always registration of the quality and quantity of operations. There is a distinction between the operations performed as a surgeon or as an assistant. The surgical training must include:
 - a. traumatology and its consequences (30-50 operations) face, hand, skin, burns
 - b. neoplasia (30-40 operations) head and neck/ skin in general
 - c. surgery of the hand (30-50 operations)
 - d. congenital deformities (20-30 operations) cleft lip, palate, syndactyly, hypospadias, other
 - e. aesthetic surgery (20-30 operations) facelifts/rhinoplasties/breast operations/breast reconstructions/corrections of lower abdomen
- Time spent abroad is only recognised if the trainee is sponsored by a Portuguese hospital. Following the training period, the candidate takes an exam to obtain the title Assistente Hospitalar. However, in order to receive the title Especialista, issued by the Ordem dos Medicos, a second examination must be passed. Both exams consist of a review of the curriculum, an examination of two patients with discussion of the notes and an oral examination.

conclusion

The training is shorter than recommended by the UEMS. There is room for apprenticeships.

Spain

- The duration of the training: five years; two years of general surgery, followed by three years of plastic surgery.
- Rotation among units is possible
- There are no exams
- The report of the National Commission for Medical Specialties on Plastic and Reconstructive Surgery of Spain is included, in its entirety, in this supplement since it describes the role of plastic surgery in Spain and the goals of training very well.

conclusion

The duration of the training is shorter than recommended by the proposals of the UEMS. There are no exams. Their syllabus could be used in an attempt to describe the criteria necessary for a European plastic surgeon.

United Kingdom

Since 1996, the training system has changed into a more structured system. Until then the trainee had to apply every 6 months in another Unit to continue his training. In the present system the trainees apply for fixed rotations. However, these jobs are open to firm competition and the best trainee has the first choice.

The training consists of 2 years basic surgical training, followed by 6 years of higher specialist training (see Supplement 12), aiming at passing the Intercollegiate Specialty exam (see Supplement 7) or MRCS part 111. The basic surgical training consists of 2 years basic general surgical training with at least 6 months of general surgery, 6 months of traumatology and 6 months in a surgical specialty.

It should include :

- a basic surgical skills course
- a care of the critically ill patient course
- an advanced trauma life support course (ATLS)
- a logbook
- a membership examination (MRCS)

During the basic surgical training, part 1 (A and B) and part 2 of the membership examination should be passed. Part 1A can be taken after 8 months of basic surgical training. It consists of:

1. Core Modules:

- Perioperative management
- Traumatology
- Intensive care
- Tumours

2. System Modules:

- Locomotive system
- Vascular system
- Head and Neck, endocrinology, Paediatric surgery
- Urogenital system

Part 1B (clinical) can be taken after at least 20 months of basic surgical training. It consists of 5 clinical cases. Part 2 consists of 3 oral panel examinations of 30 minutes each, after 22 months of basic surgical training. It consists of anatomy, physiology and pathology.

After passing the MRCS part 1 and 2, the trainee can continue with the Higher Specialist Training in Plastic Surgery (see for more details Supplement 12). The Higher specialist Training in Plastic Surgery consists of:

1. a 6 year specialist surgical training.

A division is made between:

level 1:

- the first 4 years of Basic Surgical Specialty Training
- 2 years Senior House Officer (possible 1 year reduction of time for research)
- 2 years Registrar

level 2:

- 2 years Specialised Training (more advanced general plastic surgery training with the possibility of subspecialty training)
 - In the fifth year: Senior Registrarship
 - In the sixth year: subspecialty training in a recognised centre for example:
 - hand surgery
 - craniofacial surgery
 - breast surgery
 - traumatology
 - head and neck oncology
 - burns
2. Microsurgical and Flap course during level 1 (For more details of the theoretical and practical contents of level 1 and 2, see Supplement 12.)
 3. Advanced course in Plastic Surgery: 3 year course with 3 monthly sessions of 2 days each, with a fixed program. Obligatory from Registrar level on.
 4. A logbook
 5. The Intercollegiate Specialty Examination (M.R.C.S. part 3), see Supplement 7. This can be taken after completing level 2 of the higher plastic surgical training. It consists of a long case : a 20 minute examination of a patient, followed by a 20 minute panel exam. This is followed by a 20 minute exam of short cases (as many patients as possible with diagnosis and treatment plan) and finally 3 oral examinations of 20 minutes each with different examiners.

Conclusion:

In the United Kingdom the training system has been changed in a more structured modular system. The advantage of the system is that the trainee can have a training system adjusted to his own interests (subspecialty modes). He is no longer dependent on the special interests of his trainer and can move to other Units. A logbook can help detecting weaknesses in the practical experience of the trainee and the training institution.



E B O P R A S

**EUROPEAN BOARD OF PLASTIC,
RECONSTRUCTIVE AND AESTHETIC SURGERY**

**EUROPEAN BOARD EXAMINATION IN
PLASTIC SURGERY 1996**

The European Board of Plastic, Reconstructive and Aesthetic Surgery has been created in an attempt to achieve a high standard in training for optimal medical care in all member countries of the European Union. This will be achieved by the following measures:

- Harmonisation of training in plastic surgery in member countries
- Clear definition of the minor requirements for training in plastic, reconstructive and aesthetic surgery
- Accreditation of training centres
- Provision of exchange facilities for trainees between different centres
- Setting up of the European Board examination.

EUROPEAN BOARD EXAMINATION

The Education and Exchange Committee of the European Board of Plastic Surgery is responsible for organising the examination. Fully accredited plastic surgeons who have been accredited in one of the member countries of the European Union or are full members of the European Union of medical specialists are eligible to take this examination. The European Board examination is not intended to replace national examinations and in countries where such an examination exists candidates should have taken the national examination prior to applying for the European Board Examination.

Candidates are also required to complete a log book which can be obtained from the Chairman of the Education Committee:

Professor Romain VANWIJCK
Department of Plastic Surgery
Cliniques Universitaires St. Luc
10 avenue Hippocrate
B-1200 BRUSSELS
BELGIUM

The next examination will be held on November 9 -10, 1996 in Hannover and will be a written multiple choice examination as well as an oral examination based on slides (5 cases) in the applicants own language provided this is one of the official European Union languages.

The Education Committee reserves the right to reject applications from candidates whose log book or qualifications are considered inadequate or incomplete.

APPLICATION

If you are interested in taking the 1996 European Board Examination in Plastic, Reconstructive and Aesthetic Surgery, you should request further details of the examination as well as an application form from Professor Romain Vanwijck at the above address.

The Following documents should be returned to Professor Vanwijck:

1. A citizenship certificate
2. A copy of the certificate from your National Health Service confirming you full accreditation as a plastic surgeon
3. A completed copy of the European Board log book countersigned by the head of your department or head of specialist training program recognised by Health Authorities of your country.
4. The application form with your signature and countersigned by the President of Secretary General of your National Society for Plastic, Reconstructive and Aesthetic Surgery.

The deadline for sending the log book and the application is August 31, 1996.

An examination fee of 350 ECU will be charged. Bank to bank transfer in Danish Crowns is desirable.

Bikuben
8 Silkesade
DK-113 Copenhagen K, Denmark
Account n° 2870027977
EBOPRAS Kr. Drzewiecki

GENERAL INFORMATIONS ON THE EDUCATION- AND EXCHANGE COMMITTEE OF THE EUROPEAN BOARD OF PLASTIC SURGERY

The subcommittee of the European Board of Plastic Surgery has the goal of

- defining of minimal standards for training in Plastic Surgery in the European Countries
- creating a log book, the documents of training
- facilities for exchange for trainees and teachers among recognised training institutions
- harmonising the various postgraduate training properties.

EDUCATION AND EXCHANGE TRAINING PROGRAMME COMMITTEE

LOG BOOK

INSTRUCTION

The log book should contain all operations you performed or participated in. The sheets should be stored in a hard covered binder with this instruction sheet first.

WORKING DIARY SHEETS

You should complete this after every operation as follows:

- Date:** Date of operation.
- Patient's initials:** Initials only to maintain confidentiality.
- Nature of operation:** Description of the operation, including all the procedures in a major operation.
- P/PA/A/S:**
- P = performed by yourself
 - PA = performed with assistance of an experienced Plastic Surgeon
 - A = you assisted (types of operations)
 - S = summary of all the operations of the same kind

The log book itself: This is the record of the summary of the work you have done. Where complex procedures are involved, that includes for example free tissue transfer or reconstruction by tissue expansion, you may include these reconstructive procedures in addition to the other major procedure. In other multiple procedures you may list only one component. Within each category, there is a topic "other", in which less common procedures, not listed elsewhere, may be included. The log book should demonstrate that you have a training which is of broad categories of conditions an operations.

You are requested to complete this Log book and it should be signed by the Training Representative of your unit.

This log book should be regarded as a personal record of patients and should be kept securely. (PC must be controlled and registered).

PLASTIC SURGERY - EUROPEAN BOARD

LOG BOOK

Country _____

EC-member
 full associated No

Mrs./Mr. _____
 Family name _____ First name _____

Position _____ Academic degree _____

Hospital / Univ. Clinic / Training centre _____ Supervisor (Training director) _____

Address of Institution _____

Home address _____

Tel.No. _____ Fax No. _____ Date _____ Signature _____

CONFIDENTIAL REGISTERED MAIL

PLASTIC SURGICAL TRAINING - ASSESSMENT FORM

Grade:						
Unit:						
	Poor	Improvement indicated	Average	Above average	Outstanding	Remarks
Clinical Maturity						
Technical Ability						
Compatibility						
Administration						
Punctuality						
Industry						
Dependability						
Receptive to Training						
Reading						
Research						
Publications						
Courses, etc.						

Signature of Supervising Consultant: _____

Date: _____

PLASTIC SURGERY LOG BOOK

N.B.: Each operation is to be registered only once - even if multiple procedures are involved. For multiple procedures, record under the most complex.

BASIC COMMON TRUNK

Name:					
Unit:					
Period covered by this consolidation sheet:					
CONGENITAL ANOMALIES		Number of Operations			
		P	PA	A	S
Ears	Correction of prominent ears				
	Surgery for microtia				
Eyelids	Other				
	Other				
Clefts	Primary repair cleft lip / or palate				
	Secondary repair cleft lip / nose / palate				
	Other				
Craniofacial	Sub-cranial osteotomy				
	Trans-cranial osteotomy				
	Other				
Neck	Malformations				
Congenital limb	Correction of syndactyly				
	Correction of polydactyly				
	Other				
Genito-urinary	Repair of hypospadias				
	Repair of epispadias				
	Other genital anomalies				
Skin	Surgery for large congenital pigmented naevus				
	Surgery for haemangioma				
	Surgery for lymphangioma				
	Other				
Miscellaneous	Other congenital anomalies				

PLASTIC SURGERY LOG BOOK

N.B.: Each operation is to be registered only once - even if multiple procedures are involved. For multiple procedures, record under the most complex.

BASIC COMMON TRUNK

Name:					
Unit:					
Period covered by this consolidation sheet:					
TRAUMA		Number of Operations			
		P	PA	A	S
Face	Repair soft tissue injury of face				
	Repair of bony injuries of face				
	Reduction of fractured nose				
Hands	Repair skin laceration				
	Skin graft to hand				
	Local flap for skin cover				
	Distant flap for skin cover				
	Flexor tendon repair or graft				
	Extensor tendon repair or graft				
	Tenolysis				
	Tenodesis				
	Tendon transfers				
	Nerve repair primary				
	Nerve repair graft				
	Other				
TRAUMA (cont.)	Hands	Fixation of fracture /dislocation			
		Replantation / revascularisation			
		Amputation or revision of amputation			
		Free tissue transfer to hand microvascular			
		Other			

PLASTIC SURGERY LOG BOOK

N.B.: Each operation is to be registered only once - even if multiple procedures are involved. For multiple procedures, record under the most complex.

BASIC COMMON TRUNK

Name:					
Unit:					
Period covered by this consolidation sheet:					
HAND SURGERY (excluding congenital & traumatic - see above)		Number of Operations			
		P	PA	A	S
	Ganglion excision				
	Nerve decompression (including carpal tunnel release)				
	Fasciectomy for Dupuytren's disease				
	Other procedure for Dupuytren's disease				
	Synovectomy for rheumatoid disease				
	Tendon repair / transfer for rheumatoid disease				
	Arthroplasty				
	Arthrodesis				
	Other hand procedure				
MISCELLANEOUS					
Pressure sores	Flap				
	Other				
Surgery for facial palsy	Static support / dynamic support				
	Nerve graft				
	Free muscle graft				
	Sumery to eyelids				
	Other				
Breast reconstruction	Reconstruction with implant				
	Reconstruction with tissue expander				
	Reconstruction with flap				
	Nipple reconstruction				
	Other				
Trunk reconstruction	Reconstruction by free flap				
	Reconstruction by skin graft				
	Reconstruction by flap				

PLASTIC SURGERY LOG BOOK

N.B.: Each operation is to be registered only once - even if multiple procedures are involved. For multiple procedures, record under the most complex.

BASIC COMMON TRUNK

Name:					
Unit:					
Period covered by this consolidation sheet:					
MISCELLANEOUS		Number of Operations			
		P	PA	A	S
Tissue expansion (other than breast)	Insertion				
	Removal and reconstruction				
	Other				
Microvascular flap surgery	Raising of flap				
	Transfer of flap				
Aesthetic	Breast augmentation				
	Breast reduction / mastopexy				
	Other breast procedure				
	Blepharoplasty				
	Facelift				
	Rhinoplasty				
	Abdominoplasty				
	Dermabrasion				
	Chemical peel				
	Liposuction				
	Other				
OTHER PROCEDURES (not covered by the above)	Scar revision				
	Tattoo removal				
	Other				
EXPERIMENTAL TRAINING					
EXPERIMENTAL RESEARCH					
LABORATORIES					
TEACHING					
MICROSURGICAL TRAINING					

EUROPEAN BOARD OF PLASTIC SURGERY**LOG BOOK****SUBJECTS TO BE EXAMINED**

1. History of Plastic Surgery
2. Wound healing
3. Skin grafts
4. Principles and physiology of skin flap surgery
5. The vascular territories of the body
6. Principles of muscle and musculocutaneous flaps
7. Principles and techniques of microvascular surgery
8. Principles and techniques of tissue expansion
9. Alloplastic implants
10. Burns
11. Facial injuries
12. Reconstruction of the eyelids
13. Rhinoplasty
14. Reconstruction of the auricle
15. Facial paralysis
16. Blepharoplasty and facial palsy
17. Embryology of the head and neck
18. Embryo genesis of cleft lip and palate
19. Unilateral cleft lip deformity
20. Bilateral clefts
21. Cleft palate
22. Principles of craniofacial surgery
23. Paediatric tumours of the head and neck
24. Cutaneous vascular anomalies
25. Tumours of the skin
26. Reconstruction of the trunk
27. Pressure sores
28. Aesthetic breast surgery
29. Breast reconstruction
30. Abdominoplasty
31. Body contouring

32. Reconstructive surgery of the lower extremity
33. Basic techniques in genital reconstructive surgery
34. Examination of the hand and relevant anatomy
35. General principles of hand surgery
36. Flexor tendon repair
37. Extension tendon repair
38. Peripheral nerve repair
39. Brachial plexus injuries
40. Nerve compression syndromes
41. Replantation and revascularisation of the upper extremity
42. Thumb and finger reconstruction
43. Free flap transfer in the upper extremity
44. Dupuytren's disease
45. Congenital anomalies of the hand and forearm
46. Free flap transfer in the lower extremity

EUROPEAN BOARD OF PLASTIC; RECONSTRUCTIVE
AND AESTHETIC SURGERY

EXECUTIVE COMMITTEE MEMBERS

- | | |
|--|--|
| <p>Prof. VAN DER MEULEN Jacques
Lambertweg 40
NL-3082 RA/Rotterdam
phone: (31)10-4633407
fax: (31)10-4633731</p> | <p>Chairman</p> |
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Vrionon 1
GR-151 21 Pafos
Athens
phone: (30)1-7709831
fax: (30)18060077</p> | <p>Past Chairman</p> |
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rue du Languedoc 3
F-31000 Toulouse
phone: (33)61322742
fax: (33)61-322237</p> | <p>Secretary General</p> |
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The Princess Margaret Hospital
Osborne Road
Windsor
Berkshire SL4 3SJ
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fax: (44)753-851749</p> | <p>Past Secretary General</p> |
| <p>Dr. DRZEWIECKI Kris
Dept. of Rec. Surgery S-3032
Rigshospitalet
Blegdamsvej 9
DK-2100 Copenhagen
phone: (45)35-453030
fax: (45)35-453032</p> | <p>Treasurer</p> |
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Serv. Chir. Plast.
Clin. Univ. St. Luc
av. Hippocrate 10
B-1200 Bruxelles
phone: (32)2-7841403
fax: (32)2-7626284</p> | <p>Chairman of Education
Committee</p> |
| <p>Prof. BERGER Alfred
Clinic of Plastic and Reconstructive
Surgery of the Medical School Hannover
Podbielskistr. 380
D-30658 Hannover
phone: (49)511-9083646
fax: (49)511-8478042</p> | <p>Education
Committee</p> |
| <p>Mr. WATSON A.C.H.
6 Duncan Street
Edinburgh EH9 1SZ
phone: (44)316674022
fax: (44)316673968</p> | <p>Chairman of Accreditation
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Requirements for the specialist fellowship exam (UK)

INTERCOLLEGIATE BOARD IN PLASTIC SURGERY

The Royal College of Surgeons of Edinburgh
The Royal College of Surgeons of England
The Royal College of Physicians and Surgeons of Glasgow
The Royal College of Surgeons of Ireland

Regulations relating to the Specialty Examination in Plastic Surgery

1993

Secretariat of the Intercollegiate Board in Plastic Surgery
at 10 Hill Square, Edinburgh EH8 9DR
(Tel. No. 031 556 7079)

REGULATIONS RELATING TO THE SPECIALTY EXAMINATION IN PLASTIC SURGERY

The candidate must hold a medical qualification recognised for registration by the General Medical Council or the Medical Council of Ireland and must have been qualified for at least seven years.

The candidate must

- (a) hold a Fellowship of one of the Royal College of Surgeons of Great Britain and Ireland
- or (b) hold an equivalent diploma recognised by the Joint Conference of Surgical Colleges
- or (c) have acquired three years of basic training in surgery-in-general acceptable to the Joint Meeting of Surgical Colleges in lieu of these requirements.

The candidate must have completed three years of training in the specialty acceptable to the relevant Board and a record of operative experience throughout this period should be provided.

- (a) Candidates who have qualified and are domiciled in Great Britain or Ireland must have enrolled with the relevant Specialist Advisory Committee at the commencement of specialist training and one of the three years must have been at senior registrar level.
- (b) Candidates who have trained outwith Great Britain or Ireland must have spent at least one year in specialty training in Great Britain or Ireland in a post at senior registrar or equivalent level approved by the Joint Committee on Higher Surgical Training. This may have been as a visiting or locum senior registrar. Candidates must confirm with the appropriate Specialist Advisory Committee prior to the commencement of training that their post is approved. Performance in this post must have been certified as satisfactory by the supervising consultants. Similar certification must be submitted also for the other posts held during the three-year period.

FORMAT OF THE EXAMINATION

The format of the Examination will consist of clinical and oral components and will contain a significant component of the Basic Sciences related to Plastic Surgery.

GUIDE TO THE SCOPE OF THE EXAMINATION

The scope of the Examination will consist of:

- (a) Principles and practice of wound care and tissue transplantation
- (b) Principles and practice of managing trauma and/or infection which involves skin as part of the injury
- (c) Principles of management of maxillofacial trauma
- (d) Management of burns, thermal, electrical, chemical and radiation, including their sequelae
- (e) Diseases and deformities of the head and neck and their management
- (f) The management of skin tumours, including management of the regional lymph nodes
- (g) Management of head and neck tumours
- (h) Management of congenital and acquired deformities of the trunk, limbs (including lymphoedema) and other sites where the provision of skin cover is a component
- (i) Plastic surgical aspects of congenital and acquired deformities of the urogenital system and their management
- (j) Management of paraplegic skin problems
- (k) All aspects of hand surgery
- (l) Microsurgery in all its applications to reparative and reconstructive surgery
- (m) Reconstructive surgery of the breast
- (n) Aesthetic surgery, particularly of eyelids, nose, face and chin, breast and abdomen
- (o) The basic sciences which relate to the foregoing

5. When your answer for question 2 was NO for any of group A, B or C (see **), tick the reason:

- a. immigration of
has a negative effect on:
- the employment
 - the availability of activities
(for example they could take
the cosmetic work or other areas)
 - the income from the activities
 - other: _____
- b. problems related to:
- quality of the training and qualifications
 - language and cultural problems, hindering
work
- c. tick the countries, where training, language and culture
could in your opinion, cause problems (see *)

A	B	C

	B	DK	D	F	GR	IRL	I	L	NL	P	E	GB
training and qualifications												
language culture												

6. 2. Do you consider to settle down permanently in future in one of the other member states of the E.C.
YES NO

- b. When your answer was YES, please indicate which member state you prefer (see *)
- ++ = most preferable
 - + = preferable
 - 0 = least preferable

	B	DK	D	F	GR	IRL	I	L	NL	P	E	GB
++												
+												
0												

7. What would be for you the reason for permanent settlement in another E.C. member state?

- a. better financial possibilities
- b. more interesting work
- c. better working conditions
- d. better future perspectives
- e. other: _____

Yes	No

11. Could you give an estimate of the number of plastic surgeons, plastic surgical trainees and doctors in your country looking for training in plastic surgery, who all want to move to another E.C. member state:

- A. the plastic surgeons
- B. the trainees
- c. doctors looking for plastic surgical training

A	B	C

- a. permanently
- b. temporarily

THANK YOU VERY MUCH FOR YOUR COOPERATION

PLEASE SEND YOUR ANSWERS TO:

K.H. Tan MD
Consultant plastic surgeon
Kennemer Hospital, lok. EG
c/o Postbus 117
2040 AC Zandvoort
Netherlands

Summary of the findings of the survey (1991-1992) in tables

Table 7.1 Support for the view that European Unification leads to an increase in the migration of doctors working in the area of plastic surgery

countries	yes (%)	no (%)	% of abstentions of the total of received questionnaires	total received questionnaires
Belgium	85	15	-	20
Denmark	67	27	7	15
France	96	4	-	24
Germany	72	26	2	53
Greece	97	3	-	31
Ireland	100	-	-	2
Italy	87	10	3	106
The Netherlands	89	11	-	18
Portugal	77	18	5	22
Spain	87	4	13	31
United Kingdom	92	6	2	50
Total				372

Table 7.2 The positive attitude of respondents from EC countries towards the temporary arrival of plastic surgeons from other EC countries; plastic surgical trainees from other EC countries and doctors looking for a training post in plastic surgery in the country of the respondent.

countries	plastic surgeons from other EC countries	plastic surgical trainees from other EC countries	doctors looking for a training post in plastic surgery in the country of the respondent	total received questionnaires
Belgium	75%	95%	90%	20
Denmark	93%	93%	60%	15
France	88%	96%	88%	24
Germany	70%	85%	77%	53
Greece	77%	81%	68%	31
Ireland	0%	100%	100%	2
Italy	84%	89%	75%	106
The Netherlands	94%	94%	61%	18
Portugal	77%	77%	90%	22
Spain	58%	84%	55%	31
United Kingdom	86%	94%	92%	50
Total	72%	81%	68%	372

* There were also abstentions in the different EC countries

Table 7.3 The positive attitude of respondents from EC countries towards the permanent arrival of plastic surgeons from other EC countries; plastic surgical trainees from other EC countries and doctors looking for a training post in plastic surgery in the country of the respondent.

countries	plastic surgeons from other EC countries	plastic surgical trainees from other EC countries	Doctors looking for a training post in plastic surgery in the country of the respondent	total received questionnaires
Belgium	75%	95%	90%	20
Denmark	93%	93%	60%	15
France	88%	96%	88%	24
Germany	70%	85%	77%	53
Greece	77%	81%	68%	31
Ireland	0%	100%	100%	2
Italy	84%	89%	75%	106
The Netherlands	94%	94%	61%	18
Portugal	77%	77%	90%	22
Spain	58%	84%	55%	31
United Kingdom	86%	94%	92%	50
Total	72%	81%	68%	372

Table 7.4 The advantages of the arrival of plastic surgeons from other EC countries, for the respondents in the different EC countries

countries	solution for shortage of manpower	enrichment of knowledge and expertise	stimulation of international exchange	positive influence on the training	other remarks*	total received questionnaires
Belgium	5%	50%	65%	25%		20
Denmark	0%	87%	73%	47%		15
France	8%	63%	71%	58%		24
Germany	19%	60%	72%	49%		53
Greece	0%	74%	55%	55%		31
Ireland	0%	50%	0%	50%		2
Italy	1%	67%	70%	48%		106
The Netherlands	39%	72%	83%	56%		18
Portugal	5%	64%	64%	45%		22
Spain	10%	42%	52%	39%		31
United Kingdom	10%	78%	74%	46%		50
Total	8%	66%	68%	47%		372

Additional remarks from respondents from the United Kingdom and Germany, regarding the arrival of plastic surgeons, trainees and doctors looking for a training post, from other EC countries

* United Kingdom: It would lead to training of doctors from other EC countries.
Reciprocal training arrangements may be stimulated.

* Germany: The effect of an influx of foreign medical graduates is unknown and full of speculation
It may lead to competition with their own doctors
Language barriers may be lowered
Finding a job or a training position may become more difficult.

Table 7.5 *The advantages of the arrival of plastic surgical trainees from other EC Countries*

countries	solution for shortage of manpower	enrichment of knowledge and expertise	stimulation of international exchange	positive influence on the training	other remarks	total received questionnaires
Belgium	15%	50%	65%	25%	1*	20
Denmark	7%	53%	73%	27%		53
France	21%	46%	67%	54%		24
Germany	7%	53%	80%	27%		15
Greece	-	29%	48%	52%		31
Ireland	-	100%	100%	100%		2
Italy	5%	14%	63%	24%		106
The Netherlands	17%	39%	78%	28%		18
Portugal	-	36%	64%	32%		22
Spain	10%	26%	74%	16%		31
United Kingdom	34%	54%	86%	44%		50
Total	10%	30%	62%	28%		372

Belgium: social and cultural enrichment

Table 7.6 *The advantages of the arrival of doctors from other Common Market countries, according to the respondents*

countries	solution for shortage of manpower	enrichment of knowledge and expertise	stimulation of international exchange	positive influence on the training	other remarks	total received questionnaires
Belgium	5%	50%	90%	40%	1*	20
Denmark	2%	19%	72%	26%	1*	53
France	4%	17%	29%	25%		24
Germany	-	20%	53%	13%		21
Greece	-	23%	16%	45%		31
Ireland	-	-	50%	-		2
Italy	4%	16%	50%	18%		106
The Netherlands	-	11%	67%	11%	1*	18
Portugal	-	18%	59%	41%		22
Spain	3%	13%	32%	10%		31
United Kingdom	24%	18%	48%	44%		50
Total	5%	19%	51%	27%		372

B: social and cultural enrichment

D: lowering of language barriers

NL: stimulation of competition and the quality of training

Table 7.7 *The reasons for objecting to the arrival of plastic surgeons from other Common Market countries*

respondent	negative effect on employment	negative effect on training possibilities	negative effect on income	negative effect on activities	expected problems with qualifications	expected linguistic and cultural problems	total received questionnaires
Belgium	55%	10%	15%	5%	10%	15%	20
Denmark	20%	7%	-	-	-	7%	15
France	25%	12%	-	12%	9%	12%	24
Germany	60%	15%	23%	25%	13%	8%	53
Greece	13%	6%	6%	-	-	4%	31
Ireland	100%	100%	100%	100%	100%	50%	2
Italy	36%	5%	9%	17%	3%	1%	106
The Netherlands	44%	6%	40%	39%	28%	28%	18
Portugal	27%	5%	32%	23%	9%	18%	22
Spain	55%	13%	26%	35%	10%	10%	31
United Kingdom	50%	-	30%	40%	42%	-	50
Total	40%	8%	17%	21%	12%	7%	372

Table 7.8 *The reasons for objecting to the arrival of plastic surgical trainees from other Common Market countries*

respondent	negative effect on employment	negative effect on training possibilities	negative effect on income	negative effect on activities	expected problems with qualifications	expected linguistic and cultural problems	total received questionnaires
Belgium ¹	10%	20%	15%	5%	10%	-	20
Denmark	13%	-	-	13%	7%	13%	15
France ²	12%	12%	4%	4%	16%	16%	24
Germany	40%	23%	13%	4%	8%	8%	53
Greece	13%	3%	6%	10%	3%	3%	31
Ireland	100%	50%	-	-	50%	50%	2
Italy	18%	6%	4%	4%	4%	9%	106
The Netherlands	40%	22%	11%	11%	22%	6%	18
Portugal	18%	9%	14%	5%	5%	14%	22
Spain	26%	42%	10%	16%	13%	13%	31
United Kingdom	30%	-	8%	12%	22%	10%	50
Total	19%	9%	8%	7%	11%	7%	372

¹ other: problems with adaptation were expected by 1 (5%)

² other: abundance of trainees

Table 7.9 The reasons for objecting to the arrival of doctors from other Common Market countries looking for training posts in plastic surgery outside their home country.

respondent	negative effect on employment	negative effect on training possibilities	negative effect on income	negative effect on activities	expected problems with qualifications	expected linguistic and cultural problems	total received questionnaires
Belgium	15%	25%	-	5%	25%	15%	20
Denmark	13%	7%	-	-	-	13%	15
France	12%	12%	-	4%	21%	16%	24
Germany	36%	23%	13%	4%	8%	8%	53
Greece	10%	6%	6%	3%	3%	3%	31
Ireland	100%	-	-	-	50%	50%	2
Italy	135	20%	7%	8%	6%	-	106
The Netherlands	40%	22%	6%	11%	28%	22%	18
Portugal	18%	14%	14%	14%	14%	14%	22
Spain	29%	42%	19%	39%	26%	13%	31
United Kingdom	30%	-	8%	12%	22%	10%	50
Total	21%	17%	8%	10%	13%	8%	372

Table 7.10 The 6 most preferred Common Market countries of origin for immigrant doctors (plastic surgeons, trainees and doctors looking for plastic surgery training outside their home country)

countries of respondent	preferred countries of origin of immigrant doctors						Number of responses
	United Kingdom	France	The Netherlands	Germany	Belgium	Spain	
Belgium	50%	45%	35%	20%	-	20%	20
Denmark	45%	27%	27%	40%	-	7%	15
France	50%	-	12%	12%	26%	9%	24
Germany	40%	25%	15%	-	19%	15%	53
Greece	45%	42%	35%	29%	1%	29%	31
Ireland	100%	-	50%	50%	-	-	2
Italy	43%	40%	19%	26%	-	23%	106
The Netherlands	61%	39%	-	11%	39%	-	18
Portugal	64%	45%	-	18%	3%	14%	22
Spain	42%	39%	10%	29%	3%	10%	31
United Kingdom	-	22%	28%	22%	24%	2%	50
Total	38%	33%	19%	31%	19%	15%	372

Table 7.11 Common market countries where training and qualification could cause problems

countries of respondent	countries where training and qualifications could cause problems											Number of responses
	B	Dk	F	D	Gr	I	P	E	Nl	Irl	GB	
Belgium	-	-	-	5%	40%	45%	40%	25%	-	5%	-	20
Denmark	-	-	-	-	20%	13%	20%	7%	-	7%	-	15
France	-	12%	-	-	37%	25%	29%	25%	12%	-	-	24
Germany	-	-	-	-	25%	12%	26%	17%	-	4%	-	53
Greece	-	-	3%	-	-	-	3%	3%	-	-	3%	31
Ireland	-	-	-	-	100%	100%	100%	100%	50%	-	-	2
Italy	-	-	-	2%	4%	-	4%	-	3%	-	1%	106
The Netherlands	-	-	-	-	39%	33%	33%	28%	-	-	-	18
Portugal	14%	45%	-	27%	41%	14%	-	5%	23%	5%	-	22
Spain	-	-	-	-	13%	6%	6%	3%	3%	10%	-	31
United Kingdom	12%	10%	22%	8%	46%	2%	46%	40%	10%	6%	-	50
Total	2%	5%	3%	3%	20%	10%	18%	14%	5%	3%	0.5%	372

Table 7.12 Common market countries where language and culture could cause problems

countries of respondent	countries of origin of immigrant doctors, where linguistic and cultural problems could be expected											Number of responses
	B	Dk	F	D	Gr	Irl	I	Nl	P	E	GB	
Belgium	-	25%	-	-	25%	-	25%	5%	35%	30%	-	20
Denmark	33%	-	-	-	47%	13%	40%	20%	47%	47%	-	15
France	-	29%	-	12.5%	21%	-	-	21%	9%	9%	-	24
Germany	-	6%	-	-	19%	-	15%	4%	21%	17%	7.5%	53
Greece	-	3%	-	6%	-	-	3%	3%	3%	3%	-	31
Ireland	-	50%	-	-	100%	-	100%	50%	100%	100%	-	2
Italy	-	7%	-	4%	4%	-	-	4%	2%	-	-	106
The Netherlands	5.5%	6%	28%	17%	39%	5.5%	39%	-	44%	44%	5.5%	18
Portugal	4.5%	77%	-	95%	64%	14%	-	95%	-	5%	4.5%	22
Spain	3%	23%	-	16%	16%	3%	-	26%	-	-	6%	31
United Kingdom	12%	12%	16%	12%	33%	-	26%	8%	32%	30%	-	50
Total	4%	14%	4%	11%	16%	2%	11%	13%	15%	14%	2%	372

Table 7.13 Preparedness of the respondents to settle permanently in another Common Market country

Country	Number of respondents prepared to settle down permanently in another Common Market country	
Belgium	4	20%
Denmark	1	6%
France	5	9%
Germany	10	42%
Greece	12	39%
Ireland	1	50%
Italy	9	9%
The Netherlands	5	28%
Portugal	3	14%
Spain	5	16%
United Kingdom	5	10%

Table 7.14 Order of preference in the different EC countries

Country	Decrease in preference from left to right									
B Belgium	F	P-E-GB	NL	I-IRL	D-DK-GR					
DK Denmark	GB	D	NL	F	B	E	I-IRL-GR-P			
F France	B	I	GB	E	DK-D-GR-NL		IRL	P		
D Germany	GB	F	I	B	NL	E	IRL	DK	P GR	
GR Greece	GB	F	I-D	NL	E	P	IRL	DK		
IRL Ireland	GB								GR	
I Italy	GB-F	B-DK-D	NL	E	P	GR				
NL The Netherlands	B	I	D	E-GB-P-F		GR				
P Portugal	E	I	F	GB	NL	B-IRL-GR D				
E Spain	F	I-GB	NL	B	D-P		GR			
GB United Kingdom	F	D	B	NL	IRL	E	I	P	GR	

When countries had the same preference the "-" was used

Table 7.15 *The reasons for permanent settlement in another EC country*

respondent	better financial perspectives	more interesting work	better working conditions	better future perspectives	number of respondents
Belgium ¹	15%	15%	15%	15%	20
Denmark ²	13%	13%	7%	15%	15
France	63%	62%	59%	62%	24
Germany	9%	15%	26%	23%	53
Greece ³	19%	39%	39%	43%	31
Ireland	-	-	100%	50%	2
Italy ⁴	7%	24%	30%	17%	106
The Netherlands ⁵	17%	11%	17%	22%	18
Portugal	9%	9%	14%	9%	22
Spain ⁶	13%	26%	19%	16%	31
United Kingdom ⁷	4%	2%	2%	-	50
Total	13%	21%	24%	20%	372

¹ no employment in own country; better climate

² the desire to learn new procedures

³ better climate

⁴ uniformity of science in the "United States of Europe"

⁵ working in international surroundings

⁶ exile; better living conditions

⁷ more tolerant society; better climate

Table 7.16 *The reasons for temporarily moving to another EC country*

respondent	temporary work	fellowship	training	number of respondents
Belgium	65%	60%	50%	20
Denmark	33%	28%	33%	15
France	21%	40%	66%	24
Germany	60%	53%	60%	53
Greece	35%	65%	65%	31
Ireland ¹	-	-	-	2
Italy	54%	41%	64%	106
The Netherlands	72%	61%	44%	18
Portugal	36%	41%	42%	22
Spain	26%	29%	52%	31
United Kingdom	20%	34%	44%	50
Total	44%	44%	58%	372

¹ there was only one respondent who answered this question and indicated no

Table 7.17 *The favourite topics for a fellowship in another EC member state*

respondent	hand surgery	micro surgery	cosmetic surgery	head and neck surgery	reconstructive surgery	craniofacial surgery	cleft lip and palate surgery	burns	number of respondents
Belgium	15%	55%	55%	20%	30%	55%	45%	-	20
Denmark	7%	33%	47%	20%	40%	27%	7%	33%	15
France	41%	46%	42%	34%	43%	55%	34%	4%	24
Germany	25%	51%	78%	43%	57%	23%	13%	25%	53
Greece	39%	32%	61%	32%	52%	13%	6%	6%	31
Ireland	-	-	50%	50%	-	50%	50%	-	2
Italy	28%	38%	43%	41%	58%	31%	25%	14%	106
The Netherlands	17%	11%	28%	11%	33%	11%	17%	6%	18
Portugal	59%	45%	55%	41%	50%	27%	23%	23%	22
Spain	42%	23%	32%	42%	55%	19%	16%	19%	31
United Kingdom	62%	30%	30%	10%	26%	30%	16%	8%	50
Total	35%	37%	46%	33%	48%	29%	20%	14%	372

Table 7.18 *The present number of foreign medical graduates from other EC countries in the hospitals of the respondents*

country of the respondent	plastic surgeons staying temporarily	plastic surgeons staying permanently	trainees staying temporarily	trainees staying permanently	doctors, looking for training, staying temporarily	doctors, looking for training, staying permanently
Belgium	1	-	1	-	-	-
Denmark	-	-	-	-	-	-
France	12	4	5	3	3	3
Germany	1	4	5	2	8	2
Greece	-	-	-	-	-	-
Ireland	-	-	-	-	-	-
Italy	-	1	4	2	5	-
The Netherlands	6	2	2	-	4	-
Portugal	-	-	-	-	1	-
Spain	1	-	-	-	-	-
United Kingdom	5	2	17	3	14	3
Total	26	13	34	10	35	8

European diploma in Hand Surgery Examination Syllabus

EUROPEAN DIPLOMA IN HAND SURGERY

Regulations and Format of Examination

The Council of FESSH are firmly of the opinion that the examination should be on a standard to allow the Diploma to acquire a high reputation from the outset. The first Diet of Examination will be held in Paris in April 1996 at the time of the FESSH meeting.

Format of Examination

1. MCQ elimination paper.
2. Provided candidates have given a satisfactory performance in (1) they will be allowed to go forward to three oral examinations each lasting 40 minutes and each conducted by two examiners. The subject matter of the orals will be as follows:
 - [a] The acutely injured hand.
 - [b] General reconstructive surgery with particular reference to :
 - (i) secondary reconstruction after trauma.
 - (ii) Congenital malformations.
 - (iii) Paralytic and other neurological conditions.
 - [c] Miscellaneous local pathology and general systemic disease, eg hand infections, Dupuytren's contracture, degenerative and inflammatory arthritis and tumours of the hand.

Each oral will comprise an assessment of the candidate's knowledge of basic sciences, investigative procedures, conservative management, and operative surgery.

Examination fees

The fee for the whole examination will be 350 Ecu.

Languages for Examination

Candidates will be able to take the written paper and the orals in any one of the five main European languages, ie English, French, German, Italian or Spanish. In the event of a candidate coming from one of the other European countries, and if his command of all of the major languages is limited, consideration is being given to the possibility of providing a translator from his/her own country to be in attendance.

Entry criteria

Because of the differences which exist in training in hand surgery in different parts of Europe the Council of FESSH have agreed that different sets of criteria will have to be utilised according to the prevailing pattern of training in the candidate's own country:

1. Where training in hand surgery is not subsequent to accreditation in a major surgical specialty, the background training should incorporate a minimum of three years spent in general surgery, orthopaedics and plastic surgery, and at least one year of this time must have been spent in either one or other of the latter two specialties. Thereafter two years' training in a centre accredited for training in hand surgery with 100% exposure to hand surgery for that period will be required.
2. In countries where training in hand surgery follows accreditation in a major surgical specialty other than orthopaedic or plastic surgery, two years training in an accredited centre with 100% exposure will again be required.
3. In countries where training in hand surgery follows accreditation in orthopaedic or plastic surgery, one year's training with 100% exposure to hand surgery in an accredited centre will be sufficient to allow entry to the Diploma Examination.
4. Candidates from countries in which hand surgery is already a separate specialty in its own right, will be eligible for entry to the European Diploma Examination without further training provided that:
 - [1] Their general background training (minimum duration 2 years) has incorporated exposure to orthopaedic and/or plastic surgery for at least one year.
 - [2] Their specialty training in hand surgery has been for a minimum of three years in an accredited centre with exposure to both orthopaedic and plastic surgery techniques, including microsurgery.
 - [3] They have achieved accreditation in hand surgery in their own countries.

Surgeons who are interested in sitting the examination but whose training background does not match any of the above, can still submit an application which will then be assessed individually by the Qualifications Committee with regard to their eligibility to sit the examination.

As part of the conditions for entry to the examination candidates will have to submit a certificate attesting satisfactory performance in an accredited unit, together with a logbook detailing their operative experience. The logbook will also provide guidelines as to the numbers and types of operation which candidates will be expected to have participated in either as assistant or principal operator. This logbook will shortly be available from Professor Alfred Berger, Krankenhaus Oststadt, Podbeilskistrasse 380, 3000 Hannover 51, Allemagne, to whom enquiries regarding the examination and eventually formal applications for entry to the examination should also be submitted.

REGISTRATION of INTEREST
in
FIRST DIPLOMA EXAMINATION in HAND SURGERY
to be held in
PARIS, APRIL 1996

NAME..... D of B.....

ADDRESS.....

.....
.....

QUALIFICATION, eg University degrees, surgical diplomas etc.

.....

Current Centre of Employment

.....
.....

Position held:.....

Surgical Discipline/s if any
in which you already
hold accreditation

Languages in which you are fluent

Preferred language for examination.....
(Must be one of the five main
European languages, viz. English,
French, German, Italian or Spanish)

On completion this form should be sent to *Pr BERGER Alfred,*
Dept. of Plastic Surgery, Medical School Hannover, Podbielskistrasse 380
D-30659 HANNOVER, GERMANY, and a copy should also be sent to the
Secretary of your National Hand Society.

NB. This form does not constitute formal registration for the
Diploma examination. Full details with the official entry
form will be sent to you in due course.

European Hand Surgery Examination Syllabus

1. Anatomy of hand and upper limb.
2. Physiology of muscle, nerve and bone metabolism.
3. Operative surgery, including micro-surgical techniques.
4. Injured hand - wound care, management of vascular tendon and nerve injuries, bone and joint injuries.
5. Amputations in the hand.
6. Burns of the hand.
7. Reconstructive surgery eg.
 - (a) Thumb reconstruction
 - (b) Tendon transfers
 - (c) Management of tetraplegia, stroke and cerebral palsy
 - (d) Management of upper limb nerve injuries, including brachial plexus injuries.
8. Congenital abnormalities of hand and upper limb.
9. The arthritic hand in osteoarthritis, rheumatoid arthritis and other inflammatory arthritides, eg lupus and scleroderma
10. Dupuytren's contracture
11. Infections of the hand
12. Tumours of the hand

Candidates should expect to be examined on the basic sciences as they relate to the various clinical topics listed above and also on relevant investigative techniques, conservative management, and operative surgery.

MEMORANDUM

From: Qualification and Accreditation Committee of FESSH

To: Members of European National Hand Societies.

Preparation for first diet of examination for European Diploma in Hand Surgery

Identification of Multilingual Examining Faculty

Candidates will be allowed to sit the Diploma Examination in any one of the five major European languages. It will accordingly be necessary to recruit a multinational, multilingual group of examiners. If you would like to be considered for appointment as an examiner, please complete this application form and return it to the Honorary Secretary of your National Hand Society.

NAME.....

ADDRESS.....

.....

Percentage of workload devoted to Hand Surgery

Linguistic Abilities:

	English	French	German	Italian	Spanish	Other languages spoken - please list & indicate fluency.
Fluent						
Moderate understanding						

Syllabus for training in aesthetic plastic surgery,
recommended by
the British Association of Aesthetic plastic surgery



SYLLABUS FOR TRAINING IN AESTHETIC PLASTIC SURGERY

RECOMMENDED BY

THE BRITISH ASSOCIATION OF AESTHETIC PLASTIC SURGEONS



THE BAAPS SYLLABUS FOR AESTHETIC PLASTIC SURGERY

1 INTRODUCTION

1.1 Aesthetic plastic surgery can be defined as the surgical normalisation of subjectively-perceived abnormalities of appearance in order to:

- (a) Relieve the symptomatic distress of self-consciousness of abnormal appearance.
- (b) Increase self-confidence and social psychological functioning.
- (c) Create aesthetic pleasure from the self-perception of increased physical attractiveness.

1.2 Qualities of an aesthetic plastic surgeon. An aesthetic plastic surgeon should have a sympathetic understanding of the motives of patients who request aesthetic surgery and have an understanding of the psychological mechanisms which underlie these motives; be sensitive to patients' anxieties, worries and desires for secrecy; be sufficiently sensitive aesthetically to recognise the disharmonies of appearance of which aesthetically-sensitive patients complain; and be able to imagine new appearances which can be created surgically. The surgeon must be capable of fine dexterity and be well-trained in the handling of tissues gently and with fine instruments.

1.3 Training in aesthetic plastic surgery. The surgeon should be knowledgeable of surgery-in-general and have completed higher surgical training in plastic surgery to the level required for accreditation. Within this background of training and in addition to it, the following requirements are considered to be appropriate for the safe and proficient practice of aesthetic plastic surgery.

2 GENERAL REQUIREMENTS

2.1 History and Bibliography. A broad understanding of the historical evolution of aesthetic plastic surgery and general knowledge of modern concepts in the science and practice of aesthetic plastic surgery from a study of the relevant literature.

2.2 Medical Photography. Knowledge of the principles and practice of good clinical photography and its relevance to patient communication, operative planning and record-keeping.

2.3 Medico-legal. Familiarity with the legal requirements for informed consent with specific reference to rates of complications reported for the range of operative procedures which the surgeon desires to perform; the requirements of confidentiality; the need for accurate documentation including medical photography.

2.4 Psychiatry and Psychology. A general understanding of: the social psychology of physical attractiveness and facial and other disfigurements; the theory of body image and its relevance to patient selection and post-operative neuroses; dysmorphophobia.

2.5 Patient Selection and Surgical Judgement. Detailed knowledge of the range of symptoms which derive from self-consciousness of aesthetic abnormalities of appearance and the motivations of patients who request cosmetic surgery. Understanding of the influence of other life stresses on patients motivations for cosmetic surgery. Familiarity with the limitations for achieving perfection of appearance of the various operative procedures that are used in aesthetic surgery. Ability to recognise psychotic disorders and behavioural characteristics of patients in whom aesthetic surgery should be avoided.

2.6 Aesthetics. An understanding of aesthetic values which determine normal and harmonious appearances including shape, proportion, symmetry, tidiness, contour, colour and inter-racial variations. Familiarity with techniques of clinical examination and analytic investigation which are employed to identify deviations from normal.

2.7 Anaesthesia. Knowledge of the comparative advantages and disadvantages of general and local anaesthesia in aesthetic plastic surgery with particular reference to peri- and post-operative bleeding; knowledge of techniques of local anaesthesia and vasoconstriction and the diagnosis and management of adverse reactions which may result from the use of agents for these purposes; pharmacology of anxiolytic and hypnotic drugs which are used in conjunction with local anaesthetic agents; methods for monitoring a patient's cardio-respiratory function during surgery.

2.8 Wound Healing. Comprehensive knowledge of local and systemic factors which influence wound healing and the formation of aesthetically acceptable scars including: the bio-mechanics of dermal collagen, techniques of fine suturing, biological reactions to suture materials, wound drainage, dressings, the use of steroids and enzymatic drugs to control oedema and bruising, nutrition. Knowledge of conditions and disorders which predispose to scars which may not be acceptable to the aesthetic surgery patient.

2.9 Management of the Patient Post-operatively. Ability to advise patients on what to expect in terms of pain, discomfort and appearance during the post-operative healing period and the modifications of lifestyle which are necessary for uncomplicated healing. Knowledge of the psychological reactions which can follow aesthetic surgery and the management of these reactions. Knowledge of the causes of patient under-satisfaction and dissatisfaction; the principles of counselling these patients and judging the benefits, limitations and risks of secondary aesthetic surgery.

2.10 Post-operative Complications. Knowledge of the range and incidence of systemic and local complications which can develop following aesthetic surgical operations, their diagnosis and treatment and pre-operative and peri-operative actions which can be taken to avoid them. Specific complications are detailed in Section 3.

3 SPECIFIC REQUIREMENTS

The following sections define the requirements of education and training which are specific to the proficient practice of aesthetic plastic surgery applied to different anatomical sites and are additional to the General Requirements described above.

3.1 AESTHETIC SURGERY OF THE NOSE

3.1.0 Abnormalities. Aesthetic disproportions of developmental origin between structural components of the nose and between the nose and other facial features; post-traumatic deformities; saddle nose deformity; sebaceous hyperplasia of the skin of the nose; septal deformity; septal deficiency; cleft lip nose; nasal dermoid cyst and sinus.

3.1.1 Surgical anatomy. Detailed knowledge of the anatomical structure of the external nose, the nasal septum, the turbinates, the structures for lachrymal drainage; relationships of the nose with the base of the skull, the orbit, the para-nasal sinuses and the palate; myology of muscles which act on the nose; the course and distribution of arteries, veins and nerves in the external nose and nasal septum and their relevance to rhinoplasty operations.

3.1.2 Physiology. General understanding of current concepts of nasal physiology and techniques for assessing airway obstruction. Knowledge of the pathophysiology of post-operative healing and its influence on post-operative changes in the appearance of the nose.

3.1.3 Pharmacology. Knowledge of the effects and side-effects of drugs which act on the nasal mucosae and turbinates.

3.1.4 Relevant diseases, syndromes, conditions. General knowledge of the causes and treatment of: rhinitis, epistaxis, polyps, hypertrophy of the turbinates, septal perforation, specific infections; the mechanisms and consequences of traumatic injury to the nose and its adjacent structures; skeletal malocclusions.

3.1.5 Aesthetics and Patient Selection. Detailed knowledge of variations in the anatomical structure of the nose between ethnic groups; methodologies for the measurement of the size and shape of the nose and its relationship with other facial features; dimensions and ratios of normal and harmonious appearances; techniques for the examination of the nose and analysis of the anatomical structures which underlie its shape. Knowledge of the intrapsychic importance of the nose particularly in the male patient. Knowledge of the aesthetic limitations of rhinoplastic operations.

3.1.6 Operative practice. Comprehensive knowledge of: the different surgical approaches to the nasal skeleton and the advantages and disadvantages of each; indications for external rhinoplasty and closed rhinoplasty; technique of sub-mucosal rhinoplasty; techniques for altering the height of the nasal bridge, deepening the glabellar, altering the size, shape and position of the nasal tip, altering the width of the alar base, thinning the nostrils, reducing sub-cutaneous fat, altering the shape and position of the columellar, altering the positions of the nasal bones, straightening out deformities of the nasal septum and reducing the inferior turbinates; techniques for producing tip projection. Knowledge of surgical techniques which are used to augment and reduce the chin and augment the malar regions of the face in combination with rhinoplasty.

Knowledge of the sources, use and abuse of autogenous tissues (bone, cartilage, dermis, fascia), non-autogenous tissues (bone, cartilage, liquefied collagen) and alloplastic materials (silicone, Proplast, hydroxylapatite) for augmentation of the nasal bridge, correction of contour deformities, support of the upper lateral cartilages and alar bases, modification of the nasal tip and modification of the columellar and the columello-labial angle; fixation of implants. Knowledge of the biological behaviour of implants both in the short term and in the long term.

Knowledge of the influence of the healing process on the changing appearance of the nose in both the short and the long terms and the operative techniques which can be used to take these changes into account.

Familiarity with the names of surgical instruments which are commonly used for septal and rhinoplastic operations.

3.1.7 Post-operative Complications. Knowledge of the incidence and range of post-operative complications and their treatment with particular emphasis on haemorrhage, infection, septal haematoma and obstruction of the airways.

3.2 AESTHETIC SURGERY OF THE FACE AND NECK

3.2.0 Abnormalities. Loose skin of the neck. Double chin. Jowling. Rhytides of lips, cheeks, glabella, forehead and lateral orbit. Lipotrophy of neck and cheeks. Skeletal disproportion. Asymmetric facial movement.

3.2.1 Surgical Anatomy. Detailed knowledge of: the trigeminal, facial and accessory nerves and cervical plexus; the fascial planes of the head and neck; the platysma, the SMAS and the muscles of facial expression; the facial, occipital and superficial temporal arteries; a general knowledge of the facial skeleton.

3.2.2 Patho-physiology. Knowledge of the ageing process as it affects the soft tissues of the face; the influence of actinic damage on the appearance and behaviour of facial skin; the changes in facial anatomy which occur in response to gain and loss of body weight; the circulatory effects of smoking on facial skin flaps.

3.2.3 Relevant Diseases, Syndromes and Conditions. Knowledge of those diseases and conditions which affect the fluid content of facial skin and its elasticity and stretch characteristics including: myxoedema, renal diseases, cardiac disease, allergies and sensitivities and disorders of connective tissue.

3.2.4 Aesthetics and Patient Selection. Knowledge of the sequence of changes in facial appearance which occur with the ageing process and ability to analyse the anatomical structures which underlie these changes. Knowledge of the various motivations of patients who request aesthetic surgery of the face and neck; an understanding of aesthetic untidiness of the ageing face and features which characterise tiredness.

3.2.5 Operative Practice. Knowledge of the specific effects of the range of operative procedures which are described to correct the various features of the ageing face. Detailed knowledge of the following operations:

3.2.5.1 Rhytidectomy: choice of incisions in relation to a patient's gender and age; extent of flap undermining; indications for and design of platysma and SMAS flaps; techniques for protecting the facial and accessory nerves and branches of the cervical plexus; nerve repair; techniques for protecting the viability of the skin flaps; techniques of sub-mandibular lipectomy and modification of facial contour by liposuction.

3.2.5.2 Operations which modify the forehead and eyebrows: the bi-coronal brow lift; the hair-line brow lift; the temporal lift; the mid-forehead lift; the supraciliary eyebrow lift; trans-blepharoplasty eyebrow suspension; selective myotomy, myectomy and neurectomy of the corrugator, procerus, frontalis and orbicularis oculi muscles to improve lines of facial expression; techniques to protect branches of the trigeminal nerves and the viability of skin flaps; factors used in the selection of procedure(s) for a given patient:

3.2.5.3 Secondary Face Lift: modifications relating to the design of incisions and extent of flap undermining.

3.2.5.4 Adjunctive Procedures: local excisions of skin; malar implants; chin implants; rhinoplasty; blepharoplasty; dermabrasion; chemical peel; collagen injections; fat grafts. (Ref. 3.1.6, 3.3.6, 3.7.6, 3.8.6)

3.2.5.5 Surgery for Facial Palsy: lateral tarsorrhaphy; medial canthoplasty; procedures which enable eyelid closure — gold weights, steel springs; static slings; utilisation of muscles of mastication; selective

myotomy, myectomy and neurectomy; skin excisions; cross facial nerve grafting; micro-neuro-vascular transfer of distant muscle flaps; factors used in the selection of procedures in the given patient.

3.2.6 Post-operative Complications. Knowledge of the incidence, diagnosis, prophylaxis and treatment of: airway obstruction; haematoma; infection; skin necrosis; alopecia; chronic facial oedema; nerve damage; abnormal hairline; wide scars; hypertrophic scars.

3.3 AESTHETIC SURGERY OF THE EYELIDS

3.3.0 Abnormalities. Ptosis. Familial baggy eyelid syndrome. Exophthalmos. Loose skin. Eye bags. Rhytides. Cutaneous lesions causing cosmetic defect.

3.3.1 Surgical Anatomy. Detailed knowledge of the structural anatomy of the eyelids, orbits and eyes with particular reference to: myology of the orbicularis oculi, levator muscles and extrinsic muscles of the eye; the lacrimal glands; the compartments of peri-orbital fat; fascial septa; ligaments; blood vessels and nerves.

3.3.2 Physiology. Knowledge of the production, flow and drainage of lacrimal and mucous secretions which protect the eye; the effects of the ageing process on the skin, muscles and fasciae of the eyelids.

3.3.3 Pharmacology. Knowledge of the use of steroids, antibiotics and local anaesthetic agents in and around the eye; the effects of adrenaline on the eye, its blood supply and its lubrication.

3.3.4 Relevant Diseases, Syndromes and Conditions. Familiarity with the causes, investigation and treatment of: ptosis, oedema of the eyelids, exophthalmos, keratitis sicca, ectropion, entropion, xanthelasma, Meibomian cyst.

3.3.5 Aesthetics and Patient Selection. Ability to diagnose anatomical deviations from normal which characterise tiredness, worry and age; the contribution of eyebrow ptosis, laxity of muscles and fasciae and the location and quantification of protruding peri-orbital fat. Knowledge of anatomical variations which characterise ethnic background, in particular, the oriental eyelid. Ability to test for visual acuity and dry eye. Familiarity with the limitations of aesthetic surgery particularly in the treatment of malar bags and rhytides of the lower lids.

3.3.6 Operative Practice. Comprehensive knowledge of:

Upper Lid Blepharoplasty: the location of skin excisions, techniques for skin excision at the inner canthus, excision of orbicularis oculi, excision of peri-orbital fat, correction of ptosis, creation of tarsal fold; repair of orbital septum.

Lower Lid Blepharoplasty: myocutaneous, subcutaneous and trans-conjunctival approaches, excision of orbicularis oculi and peri-orbital fat, wedge excision of the tarsus, excision of skin with techniques for preventing over-correction; lateral canthus suspension.

Correction of Ptosis: repair and modification of the levator mechanism; frontalis slings.

Correction of Lower Lid Ectropion: Kuhnt-Szymanowski procedure, temporal rhytidectomy, skin graft.

Chemical Peel, Dermabrasion, Collagen injections, fat grafting for rhytides.

Operations which modify the forehead and eyebrows. (Ref. 3.2.5.2)

3.3.7 Post-operative Complications. Knowledge of the diagnosis and treatment of: reactionary haemorrhage, haematoma, infection, corneal abrasion, chemosis, chronic oedema, ectropion, trichlasis; awareness of the risk of blindness.

3.4 AESTHETIC SURGERY OF THE EARS

3.4.0 Abnormalities. Congenital malformations resulting in cosmetic defect. Abnormal prominence. Scarring and deformity caused by trauma and burn.

3.4.1 Surgical Anatomy. General knowledge of the embryological development of the external ear and errors which produce the range of congenital malformations which are surgically treatable; the topographical and histological anatomy of the external ear, its blood supply and innervation and its relationships with the facial nerve; the anatomy and function of the auditory system as a whole.

3.4.2 Physiology. General knowledge of the function of the auditory canal and potential disfunctions which can be caused by surgery on the external ear; nutrition of auricular cartilage and the dynamics of its elasticity.

3.4.4 Relevant Diseases, Syndromes and Conditions. Syndromes associated with congenital malformation of the ears (eg. renal abnormalities), Otitis externa. Cauliflower ear. Epidermoid cysts. Congenital cysts and sinuses. Chondro-dermatitis.

3.4.5 Aesthetics and Patient Selection. Knowledge of the normal configuration of the external ear and its normal position on the head in relation to other facial features; knowledge of a classification to differentiate the congenital abnormalities with regard both to the surgical procedures required and to the aesthetic result which may be surgically attainable; knowledge of the social psychological consequences of abnormal appearances of the ears and factors which influence parental behaviours towards their children with such abnormalities.

3.4.6 Operative Practice. Detailed knowledge of the common surgical procedures used for the treatment of: prominent ears; conchal deformation; cup ears; split earlobes; buried upper poles; accessory auricles; congenital deformity of the earlobes; cauliflower ear; cysts; pre-auricular sinuses; keloid scars.

General knowledge of the operative procedures which are described for the reconstruction of microtia, anotia and absence of the external auditory canal; familiarity with techniques available for the reconstruction of the traumatically damaged ear including post-auricular skin tubes, cartilage grafts, composite grafts, skin expansion; knowledge of modern technology of prosthetics including osseo-integration.

Knowledge of techniques of dressing the ears for their protection during the post-operative period.

3.4.7 Post-operative Complications. Knowledge of the incidence, diagnosis and management of: haematoma; haemorrhage; infection; pressure necrosis of skin leading to exposure of cartilage; chronic sinus formation; hypertrophic and keloid scar formation; recurrence of the deformity.

3.5 AESTHETIC SURGERY OF THE BREASTS AND CHEST

3.5.0 Abnormalities. Congenital amasia. Virginal hypertrophy. Mid-life hypertrophy. Poland's syndrome. Asymmetry. Tubular breasts. Atrophy. Ptosis. Inversion of the nipples. Gynaecomastia. Mastectomy. Congenital deformities of the thoracic cage including pectus carinatum and pectus excavatum.

3.5.1 Surgical Anatomy. Detailed knowledge of the topographical and histological anatomy of the breast with special reference to the blood supply of its parenchyma and the blood supply and innervation of the nipples in both the female and the male; the relations of the breast with the external muscles of the thorax and the axilla.

3.5.2 Physiology. Knowledge of the structural changes of the female breast in menarche, menses, pregnancy, lactation, involution, menopause and ageing and the changes in the male breast in adolescence and in response to hormonal drugs; the vascular changes in the breast during the menstrual cycle.

3.5.4 Relevant Diseases, Syndromes and Conditions. General knowledge of the pathology, diagnosis and treatments of: carcinoma of the breast; benign tumours; chronic mastitis; mastodynia; the influence of implanted prostheses on the radiological examination of the breast.

3.5.5 Aesthetics and Patient Selection. An aesthetic appreciation for concepts of normal proportions for the female figure in different cultural environments; the normal position of the nipple on the breast; a general appreciation the dimensions and ratios of normal and harmonious appearance of the breasts; classifications of breast ptosis and peri-prosthetic encapsulation. Knowledge of techniques for measuring the volumes of asymmetrical breasts and selecting appropriately-sized implants for predictable augmentation. Familiarity with the distress which derives from self-consciousness of abnormal appearances of the breasts and the social psychological consequences.

3.5.6 Operative Practice. Detailed understanding of pre-operative planning, operative techniques and post-operative management of the following procedures:

Reduction Mammoplasty. Knowledge of the range of techniques that can be used for reducing the size of the breasts; the principles on which they are designed with particular reference to preserving the bloody supply and innervation of the nipples, the ability to breast-feed and the extent of scarring; the advantages and disadvantages of each. The surgeon should have detailed knowledge of the operative steps for at least two chosen techniques.

Augmentation Mammoplasty. Knowledge of the operative techniques for creating a pocket for the implant; knowledge of the advantages and disadvantages of sub-muscular and sub-glandular placement of implants; axillary, areolar and sub-mammary approaches; the variety of manufactured implants (saline-filled, gel-filled, double lumen, thick-walled, thin-walled, foam-covered, textured, etc.); the use of drains, steroids, antibiotics and massage of implants to minimise encapsulation.

Mastopexy. Detailed knowledge of the operative procedure of at least one method for the correction of breast ptosis with an understanding of its limitations both in the short term and in the long term; difficulties of combining augmentation with mastopexy; the advantages and disadvantages of one-stage and two-stage augmentation-mastopexies.

Capsulotomy and Capsulectomy. Knowledge of the advantages and disadvantages and the operative techniques of closed capsulotomy, open capsulotomy, capsulectomy, exchange of implant and choice of pocket in the treatment of peri-prosthetic encapsulation.

Breast Reconstruction after Mastectomy. Knowledge of the principles and operative techniques which are currently used to gain additional skin (tissue expansion, local and distant flaps), create a breast mound (implants, TRAM flap) and create symmetry (reduction/augmentation of the opposite breast, nipple reconstruction, nipple prostheses); knowledge of the advantages and disadvantages of each; knowledge of the effects of radiotherapy and their influence on the choice of technique for the individual patient.

Other Operations. Excision of Gynaecomastia via peri-areolar or trans-areolar incisions and the use of liposuction both in place of excision and as an adjunct to excision; eversion of Inverted Nipples; excision of supernumerary nipples; treatment of chest wall deformities by pre-formed implant, silicone elastomer and/or resection of costal cartilages.

3.5.7 Post-operative Complications. Comprehensive knowledge of the incidence, diagnosis and management of complications which can occur following the above with particular emphasis on: haemorrhage; haematoma; infection; avascular necrosis of nipple; skin, breast and flaps; peri-prosthetic fibrous encapsulation; hypertrophic and keloid scars; residual abnormalities of breast shape, nipple position and skin/scar contour; ventral hernia; psychological reactions.

3.6 AESTHETIC SURGERY OF THE ABDOMEN

3.6.0 Abnormalities. Lax skin, Striae. Lipotrophy and/or Divarication of the recti causing abnormal contour. Abdominal apron associated with obesity.

3.6.1 Surgical Anatomy. Detailed knowledge of the surface anatomy of the abdominal wall, the origin and route of the main blood vessels and nerves which supply it, its lymphatic drainage; the fascial planes; myology of the abdominal wall; the rectus sheath; the sites of herniae.

3.6.2 Physiology. Knowledge of the effects of pregnancy on the structure of the fascial sheaths and skin, the metabolism of subcutaneous fat and the metabolic consequences of obesity and operations on the stomach and jejunum to promote weight loss.

3.6.4 Relevant Diseases, Syndromes and Conditions. Knowledge of herniae of the abdominal wall (umbilical, paraumbilical, Spigelian, lumbar, femoral, inguinal and incisional); diagnosis of intra-abdominal distension as a cause of the pot belly appearance.

3.6.5 Aesthetics and Patient Selection. Familiarity with the aesthetics of abdominal shape and contour which combine to give normal appearances for different cultures; knowledge of the limitations of aesthetic surgery to achieve these ideals. Understanding of the causes of psychological distress which derives from self-consciousness of abnormalities of shape, consistency and surface texture of the abdominal wall.

3.6.6 Operative Practice. Detailed knowledge of pre-operative planning and operative techniques for the following procedures:

Abdominoplasty. Design of skin excisions which are commonly used and their indications; techniques for plication of the rectus sheath; resiting of the umbilicus; umbilicoplasty; repair of para-umbilical and Spigelian herniae.

Abdominoplasty with Liposuction. Mini-abdominoplasty. Limitations and risks of liposuction above and below the umbilicus. (Ref. 3.7.6.) Techniques for minimising the length of scars resulting from skin excisions.

Apronectomy.

Adjunctive Procedures. Knowledge of operative techniques used to improve deformities residual from primary abdominoplasties including liposuction, ilpectomy, scar revision and umbilicoplasty. Combination of abdominoplasty with aesthetic surgery of the breasts. (Ref. 3.5.6)

3.6.7 Post-operative Complications. Comprehensive knowledge of the incidence, diagnosis and management of complications which can occur following the above with particular emphasis on: haemorrhage, haematoma, infection, avascular necrosis of skin, wound dehiscence, paralytic ileus, deep vein thrombosis, hypertrophic scars and keloid scars.

3.7 AESTHETIC SURGERY OF SUBCUTANEOUS FAT

3.7.0 Abnormalities. Lipotrophies, Lipomata. Deformities resulting from severe weight reduction. Gynaecomastia.

3.7.1 Surgical Anatomy. Detailed knowledge of the gross and histological anatomy of subcutaneous fat, the distribution of localised deposits of deep fat and the attachments of the fascial planes which confine them; the embryological development of fat cells; neonatal brown and white fat; factors which determine the distribution of fat in a given individual.

3.7.2 Physiology. General knowledge of current theories of fat metabolism with particular reference to the development of lipotrophies; principles of weight-reducing diets; surgical procedures on the stomach and jejunum to promote weight loss.

3.7.3 Pharmacology. Knowledge of drugs which suppress appetite, drugs which influence body weight such as corticosteroids and androgenic steroids and drugs which cause gynaecomastia.

3.7.4 Relevant Diseases, Syndromes and Conditions. Dercum's disease, Romberg's disease, lymphoedema, liposclerosis, benign and malignant tumours of subcutaneous fat.

3.7.5 Aesthetics and Patient Selection. Knowledge of techniques of examination which identify the position and extent of lipotrophies which are suitable for treatment by liposuction including the use of radiographic imaging. Knowledge of good areas, difficult areas, non-forgiving areas and taboo areas; the importance of skin tone. Knowledge of the consequences, limitations and risks of fat removal by liposuction in different parts of the body, in male and female patients and at different ages. Familiarity with techniques of pre-operative assessment.

3.7.6 Operative Practice. Detailed knowledge of the following techniques:

Lipoplasty. Instrumentation including choice of cannulae and types of vacuum pumps; positioning of the patient on the operating table; location of incisions; choice and location of cannula during liposuction; feathering; assessment of fat removal; protection of skin, deep fascia and muscle; 'wet' and 'dry' techniques and their indications; intravenous fluid replacement; compression dressings, massage and ultrasound during post-operative healing.

Dermolipectomies. Thighplasty: sites of excisions; preservation of trochanteric contour; protection of vulva; concealment of scars. Brachioplasty: location of excisions; concealment of scars.

Fat Transplants. Dermal-fat grafts. Fat cell injections. Choice of donor sites; techniques for harvesting and preparing grafts; techniques of immobilisation; long-term behaviour of grafts.

Combination Procedures. Familiarity with the application of lipoplasty by liposuction as an adjunct to abdominoplasty, excision of gynaecomastia, rhytidectomy, reduction mammoplasty, adjustment of contour deformities other than those caused by lipotrophy.

3.7.7 Post-operative Complications. Comprehensive knowledge of the incidence, diagnosis and management of complications which can occur following the above with particular emphasis on: haematoma, seroma, infection, deep vein thrombosis, superficial phlebitis, fat embolus, anaemia, sensory impairments, scar hypertrophy, contour irregularities, laxity of skin.

3.8 AESTHETIC SURGERY OF THE SKIN

3.8.0 Abnormalities. Cutaneous naevi, papillomata, keratoses, haemangiomas. Congenital pigmented naevi. Sebaceous hyperplasia and rhinophyma. Acne scarring. Tattoos. Facial rhytides. Alopecia. Hirsutism. Scars.

3.8.1 Surgical Anatomy. Detailed knowledge of the histological anatomy of skin in different parts of the body, at different ages and in different races with particular emphasis on the arrangement of dermal collagen and its relevance to the planning of surgical incisions and scar formation; Langer's lines; myology of muscles of facial expression.

3.8.2 Physiology. Detailed knowledge of the processes of wound healing by primary and secondary intention, the metabolism of collagen in these processes and current theories relevant to the formation of hypertrophic scars, keloid scars and abnormal pigmentation. Knowledge of the effects on skin caused by the ageing process and exposure to the sun and their relevance to post-operative healing.

3.8.3 Pharmacology. Knowledge of the effects of steroids on skin and scar tissue and their use in the treatment of hypertrophic and keloid scars.

3.8.4 Relevant Diseases, Syndromes and Conditions. General knowledge of acute and chronic dermatological conditions with particular emphasis on benign and malignant tumours. Ehlers-Danlos syndrome. Cutis laxa. Solar elastosis. Systemic and local causes of alopecia.

3.8.5 Aesthetics and Patient Selection. Appreciation of the aesthetic importance of irregular surface contour, untidiness and discolouration in scars and skin grafts; knowledge of cosmetic units of the face; knowledge of the potential social psychological disadvantages of the abnormalities defined under 3.8.0.

3.8.6 Operative Practice. In addition to a comprehensive knowledge of plastic surgical techniques used for wound closure by suture, by stapling and by tissue adhesives, the surgeon should be knowledgeable of the advantages, limitations and risks of the following techniques:

Excision and Suture of skin lesions and scars incorporating Z-plasty, W-plasty and local flaps.

Excision and Graft of tattoos, large pigmented naevi, etc.

Reconstruction by Tissue-expanded Flaps of male pattern baldness and other alopecias, tattoos, giant naevi, scars, skin grafts; bio-mechanical principles of tissue expansion; choice of expander; operative techniques; design of expanded flaps.

Laser Treatment of tattoos, naevi and thread veins: types of lasers and their indications; test areas; techniques including computerised delivery.

Salabrasion and use of Tannic Acid in the treatment of tattoos.

Dermabrasion in the treatment of irregular scars, acne scars and facial rhytides: techniques; instrumentation.

Chemical Peeling in the treatment of acne scars, facial rhytides and hyperpigmentation: formulae; techniques for controlled peeling; phenol toxicity; post-operative management.

Liquified Bovine Collagen Injections in the treatment of facial rhytides and depressed scars: limitations; possible side-effects; choice of collagen preparations; techniques of injection.

Hyphrication, Electrolysis and Injection Sclerotherapy in the treatment of naevi and thread veins.

Radiotherapy, Steroid Injections, Silicone Dressings and Compression in the treatment of hypertrophic and keloid scars.

Cosmetic Camouflage. Indications, limitations and techniques.

3.8.7 Post-operative Complications. Knowledge of the incidence, diagnosis and management of complications which are known to occur following the use of these treatments including wound infection, flap necrosis, hypertrophic and keloid scarring, hyperpigmentation and depigmentation; knowledge of prophylactic measures which can be taken to avoid these complications.

12

Requirements for Higher Specialist Training in Plastic Surgery

PLASTIC SURGERY

**Requirements for
Higher Specialist Training
in Plastic Surgery**

Contents

	Page No
Introduction	1
1. RECOMMENDATIONS	1
Entry Criteria	
Annual Assessments	2
Log Books	2
Completion of Training	2
2. TRAINING PROGRAMMES	2
Research	4
Prior Training	4
Implementation	4
Role of the SAC in Setting up Rotations	4
Recommendations for Courses and Meetings Appendix 1	5
Syllabus of Training Appendix 2	6

Requirements for Higher Specialist Training in Plastic Surgery

INTRODUCTION

The SAC has been charged with defining the requirements of training in the specialty to comply with the recommendations of the Calman report. The detailed recommendations are set out below.

In a small specialty covering such a wide spectrum as Plastic Surgery rotations are essential, and funding will also have to be provided for removal expenses.

Because of the small number of trainees and trainers in any one region, Plastic Surgery trainees will need to attend more national courses and meetings than trainees in larger specialties. Specific recommendations for study leave are attached (Appendix 1).

It is highly desirable that a trainee in Plastic Surgery should have attended an ATLS course or its equivalent before obtaining the CCST.

1.0 RECOMMENDATIONS

1.1 Higher Specialist Training will be a six year continuum in posts approved by the SAC, of which at least five years will be clinical.

There should be some flexibility in how this is arranged. After successful completion of training the trainee will be awarded a Certificate of Completion of Surgical Training (CCST). Sub-specialty training can start during the fifth year and can continue in the sixth year.

1.2 Entry into Higher Specialist Training

This will be by an Appointments Committee after satisfactory completion of basic surgical training (or equivalent) and possession of MRCS/AFRCS (or equivalent), such equivalence being jointly agreed by the Surgical Royal Colleges of Great Britain and Ireland.

It is important for basic surgical trainees to have the opportunity of experience in the specialty. The SAC would welcome more trainees on rotation as part of the "common trunk" but does not believe that experience of the specialty at this stage is essential for potential Plastic Surgery trainees. Individuals should be encouraged to apply from a range of different backgrounds.

It should be possible to enter HST immediately after completion of BST. However, it is likely that the demand for training posts will continue to exceed supply, so that most trainees will have to enter a holding post. This would be an appropriate opportunity for trainees to gain experience in Plastic Surgery or a related specialty.

2.3 In summary, training will be progressive and will be divided into Years 1 & 2, Years 3 & 4, and Years 5 & 6. The programme for the first two years of Higher Specialist Training should cover the whole spectrum of the specialty at a junior level, concentrating mainly on principles of management. It should include:

- Management of and relationships with the Plastic Surgery outpatient and inpatient
- Principles of Reconstructive Surgery
- Principles of Aesthetic Surgery
- Management of Acute Trauma
- Malignant Skin Tumours
- Benign Skin Conditions
- Administration
- Level 1 (basic) sub-specialty training in:
 - Brans 1
 - Paediatric Plastic Surgery
 - Head & Neck Tumours 1
 - Elective Hand Surgery 1

The trainee should be involved in each of these sub-specialties for a minimum of six months, but it is recognised that in almost all cases he will be working in several at the same time. Clinical experience should be graded and should progress from assisting at operations, through supervised operating of simpler procedures to independent operating on simpler procedures. Sub-specialty Surgery at this stage should largely be confined to assisting. Outpatient attendance should progress from "sitting in" to seeing returned patients under Consultant supervision.

2.4 During Years 3 & 4 the trainee should continue the progression towards increasing responsibility. He should have further experience at a higher level (Level 2) in Reconstructive and Aesthetic Surgery of the face, breasts, trunk and limbs; surgical management of metastatic malignant disease; and in the following sub-specialties:

- Brans 2
- Hand 2
- Head and Neck Tumours 2
- Cleft Lip and Palate
- Reconstruction of Genitalia
- Oculoplastic Surgery
- Limb Trauma

Training must take place in an approved Unit or Units. Training in the complete spectrum of Aesthetic Surgery is unlikely to be possible in NHS hospitals, and arrangements should be made for trainees to accompany Consultants in their private practice to gain this experience. Alternatively, secondment for a period of whole time experience should be arranged.

2.5 In the fifth and sixth years the trainee may continue general specialty training at a more advanced level or have the opportunity to enter advanced sub-specialty training for all or part of the time. This could be either within the rotation in defined posts or, alternatively, he could seek posts elsewhere. This would introduce further choice and competition into training. One year of training overseas can be counted towards the CCST.

1.3 **Annual Assessments**
After every 12th month the first six months must be recognised as probationary, and be followed by a rigorous assessment thereafter. The trainee must be aware that his appointment can be terminated after this or after any of the subsequent annual assessments.

If a trainee is dismissed after six months or a year we suggest this place be filled by another first year trainee. The filling of vacancies later in training needs further consideration, as experience has shown that vacancies are difficult to find. Such vacancies may provide good opportunities to offer periods of training to European trainees, or secondments for Specialist Registrars from other programmes.

1.4 **Log Books**
The trainee will keep a record of his experience in a log book in a form approved by the SAC and the British Association of Plastic Surgeons. He is required to produce this at his annual assessments and to the SAC before the granting of a CCST.

1.5 **Completion of Training**
After award of the CCST the trainee will be eligible to enter into independent practice. He may, however, opt for further sub-specialty training, a research post or a visit overseas. Alternatively, he will be able to remain in his training post for a limited period (6 months), and at the discretion of the Postgraduate Dean, for a further single extension) if he is unable to obtain a Consultant post immediately.

2.0 **TRAINING PROGRAMMES**
The SAC does not wish to impose a rigid uniformity of training on every trainee, and hopes to encourage a healthy diversity of interests and skills among fully trained Plastic Surgeons. The recommendations set out below are designed to be flexible, and training programmes will vary in the way they fulfil these requirements.

2.1 The trainee must train in more than one Unit and be exposed to the work of at least six Consultants. During training he should assume increasing responsibility, under appropriate supervision, for conditions of progressively increasing complexity. The Units should have organised teaching programmes, instruction in basic sciences, administration and management, and staff meetings. Two sessions must be allocated for research or private study within the working week.

2.2 The SAC will encourage trainees to move outside their basic rotations, either on direct exchanges with colleagues in other approved programmes, or on secondment in the UK or overseas. Only one year of overseas training will count towards the CCST. Such moves should be arranged between the programme directors concerned, with the approval of the SAC prior to implementation.

A detailed syllabus will be found in Appendix 2.

RESEARCH

- 2.6 A period of up to one year in supervised research previously approved by the SAC will be encouraged, but four years of clinical training will be required before the trainee sits the Intercollegiate Specialty Exam and five years before the award of the CCTS. Therefore, if a period of full-time non-clinical research is carried out during the first four years, or more than one year during the 5th or 6th years, clinical training will have to be extended by an equivalent time. The SAC will require evidence that this research time has been profitably used.
- 2.7 Temporary vacancies should be filled with short term locum appointments - training or service - or those from other specialties or by secondment of Specialist Registrars from other programmes.
- 2.8 Prior training may be recognised towards HST during the transition phase of admission to the Unified Training Grade. The Specialty Training Committee (STC) and the relevant Postgraduate Exam will assess each individual for placement on the Unified Training Grade. Up to one year of research may be recognised towards Higher Surgical Training.

3.9 IMPLEMENTATION OF TRAINING PROGRAMMES

- 3.1 Units are invited to set up rotations with others and to develop programmes to meet the requirements set out above. In planning these rotations they should remember that:
- rotations with nearby Units may, in many cases, avoid the need for trainees to move home
 - Units should link up which can complement each other's training
 - programmes need not be the same for every trainee
 - consideration should be given to whether the programme can provide sub-specialty training for 6 months or a year (in either 5th or 6th year) without compromising the training of more junior trainees.
 - plans for rotations must be submitted to the SAC for approval.
- 3.2 The role of the SAC in setting up rotations:
- the SAC will not enforce programmes, but will approve or disapprove of those submitted to it
 - however, the SAC can offer advice
 - the SAC must ensure that smaller Units with educational approval, are included in rotations and, if necessary, will insist on their inclusion.

Appendix 1

Recommendations by the SAC in Plastic Surgery and BAPS for the Minimum Number of Courses and Meetings to be Attended by Trainees in the Specialty

These recommendations apply to overseas trainees as well as UK/EEA career trainees. They are linked to the modular training syllabus outlined in Appendix 2.

Part 1 - Year 1 and 2

Successful completion of BST should ensure that trainees at this grade have attained basic surgical skills. There are further skills required in Plastic Surgery, particularly microsurgical expertise and the management of trauma.

- a) A microsurgical training course
- b) An ATLS course
- c) One national meeting per year

Part 2 - Year 3 and 4

Training at this level will develop clinical skills with increasing responsibility in Plastic Surgery. More advanced teaching courses are required at this level in preparation for the final FRCS in Plastic Surgery.

- a) At least two advanced courses in Plastic Surgery per year
- b) One BAPS scientific meeting per year
- c) One sub-specialty meeting per year

Part 3 - Years 5 and 6

More advanced general Plastic Surgery training with the possibility of sub-specialty training and/or research.

- a) At least two advanced courses per year
- b) One BAPS scientific meeting per year
- c) Two sub-specialty meetings per year
- d) Two national meetings per year

Special consideration should be given if the trainee is presenting a paper whatever the grade.

Appendix 2

Syllabus of Training in Plastic Surgery Leading to Certification with recommendations for Modules of Training

INTRODUCTION

The syllabus is divided into a series of modules. During each module the trainee should learn the following:

- relevant anatomy, embryology, physiology, biochemistry and pharmacology
- relevant pathology
- relevant associated diseases and conditions
- appropriate pre-operative investigations and patient assessment
- range, indications and principles of relevant operations
- post-operative complications and their management
- recent advances
- relevant auxiliary interventions, e.g. radiotherapy, psychological support, physiotherapy, occupational/speech therapy, etc.

Training in modules should include: selected reading, tutorials, attendance at appropriate Meetings/Courses, attachment to Consultants with special interests, attendance at special clinics and attachment to inter-departmental specialities where appropriate.

Modules for Part 1 (Years 1 and 2) relate mainly to principles of management. Those for Parts 2 and 3 imply increasing experience in practical techniques and in patient management.

TRAINING IN OPERATIVE AND CLINICAL PRACTICES

This will be undertaken throughout the continuum of training. The spectrum of operations to be learnt is described in the revised Plastic Surgery log book published by BAPlS. The SAC in Plastic Surgery is desirably guidelines for the quantity of operative training which should be undertaken. Where possible during Part 2 of the continuum, operative training should be expanded to coincide with related modules. It is expected that part of the clinical and operative training in Aesthetic Surgery that is necessary for competent independent practice may need to be conducted in the private sector. Trainees should be enabled to attend Consultants' private operating lists and consulting rooms.

The Programme Director should be responsible for timetabling modules, of which two or more could run concurrently, eg. 'Principles of Reconstructive Surgery' could well run throughout the period of core training. At the end of each year the trainee will be formally assessed.

PART 1 (YEARS 1 AND 2): INTRODUCTORY TRAINING MODULES

1.1 Principles of Reconstructive Surgery

- a) wound healing and wound repair
- b) transfer of tissues by free graft
- c) transfer of tissues by vascular pedicle
- d) transfer of tissues by microvascular anastomosis
- e) use of non-scarificious grafts/implants
- f) tissue expansion

1.2 Principles of Aesthetic Surgery

- a) patient selection
- b) scars, cosmetics, behaviour; hypertrophic/keloid; pathobiology; management
- c) treatment of benign skin conditions (naevus, naevi, etc)
- d) laser therapy

1.3 Management of Acute Trauma

- a) injuries of the hand, including tendons, nerves, blood vessels and bones; hand infections
- b) soft tissue injuries of the face, fractures of the nose, malars and principles of management of maxillary and mandibular fractures
- c) injuries of the limb, including compound fractures

1.4 Burns 1

- a) resuscitation of major burns, including nutrition and infection
- b) primary treatment of burn wounds
- c) types and sites of burns
- d) management of post-burn scarring

1.5 Paediatric Plastic Surgery

- a) general principles of cleft lip and palate management
- b) general principles of craniofacial surgery
- c) general principles of hypospadias management
- d) general principles of congenital hand surgery
- e) prominent ears

1.6 Malignant Skin Tumours

- a) melanoma, including surgical management of metastatic spread to regional lymph nodes; management of other metastases
- b) squamous and basal cell carcinomas
- c) soft tissue sarcomas of skin and other tissues
- d) non-surgical methods of treatment

- 2.7 **Surgical Management of Metastatic Malignant Disease of Skin and Soft Tissues**
Including radical lymph node dissection of groin, axilla and neck.
- B. SUBSPECIALTY MODULES**
- Part 2 trainees will be required to become familiar with the following modules but will not necessarily be expected to have operative training beyond that of assisting.
- Part 2**
- Management of major burns, resuscitation, nutritional support, infection, skin cover, surgical rehabilitation of post-burn scar contractures, ulcers etc, reconstruction of the burned face, psychological support.
- Child Lip and Palate**
- Indications, principles and practice of primary and secondary soft tissue reconstructions, alveolar bone grafting, rhinoplasty techniques, principles of orthodontics and orthognathic reconstruction, principles of speech development and investigation of speech disorders, pharyngoplasty.
- Reconstructive Surgery of the Genitalia**
- Hypopadias, epispadias, virginoplasty, gender reassignment.
- Head Surgery 2**
- Congenital malformations, complex post-traumatic surgical rehabilitation, rheumatoid arthritis, tumours.
- Oculoplastic Surgery**
- Proptis, enophtos and ectropion, blepharophimosis, teleophthalmia, entropion, reconstruction for lacrimal drainage.
- Head and Neck Surgery**
- Carcinoma of the floor of the mouth, palate, nose and maxillary antrum; surgical resections, functional and radical neck dissections, functional and aesthetic reconstructions, mandibular reconstructions, prosthetics, parotidomictomies, reconstruction for facial palsy.
- Aesthetic Surgery**
- As described in the syllabus of training recommended by BAAPS.
- Limbs/Trauma**
- Primary repair and reconstruction of major soft tissue and skeletal injuries in conjunction with interlocking prosthesis; surgical rehabilitation; amputations; prosthetics.
- At the completion of Part 2 the trainee should be ready to pass the Intercollegiate Specialty Examination.

PART 3 (YEARS 5 AND 6)

The trainee may opt to spend part or all of years 5 and 6 in more advanced general plastic surgical training, or in subspecialty training in one or more of the sub-specialties listed in the Sub-specialty Modules for Part 2 above, or in Craniofacial Surgery. This training must be in a Unit

-9-

- 1.7 **Head and Neck Tumours 1**
- a) Principles of management
- 1.8 **Effective Head Surgery 1**
- a) Depyriden's contracture
b) carpal tunnel
c) simple post-traumatic rehabilitation
- 1.9 **Administration and Management**
- NHS, private sector, medico-legal, preparation of medical reports, audits, ethics.

PART 4 (YEARS 3 AND 4)

Trainees should learn the theory of all the following modules, and develop practical experience of most of the operations described.

APPLIED RECONSTRUCTIVE AND AESTHETIC PLASTIC SURGERY

- 2.1 **Reconstructive and Aesthetic Surgery of the Face and Lips**
- Repair and reconstruction of facial defects, reconstruction of upper and lower lips, face lifts, treatment of hydrops.
- 2.2 **Reconstructive and Aesthetic Surgery of the Nose**
- Reconstruction of the defect, SMR, tubinectomy, reconstructive rhinoplasties, aesthetic rhinoplasties, augmentation rhinoplasty.
- 2.3 **Reconstructive and Aesthetic Surgery of the Eyelids**
- Tumour, reconstruction of skin defects, reconstruction of the upper and lower eyelids, reconstruction of the eyebrow, ectropion, blepharoplasty including reduction of folds, muscle and fat, brow lifts.
- 2.4 **Reconstructive and Aesthetic Surgery of the Ears**
- Tumours of the ear, otitis externa, partial and total pinnaomictomies, principles of reconstruction for microtia and aotia, prosthetics including osseointegration, skin grafts, keloid scars.
- 2.5 **Reconstructive and Aesthetic Surgery of the Breasts**
- Benign and malignant tumours of the breast, gynaecomastia, Poland's syndrome, reconstruction of the breast and lipids after mastectomy and lumpectomy, subcutaneous mastectomy, reduction and augmentation mammoplasties, mastopexy.
- 2.6 **Reconstructive and Aesthetic Surgery of the Trunk and Limbs**
- Reconstruction of defects of the chest and abdominal walls, pectus excavatum, abdominoplasties including adjacent liposuction, surgery of pressure sores and ulcers. Treatment of hypertrophies by resection-assisted liposculpture and dermolypectomies.

-8-

UEMS Charter on Continuing Medical Education CME in Plastic Surgery



UNION EUROPEENNE DES SOCIÉTÉS DE SPÉCIALITÉ DE
CHIRURGIE PLASTIQUE, RECONSTRUCTIVE & ESTHÉTIQUE
U.E.M.S.

UEMS Charter on Continuing Medical Education CME in Plastic Surgery

U.E.M.S. Section of Plastic, Reconstructive & Aesthetic Surgery Continuing Medical Education

Introduction:

The U.E.M.S. Section of Plastic, Reconstructive & Aesthetic Surgery has drawn up these guidelines at the request of the Secretary General of the U.E.M.S. and in response to the need for maintenance of a high standard of practice amongst those who have completed their recognised specialty training. In this way, quality assurance for the patient can be achieved. The desired outcome of Continuing Medical Education is an improvement in clinical practice.

The management of the U.E.M.S. in 1994 have already approved a Charter on Continuing Medical Education. Recommendations have also been set out by the Advisory Committee on Medical Training (A.C.M.T.) and accepted in October 1994. It is therefore well established that doctors must remain up to date in their specialty. This document deals solely with specific recommendations for Plastic, Reconstructive & Aesthetic Surgery.

1. Management Structure:

It is recommended that the European Board of Plastic, Reconstructive & Aesthetic Surgery should manage Continuing Medical Education in order to achieve continuity between the preparatory courses for Board Examinations, standards for examinations, criteria of accreditation and the maintenance of standards throughout the post-accreditation professional career.

2. Credit System:

A credit system for proof of individual Continuing Medical Education is recommended. A credit is a single unit of C.M.E. and corresponds to one hour of Educational Activity. A minimum number of 50 credits per year should be achieved (see appendix 1).

The credit system has two main categories:

- Internal Continuing Medical Education
- External Continuing Medical Education

There must be a minimum of 25 credits in each category.

3. Categories of Continuing Medical Education:

These categories are based on those recommended by the Senate of Surgery of Great Britain and Ireland in November 1995 and also by the Royal Australian College of Surgeons in 1995.

Category A:- Internal C.M.E. - Hospital Based

Attendance at hospital meetings:

Postgraduate meetings

- Research Meetings
- Journal Club
- Department meetings
- Hospital ground Rounds
- Clinical outcome meetings (Audit)
- Other (to be specified)

Category B:- Internal C.M.E. - Independent Study

- Reading medical literature (Journal and Books)
- Medical writing
- Editorial or refereeing work.
- Audio tapes
- Video tapes
- Self assessment examinations
- Preparing lectures

Category C:- External C.M.E. - Major Scientific Meetings

- National meetings
- International meetings
(N.B. These must be CME approved meetings)

Category D:- Special C.M.E. Activities

- Courses
- Workshops
- Seminars
- Arranged visits to specialised units
- Publication and/or presentation of scientific papers
- Teaching

4. Approval of Categories:

Meetings must be C.M.E. approved, preferably prior to the meeting.

Approval must be sought from the Sub-Committee of the European Board of Plastic, Reconstructive & Aesthetic Surgery.

It must be decided who approves the meeting and who approves the courses.

This will increase the burden upon the E.B.O.P.R.A.S. Secretariat.

5. Recording of Activities:

These need to be recorded either in logbook form on hard copy or else on computer disc for submission to the C.M.E. sub-committee.

6. Validation:

The log-book or disc will be returned to the C.M.E. sub-committee for validation and recording.

7. Re-Accreditation:

At present, the voluntary nature of Continuing Medical Education is recognised but in the future it may become a requirement for re-accreditation.

8. Financing:

This has been dealt with by the A.C.M.T. in their report of October 1994 - "As Continuing Medical Education is a professional obligation, it has therefore to be financed independently by the profession itself, with the funds being charged collectively against the overall budget for medical services or with individual practitioners obtaining the means needed to finance their programme through the material and other benefits associated with their C.M.E. accreditation".

"Contributions from outside the profession, whether from national governments, sickness insurance schemes, pharmaceutical firms and equipment manufacturers, etc. must be channelled through independent professional bodies which will guarantee that there are no interests conflicting with the objectives of Continuing Medical Education. The sole aim must remain that of improving medical care so as to ensure that patients received the best and safest treatment for their condition".

(Prepared by Michael Earley, President U.E.M.S. Section of P.P. S. - June 1997).

APPENDIX

Requirements: (Royal College of Surgeons in Ireland)

Category A: At least 12 meetings / year

Category B: At least 30 hours / year

Category C: 2 meetings / year

Category D: Involvement in at least one of these activities

B.A.P.S. (Guidelines)

Category A: 10 hours / year

Category B: 10 hours / year

Category C: 20 hours / year

(includes D)

Clinical Audit: 10 hours / year

Return to / retour vers: [HOMEPAGE UEMS](#)

#

Historical development of the European Union

Table 14.1 *Chronological admission of countries to European organizations*

1954 ECCS	European Community of Coal and Steel: West Germany, Belgium, The Netherlands, Luxembourg, France and Italy
1957 EEC	European Economic Community: West Germany, Belgium, The Netherlands, Luxembourg, France and Italy
1973	New members: the United Kingdom, Ireland and Denmark
1981	New member : Greece
1986	New members: Spain and Portugal, resulting in a total of 12 members of the EEC
1987 EC	Introduction of the term EC or European Community in stead of EEC, the members remain the twelve of the EEC
1991 EU	Introduction of the term EU or European Union, consisting of the 12 members of the EC
1995	New members: Sweden, Finland and Austria (these countries were not included in the survey)

source: data acquired from Denis, A.(1998): Horizon 1992, Roularta Books, Brussels

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Mijn dank gaat allereerst uit naar mijn promotor prof.dr. C.F. van der Klauw, die mij bij het tot stand komen van deze studie door dik en dun heeft gesteund, vooral in sombere dagen. Zijn kritische instelling bracht mij soms bijna tot wanhoop, maar inspireerde mij weer op te staan en verder te gaan. Hij leerde mij ook met de tekstverwerker om te gaan.

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Curriculum Vitae

King Hoen Tan was born in Amsterdam on 14 July 1948. His father was a gynaecologist who came to The Netherlands after the Second World War as a Medical officer in the K.N.I.L. and was awarded a bronze medal for bravery by Prince Bernhard for his leadership during his escape from a Japanese prisoner's of war camp. Following primary school at the Willibrordus School in Tegelen, he attended secondary school at the St. Thomas college in Venlo. He received his gymnasium beta certificate in May, 1966. In September 1966, he started medical school at the Rijks Universiteit Leiden and passed his artsexamen (medical degree) on May 25, 1973.

Military service was spent at the Military Hospital in Utrecht (1973 - 1975) where he worked under dr. C. Bornhaupt as a registrar at the surgical department and under dr. B.D. de Jong in the plastic surgical department.

In order to gain a scientific background for his surgical profession, he worked from 1975 till 1977 at the Pathology Department of the Free University in Amsterdam (prof.dr. R. Donner*), where he published three scientific papers. His prerequisite training in general surgery was spent at the Catherina Hospital in Eindhoven (dr. Q.A.M. Eijsbouts) from 1977 till 1980.

In order to obtain experience in plastic surgery he went to the United Kingdom where he first spent 6 months as a locum Senior House Officer at the St. Lawrence Hospital, Chepstow (Mr. M.N. Tempest*) and published one scientific paper. Then followed a long spell (Jan. 1981 - Dec. 1984) as a Senior House Officer from at Canniesburn Hospital, Glasgow (Mr. I.A. McGregor), an internationally renown centre for plastic and reconstructive (head and neck) surgery where yearly international conferences are held. Scientific papers of his were presented at scientific meetings in London and Edinburgh and two papers were published.

In 1985, he spent 6 months as a locum registrar in plastic surgery at the Free University Hospital (prof.dr. F.G. Bouman) in Amsterdam. Prior to the start of his formal training in plastic surgery at the Free University Hospital (prof.dr. F.G. Bouman), he took a study tour to France (dr. G. Foucher), the United Kingdom (prof. D.A. McGrouther) and the U.S.A. (prof. D. Serafin). In the U.S.A., he visited Philadelphia (prof. D. Randall), Miami (prof. D.R. Millard), the Mayo Clinic (Mr. I. Jackson) and Louisville (dr. G.D. Lister and H.E. Kleinert).

His training in Plastic and Reconstructive Surgery started on May 1, 1989 at the Academic Hospital Free University (prof.dr. F.G. Bouman) and included a 3 months internships at the Radboud Hospital in Nijmegen (dr. J.M.H.M. Borghouts). During his training, he presented three papers at scientific meetings. He received his EC recognised certificate as a plastic surgeon on May 1, 1989.

At present, he is working as a Consultant Plastic Surgeon at the Kennemer Hospital, location E.G. in Haarlem and the Medisch Centrum Jan van Goyen in Amsterdam.

* deceased

List of tables and figures

Tables

4.1	Number of clinical hand surgery operations 1980-1989	58
4.2	Number of clinical hand surgery operations 1991-1995	59
4.3	Clinical hand surgery operations 1995	59
4.4	Number of day care hand surgery operations 1991-1995	60
4.5	Day care hand surgery operations 1995	61
4.6	Clinical hand surgery operations Academic Hospital C 1992-1996	61
5.1	Responsibility for training in the EU countries	64
5.2	Responsibility for specialist registration in the EU countries	65
5.3	Duration of training in the EU countries	70
5.4	National exams in the EU countries	83
6.1	Costs of the health care as percentage of the Gross National Product in The Netherlands and some other Western Countries	102
6.2	The ratio of plastic surgery consultants to other specialty consultants in England and Wales (1985)	105
6.3	The number of plastic surgeons (1991)	108
6.4	The number of plastic surgeons (1996)	109
7.1	Summary of the participation in the survey	119
7.2	Number of doctors (all categories), who are fully qualified to practice in another EU country, according to country of inflow	124
7.3	Inflow of doctors into the United Kingdom, according to the country of origin	125
7.4	The number of EU plastic surgeons, who are fully qualified to practice in another EU country, according to the country of inflow	125
7.5	The number of EU medical specialists, who are fully qualified to practice in another EU country, according the country of inflow	126
7.6	Medical demography of the European Community	127
7.7	Medical demography of the European Community (1996)	128
8.1	Number of laureates	138

Figures

3.1	Health care systems in the EC member states	32
4.1	Number of hand surgery operations between 1980 - 1989	58
4.2	Number of hand surgery operations between 1991-1995	59
4.3	Number of day care han surgery operations between 1991-1995 in percentages	60
5.1	l'Union Européene des Médecins Spécialistes and its Section in Plastic Surgery	68
5.2	Duration of training in plastic surgery in the EU Countries	71
5.3	Requirements for evaluation of candidate specialists	82
6.1	Number of plastic surgeons per 100,000 inhabitants in 1991 and 1996	109
8.1	Structure of the European Board of Urology	144

Tables in supplement

2.1	Clinical hand surgery operations 1991	170
2.2	Clinical hand surgery operations 1992	170
2.3	Clinical hand surgery operations 1993	170

2.4	Clinical hand surgery operations 1994	170
2.5	Day care hand surgery operations 1991	171
2.6	Day care hand surgery operations 1992	171
2.7	Day care hand surgery operations 1993	171
2.8	Day care hand surgery operations 1994	171
7.1	Support for the view that European Unification leads to an increase in the migration of doctors working in the area of plastic surgery	205
7.2	The positive attitude of respondents from EC countries towards the temporary arrival of plastic surgeons from other EC countries; plastic surgical trainees from other EC countries; doctors looking for a training post in plastic surgery in the country of the respondent.	205
7.3	The positive attitude of respondents from EC countries towards the permanent arrival of plastic surgeons from other EC countries; plastic surgical trainees from other EC countries; doctors looking for a training post in plastic surgery in the country of the respondent.	206
7.4	The advantages of the arrival of plastic surgeons from other EC countries for the respondents in the different EC countries	206
7.5	The advantages of the arrival of plastic surgical trainees from other EC Countries	207
7.6	The advantages of the arrival of doctors from other Common Market Countries, according to the respondents	207
7.7	The reasons for objecting to the arrival of plastic surgeons from other Common Market countries	208
7.8	The reasons for objecting to the arrival of plastic surgical trainees from other Common Market countries	208
7.9	The reasons for objecting to the arrival of doctors from other Common Market countries, looking for training posts in plastic surgery outside their home country.	209
7.10	The 6 most preferred Common Market countries of origin for immigrant doctors (plastic surgeons, trainees and doctors looking for plastic surgery training outside their home country)	209
7.11	Common Market countries where training and qualifications could cause problems	210
7.12	Common Market countries where language and culture could cause problems	210
7.13	Preparedness of the respondents to settle down permanently in another Common Market country	211
7.14	Order of preference in the different EC countries	211
7.15	The reasons for permanent settlement in another EC country	212
7.16	The reasons for temporarily moving to another EC country	212
7.17	The favourite topics for a fellowship in another EC member state	213
7.18	The present number of foreign medical graduates from other EC countries in the hospitals of the respondents	213
14.1	Chronological admission of countries to European organizations	240