Medical Oncology Status in Europe Survey (MOSES)

Phase II

Prepared by
The ESMO MOSES Task Force
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Reference Map

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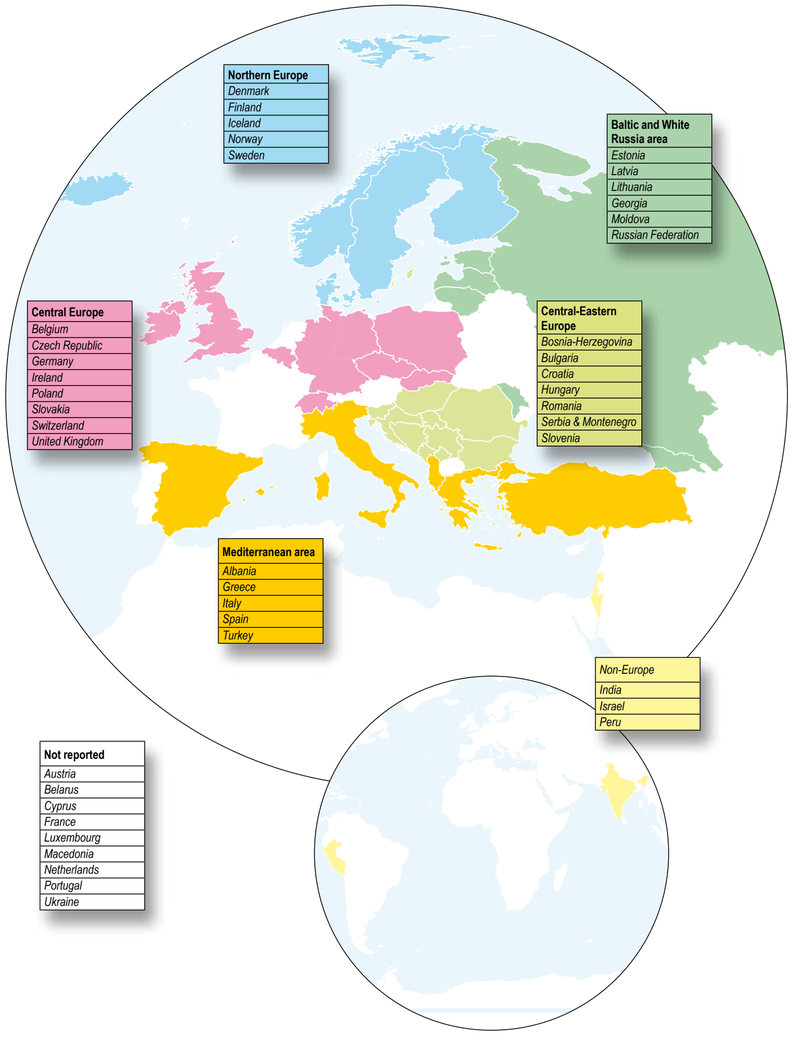

ABBREVIATIONS
AdjChemo: Adjuvant Chemotherapy
CME: Continuing Medical Education
FU: Follow-up
GCT: Germ Cell Tumor
GO: General Oncology
GP/FD: General Practitioner/Family Doctor
GyO: Gynecological Oncology
IM: Internal Medicine
MD-B: MultiDisciplinary Board
MO: Medical Oncology
N/A: not applicable
N/R: not reported
O: Oncology
PC: Palliative Care
PM: Palliative Medicine
RO: Radiation Oncology
SO: Surgical Oncology

DEFINITIONS
**Medical Oncology Facility*: facility with at least one specialized medical oncologist, exclusively supervising the treatment of cancer patients.
**Independent Oncology Unit*: a unit with a specialized medical oncologist as director, that treats only cancer patients, and has a clinical ward (minimum of 15-20 beds) +/- a day clinic (minimum of 5-15 beds/ places).
**Comprehensive Cancer Center*: a referral center for cancer patients, a center which houses both medical and radiation oncology, with a minimum of 20 beds, at least 4 beds for immunocompromised patients or administration of high-dose therapies with transplant support, a day clinic, an attached radiotherapy unit, a clinical/ basic laboratory research, attached to, or with direct access to, other oncology-related specialties (i.e. surgical oncology, palliative care, etc.).

**Radiation Oncology Facility*: facility with at least one specialized radiation oncologist, who supervises the administration of radiotherapy exclusively to cancer patients. The facility must have adequate radiotherapy equipment (at least one cobalt and/ or linear accelerator).
**Palliative Care Facility*: facility with a palliative care specialist or oncologist providing palliative, supportive and end-of-life care to cancer patients, including home care and psychosocial support of cancer patient and family

DISCLAIMER
Data published in this report were collected from various sources in the surveyed countries.

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European Society
for Medical Oncology

On behalf of the European Society for Medical Oncology I am very pleased to present the Medical Oncology Status in Europe Survey (MOSES) II. This outline represents the collective work of the ESMO MOSES Task Force chaired by Prof. Roberto Labianca in collaboration with ESMO National Representatives and members of national societies.

It is a well known fact that there are inequalities in cancer care in Europe, which require immediate attention and remedy. In fact, ESMO and ASCO have published a consensus statement on quality cancer care where the two societies established the discrepancies among countries relative to healthcare services, high quality cancer care, innovative drugs, clinical trials, multidisciplinary care, pain management, palliative care, healthcare information, etc. To be able to attend to the inequalities it is of fundamental importance to have information on the 'infrastructure' of multidisciplinary oncology in Europe.

Therefore, it is with the greatest satisfaction that I introduce this unique and comprehensive report, which will form the basis for improving oncology and cancer care throughout Europe. This document will be of significant importance for politicians, governments, societies, patient advocacy groups, and all those involved in the ongoing fight against cancer.

Håkan Mellstedt, MD, Ph.D.
ESMO President

Medical Oncology Status in Europe Survey (MOSES) Phase II

Introduction

The European Society for Medical Oncology (ESMO), to fulfill its mission, addresses global inequalities in cancer care through statistical analysis of data concerning the discrepancies in the prerequisites for the practice of oncology in Europe and developing countries. The summary report from this data analysis helps identify necessary improvements in the infrastructure of those countries that have less than optimal healthcare systems. They indicate how to face the challenge of reducing disparities in the quality of care available to patients residing in different European countries. They also provide further evidence of the need to recognize medical oncology as an independent specialty throughout Europe and worldwide.

Although medical oncology has been recognized as an independent specialty in a number of countries, a multidisciplinary approach to cancer patients is necessary. We must also consider that in some Central, Eastern, and Northern European settings medical oncology is not separate from radiotherapy or other related disciplines. In order to fully comprehend the existing problems, ESMO has designed a survey with the aim of identifying the best model in which the work of a multidisciplinary team can be implemented.

Therefore, ESMO is pleased to present the final results of the 'MOSES' (Medical Oncology Status in Europe Survey) II Project.

The MOSES Project started in the late Nineties, when ESMO decided to undertake the immense and important task of collecting detailed information about the status of medical oncology in Europe. The decision to embark upon this project, which is one of the most important tasks of the Society, was made based upon the work of the ESMO National Representatives, who are involved in the broad discussion about the definition of the discipline of Medical Oncology in the different countries, the training programs for specialists, the level of collaboration with other colleagues of the multidisciplinary oncology team, and the role of national oncology societies and their liaison with ESMO.

After a first attempt at obtaining data with the use of an experimental questionnaire, the decision was taken to increase the involvement of the National Representatives and of the national medical oncology societies: a new, more detailed, and analytical version of the questionnaire was prepared with the involvement and support of a group of active and motivated Task Force representatives of six countries (Belgium, Denmark, Greece, Italy, Serbia, and Turkey). In particular, four sections were prepared:

1. Teaching of oncology for undergraduate students and postgraduate specialization and/or sub-specialization in oncology
2. Outline of medical and radiation oncology facilities / Pattern of cancer care and multidisciplinary collaboration
3. Continuing medical education (CME) / National societies for medical oncology / National cancer guidelines
4. Clinical research

One data manager and one statistician were included in the Task Force, in order to adhere to a strict methodology in the collection, cleaning and analysis of data.

With the phase II of the MOSES Project, by the end of 2005 we were able to obtain data from 34 out of 46 countries (nearly 80%); all procedures to guarantee the highest response rate (i.e. reminders, deadline extensions and similar) were duly carried out. A careful clean-up of the data was performed, in order to avoid non-matching information and inappropriate compilation, and a complete statistical analysis was carried out. All the data were analyzed and discussed within the Task Force, followed by a peer review of the observations made by each individual member and finally granted unanimous approval. With this methodology we trust that every effort was made to obtain, as a minimum, an acceptable level of quality for this work: however, inaccuracies or lack of important information are possible, and we would be grateful for every comment or constructive criticism.

To stimulate the interest of the readers, I would point out some highlights:

- There are **wide differences in the teaching of oncology** (particularly, medical oncology) and the current situation is still far from being satisfactory, despite significant progress having been achieved, especially in some countries. There is still an urgent need to improve teaching in the field of palliative care.
- The **organization of medical oncology** in the different countries is often difficult to analyze, due to scarce data in some national settings; nevertheless a **lack of homogeneity** within Europe clearly emerged from the survey, and a particular need of developing palliative care was pointed out.
- The rapidly **increasing cost of anticancer drugs** and devices is an important matter of concern in many countries.
- It is necessary that the **use of anticancer drugs** be restricted **to specialists in medical oncology**.
- The role of the medical oncologist in the **multidisciplinary team** is increasing. It is well recognized in the treatment of several specific tumors and within national settings, but still to be significantly improved in others.
- Active **national medical oncology societies** are present in several countries and are involved in the preparation and dissemination of guidelines and procedures for CME. Some societies have established specific working groups for these tasks.
- An increasing number of **young medical oncologists (YMO)** groups are present in the national settings, but they must be promptly reinforced, united, and integrated into the larger medical oncology community.
- Most European medical oncologists are deeply involved in clinical research, but there are important challenges posed for conducting **independent trials**, which should be funded in a specific way (e.g. through Foundations or Charities)

We don't pretend to do miracles as Moses did when he parted the Red Sea, but we do think that an accurate analysis of the data reported in this document could help ESMO and all the members of the Society in their continuous effort to improve the recognition and role of medical oncology in the fight against cancer and at our patients' bedside.

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We thank also Silvia Rota, data manager

Table of contents

1. TEACHING OF ONCOLOGY FOR UNDERGRADUATE STUDENTS AND POSTGRADUATE SPECIALIZATION AND/OR SUB-SPECIALIZATION IN ONCOLOGY

General information

The number of medical faculties related to the number of inhabitants in those countries from which accurate information is available varies from 1 per 300,000 (Iceland) to 1 per 4,200,000 inhabitants (Moldova) in Europe, and reaches the rate of 1 per 4,750,000 in India. The average is 1 medical faculty per 1,768,000 inhabitants (+/- 966,776) with a median of 1 per 1,513,000 persons. Interestingly, there is no substantial difference between the various areas of Europe.

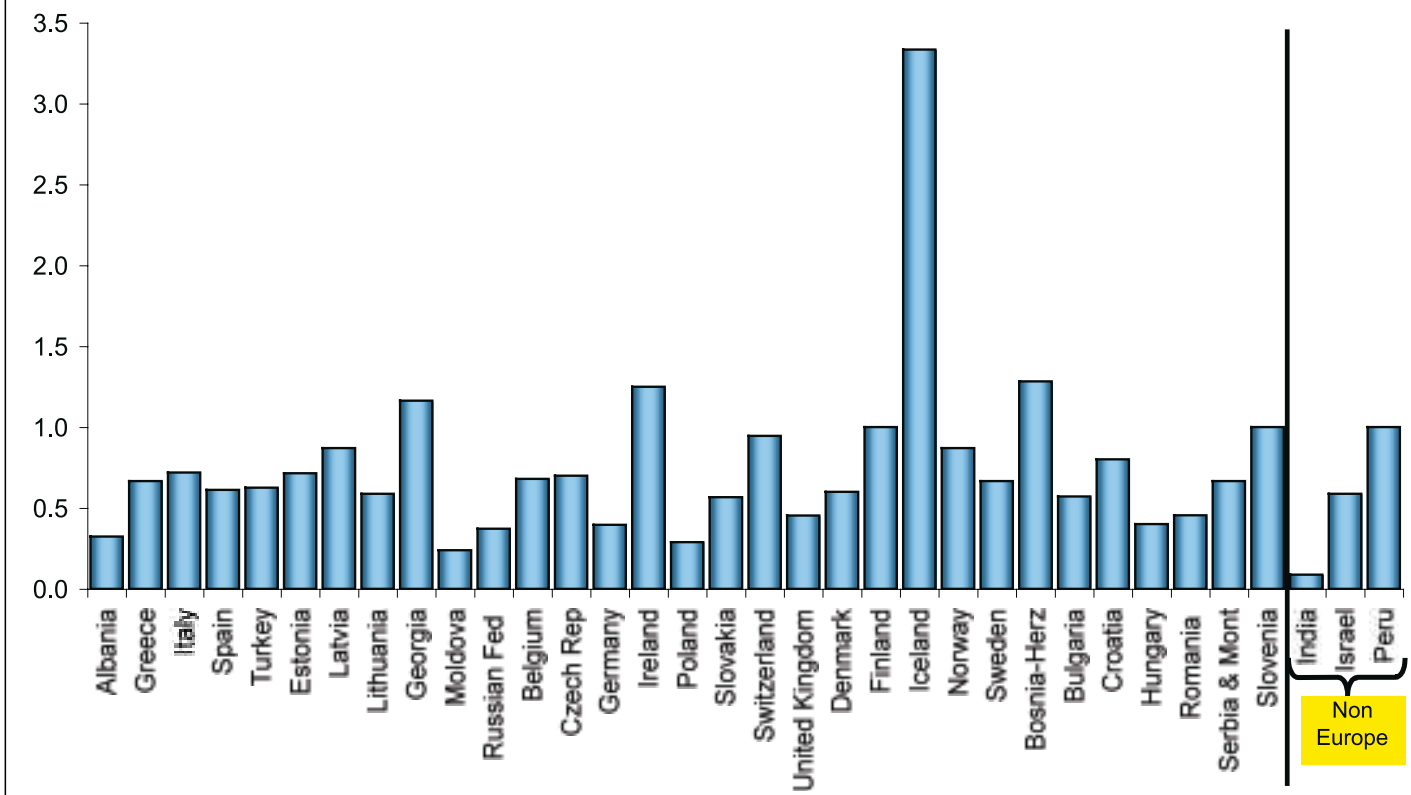
In most countries, the duration of medical graduate studies is 6 years, which is in agreement with the European Union Directive. Exceptions are: Belgium (7 years), Denmark (6.5), Switzerland (6.5) and United Kingdom (5). In the Non-Europe area: India (5.5) and Peru (7).

Information about the duration of the post-graduate specialization is limited, but most of the training is organized over a period of 2 to 6 years.

Table 1.1: number of inhabitants, number of medical faculties and duration of medical studies

COUNTRY	No. OF INHABITANTS	No. OF MEDICAL FACULTIES	DURATION OF MEDICAL STUDIES (years)	SOURCE OF INFORMATION
Albania	3,140,000	1	6	Instat (Institute of Statistics); Ministry of Education; Faculty of Medicine in Tirana
Greece	10,700,000	7	6	Ministry of Internal Affairs; Ministry of Education
Italy	57,000,000	41	6	Conference of the Chiefs of Universities
Spain	44,110,000	27	6	National Statistics Institute; Ministerio de Sanidad y Consumo
Turkey	72,000,000	45	6	-
Estonia	1,400,000	1	6	Medical Faculty of the Tartu University, Tartu
Latvia	2,330,000	2	6	-
Lithuania	3,400,000	2	6	-
Georgia	4,300,000	5	6	Tbilisi State Medical University Tbilisi State Medical Academy; "Ayeti" Medical School; Statistics Department of Georgia
Moldova	~4,200,000	1	6	-
Russian Fed	145,200,000	54	6	Federal Statistic Agency Department of Medical Education of the Federal Health Agency and Social Welfare
Belgium	10,300,000	7	7	-
Czech Rep	10,000,000	7	6	-
Germany	81,000,000	32	6	-
Ireland	4,000,000	5	5	-
Poland	38,150,000	11	6	GUS (Statistical office)
Slovakia	5,400,000	3	6	Census on May 2001
Switzerland	7,400,000	5 full, 2 partial (preclinical)	13 semesters, 6.5 years	-
United Kingdom	59,500,000	27	5	-
Denmark	5,000,000	3	6.5	-
Finland	5,000,000	5	6	-
Iceland	300,000	1	6	-
Norway	4,600,000	4	6	-
Sweden	9,000,000	6	6	-
Bosnia-Herz	3,900,000	5	6	Ministry of Health, Federation of BiH Ministry of Helthy, Republika Srpska
Bulgaria	7,000,000	4	6	-
Croatia	5,000,000	4	6	-
Hungary	10,000,000	4	6	-
Romania	22,000,000	10	6	Department of Oncology University "Carol Davila" Bucharest
Serbia & Mont	7,500,000	5	6	Data do not contain information regarding the Kosovo region
Slovenia	2,000,000	1 (the 2nd one just founded, all programs not yet available)	6	-
India	1,140,000,000	240	5.5	Ministry of Health
Israel	6,800,000	4	6	Ministry of the Interior
Peru	27,000,000	27	7	-

Figure 1.1: total number of medical faculties per million inhabitants in each country



Teaching of oncology for undergraduate students

Medical Oncology

Medical Oncology is included in the program of undergraduate studies in about 56% of the analyzed countries. It is standard in Northern Europe (100%) and mostly present in the Mediterranean countries (80%); in Central Europe (63%) and Central-Eastern Europe (57%) only for about half the countries. Among countries in the Baltic and White Russia area, it is included only in Lithuania. Outside Europe (where only limited information was received) it is not common to include Medical Oncology in the undergraduate courses. Medical Oncology is a separate and/or a mandatory course in only one-third of the countries (32% have a separate course and 32% have a mandatory course). It is usually included in the program of the last years of the graduate teaching (4^{th}-6^{th}), but the number of teaching hours per year differs considerably (2 to 150 hours).

Table 1.2: teaching of oncology for undergraduate students

COUNTRY	FORESEEN	AS A SEPARATE COURSE If not, please specify	MANDATORY	YEAR OF COURSE	TEACHING HOURS PER YEAR
Albania	No				
Greece	Yes	Yes	No	4^{th} or 5^{th} or 6^{th}	~70
Italy	Yes	It varies among individual faculties	Yes	4^{th}-6^{th}	125-150
Spain	Yes	No (IM)	Yes	6^{th}	30
Turkey	Yes	Yes	Yes	4^{th} or 5^{th}	23-32
	4 (80.0%)				
Estonia	No				
Latvia	No				
Lithuania	Yes	Yes	Yes		
Georgia	No				
Moldova	No				
Russian Fed	No				
	1 (16.7%)				
Belgium	No				
Czech Rep	No				
Germany	Yes	In some faculties	No	4^{th}	2
Ireland	Yes	No, it comprises part of the medical curriculum, with special training after graduation from medical school	Yes	3^{rd} and 5^{th}	
Poland	No				
Slovakia	Yes	Yes	Yes	4^{th}-5^{th}	28-42
Switzerland	Yes	Yes	Yes	variable	variable
United Kingdom	Yes	No, O			
	5 (62.5%)				
Denmark	Yes	Yes	Yes	4^{th}	24
Finland	Yes	Yes	Yes	6^{th}	4 ECT
Iceland	Yes		Yes	5^{th}	30
Norway	Yes	No (GO)	Partly	6^{th}	
Sweden	Yes	It varies among individual faculties	Yes	variable	variable
	5 (100%)				
Bosnia & Herz	No				
Bulgaria	Yes	No, GO	No	4^{th}	28
Croatia	No				
Hungary	Yes	Yes	Yes	5^{th}	21
Romania	Yes	No, GO	No	4^{th}	16
Serbia & Mont	No				
Slovenia	Yes	No, GO			
	4 (57.1%)				

Surgical Oncology
In comparison to Medical Oncology, Surgical Oncology is foreseen in only 19% of the analyzed countries and very rarely it is a separate course (only in Greece). It is part of the undergraduate program (probably included in other teaching modules) mainly in Central-Eastern European countries (43%), followed by Central European (29%) and Mediterranean countries (20%). Surprisingly, it is not considered in Northern Europe, in Baltic and White Russia areas as well as in countries outside Europe. The time devoted to Surgical Oncology is very limited (2 to 12 hours per year).

Radiotherapy
Radiotherapy is included in the undergraduate program in 39% of the analyzed countries. There is a striking similarity with Surgical Oncology in terms of geographic distribution. Radiotherapy is taught mainly in Mediterranean (60%) and Central-Eastern European countries (57%), followed by Central European countries (37.5%). It is rarely defined as a separate and/or a mandatory course. In the Baltic and White Russia area as well as in Northern Europe, it is usually absent in the undergraduate curriculum. In these areas, it is foreseen only in Lithuania, Russian Federation and Norway. Radiotherapy, as already reported for Surgical Oncology, is not considered in the programs of the Non-Europe area. The maximum time devoted to radiotherapy is 16 hours.

General Oncology
General Oncology is included in 75% of the undergraduate curriculum of all analyzed countries. In some countries General Oncology is a separate and mandatory course: all Baltic and White Russia areas (with the exception of Lithuania), Albania, Bosnia-Herzegovina, Croatia, Poland, Czech Republic and Non-European area (not mandatory in Peru). In these countries, there is usually no separate course for Medical and/or Surgical Oncology and Radiotherapy. Time devoted to General Oncology generally varies between 30 and 60 hours.

Hematology
Hematology is frequently present in the undergraduate program. It is included in about 79% of the programs of all analyzed countries. It is a separate and/or a mandatory course in the last years of university (3rd-6th) in all Baltic, White Russia and Mediterranean countries and Non-Europe areas (it is not mandatory in Greece). It is also included in the program of Central (75%) and Northern Europe (60%) followed by Central-Eastern European countries (57%) where it is almost always a mandatory course. Usually it is taught a period of 20 to 125 hours.

Palliative Medicine
Palliative Medicine is part of the undergraduate teaching in only 28% of all analyzed countries. It is well considered in Northern Europe (75%) and in Non-Europe countries (67%). It is rarely a separate and/or a mandatory course. Surprisingly, in Baltic and White Russia, Mediterranean, Central European and Central-Eastern European countries it is usually absent: it is only included in the curriculum of undergraduate teaching in Lithuania, Ireland, United Kingdom, and Hungary. If it is given as a separate course, it is restricted to a few hours.

Table 1.3: teaching of oncology for undergraduate students - Summary

AREA	MEDICAL ONCOLOGY	SURGICAL ONCOLOGY	RADIOTHERAPY	GENERAL ONCOLOGY	HEMATOLOGY	PALLIATIVE MEDICINE
Mediterranean area	4/5 (80.0%)	1/5 (20.0%)	3/5 (60.0%)	3/5 (60.0%)	5/5 (100%)	0/5 (0%)
Baltic and White Russia area	1/6 (16.7%)	0/6 (0%)	2/6 (33.3%)	5/6 (83.3%)	6/6 (100%)	1/6 (16.7%)
Central Europe	5/8 (62.5%)	2/7 (28.6%)	3/8 (37.5%)	5/7 (71.4%)	6/8 (75.0%)	2/7 (28.6%)
Northern Europe area	5/5 (100%)	0/4 (0%)	1/4 (25.0%)	2/4 (50.0%)	3/5 (60.0%)	3/4 (75.0%)
Central-Eastern area	4/7 (57.1%)	3/7 (42.9%)	4/7 (57.1%)	6/7 (85.7%)	4/7 (57.1%)	1/7 (14.3%)
Non-Europe	0/3 (0%)	0/3 (0%)	0/3 (0%)	3/3 (100%)	3/3 (100%)	2/3 (66.7%)
TOTAL	**19/34(55.9%)**	**6/32 (18.8%)**	**13/33 (39.4%)**	**24/32(75.0%)**	**27/34 (79.4%)**	**9/32 (28.1%)**

Uniformity, analogies and similarities in training among medical faculties or medical schools

There is a considerable lack of uniformity in terms of content and structure of the undergraduate teaching among the different medical faculties or schools of any specific country (in almost 60% of the surveyed countries). In about 41% undergraduate teaching is uniformly structured throughout the whole country. No clear trend is evident in the different areas, which certainly suggests a lack of general European guidelines for oncology training. Some examples are listed below:

- Greece: All medical faculties have a separate course in Oncology and Hematology, for 1 semester usually during the 4th, 5th or 6th year of studies. The actual training program can vary among faculties, however in 3 out of 7 programs there are similarities, and further non-mandatory courses are included, in addition to the above-mentioned ones. Non-mandatory courses can be chosen by students based on a points system. Examples of such courses that usually involve 1 hour per week for a semester are: oncogenesis and growth factors in cancer biology, lung cancer, head & neck tumors, pediatric oncology, gynecologic tumors, molecular oncology, mechanisms of oncogenesis, laboratory oncology.
- Italy: Every Italian medical faculty is fully autonomous in choosing when and how to teach different specialties. Generally speaking Medical Oncology and Hematology are present, with different degrees of autonomy, in all faculties.
- Belgium: The situation varies considerably among universities. Mostly Medical Oncology is integrated in larger courses like Internal Medicine, Surgery, organ-directed courses etc. Radiotherapy exists as a specific specialty and is foreseen in 4 out of 7 universities. In other universities it is part of the Oncology program (2 out of 7); in 1 it is part of the multidisciplinary approach of organ-directed diseases.

Postgraduate specialization and/or sub-specialization in oncology

Medical Oncology

Postgraduate specialization and/or sub-specialization in Medical Oncology exists in 24 out of the 33 countries for which data are reported (72%). However this information appears to be related to the recognition of Medical Oncology as an independent specialty in each country, as evident in the case of Belgium. Medical Oncology was recognized as a separate specialty in Belgium at the end of June 2006. The postgraduate teaching here already existed before this date, but it was not officially recognized! The majority of specialists or sub-specialists are graduates from the Czech Republic and Italy. In fact, Mediterranean (60%) and Central Europe (100%) are areas where Medical Oncology is most frequently recognized as an independent specialization. In Northern Europe Medical Oncology is recognized in less than 50% of the countries. Interestingly, Non-European countries such as India and Peru (but not Israel) have recognized training for Medical Oncology. However, in India there is an unexpected low number of graduated specialists per year. Medical Oncology training is organized at the national level in most countries and developed in 3 to 6 years. Among these countries, requirements in terms of planned teaching hours per year are different. In many countries full or partial training abroad is allowed.

Table 1.4: postgraduate specialization and/or sub-specialization in Medical Oncology

COUNTRY	RECOGNIZED	TRAINING PER FACULTY OR SCHOOL	SPECIALISTS OR SUB-SPECIALISTS GRADUATED IN 2004 (TOTAL)	YEARS OF SPECIALIZATION OR SUB-SPECIALIZATION TRAINING	TEACHING HOURS PER YEAR	FULL OR PARTIAL TRAINING ALLOWED ABROAD
Albania	No					
Greece	Yes	Nationwide	0	6	N/A	Yes
Italy	Yes	Specific	140	4	1800	Yes
Spain	Yes	Nationwide	82	4		Yes
Turkey	Yes (IM)					
	4 (80.0%)					
Estonia	Yes		1	4	60	Yes, partially
Georgia	No					Yes
Latvia	Yes	Specific	16	5		Yes
Lithuania	Yes (IM)					No
Moldova	No					
Russian Fed	No					
	3 (50.0%)					
Belgium	Yes	Nationwide	0	3 + 3	45	Yes
Czech Rep	Yes	Nationwide	373	5		Yes
Ireland	Yes (following IM)	Nationwide	2	4		Yes
Poland	Yes	Nationwide	25	5		No
Slovakia	Yes	Nationwide	5	5		No
Switzerland	Yes		~15	6		Yes
United Kingdom	Yes	Nationwide	17	4		Yes
	7 (100.0%)					
Denmark	No					
Finland	Yes			5		Yes
Iceland	Yes (IM)					Yes
Norway	No					
Sweden	No					
	2 (40.0%)					
Bosnia-Herz	Yes (IM)					
Bulgaria	Yes (IM)					
Croatia	Yes (IM)					
Hungary	Yes	Nationwide				Yes
Romania	Yes					Yes
Serbia & Mont	No					
Slovenia	Yes	Nationwide		6		Yes (partially)
	6 (85.7%)					
India	Yes	Specific	30	3	400	No
Israel	No					
Peru	Yes	Specific	8	3	540	Yes
	2 (66.7%)					

Medical Oncology as sub-specialty of Internal Medicine
Medical Oncology is included in the Internal Medicine training program in a few countries (Lithuania, Iceland, Bosnia-Herzegovina, Bulgaria, Croatia). In Turkey, it is the only existing form of teaching Medical Oncology. In Ireland Medical Oncology is preceded by training in Internal Medicine.

Surgical Oncology
Surgical Oncology as a separate specialization exists only in 15% of countries. It seems not to exist at all in Mediterranean and Central-Eastern Europe. Within the Baltic and White Russia area, Central Europe and Northern Europe it is recognized only in Latvia, Poland and Finland, respectively. It is also recognized in India and Peru, but not in Israel. Only 65 physicians graduated in 2004, which is 1 per 28 million inhabitants!

Surgical Oncology as sub-specialty of Surgery
Surgical Oncology as a sub-specialty exists in about 30% of the surveyed countries. It is more common in Mediterranean (60%), Central-Eastern (43%) and Central-European (43%) countries. It is also recognized in India. Apparently it does not exist in the Baltic and White Russia area and in Northern Europe. The number of graduated sub-specialists is very low. If all surgical oncologists (specialty and sub-specialty) are added, the result is of 1 specialist per 23 million inhabitants (per year).

Radiotherapy
Radiotherapy as a separate specialization exists in 74% of the surveyed countries. It is present mainly in Central European (100%) and Central-Eastern European countries (100%), in the Mediterranean area (80%), Baltic and White Russia area (67%) followed by Non-European countries (67%). In Northern Europe it is frequently included as part of a General Oncology specialty. In Georgia, Radiotherapy is included in the Radiology program. It is not recognized in Albania, Moldova and Israel.
The majority of specialists are trained in Croatia, Turkey, Spain, Italy and United Kingdom. The median duration of specialty training is 4-5 years, with exceptions for the Russian Federation (2 years) and Czech Republic (6 years). In many countries, full or partial training is allowed abroad. The number of graduated specialists is considerably high when compared, for example, to surgical oncologists (371 versus 86 in 2004, incomplete data).

Hematology
Postgraduate specialization and/or sub-specialization in Hematology exists in almost all the surveyed countries, with exception of Slovenia (totaling 97%). Training in Hematology is organized at the national level in most of these countries and developed in 3 up to 6 years. The majority of specialists or sub-specialists graduates from Spain and Italy. There are about 330 new graduates per year, which is in line with Radiotherapy figures (2004, incomplete data). As already reported for medical oncologists, there is an unexpected low number of graduated specialists In India. The number of required teaching hours per year varies considerably among countries. In many countries full or partial training is allowed abroad.

Hemato-Oncology
In most of the surveyed countries, postgraduate specialization and/or sub-specialization defined as Hemato-Oncology does not exist. Exceptions: Albania, Germany, Ireland and Iceland.

Palliative Medicine
Palliative Medicine is recognized as a separate specialty in 8 out of 33 surveyed countries (24%). It is mainly the case in Central Europe (71%), with the exception of Belgium and Switzerland. Outside of this region, Palliative Medicine is recognized in Moldova, Iceland and India.

General Oncology
Postgraduate specialization in General Oncology exists in 46% of the reporting countries. It appears not to be a recognized separate specialty in Central Europe. Among Mediterranean countries it is only present in Albania. Conversely, it exists in all reported Northern European countries and in the majority of Baltic and White Russia area countries (67%). In Sweden and Finland it is a combination (or addition) of Medical Oncology and Radiotherapy. Among Central-Eastern European countries, it is present in Bulgaria and Serbia and Montenegro. In the Non-European area it is only recognized in Israel. Oncology training in most of these countries is organized at a national level and developed in 2 to 6 years. The number of required teaching hours per year is very different among the countries. In the majority of countries full or partial training is allowed abroad.

Postgraduate specialization and/or sub-specialization in oncology - Summary

Among all the different types of specialties organized as a postgraduate specialization, Hematology is almost uniformly present in all surveyed areas (97%), followed by Radiotherapy (74%) and Medical Oncology (61%). General Oncology (46%) and Hemato-Oncology (12%) are the most uncommon. Surgical Oncology is not frequently known as a separate specialty (15%). It is also not so frequently trained as a subspecialty of Surgery (30%). Palliative Medicine is very differently trained: in Mediterranean and Central-Eastern areas (0%), Baltic and White Russia area (17%) and in the Northern Europe area (20%) it is quite inexistent. On the other hand, in Central Europe it is better known as a specialty (71%).
A broad geographic diversity results from the survey: the Mediterranean area is well covered with Medical Oncology (60%) and Surgical Oncology as a subspecialty of Surgery (60%), Radiotherapy (80%) and Hematology (100%), but is unfamiliar with Palliative Medicine training. In the Baltic and White Russia area, Medical Oncology (50%), Radiotherapy (67%) and Hematology (100%) are recognized but there is an almost blank area for Palliative Medicine and Surgical Oncology as a subspecialty of Surgery (0%) and/or separate specialty (17%). Central Europe seems to be the area where the different specialties are equally presented. The Northern area does not know Radiotherapy (0%) and Palliative Medicine as separate specialties (20%). Central-Eastern area is again a blank area for Palliative Medicine training (0%).

Table 1.5: postgraduate specialization and/or sub-specialization in oncology - Summary

AREA	MO	MO as subspecialty of IM	SO	SO as sub-specialty of SURGERY	RADIO-THERAPY	HEMATO-LOGY	HEMATO-ONCOLOGY	PALLIATIVE MEDICINE	ONCOLOGY
Mediterranean area	3/5 (60.0%)	1/5 (20.0%)	0/5 (0%)	3/5 (60.0%)	4/5 (80.0%)	5/5 (100%)	1/5 (20.0%)	0/5 (0%)	1/5 (20.0%)
Baltic and White Russia area	3/6 (50.0%)	1/6 (16.7%)	1/6 (16.7%)	0/6 (0%)	4/6 (66.7%)	6/6 (100%)	0/6 (0%)	1/6 (16.7)	4/6 (66.7%)
Central Europe	7/7 (100%)	1/6 (16.7%)	1/7 (14.3%)	3/7 (42.9%)	7/7 (100%)	6/6 (100%)	2/8 (25.0%)	5/7 (71.4%)	0/4 (0%)
Northern area	2/5 (40.0%)	1/5 (20.0%)	1/5 (40.0%)	0/5 (0%)	0/4 (0%)	5/5 (100%)	1/4 (50.0%)	1/5 (20.0%)	5/5 (100%)
Central-Eastern area	3/7 (42.9%)	3/7 (42.9%)	0/7 (0%)	3/7 (42.9%)	6/6 (100%)	4/5 (80.0%)	0/6 (0%)	0/7 (0%)	2/6 (33.3%)
Non-Europe	2/3 (66.7%)	0/3 (0%)	2/3 (66.7%)	1/3 (33.3%)	2/3 (66.7%)	3/3 (100%)	0/3 (0%)	1/3 (33.3%)	1/2 (50.0%)
TOTAL	**60.6%**	**21.8%**	**15.1%**	**30.3%**	**74.2%**	**96.7%**	**12.5%**	**24.2%**	**46.4%**

Notes

• Greece: Medical Oncology was recognized as a separate specialty in 1998, the first examinations for certification started in 2000, and initially involved doctors with training abroad, as training positions opened in 2001. The first specialists with a degree from this country are graduating in 2006. The training in Medical Oncology involves 3 years of general medicine of which 6 months have to be in Hematology and 3 years in Medical Oncology. An evaluation system for every training year is applied for all students based on nationwide guidelines. Certification is obtained at completion of 6 years following a written and oral examination. Although there is a nationwide curriculum for specialist training, each faculty follows each own teaching program.
Radiotherapy and Hematology are both recognized specialties and the training curriculum is nationwide, although the teaching hours may vary among faculties. The same applies for a subspecialty of Surgery, but teaching is organized differently among faculties.
Palliative Medicine is not recognized as a separate specialty.

• Italy: until 2005 the specialty was named Oncology. As of 2006 the specialty is Medical Oncology and it has a duration of 5 years instead of 4.

• Russian Federation: the 2-year postgraduate specialization in Oncology includes 2 certification cycles of 288 hours (100 hours of lecture courses and 188 hours of active practical training). The training in basic statistics (144 hours) is an additional part of specialization.
The postgraduate specialization in Oncology is common for Surgical Oncology and Medical Oncology. For those who are involved in Surgical Oncology, an additional basic active surgical training (or specialization) is required. For those who are involved in Medical Oncology a degree in Internal Medicine is required.

• Switzerland: there is a national postgraduate training program for existing specialties, developed by the appropriate society and approved by the Federal Government. The implementation has to follow this program, is supervised by the respective specialist society, but is quite variable.
Switzerland foresees a certificate in Gynecological Oncology (Surgery).

• Belgium: Hematology as part of Internal Medicine: 4 years of general Internal Medicine plus 2 years of sub-specialization (known as a special competence).

• Georgia: recognized postgraduate specialties are General Oncology, Hematology and Radiotherapy. General Oncology includes: chemotherapy, organ-specific surgical oncology. The postgraduate course has a duration of 4 years – one year for general oncology and 3 years for the specialty (organ-specific surgical oncology or chemotherapy).
Radiotherapy is a sub-specialty of Radiology. The postgraduate course has a duration of 3 years – one year for general Radiology and 2 years for sub-specialization in Radiotherapy.
Hematology as a specialty includes Onco-Hematology. The postgraduate course has a duration of 3 years and includes both general Hematology and Onco-Hematology.

• Estonia: Oncology is understood as Medical Oncology plus Radiation Oncology. Under the umbrella there are 2 separate sub-programs (Medical Oncology and Radiation Oncology) with a duration of 4 years.

• Norway: the specialty in Oncology covers both Medical Oncology and Radiotherapy. These are not separated.

• Finland: as in the other Scandinavian countries, the specialty in Oncology covers both Medical Oncology and Radiotherapy. These are not separated.

• Czech Republic: the situation is changing with the new structure of postgraduate education in Medical Oncology and the establishment of postgraduate education in Palliative Medicine.

• Slovakia: Palliative Medicine is a subspecialty of Internal Medicine; Oncology is not considered a sub-specialization.

• Sweden: in Scandinavian countries, the specialty in Oncology covers both Medical Oncology and Radiotherapy; these are not separated. In Sweden you can also specialize in Gynecologic Oncology, including training in Radiotherapy and Medical Oncology, but not Surgery on gynecological patients.

• Romania: there is competence in Palliative Care (2 year training).There is 1 year specialization in Gynecologic Oncology.

Specific qualifications required for specialization

Specific qualifications required for specialization usually include: MD degree and, in some countries, specialty in Internal Medicine, or at least qualification for Internal Medicine and sub-selection of Hematology, Medical Oncology.

National and/or international certification

The certification process for each specialty usually requires the following: oral and/or written examination by each medical faculty or by an examination committee organized under the supervision of the Ministry of Health or by a recognized professional society. In some countries a system of continuous evaluation by a national commission of specialists is established. There is certainly no uniform system all over Europe. The ESMO Examination in Medical Oncology is accepted as part of the evaluation system in only 3 countries (Croatia, Slovenia, Switzerland), and probably in the future also in Belgium.

Notes

- Greece: the Ministry of Health is responsible for the training program, examination and certification for all specialties in Medicine. The examination is both oral and written and can be taken 4 times per year. A Committee of academic doctors relevant to the specialty is appointed for the examination.
- Italy: certification by ESMO has no value in order to work as a medical oncologist in Italy and it is not required.
- Latvia: certification documentation of Latvian Physicians Association.
- Georgia: as of 2000 the Ministry of Health organizes the examination for certification for all specialties in Medicine. As was explained above, organ-specific surgical oncologists and chemotherapists receive a certificate in General Oncology, Onco-hematologist in Hematology, radiotherapists in Radiology.
- Moldova: postgraduate educational program and syllabus for specialization in Oncology and Hematology (State Medical & Pharmaceutical University).
- Russian Federation: initial national certification requires 576 hours of active training during 2 years of postgraduate specialization in Oncology, followed by 144-hour training every 5 years. The Local Academic Departments or Postgraduate Departments accredited by Federal Agency of Health Care are responsible for certification.
- Poland: specializations are completed with a national examination organized by a special governmental unit, general consultants and representatives of specific society.

2. OUTLINE OF MEDICAL AND RADIATION ONCOLOGY FACILITIES – PATTERN OF CANCER CARE AND MULTIDISCIPLINARY COLLABORATION

Existing Oncology Facilities in each country

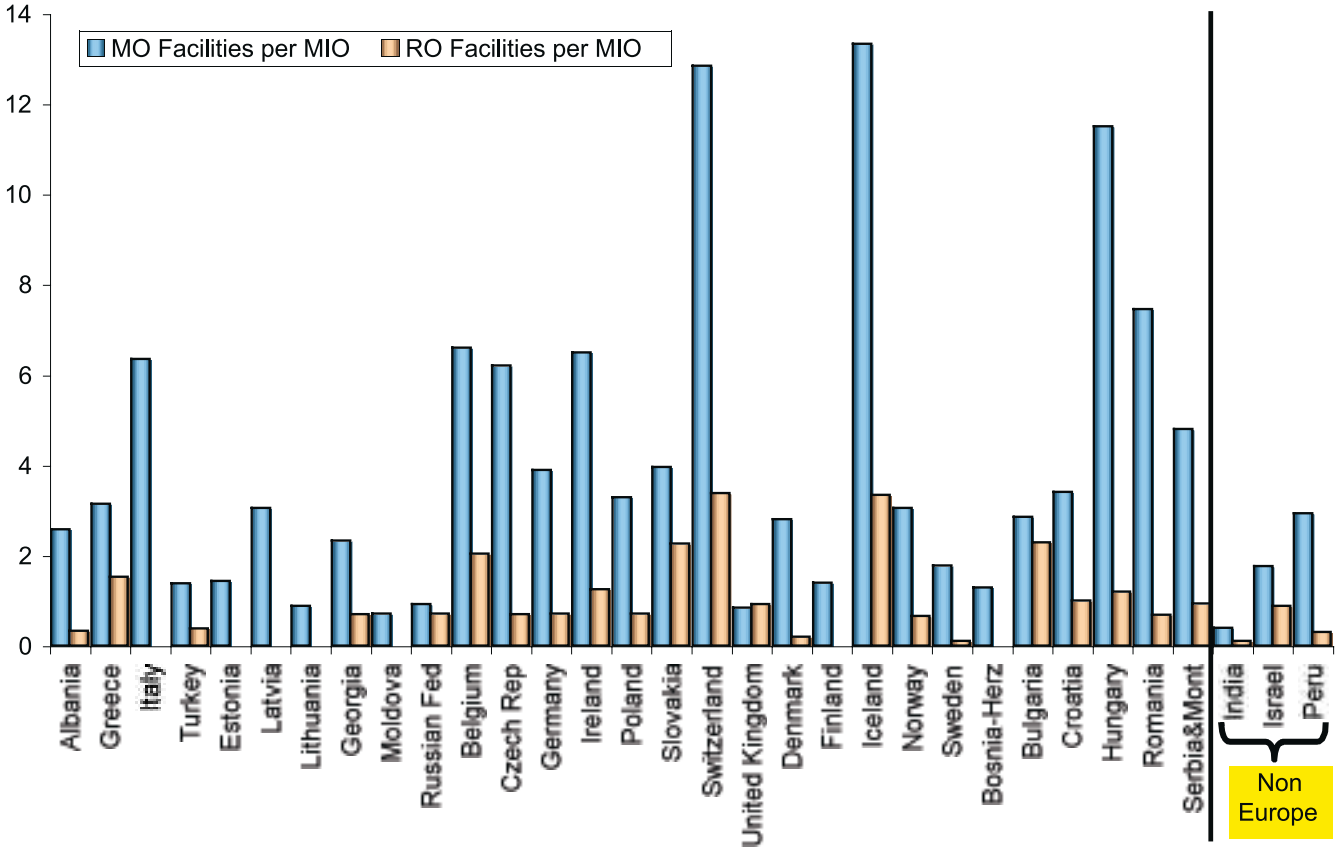
Medical and Radiation Oncology Facilities

At the end of 2005, the outline of Medical and Radiation Oncology services across Europe was far from being uniform. Healthcare systems differ significantly among countries and, although consensus definitions of facilities were provided with the questionnaire, data collection was not possible for several countries. Few countries have central 'registries' of Medical Oncology services. The best example is Italy, where a detailed publication of national Medical Oncology services exists (Italian White Book on Oncology). However, all of them are considered as Medical Oncology structures and an exact categorization according to questionnaire definitions is difficult. Others reported instead that the compilation of the 'oncology' map of the country is underway by their national society (i.e. Greece). National societies were in fact the most common source of information for data collected in this chapter. In order to provide a way to compare facilities across European countries, separate graphs for different Medical Oncology Services (including Medical Oncology Facilities, Independent Oncology Units, Day Clinics, and Comprehensive Cancer Centers, as defined in the questionnaire) would have been the ideal solution. However, missing data for some of the services allowed only a graph comparing Medical Oncology Facilities to Radiation Oncology Facilities. The data is not accurate in all cases.

Table 2.1: overall number of Medical and Radiation Oncology Facilities across European countries

COUNTRY	NO. OF INHABITANTS	MEDICAL ONCOLOGY FACILITIES	INDEPENDENT ONCOLOGY UNITS	ONLY DAY CLINICS	COMPREHENSIVE CANCER CENTERS	TOTAL MEDICAL ONCOLOGY SERVICES	RADIATION ONCOLOGY FACILITIES
Albania	3,140,000	6	1	0	1	8	1
Greece	10,700,000	>3	~19	~8	~3	>33	16
Italy	57,000,000	N/R	N/R	N/R	7	362	N/R
Spain	44,110,000	Yes	Yes	Yes	Yes	N/R	N/R
Turkey	72,000,000	56	28	3	12	99	27
Estonia	1,400,000				2	2	N/R
Latvia	2,330,000	4	1		2	7	N/R
Lithuania	3,400,000	3				3	N/R
Georgia	4,300,000	2	4	4		10	3
Moldova	4,200,000		2		1	3	N/R
Russian Fed	145,200,000	Yes	84	Yes	9	134	104
Belgium	10,300,000	38	>22		8	~68	>21
Czech Rep	10,000,000	>28	2	~14	18	62	7
Germany	81,000,000	~209		~100	~6	~315	57
Ireland	4,000,000	>10	>7	>4	>5	>26	>5
Poland	38,150,000	53	49	4	19	125	27
Slovakia	5,400,000	21				21	12
Switzerland	7,400,000	~70	~10	>10	5	>95	~25
United Kingdom	59,500,000	>50				~50	55
Denmark	5,000,000	8	1		5	14	1
Finland	5,000,000	N/R	N/R	N/R	7	7	N/R
Iceland	300,000	2	1		1	4	1
Norway	4,600,000	4	4		6	14	3
Sweden	9,000,000				16	16	1
Bosnia-Herz	3,900,000	1	3		1	5	N/R
Bulgaria	7,000,000	6	14	Yes	1	>20	16
Croatia	5,000,000	10	6	0	1	17	5
Hungary	10,000,000	66	32	15	12	115	12
Romania	22,000,000	>60	Yes	102	2	>164	15
Serbia&Mont	7,500,000	27	3	1	5	36	7
India	1,140,000,000	111	290	0	42	443	127
Israel	6,800,000			11	6	12	6
Peru	27,000,000	56	4	18	1	79	8

Figure 2.1: total number of Medical and Radiation Oncology Facilities per million inhabitants in each country



Based on the available data, countries in Central, Eastern and Northern Europe seem to have higher numbers of Medical Oncology Facilities per million population than the Mediterranean countries and the Baltic and White Russia area. It is noteworthy that certain countries with smaller populations have high numbers of facilities (e.g. Switzerland, Iceland), while countries with large populations such as the Russian Federation, Turkey and Non-Europe countries (India, Israel, Peru) lack significantly in numbers of facilities. It is not possible to make accurate comparisons at present with reference to Radiation Oncology Facilities as data reported was limited.

Among the total number of Medical Oncology Services it is difficult at the present time to draw conclusions regarding their location within health institutes. Data provided are very limited and in most cases only approximate figures were given. Data across countries are shown in the table below and, with all the limitations of accuracy considered, they indicate that the majority of Medical Oncology Services are currently provided within Universities and in General Hospitals. Furthermore, a large number of private practices is providing Medical Oncology Services across Europe today. It is of interest that most countries provided data regarding Comprehensive Cancer Centers and it is also noteworthy that most of these centers across Europe belong to Universities. Only few countries provided accurate data regarding Radiation Oncology Facilities. Again considering the above-mentioned limitations, data are only indicative that Radiation Oncology Facilities exist mainly within Cancer Centers and Universities across Europe.

Table 2.2: location of Medical and Radiation Oncology Facilities in health institutions across European countries

	UNIVERSITIES	CANCER CENTERS	GENERAL HOSPITALS	COMMUNITY HOSPITALS	PRIVATE HOSPITALS	PRIVATE PRACTICES
Medical Oncology Facilities	>188 (18)	146 (18)	>371 (19)	>80 (9)	>90 (13)	>170 (10)
Independent Oncology Units	>245 (17)	113 (10)	61 (10)	N/R	9 (5)	151 (2)
DayClinics only	78 (6)	5 (3)	66 (6)	2 (3)	29 (8)	>104 (3)
Comprehensive Cancer Centers	110 (22)	69 (12)	10 (3)	N/R	2 (2)	1 (1)
Total no of Medical Oncology Services	>621	333	>508	>82	>130	>426
Radiation Oncology Facilities	162 (16)	216 (16)	89 (11)	0	50 (7)	36 (4)

The total number of Facilities is given in each case; the number of countries that have reported data is given in parentheses in each case (data for Italy are included in the Medical Oncology facilities section). Data are indicative only and not completely accurate.

Palliative Care Facilities

The majority of European countries do not have specialized Palliative Care Facilities, and even in countries that do report them the numbers are very low. Table 2.3 details the Palliative Care Facilities across countries and their location within health institutes. It is interesting that they primarily belong to private hospitals or private practices, and a smaller number are within Universities.

Although the number of countries that reported on Palliative Care Facilities is relatively small, it is worth commenting that countries with high numbers of such facilities also have hospices linked to the majority of them (e.g. Albania, Iceland) and again that countries with large populations lack in numbers of such facilities (e.g. Turkey, Germany, Non-European countries).

Table 2.3: Palliative Care Facilities (w-h: with hospice)

COUNTRY	UNIVERSITY HOSPITALS	CANCER CENTERS	GENERAL HOSPITALS	COMMUNITY HOSPITALS	PRIVATE HOSPITALS/ CLINICS	PRIVATE PRACTICES	OTHER	TOTAL
Albania	No	Yes (13)	No	No	Yes (11) w-h (10)	No	Yes (1)	15 w-h (10)
Greece	Yes (1)	No	Yes (1)	No	No	No	No	2
Georgia	No	Yes (1)	No	No	No	No	No	1
Moldova	N/R	N/R	N/R	N/R	N/R	N/R	Yes (2) w-h (2)	2 w-h (2)
Russian Fed	N/R	Yes (few)	No	No	N/R	N/R	N/R	N/A
Belgium	Yes (7) w-h (1)	No	Yes (5) w-h (3)	Yes (5) w-h (2)	N/R	N/R	N/R	17 w-h (6)
Germany	No	N/R	Yes (8) w-h (3)	N/R	N/R	N/R	N/R	8 w-h (3)
Ireland	Yes (8)	Yes (2)	Yes (-, -)	N/R	Yes (-, -)	Yes (-, -)	N/R	N/A
Poland	Yes (4) w-h (4)	Yes (16) w-h (14)	No	No	No	No	No	20 w-h (18)
Switzerland	Yes (-)	N/R	Yes (-)	Yes	Yes	N/R	N/R	N/A
Denmark	Yes (5)	Yes (1)	Yes (8) w-h (6)	No	Yes (3) w-h (3)	No	No	17 w-h (9)
Iceland	Yes (2) w-h (2)	No	N/R	No	N/R	N/R	N/R	2 w-h (2)
Bosnia-Herz	Yes (2) w-h (2)	N/R	N/R	N/R	N/R	N/R	N/R	2 w-h (2)
Bulgaria	Yes (3)	No	No	No	Yes (12) w-h (8)	No	N/R	15 w-h (8)
Hungary	Yes	No	No	No	No	No	N/R	N/A
Romania	Yes (2)	Yes (2)	No	No	Yes (-, -)	No	N/R	N/A
Serbia&Mont	Yes (3)	No	No	N/R	No	Yes (1)	No	4
India	Yes (40) w-h (6)	Yes (21) w-h (8)	No	No	Yes (50) w-h (2)	Yes (30)	N/R	141 w-h (16)
Israel	Yes (2) w-h (2)	N/R	N/R	N/R	N/R	N/R	N/R	2 w-h (2)
Peru	No	Yes (1)	Yes (1)	No	No	No	No	2

For Italy, the total number of Hospices active in 2005 (81) was delivered, but it is difficult to track their exact distribution within the different structures.

Not reported: Spain, Turkey, Estonia, Latvia, Lithuania, Finland, Norway, Sweden, Croatia, United Kingdom, Slovenia.

Private practice by medical oncologists across European countries

Regarding private practice of Medical Oncology across Europe, it is a significant reality in most countries, with 62.5% reporting that private Medical Oncology practices exists in their country. Low percentages were only reported in the Baltic and White Russia area as well as in Central-Eastern Europe; almost the majority of the other countries have private medical oncologists.

Table 2.4: presence of private Medical Oncology practices across Europe

	AREA	N (%)
No		**12 (37.5)**
	Baltic and White Russian area: *Latvia, Lithuania, Georgia, Moldova*	***4 (80.0)***
	Central Europe: *Belgium*	***1 (14.3)***
	Northern Europe: *Denmark, Norway*	***2 (40.0)***
	Central-Eastern Europe: *Bosnia-Herz, Croatia, Hungary, Romania, Slovenia*	***5 (71.4)***
Yes		**30 (62.5)**
	Mediterranean area: *Albania, Greece, Italy, Spain, Turkey*	***5 (100)***
	Baltic and White Russia area: *Russian Fed*	***1 (20.0)***
	Central Europe: *Poland, Germany, Ireland, Slovakia, Switzerland, United Kingdom*	***6 (85.7)***
	Northern Europe: *Finland, Iceland, Sweden*	***3 (60.0)***
	Central-Eastern Europe: *Bulgaria, Serbia&Mont*	***2 (18.6)***
	Non-Europe: *India, Israel, Peru*	***3 (100)***

Not reported: Estonia, Czech Rep

Certified Medical Oncology specialists

Significant differences exist among countries with regard to Medical Oncology specialists: in some healthcare systems Medical Oncology is not a recognized specialty (e.g. Denmark) while in others the certification is common for surgical and medical oncologists (Russian Federation) or gynecology oncologists (Sweden). These differences make it very difficult to draw comparative conclusions among countries, therefore only an outline of specialists across Europe can be given. The number of reported certified Medical Oncology specialists per million population for each country is shown in Graph 2.2, where some comparisons across countries/areas could be attempted: countries in Central and Northern Europe have comparatively higher numbers of specialists per million population, whether countries with large populations, such as India, have extremely small numbers of specialists.

Palliative Care is not a recognized specialty in the majority of countries, however, in most countries several certified oncologists exist that can provide palliative care. Some countries in Central Europe foresee a certification for Palliative Care Specialists (PCS). A large number of those specialists provide palliative care mainly within Universities and Cancer Centers (a total of 168 PCS work in the Czech Rep., 91 in Poland and 317 in the United Kingdom). However, it must be noted that countries with very large populations have no palliative care specialists at all, or very limited (i.e. Turkey 0, India 40).

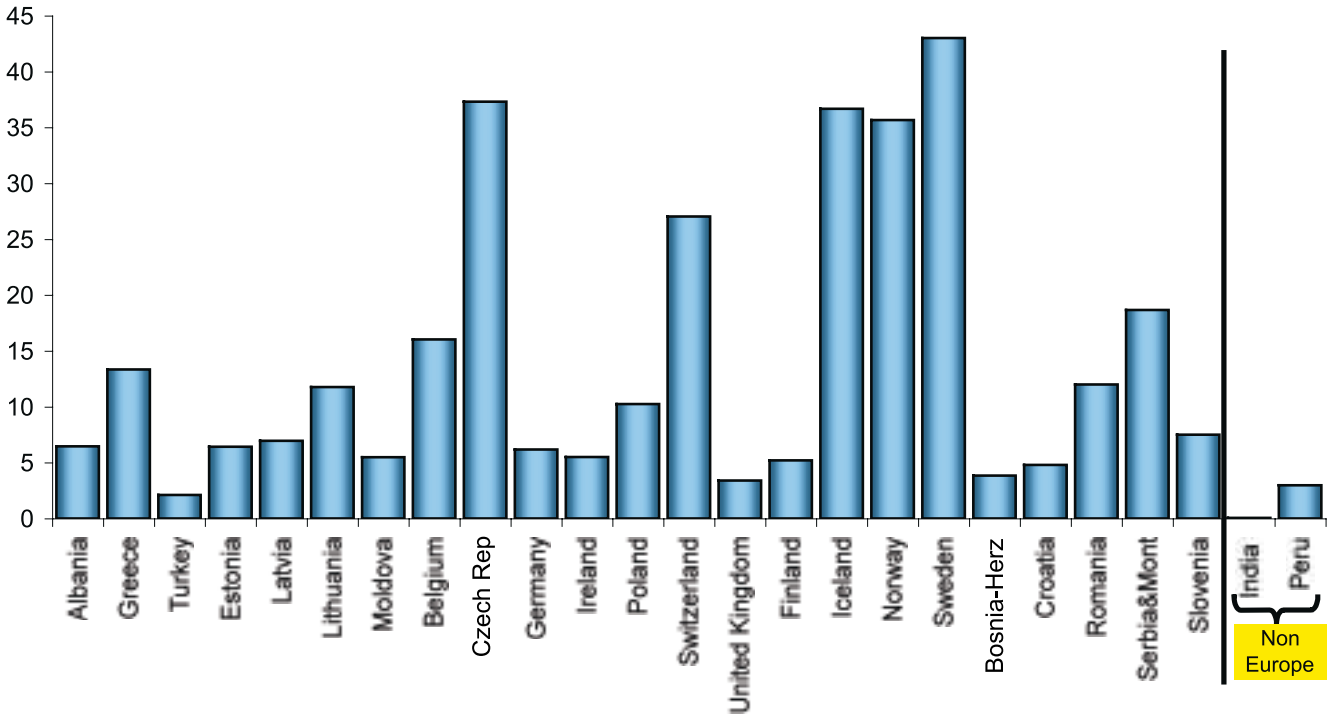
Table 2.5: number of certified medical oncologists according to location of practice

COUNTRY	UNIVERSITY HOSPITALS	CANCER CENTERS	GENERAL HOSPITALS	COMMUNITY HOSPITALS	PRIVATE HOSPITALS / CLINICS	PRIVATE PRACTICES	OTHER	TOTAL
Albania	8	-	-	-	6	6	-	20
Greece	35	63	7	NA	21	14	-	140
Turkey	130	2	16	-	-	4	-	152
Estonia	2	7	0	0	0	0	0	9
Latvia	4	12	-	-	-	-	-	16
Lithuania	30	10	0	0	0	0	0	40
Moldova	8	15	0	0	0	0	0	23
Belgium	50	10	50	60	0	0	5	165
Czech Rep	112	149	56	37	19	-	-	373
Germany	150	10	200	30	10	100	-	500
Ireland	15	Incorporated in the University Hospitals	6	-	1	-	-	22
Poland	80	180	80	30	20	0	0	390
Switzerland	-	-	-	-		~ 100		207
United Kingdom	-	-	-	-	-	-	-	202
Finland	>10	-	-	-	2	-	14	26
Iceland	8	-	-	-	-	3	-	11
Norway	153	0	≤10	-	0	1	0	~ 164
Sweden	300	-	85	-	2	-	-	387
Bosnia-Herz	15	-	-	-	-	-	-	15
Croatia	9	7	8	-	-	-	-	24
Romania	50	40	40	160	4	10	-	304
Serbia&Mont	~ 60	~ 10	~ 50	~ 20	-	-	-	~ 140
Slovenia	15	-	-	-	-	-	-	15
India	5	30	0	0	20	0	0	55
Peru	0	8	28	0	14	30	-	80

Not reported: Spain, Georgia, Russian Fed, Bulgaria, Hungary, Slovakia, Israel
Not applicable: Denmark, Italy

Caution: due to the heterogeneous situation throughout the Continent, it is very likely that the question was interpreted and answered differently. Therefore discrepancies may appear within the above table.

Figure 2.2: total number of certified Medical Oncologists per million inhabitants in each country



National Standards/Minimum Requirements for a Medical Oncology Facility

Only in half of European countries there are National Standards or minimum requirements for a Medical Oncology Facility, with no apparent distribution of the differences in geographical areas.

Table 2.6: percentages of countries with or without National Standards/Minimum Requirements for a Medical Oncology Facility

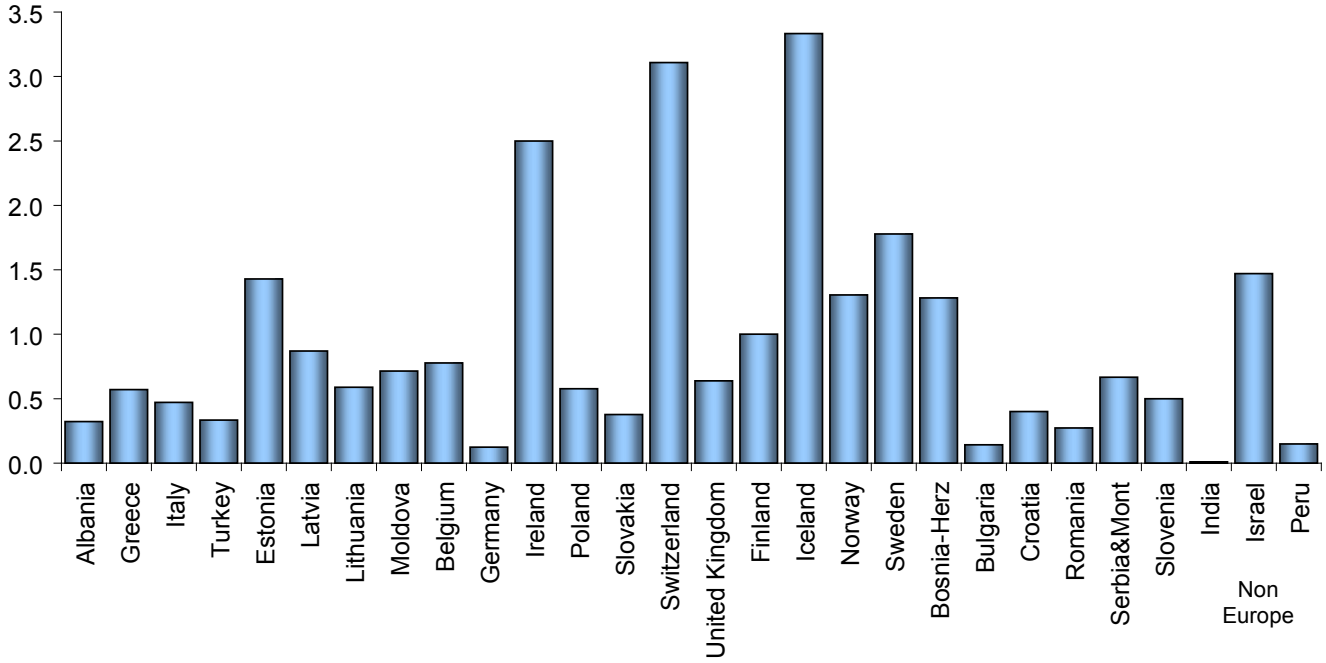
	AREA	N (%)
No		**16 (50.0)**
	Mediterranean area: *Greece, Italy, Turkey*	***3 (60.0)***
	Baltic and White Russia area: *Lithuania*	***1 (16.7)***
	Central Europe: *Belgium, Germany, Switzerland, United Kingdom*	***4 (50.0)***
	Northern Europe: *Norway, Sweden*	***2 (50.0)***
	Central-Eastern Europe: *Bosnia-Herz, Croatia, Serbia&Mont, Slovenia*	***4 (66.7)***
	Non Europe: *Israel, Peru*	***2 (66.7)***
Yes		**16 (50.0)**
	Mediterranean area: *Albania, Spain*	***2 (40.0)***
	Baltic and White Russia area: *Estonia, Latvia, Georgia, Moldova, Russian Fed*	***5 (83.3)***
	Central Europe: *Czech Rep, Ireland, Poland, Slovakia*	***4 (50.0)***
	Northern Europe: *Finland, Iceland*	***2 (50.0)***
	Central-Eastern Europe: *Hungary, Romania*	***2 (33.3)***
	Non-Europe: *India*	***1 (33.3)***

Not applicable: Denmark
Not reported: Bulgaria

Medical Oncology Facilities for official training in Medical Oncology

As a result of the above-described differences among countries in terms of number of facilities and specialists in Medical Oncology, also to be noted are differences in facilities for official MO training that exist in each country. If one compares the figures per million population, it is again evident that non-European countries with large populations such as India still lack significantly in facilities while countries in Central Europe seem to have the most balanced numbers per population of facilities for official training in MO.

Figure 2.3: Medical Oncology Facilities for official training in Medical Oncology per million inhabitants in each country



Not applicable: Denmark
Not reported: Spain, Russian Fed, Germany, Hungary, Czech Rep

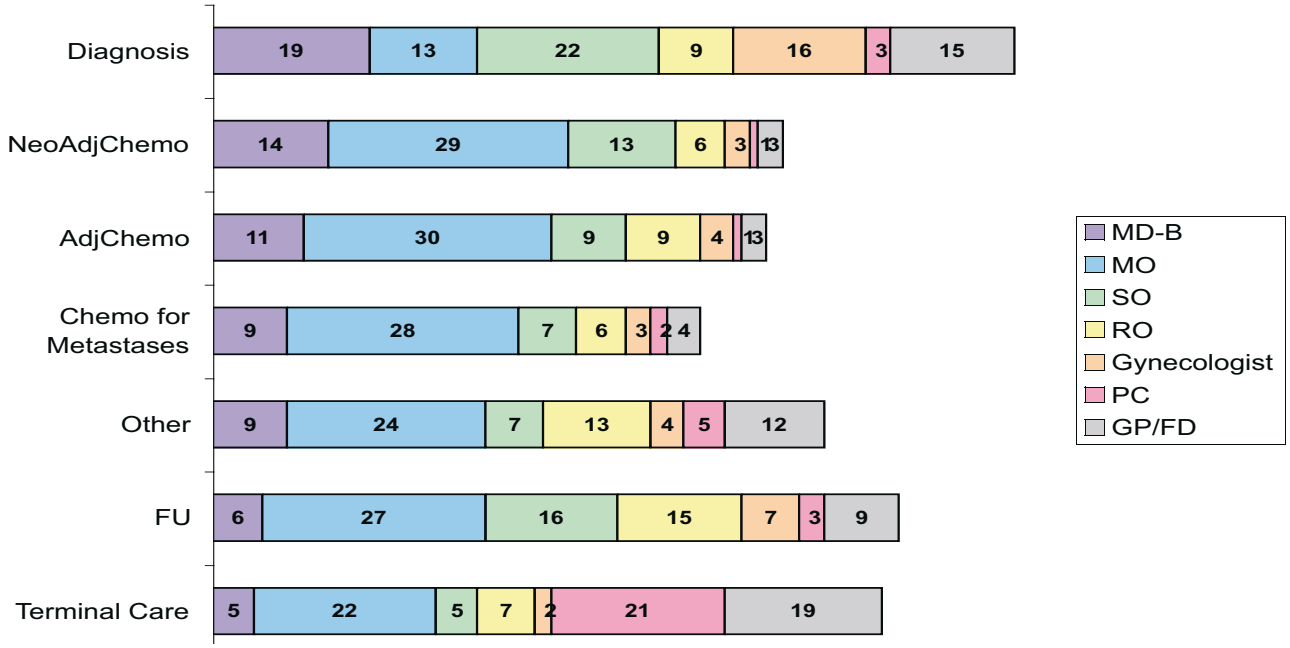
Pattern of cancer care and multidisciplinary collaboration

Patterns of cancer care across countries in Europe are outlined in a diagram for the major types of cancer.

Breast cancer

Surgical oncologists, a Multidisciplinary Board and other specialists are primarily the ones involved in the diagnosis of breast cancer (BC) in the majority of countries. Medical oncologists, however, are the main specialists involved in the administration of all types of chemotherapy and other medical treatment, as well as the follow-up of BC patients. Surgical and radiation oncologists are also involved in the follow-up of these patients. Terminal care is provided by medical oncologists, palliative care specialists and family doctors, equally.

Figure 2.4: breast cancer

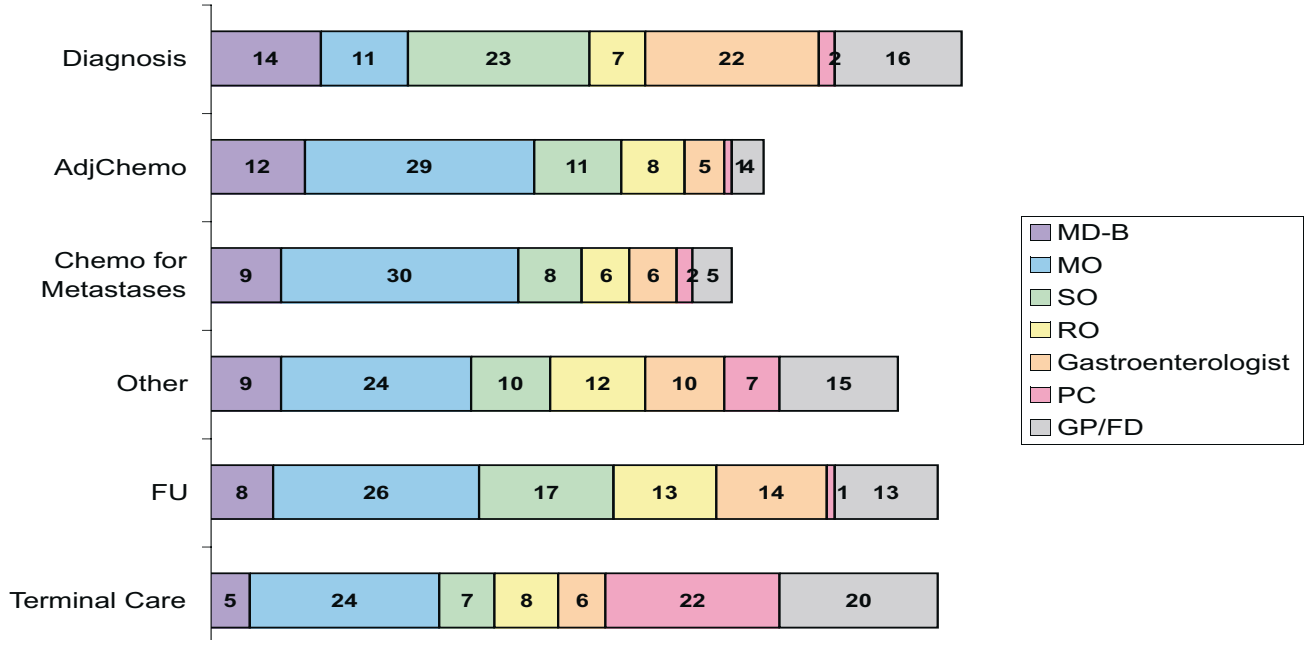


Values represent the number of countries that reported the most relevant specialist/s in the diagnosis.
Not reported: Finland

Colorectal and gastrointestinal cancer

For colorectal and gastrointestinal cancer the surgical oncologist and the gastroenterologist are the ones primarily involved in diagnosis. The medical oncologist is the main specialist to administer chemotherapy and other medical treatment, is primarily involved in follow-up and terminal care, which is also provided by palliative care specialists.

Figure 2.5: colorectal and gastrointestinal cancer

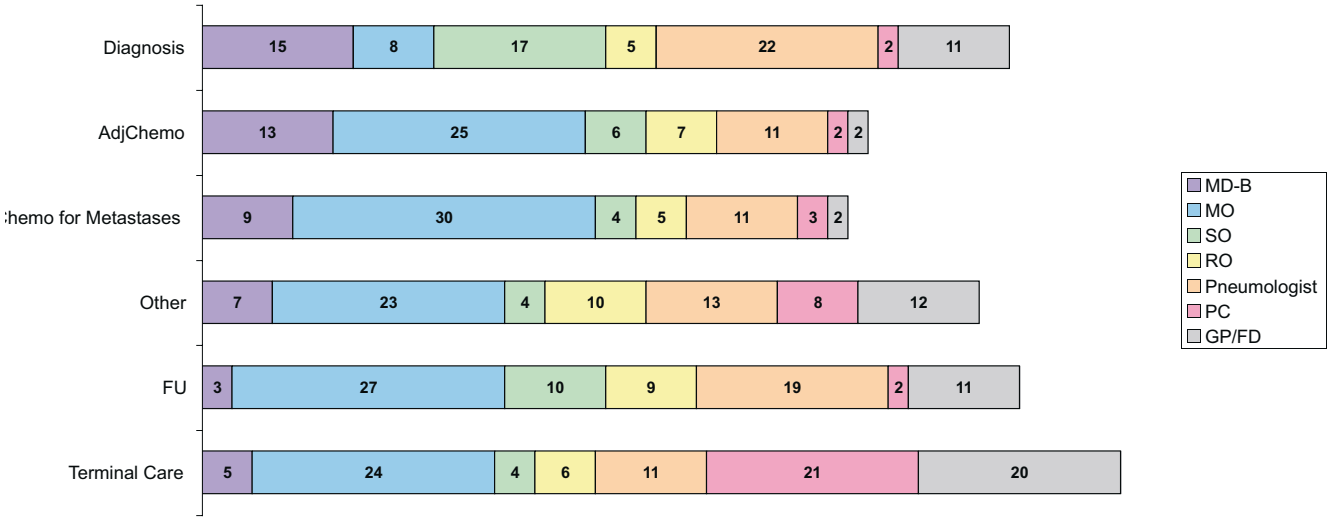


Values represent the number of countries that reported the most relevant specialist/s in the diagnosis.
Not reported: Finland

Lung cancer

For lung cancer the pneumologist is usually the first to diagnose it but it seems that surgical oncologists and a Multidisciplinary Board also play an important role in several countries. Chemotherapy is mainly administered by medical oncologists (especially for metastatic disease) but there is a number of countries where chemotherapy is administered by pneumologists. Finally, follow-up is provided by medical oncologists and also pneumologists with a slight difference among countries.

Figure 2.6: lung cancer

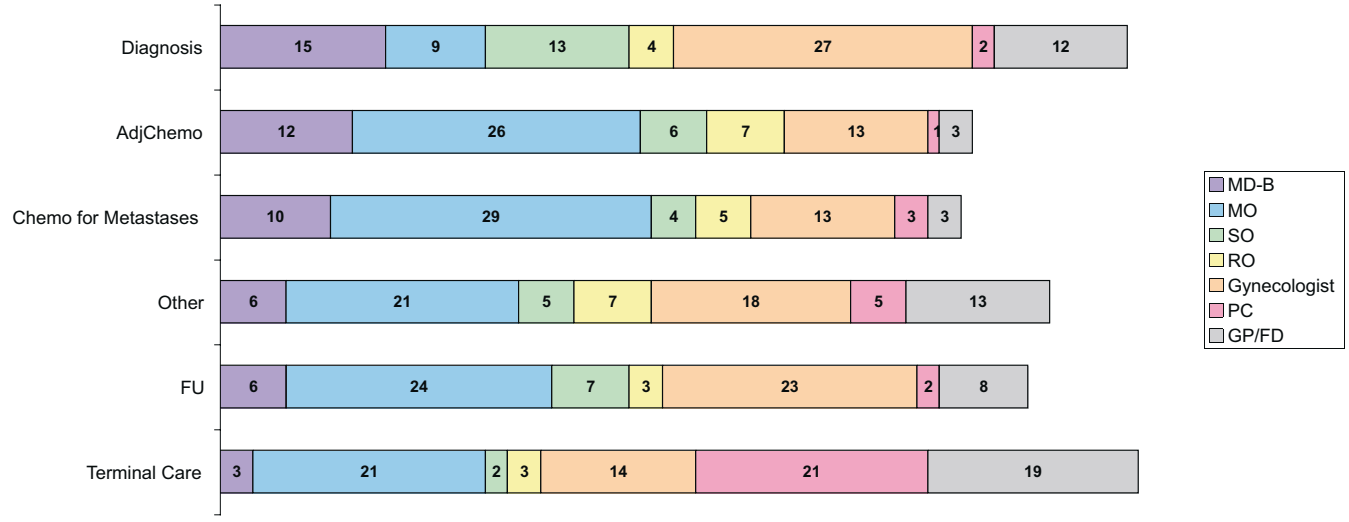


Values represent the number of countries that reported the most relevant specialist/s in the diagnosis.
Not reported: Finland

Ovarian cancer

For ovarian cancer the gynecologist is primarily involved in diagnosis, while chemotherapy is mainly administered by medical oncologists. In several countries, however, chemotherapy is administered by gynecologists and they are also involved in the patient follow-up.

Figure 2.7: ovarian cancer

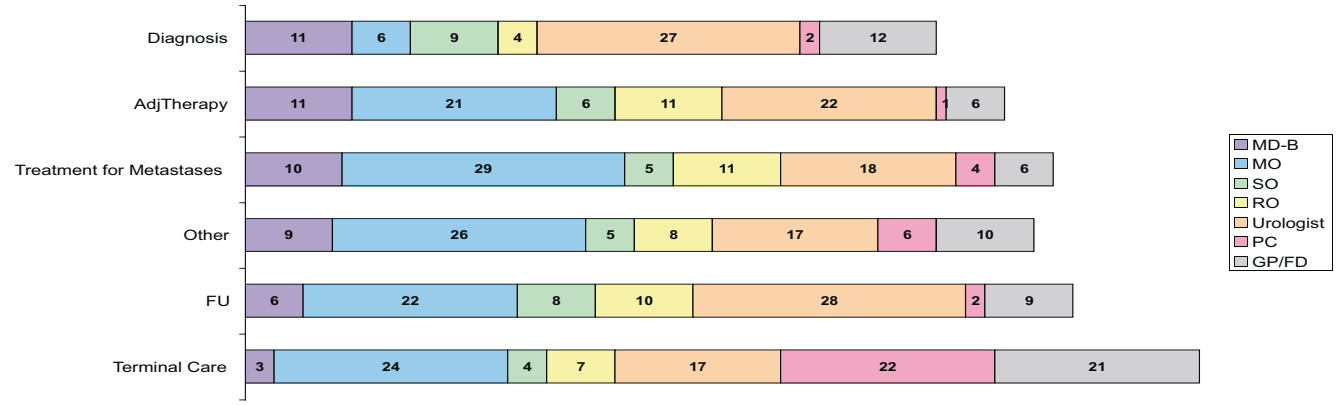


Values represent the number of countries that reported the most relevant specialist/s in the diagnosis.
Not reported: Finland

Prostate cancer

Similarly with other types of cancer, the relevant specialist (urologist) is primarily involved in diagnosis. In most countries both the urologist and the medical oncologist administer chemotherapy, while treatment for metastatic disease is mainly provided by medical oncologists. Follow-up is provided by urologists and medical oncologists.

Figure 2.8: prostate cancer

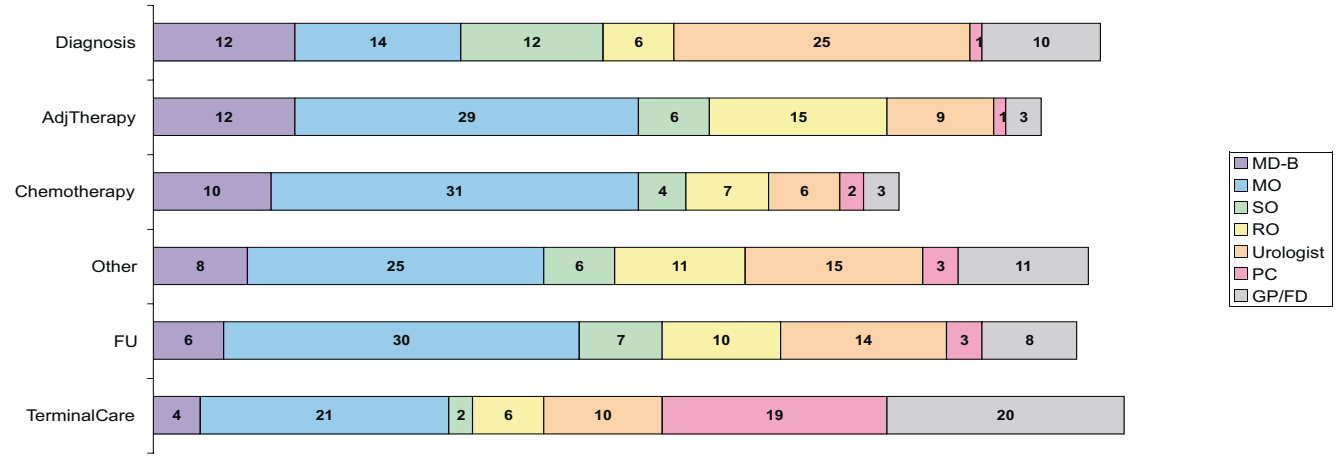


Values represent the number of countries that reported the most relevant specialist/s in the diagnosis.
Not reported: Finland

Germ Cell Tumor (GCT)

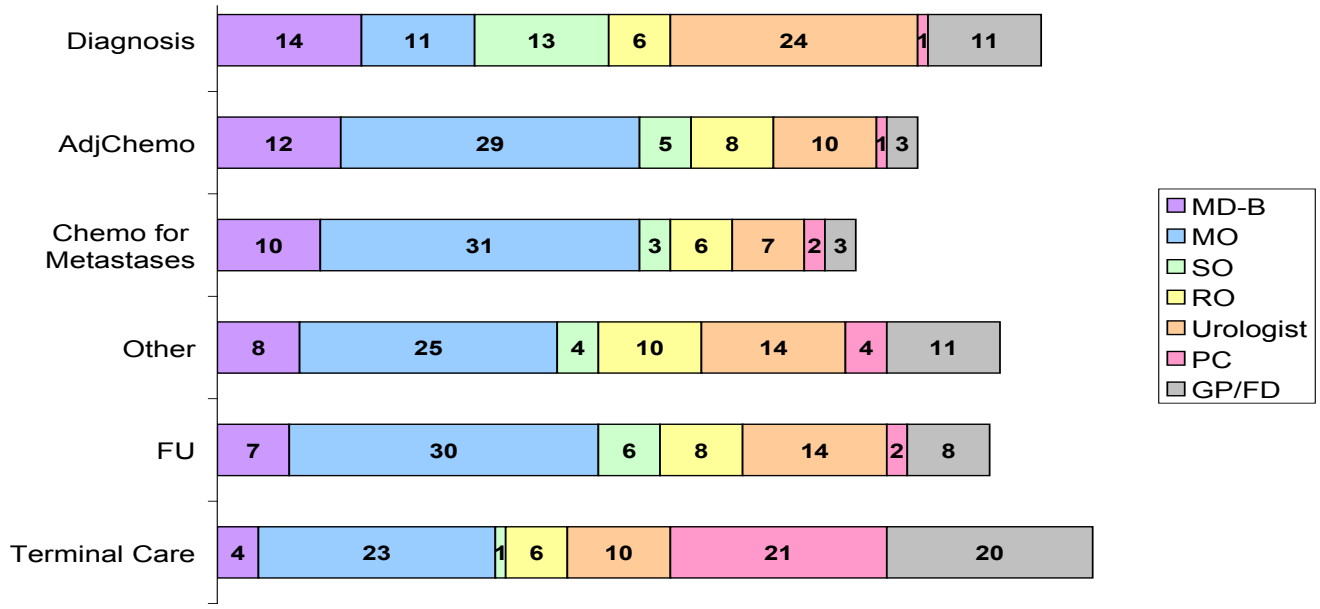
For both Seminomatous and Non-Seminomatous GCTs the urologists are mainly involved in diagnosis but the medical oncologist is the main specialist providing all other patterns of care, from chemotherapy administration to follow-up.

Figure 2.9: seminomatous (GCT)



Values represent the number of countries that reported the most relevant specialist/s in the diagnosis.
Not reported: Finland

Figure 2.10: non seminomatous GCT

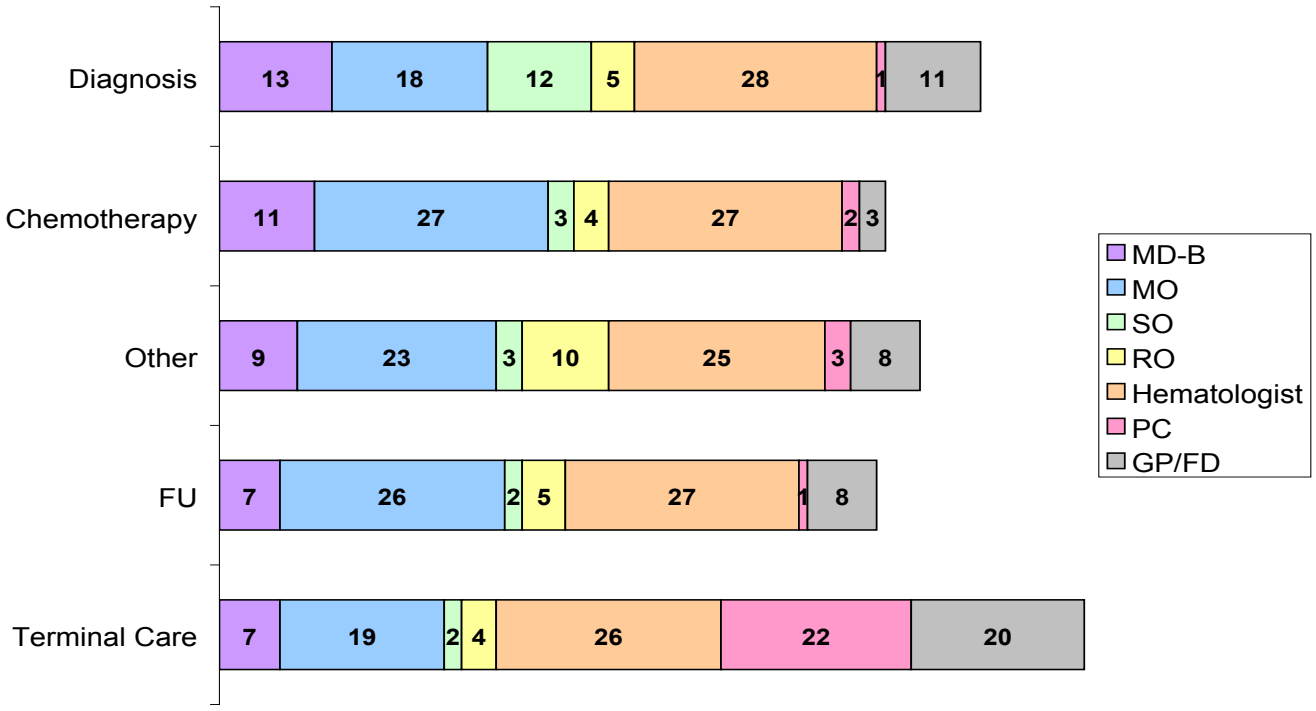


Values represent the number of countries that reported the most relevant specialist/s in the diagnosis.
Not reported: Finland

Malignant Lymphoma (Non-Hodgkin Lymphoma)

For malignant lymphoma, in the majority of countries the main specialist involved for diagnosis, chemotherapy administration, follow-up and terminal care remains the hematologist, followed by the medical oncologist.

Figure 2.11: malignant lymphoma



Values represent the number of countries that reported the most relevant specialist/s in the diagnosis.
Not reported: Finland

As a general comment on the outline of patterns of care for major cancer types, in most countries medical oncologists, in some cases within the Multidisciplinary Boards, are involved in the care of the patient after initial diagnosis from the relevant organ-based specialist.

Prescription and administration of cytotoxic drugs

With reference to chemotherapy prescription and administration, only in 35% of countries the prescription of cytotoxic drugs in solid tumors is restricted to a single specialty. Most countries in the Mediterranean area, Central and Northern Europe, on the contrary, report that prescription of chemotherapy and even more administration of cytotoxic drugs in solid tumors are not restricted to a single specialty. (71.9% more than one specialty, 28.1% restricted to one specialty).

Table 2.7: prescription of chemotherapy by a single specialty

	AREA	N (%)
No		**22 (64.7)**
	Mediterranean area: *Greece, Italy, Spain, Turkey*	***4 (80.0)***
	Baltic and White Russian area: *Estonia, Georgia,*	***2 (33.3)***
	Central Europe: *Belgium, Czech Rep, Germany, Ireland, Poland, Switzerland, UK*	***7 (87.5)***
	Northern Europe: *Finland, Iceland, Norway, Sweden*	***4 (80.0)***
	Central-Eastern Europe: *Bosnia-Herz, Serbia&Mont, Slovenia*	***3 (42.9)***
	Non-Europe: *India, Israel*	***2 (66.7)***
Yes		**12 (35.3)**
	Mediterranean area: *Albania*	***1 (20.0)***
	Baltic and White Russian area: *Latvia, Lithuania, Moldova, Russian Fed*	***4 (66.7)***
	Central Europe: *Slovakia*	***1 (12.5)***
	Northern Europe: *Denmark*	***1 (20.0)***
	Central-Eastern Europe: *Bulgaria, Croatia, Hungary, Romania*	***4 (57.1)***
	Non-Europe: *Peru*	***1 (33.3)***

Table 2.8: administration of chemotherapy by a single specialty

	AREA	N (%)
No		**23 (71.9)**
	Mediterranean area: *Greece, Italy, Spain, Turkey*	***4 (80.0)***
	Baltic and White Russian area: *Estonia, Georgia*	***2 (33.3)***
	Central Europe: *Belgium, Czech Rep, Germany, Ireland, Poland Switzerland, UK*	***7 (87.5)***
	Northern Europe: *Finland, Iceland, Norway, Sweden*	***4 (80.0)***
	Central-Eastern Europe: *Bosnia-Herz, Croatia, Serbia&Mon, Slovenia*	***4 (80.0)***
	Non-Europe: *India, Israel*	***2 (66.7)***
Yes		**9 (28.1)**
	Mediterranean area: *Albania*	***1 (20.0)***
	Baltic and White Russian area: *Latvia, Lithuania, Russian Fed, Moldova*	***4 (66.7)***
	Central Europe: *Slovakia*	***1 (12.5)***
	Northern Europe: *Denmark*	***1 (20.0)***
	Central-Eastern Europe: *Bulgaria*	***1 (20.0)***
	Non-Europe: *Peru*	***1 (33.3)***

Not reported: Hungary, Romania

Radiation oncologists prescribe chemotherapy or hormonal drugs for cancer treatment in 72.7% of European countries, including all of the Mediterranean and Northern European countries as well as the majority of Central European countries, among others.

Table 2.9: chemotherapy or hormonal drugs for cancer treatment prescribed by radiation oncologists.

	AREA	N (%)
No		**9 (28.1)**
	Baltic and White Russian area: *Georgia, Latvia, Lithuania, Moldova, Russian Fed*	***5 (71.4)***
	Central Europe: *Slovakia*	***1 (12.5)***
	Central-Eastern Europe: *Bulgaria, Romania*	***2 (28.6)***
	Non-Europe: *Peru*	***1 (33.3)***
Yes		**24 (72.7)**
	Mediterranean area: *Albania, Greece, Italy, Spain, Turkey*	***5 (100)***
	Baltic and White Russian area: *Estonia*	***1 (18.6)***
	Central Europe: *Belgium, Czech Rep, Germany, Ireland, Poland, Switzerland, UK*	***7 (87.5)***
	Northern Europe: *Denmark, Finland, Iceland, Sweden*	***4 (100)***
	Central-Eastern Europe: *Bosnia-Herz, Croatia, Hungary, Serbia&Mon, Slovenia*	***5 (71.4)***
	Non-Europe: *India, Israel*	***2 (66.7)***

Not reported: Norway

The majority of countries reported that prescription and administration of chemotherapy is not restricted to a single specialty, yet a high percentage (64.5%) reports that there are reimbursement difficulties for medical oncology treatments provided by specialists other than medical oncologists. Furthermore, 88% of countries report the presence of local health authority rules and regulations for the prescription and compensation of cytotoxic drugs. This group includes all countries from the Mediterranean area, Central and Northern Europe, while from the rest of Europe only Lithuania and Slovenia do not have such rules. From the Non-European countries, India and Peru also do not have such rules. The majority of countries (91.2%) reported also the existence of legal safety rules about the handling and administration of cytotoxic drugs. The above reflects the changes in health systems in recent years and the recent uniformity of regulations across Europe; significant differences, however, still exist among European and Non-European countries with regard to cancer care regulations (Tables 10, 11, 12).

Table 2.10: reimbursement difficulties for medical oncology treatments provided by specialists other than medical oncologists

	AREA	N (%)
No		**11 (35.5)**
	***Mediterranean area**: Italy*	***1 (20.0)***
	Baltic and White Russia area:	***- (0)***
	***Central Europe:** Czech Rep, Germany, Slovakia, United Kingdom*	***4 (57.1)***
	***Northern Europe:** Finland, Iceland, Norway, Sweden*	***4 (100)***
	***Central-Eastern Europe:** Croatia, Slovenia*	***2 (33.3)***
Yes		**20 (64.5)**
	***Mediterranean area:** Albania, Greece, Spain, Turkey*	***4 (80.0)***
	***Baltic and White Russia area:** Estonia, Georgia, Latvia, Lithuania, Moldova, Russian Fed*	***6 (100)***
	***Central Europe:** Belgium, Poland, Switzerland*	***3 (42.9)***
	***Central-Eastern Europe:** Bosnia-Herz, Serbia&Mont, Bulgaria, Romania*	***4 (66.7)***
	***Non-Europe:** India, Israel, Peru*	***3 (100)***

Not applicable: Denmark (There is no system for reimbursement: all medical care is free)
Not reported: Ireland, Hungary

Table 2.11: local health authority rules and regulations for the prescription and compensation of cytotoxic drugs

	AREA	N (%)
No		**4 (12.1)**
	Mediterranean area:	***- (0)***
	***Baltic and White Russia area:** Lithuania*	***1 (16.7)***
	***Central-Eastern Europe:** Slovenia*	***1 (14.3)***
	***Non-Europe:** India, Peru*	***2 (66.7)***
Yes		**29 (87.9)**
	***Mediterranean area:** Albania, Greece, Italy, Turkey*	***4 (100)***
	***Baltic and White Russia area:** Estonia, Latvia, Georgia, Moldova, Russian Fed*	***5 (83.3)***
	***Central Europe:** Belgium, Czech Rep, Germany, Ireland, Poland, Slovakia, Switzerland, UK*	***8 (100)***
	***Northern Europe:** Denmark, Finland, Iceland, Norway, Sweden*	***5 (100)***
	***Central-Eastern Europe:** Bosnia-Herz, Bulgaria, Croatia, Hungary, Romania, Serbia&Mont*	***6 (85.7)***
	***Non-Europe:** Israel*	***1 (33.3)***

Not reported: Spain

Table 2.12: legal safety rules about the handling and administration of cytotoxic drugs exist

	AREA	N (%)
No		**3 (8.8)**
	***Mediterranean area:** Greece*	***1 (20.0)***
	***Central Europe:** German*	***1 (12.5)***
	***Non-Europe:** Peru*	***1 (33.3)***
Yes		**31 (91.2)**
	Mediterranean area: *Albania, Italy, Spain, Turkey*	***4 (80.0)***
	***Baltic and White Russia area:** Estonia, Latvia, Lithuania, Georgia, Moldova, Russian Fed*	***6 (100)***
	***Central Europe:** Belgium, Czech Rep, Ireland, Poland, Slovakia, Switzerland, United Kingdom*	***7 (87.5)***
	***Northern Europe:** Denmark, Finland, Iceland, Norway, Sweden*	***5 (100)***
	***Central-Eastern Europe:** Bosnia-Herz, Croatia, Serbia&Mont, Slovenia Bulgaria, Hungary, Romania*	***7 (100)***
	***Non-Europe:** India, Israel*	***2 (66.7)***

National Cancer Registry

While in the majority of countries a National Cancer Registry has long since been established (82.4%), there is still 1 Non-European and 5 European countries where there is no active National Cancer Registry.

Italy presents a peculiar situation, as it has several local or regional Registries.

It is to be noted that the lack of uniformity has made the collection of statistical data on cancer across Europe very difficult.

Table 2.13: National Cancer Registry

	AREA		N (%)
No			**6 (17.6)**
	Mediterranean area: *Greece, Italy*		
	Baltic and White Russia area: *Moldova*		
	Central Europe: *Switzerland*		
	Central-Eastern Europe: *Bosnia-Herz*		
	Non-Europe: *Peru*		
Yes			**29 (82.4)**
	Albania	1959	
	Spain	-	
	Turkey	1984	
	Estonia	1966	
	Latvia	1993	
	Lithuania	1985	
	Georgia	1976	
	Moldova	>15 years	
	Poland	1963	
	Russian Fed	-	
	Belgium	1921 officially, acceptable quality since 1998	
	Czech Rep	1975	
	Germany	1995	
	Ireland	1991	
	Slovakia	1975	
	United Kingdom	Many years	
	Denmark	1920	
	Finland	1952	
	Iceland	1954	
	Norway	1951	
	Sweden	1959	
	Bulgaria	> 20 years	
	Croatia	1970	
	Hungary	1999	
	Romania	-	
	Serbia&Mont	2000	
	Slovenia	1950	
	India	1975	
	Israel	1960	

3. CONTINUING MEDICAL EDUCATION (CME); NATIONAL SOCIETIES FOR MEDICAL ONCOLOGY AND ONCOLOGY; NATIONAL CANCER GUIDELINES

Continuing Medical Education (CME)

CME process organization

Continuing Medical Education (CME) is foreseen after specialization or sub-specialization in Medical Oncology all over Europe, except in Norway. In the majority of countries a CME process is optional. It is mandatory in the Baltic and White Russia area and in most countries of Central and Central-Eastern Europe.

Table 3.1: year of introduction of a CME process, either as optional or mandatory process.

COUNTRY	YEAR OF INTRODUCTION	OPTIONAL/MANDATORY
Albania	-	Optional
Greece	2004	Optional
Italy	2000	Mandatory
Spain	-	Optional
Turkey	1994	Optional
Estonia	2002	Optional
Latvia	-	Mandatory
Lithuania	1999	Mandatory
Georgia	-	Mandatory
Moldova	>15 years	Mandatory
Russian Fed	Appr. 1995	Mandatory
Belgium	1990	Optional
Germany	1999	Optional
Ireland	2005	Optional
Czech Rep	-	Mandatory
Poland	2005	Mandatory
Slovakia	-	Optional
Switzerland	Appr. 1996	Mandatory
United Kingdom	1995	Mandatory
Denmark	2000	Optional
Finland	-	Optional
Iceland	-	Optional
Sweden	-	Optional
Norway	-	Not foreseen
Bosnia-Herz	2003	Optional
Bulgaria	-	Optional
Croatia	2000	Mandatory
Hungary	1978	Mandatory
Romania	2002	Mandatory
Serbia&Mont	2005	Optional
Slovenia	1994	Mandatory
India	2004	Mandatory
Israel	-	Optional
Peru	-	Optional

CME accreditation supervising bodies

National healthcare systems, scientific societies, universities and medical chambers are key elements in supervising the CME accreditation. In the Mediterranean area the CME process is mainly coordinated by scientific societies while in Central-Eastern Europe by medical chambers. In other areas there is an overlapping of various entities.

Table 3.2: institutions in charge of the CME accreditation supervision.

COUNTRY	NATIONAL HEALTH SYSTEM	UNIVERSITY	SCIENTIFIC SOCIETIES	HOSPITALS	PRIVATE FACILITIES	OTHER
Albania	No	Yes	Yes	Yes	No	No
Greece	No	No	Yes	No	No	No
Italy	Yes	No	No	No	No	No
Turkey	No	No	No	No	No	Turkish Physician Association
SUBTOTAL	***1 (25.0)***	***1 (25.0)***	***2 (50.0)***	***1 (25.0)***	***- (0)***	***1 (25.0)***
Estonia	No	No	Yes	No	No	No
Latvia	No	No	Yes	No	No	No
Lithuania	No	Yes	No	No	No	No
Georgia	Yes	No	No	No	No	No
Moldova	Yes	Yes	No	Yes	No	No
Russian Fed	Yes	Yes	No	No	No	No
SUBTOTAL	***3 (50.0)***	***3 (50.0)***	***2 (33.3)***	***1 (16.7)***	***- (0)***	***- (0)***
Belgium	Yes	No	No	No	No	No
Czech Rep	No	No	No	No	No	Medical Chamber
Germany	No	No	No	No	No	Board of Medicine
Ireland	No	No	Yes	No	No	No
Poland	No	No	No	No	No	Medical Chamber
Slovakia	No	Yes	No	Yes	No	No
Switzerland	No	No	Yes	No	No	No
United Kingdom	No	No	No	No	No	National Royal Colleges
SUBTOTAL	***1 (12.5)***	***1 (12.5)***	***2 (25.0)***	***1 (12.5)***	***- (0)***	***4 (50.0)***
Denmark	No	No	Yes	No	No	No
Finland	No	Yes	No	No	No	No
Iceland	No	No	Yes	No	No	No
Sweden	No	No	No	No	No	Health Care Authorities
SUBTOTAL	***- (0)***	***1 (25.0)***	***2 (50.0)***	***- (0)***	***- (0)***	***1 (25.0)***
Bosnia-Herz	No	No	Yes	No	No	Medical Chamber
Bulgaria	Yes	No	No	No	No	Bulgarian Society of Physicians
Croatia	-	-	-	-	-	Medical Chamber
Hungary	Yes	No	No	No	No	No
Romania	Yes	No	No	No	No	No
Serbia&Mont	Yes	Yes	No	No	No	No
Slovenia	No	No	No	No	No	Medical Chamber
SUBTOTAL	***4 (57.1)***	***1 (14.3)***	***1 (14.3)***	***- (0)***	***- (0)***	***4 (57.1)***
India	Yes	No	No	No	No	No
Israel	No	No	Yes	No	No	No
Peru	No	No	Yes	No	No	Peruvian Medical Association
SUBTOTAL	***1 (33.3)***	***- (0)***	***2 (66.7)***	***- (0)***	***- (0)***	***1 (33.3)***
TOTAL	**10 (32)**	**7 (21.9)**	**11 (34.8)**	**3 (9.4)**	**- (0)**	**11 (34.8)**

Not applicable: Norway
Not reported: Spain

Selection of CME activities

Generally, medical oncologists can choose their own CME activities. This is the case mainly in Central and Northern Europe, whereas in half the countries of the Baltic and White Russia area and the Central-Eastern European area this process is defined by the institution responsible for providing CME.

Table 3.3: countries with CME activities defined by medical oncologists or by the institution in charge

	AREA	N (%)
By medical oncologist		**23 (74.2)**
	Mediterranean area: *Albania, Greece, Italy, Spain, Turkey*	*5 (100)*
	Baltic and White Russia area: *Estonia, Lithuania, Georgia*	*3 (50.0)*
	Central Europe: *Belgium, Germany, Ireland, Poland, Slovakia, Switzerland*	*6 (85.7)*
	Northern Europe: *Finland, Iceland, Sweden*	*3 (75.0)*
	Central-Eastern Europe: *Bosnia-Herz, Serbia&Mont, Slovenia*	*3 (50.0)*
	Non-Europe: *India, Israel, Peru*	*3 (100)*
By institution		**8 (25.8)**
	Baltic and White Russia area: *Latvia, Moldova, Russian Fed*	*3 (50.0)*
	Central Europe: *Czech Rep*	*1 (14.3)*
	Northern Europe: *Denmark*	*1 (25.0)*
	Central-Eastern Europe: *Hungary, Romania, Croatia*	*3 (50.0)*

Not applicable: Norway
Not reported: Bulgaria, United Kingdom

Minimum requirements for CME points

Medical oncologists are required to obtain a minimum number of CME points per year mainly in the Baltic and White Russia area and in the Central and Central-Eastern Europe. In the Mediterranean area it is foreseen only in Italy and Albania.

Table 3.4: minimum requirements for CME points per year.

	AREA	N (%)
No		**16 (48.5)**
	Mediterranean area: *Greece, Spain, Turkey*	*3 (60.0)*
	Baltic and White Russia area: *Russian Fed*	*1 (16.7)*
	Central Europe: *Czech Rep, Ireland, Slovakia*	*3 (37.5)*
	Northern Europe: *Denmark, Finland, Iceland, Sweden*	*4 (100)*
	Central-Eastern Europe: *Bosnia-Herz, Bulgaria, Serbia&Mont*	*3 (42.9)*
	Non-Europe: *Israel, Peru*	*2 (66.7)*
Yes		**17 (51.5)**
	Mediterranean area: *Albania, Italy*	*2 (40.0)*
	Baltic and White Russia area: *Estonia, Latvia, Lithuania, Georgia, Moldova*	*5 (83.3)*
	Central Europe: *Belgium, Germany, Poland, Switzerland, United Kingdom*	*5 (62.5)*
	Central-Eastern Europe: *Croatia, Hungary, Romania, Slovenia*	*4 (57.1)*
	Non-Europe: *India*	*1 (33.3)*

Not applicable: Norway

Necessity of CME points in order to maintain the status of medical oncologist

CME points are mandatory in order to maintain the status of medical oncologist in the Baltic and White Russia area and in the majority of countries in Central-Eastern Europe. In Central Europe it is mandatory only in the United Kingdom and in Poland.

Table 3.5: CME points mandatory to maintain the status of medical oncologist

	AREA	N (%)
No		**20 (60.6)**
	Mediterranean area: *Greece, Italy, Spain, Turkey*	*4 (80.0)*
	Baltic and White Russia area: *Russian Fed*	*1 (16.7)*
	Central Europe: *Belgium, Germany, Ireland, Czech Rep, Slovakia, Switzerland,*	*6 (75.0)*
	Northern Europe: *Denmark, Finland, Iceland, Sweden*	*4 (100)*
	Central-Eastern Europe: *Bosnia-Herz, Bulgaria, Serbia&Mont*	*3 (42.9)*
	Non-Europe: *Israel, Peru*	*2 (66.7)*
Yes		**13 (39.4)**
	Mediterranean area: *Albania*	*1 (20.0)*
	Baltic and White Russia area: *Estonia, Latvia, Lithuania, Georgia, Moldova*	*5 (83.3)*
	Central Europe: *Poland, United Kingdom*	*2 (25.0)*
	Central-Eastern Europe: *Croatia, Hungary, Romania, Slovenia*	*4 (57.1)*
	Non-Europe: *India*	*1 (33.3)*

Not applicable: Norway

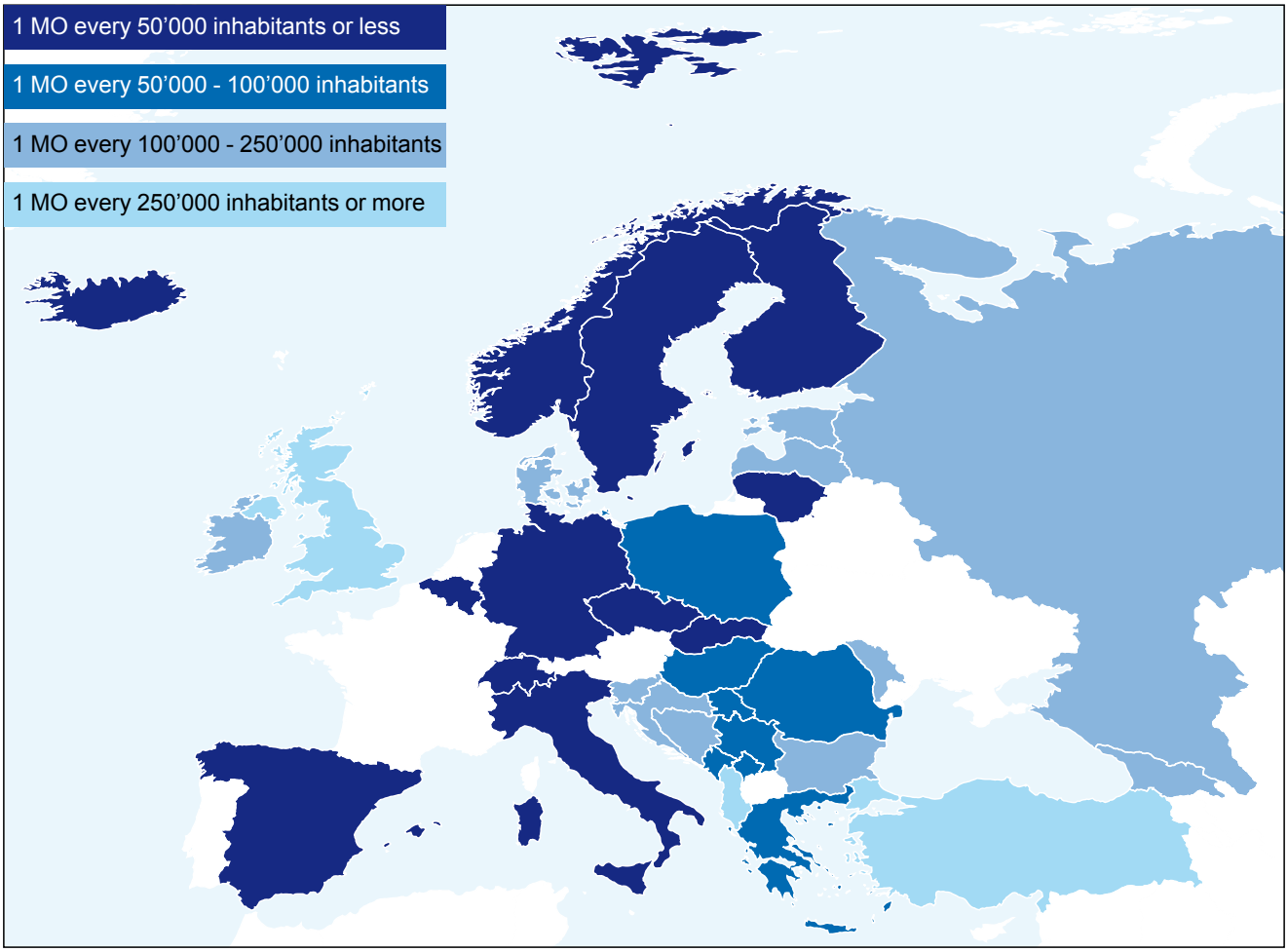
The validity of the certification as a medical oncologist differs in the various regions: 3 years in Poland, 5 years in the Baltic and White Russia area, 7 years in Central-Eastern Europe, the entire period of professional practice in Northern Europe.

National Societies for Medical Oncology and Oncology

Number of medical oncologists in each country

In terms of availability of cancer treatments compared to the number of medical oncologists per inhabitants, the best situation is in Italy (1/19,000), while the worst is India (1/3,257,000). The same comparison factors considered on a regional basis give an unsatisfactory result in the Baltic and White Russia area, Central-Eastern Europe and in some countries within the Mediterranean area. In the most developed part of Europe a shortage of specialists is evident in the United Kingdom, Ireland and Denmark.

Figure 3.1: density of medical oncologists per million inhabitants in each country



National societies for Medical Oncology and/or Oncology

In the majority of European countries there is a National Society for Medical Oncology. The oldest ones were created in the Czech Republic, Italy and Belgium. The establishment of national societies is a growing process that reflects the recognized necessity to have Medical Oncology identified as a specialty, which could be advocated for at best only with the support of associations of professionals. In countries where no National Society for Medical Oncology exists, such interest is sponsored by the National Society for Oncology or other professional societies.

Table 3.6: national societies for Medical Oncology and/or Oncology

	AREA
Countries with a National Society for Medical Oncology	
	Mediterranean area: *Greece (1987), Italy (1973), Spain, Turkey (1996)*
	Baltic and White Russia area: *Latvia (1994), Lithuania*
	Central Europe: *Belgium (1978), Czech Rep (1969), Ireland (1994), Poland (1996), Switzerland (1996), United Kingdom (1985)*
	Northern Europe: *Finland (1993)*
	Central-Eastern Europe: *Croatia (2001), Hungary (1998), Romania (2002), Serbia&Mont (2005), Slovenia (2005)*
	Non-Europe: India (appr. 1980), Peru (1996)
Countries where National Society for Oncology or other exists	
	Mediterranean area: *Albania*
	Baltic and White Russia area: *Estonia, Moldova (other: National Society for Hematology and Transfusion), Russian Fed (other: Russian Association of Oncologists)*
	Central Europe: *Slovakia (other: Slovak Society of Oncology, Slovak Society of Chemotherapy), Germany: society for Hematology and Oncology*
	Northern Europe*:* Iceland (1984), Norway (1986), Sweden, Denmark: Society of Clinical Oncology established in 2004
	Central-Eastern Europe: *Bosnia & Herz, Bulgaria*
	Non-Europe: *Israel*

Figure 3.2: total number of medical oncologists and medical oncologists as members of the National Society for Medical Oncology

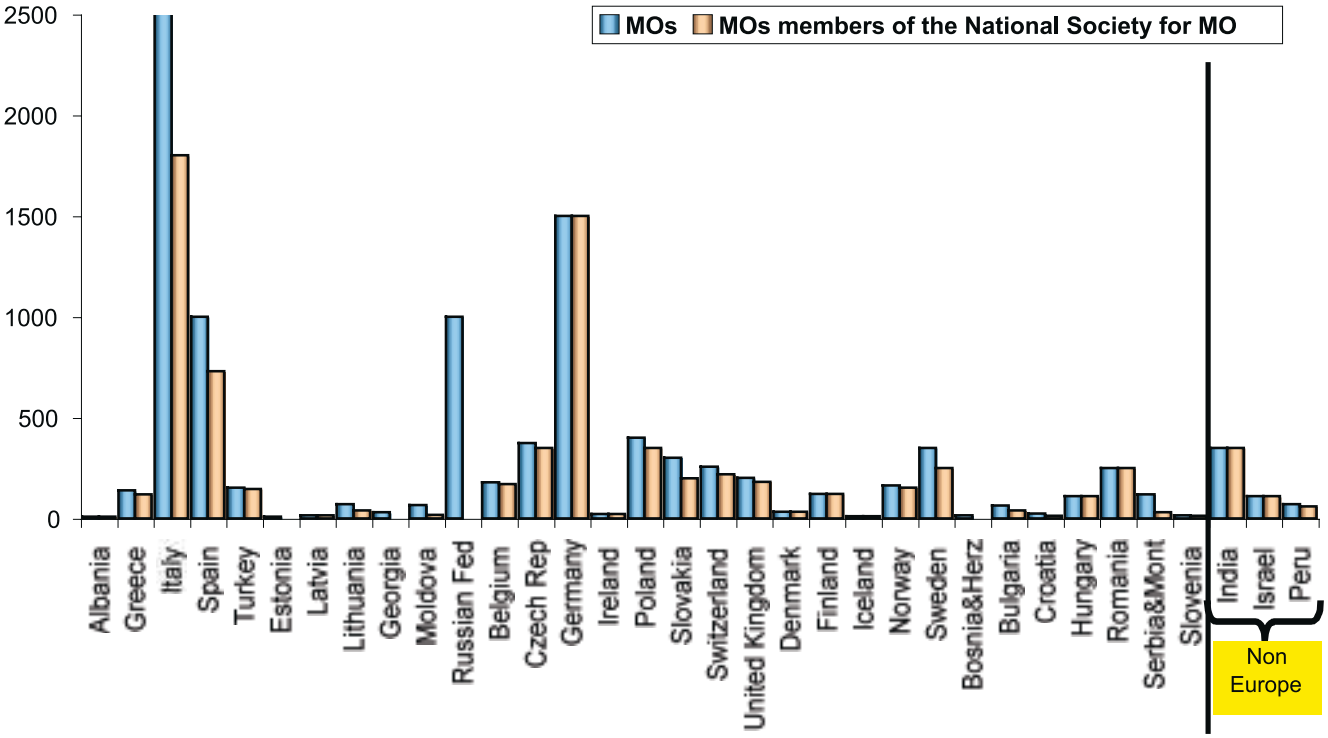


Figure 3.3: total number of medical oncologists as members of the National Society for Medical Oncology per million inhabitants in each country

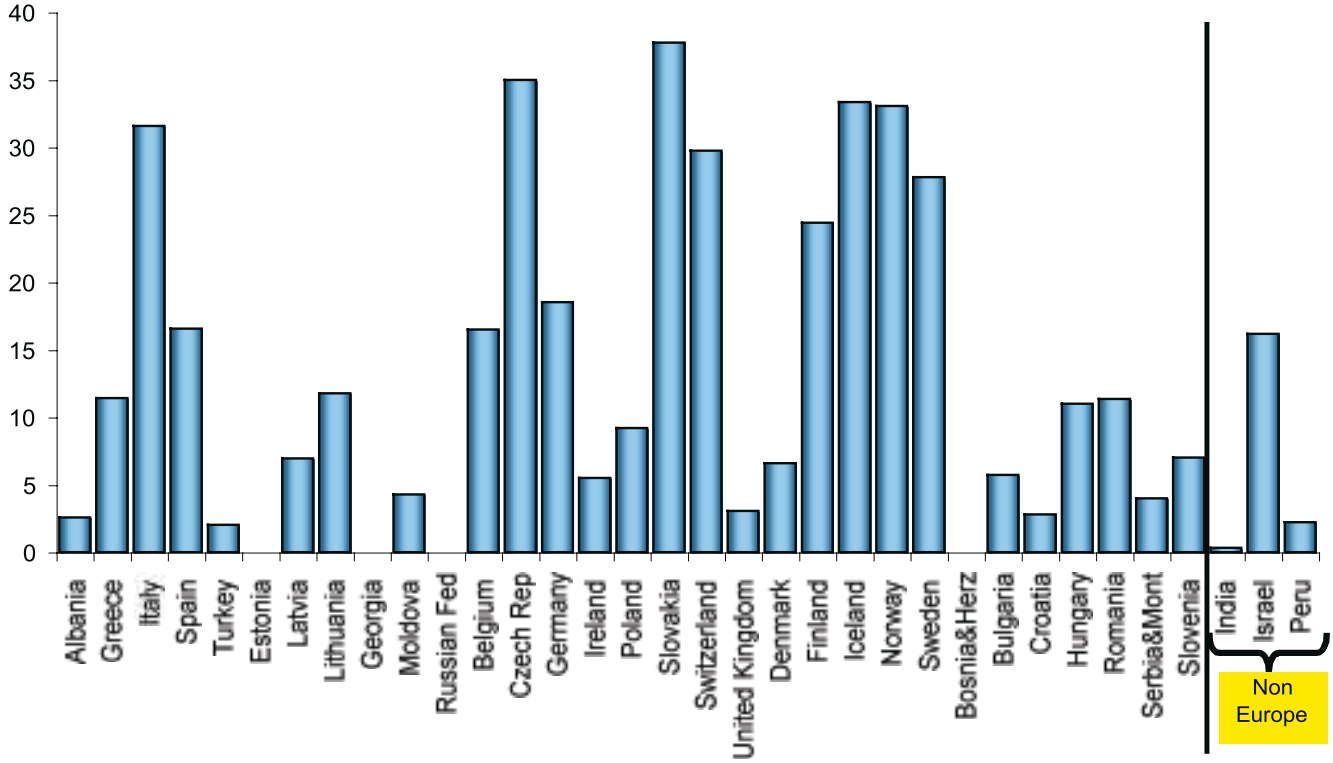


Table 3.7: categories of professionals represented in the National Society for Medical Oncology, for countries where no National Society for Medical Oncology exists. Data are referred to the National Society for Oncology or other professional societies in the field of oncology.

"1" - specialist that is the most represented in the Society
"10" - specialist that is the least represented in the Society

COUNTRY	Medical Onco-logists	Hemato-logists	Internist with interests in MO	Surgical Onco-logists	Radio-therapists	Radio-logists	Organ-specific specialists	General practitioners	Nurses	Other
Albania	1	4	6	2	3	5	7	8	10	9
Greece	1	3	2	-	4	-	-	-	-	-
Italy	1	6	2	4	3	9	5	10	8	7
Spain	1	-	-	3	-	-	-	-	4	2
Turkey	1	-	-	-	-	-	-	-	-	-
Estonia	5	3	-	10	8	-	2	-	-	1
Latvia	1	-	-	-	-	-	-	1	-	-
Lithuania	1	-	-	-	-	-	-	-	-	-
Georgia	4	6	7	1	2	-	3	-	-	-
Moldova	2	2	-	1	3	4	-	-	-	-
Belgium	1	-	-	-	-	-	2	-	-	-
Czech Rep	1	5	7	3	2	8	4	9	10	6
Germany	1	1	2	2	-	-	-	-	-	-
Poland	1	3	8	9	3	-	9	-	-	-
Slovakia	1	7	8	6	2	9	3	10	-	10
Switzerland	1	2	3	10	9	10	9	10	10	10
United Kingdom	1	4	-	-	3	-	-	-	-	2
Denmark	-	4	2	-	1	-	-	-	-	3
Finland	1	-	-	-	1	-	2	-	-	2
Iceland	1	-	-	-	2	-	-	-	-	-
Norway	1	-	-	-	-	-	-	-	-	-
Sweden	1	5	-	3	-	-	-	-	4	2
Bosnia&Herz	8	6	-	6	8	4	4	2	3	-
Bulgaria	1	10	10	1	1	1	10	10	10	10
Croatia	1	3	4	-	-	5	2	-	-	-
Hungary	1	5	6	7	8	9	7	10	7	3
Romania	10	-	-	-	1	-	-	-	-	-
Serbia&Mont	2	-	1	-	-	3	4	5	-	-
Slovenia	1	-	2	-	-	-	-	-	-	-
India	1	2	4	6	5	-	-	-	-	3
Israel	1	-	-	-	-	-	-	-	-	-
Peru	1	-	-	-	-	-	-	-	-	-

Not reported: Russian Fed, Ireland

Working groups on specific topics within the National Society for Medical Oncology

Within the National Societies for Medical Oncology working groups on specific topics exist in the majority of countries in Central and Northern Europe and in the Mediterranean area.

Table 3.8: working groups on specific topics within the National Society for Medical Oncology

	AREA	N (%)
No		**10 (29.4)**
	Mediterranean area: *Turkey*	*1 (20.0)*
	Baltic and White Russia area: *Latvia, Lithuania,*	*2 (33.3)*
	Central Europe: *Slovakia*	*1 (12.5)*
	Northern Europe: *Denmark, Iceland*	*2 (40.0)*
	Central-Eastern Europe: *Hungary, Romania, Slovenia*	*3 (42.9)*
	Non-Europe *Peru*	*1 (33.3)*
Yes		**17 (50.0)**
	Mediterranean area: *Greece, Italy, Spain*	*3 (60.0)*
	Baltic and White Russia area: *Moldova*	*1 (16.7)*
	Central Europe: *Belgium, Czech Rep, Germany, Ireland, Poland, Switzerland, United Kingdom*	*7 (87.5)*
	Northern Europe: *Finland, Norway, Sweden*	*3 (60.0)*
	Central-Eastern Europe: *Serbia&Mont*	*1 (14.3)*
	Non-Europe: *India, Israel*	*2 (66.6)*
Not applicable		**7 (20.6)**
	Mediterranean area: *Albania*	*1 (20.0)*
	Baltic and White Russian area: *Estonia, Georgia, Russian Fed*	*3 (50.0)*
	Central-Eastern Europe: *Bosnia-Herz, Bulgaria, Croatia,*	*3 (42.9)*

Organization of CME events by the National Society for Medical Oncology

The National Societies for Medical Oncology organize CME events in almost all the countries in the Mediterranean area, and in Central and Northern Europe. It is also the case in 50% of the countries in Central-Eastern Europe.

Table 3.9: CME events organized by the National Society for Medical Oncology

	AREA	N (%)
No		**11 (35.5)**
	Baltic and White Russia area: *Latvia, Georgia, Moldova, Russian Fed*	*4 (80.0)*
	Central Europe: *Ireland, Slovakia*	*2 (25.0)*
	Northern Europe: *Iceland, Norway*	*2 (40.0)*
	Central-Eastern Europe: *Bulgaria, Serbia&Mont, Croatia*	*3 (50.0)*
Yes		**20 (64.5)**
	Mediterranean area: *Albania, Greece, Italy, Spain, Turkey*	*5 (100)*
	Baltic and White Russia area: *Lithuania*	*1 (20.0)*
	Central Europe: *Belgium, Czech Rep, Germany, Poland, Switzerland, United Kingdom*	*6 (75.0)*
	Northern Europe: *Denmark, Finland, Sweden*	*3 (60.0)*
	Central-Eastern Europe: *Hungary, Romania, Slovenia*	*3 (50.0)*
	Non-Europe: *Israel, Peru*	*2 (100)*

Not reported: Estonia, Bosnia-Herz, India

Young Medical Oncologist groups within the National Society for Medical Oncology

A special group of Young Medical Oncologists within the National Society for Medical Oncology exists only in one third of European countries, mainly in the Mediterranean area.

Table 3.10: special group of Young Medical Oncologists within the National Society for Medical Oncology

	AREA	N (%)
No		**26 (76,4)**
	Mediterranean area: *Albania, Turkey*	*2 (40.0)*
	Baltic and White Russia area: *Estonia, Latvia, Lithuania, Georgia, Moldova, Russian Fed*	*6 (100.0)*
	Central Europe: *Belgium, Germany, Ireland, Poland, Slovakia, Switzerland*	*6 (75.0)*
	Northern Europe: *Finland, Iceland, Norway, Sweden*	*4 (80.0)*
	Central-Eastern Europe: *Bosnia-Herz, Bulgaria, Romania, Serbia&Mont, Slovenia*	*5 (71.4)*
	Non-Europe: *India, Israel, Peru*	*3 (100)*
Yes		**8 (23.6)**
	Mediterranean area: *Greece, Italy, Spain*	*3 (60.0)*
	Central Europe: *Czech Rep, United Kingdom*	*2 (25.0)*
	Northern Europe: *Denmark*	*1 (20.0)*
	Central-Eastern Europe: *Croatia, Hungary*	*2 (28.6)*

National cancer guidelines

Most European countries have developed national guidelines on cancer. Medical oncologists refer to national guidelines in almost all countries in Northern, Central, Central-Eastern Europe and in the Baltic and White Russia area. In other countries medical oncologists mainly refer to ESMO and ASCO guidelines.

Table 3.11: national guidelines on cancer and reference to other guidelines

	AREA	REFERENCE GUIDELINES	N (%)
Yes			**20 (58.8)**
	Mediterranean area: *Albania, Italy*		*2 (40.0)*
	Baltic and White Russia area: *Estonia, Lithuania, Moldova, Russian Fed*		*4 (66.6)*
	Central Europe*: Germany, Czech Rep, Poland, Slovakia, United Kingdom*		*5 (62.5)*
	Northern Europe: *Denmark, Finland, Norway, Sweden*		*4 (80.0)*
	Central-Eastern Europe: *Bulgaria, Hungary, Serbia&Mont, Romania*		*4 (57.1)*
	Non-Europe: *India*		*1 (33.3)*
No			**14 (41.2)**
	Mediterranean area		*3 (60.0)*
	Greece	ESMO, ASCO	
	Spain	ESMO, ASCO	
	Turkey	ESMO, ASCO	
	Baltic and White Russia area		*2 (33.3)*
	Latvia	ESMO	
	Georgia	ESMO, ASCO	
	Central Europe		*3 (37.5)*
	Belgium	The College of Oncology will finish the national guidelines in 2006 for most tumor types based on several international guidelines (ESMO, ASCO, European Societies, National Societies…)	
	Ireland	NCNN – ESMO, ASCO	
	Switzerland	ESMO guidelines are officially recognized guidelines within the SGMO, PDQ, NCCN, FNCLCC	
	Northern Europe		*1 (20.0)*
	Iceland	ASCO, ESMO, NCCN	
	Central-Eastern Europe		*3 (42.9)*
	Bosnia-Herz	PDQ, Start, ESMO, NCICC	
	Croatia	ESMO, NCI, NCHC	
	Slovenia	Institutional guidelines are in line with NCI or at least with ESMO	
	Non-Europe		*2 (66.7)*
	Israel	ASCO, ESMO, NCCN	
	Peru	NCCN	

Production and/or dissemination of national guidelines

National societies for Medical Oncology are involved in the production and/or dissemination of national guidelines in two thirds of European countries, mainly in cooperation with local health authorities and other societies

Table 3.12: involvement of National Societies for Medical Oncology in the production and/or dissemination of national guidelines

	AREA/COUNTRY	WITH	N (%)
No			**12 (37.5)**
	Mediterranean area: *Spain, Turkey*		*2 (40.0)*
	Baltic and White Russia area: *Lithuania, Moldova, Russian Fed*		*3 (50.0)*
	Central Europe*: Switzerland*		*1 (12.5)*
	Northern Europe: *Iceland*		*1 (20.0)*
	Central-Eastern Europe: *Bulgaria, Croatia, Hungary, Serbia&Mont, Slovenia*		*5 (83.3)*
Yes			**20 (62.5)**
	Mediterranean area		*3 (60.0)*
	Albania	Local health authorities	
	Greece	Alone	
	Italy	Local health authorities	
	Baltic and White Russian area		*3 (50.0)*
	Estonia	Other societies, local health authorities	
	Latvia	-	
	Georgia	Local health authorities	
	Central Europe		*7 (87.5)*
	Belgium	Board of the college of oncology	
	Czech Rep	Other societies	
	Germany	Other societies	
	Ireland	Local health authorities	
	Poland	Other societies	
	Slovakia	Local health authorities	
	United Kingdom	other societies, local health authorities, National Bodies (National Institute for Clinical Excellence)	
	Northern Europe		*4 (80.0)*
	Denmark	Other societies	
	Finland	Other societies	
	Norway	Multimodal tumor groups	
	Sweden	Other societies	
	Central-Eastern Europe		*1 (16.7)*
	Romania	Local health authorities	
	Non-Europe		*2 (100)*
	India	Other societies	
	Peru	Other societies	

Not applicable: Bosnia-Herz, Israel

Use of ESMO Minimum Clinical Recommendations as national guidelines

The ESMO Minimum Clinical Recommendations are adopted as national guidelines in only 35.3% of European countries, mainly those in Central-Eastern Europe and some in Central Europe and in the Baltic and White Russia area.

Table 3.13: adoption of ESMO Minimum Clinical Recommendations as national guidelines

	AREA	N (%)
No		**22 (64.7)**
	Mediterranean area: *Greece, Italy, Spain, Turkey*	*4 (80.0)*
	Baltic and White Russian area: *Lithuania, Georgia, Moldova, Russian Fed*	*4 (66.7)*
	Central Europe: *Belgium, Germany, Poland, United Kingdom, Slovakia*	*5 (62.5)*
	Northern Europe: *Denmark, Norway, Sweden*	*3 (60.0)*
	Central-Eastern Europe: *Croatia, Romania, Slovenia*	*3 (42.9)*
	Non-Europe: *India, Israel, Peru*	*3 (100)*
Yes		**12 (35.3)**
	Mediterranean area: *Albania*	*1 (20.0)*
	Baltic and White Russian area: *Estonia, Latvia,*	*2 (33.3)*
	Central Europe: *Czech Rep, Ireland, Switzerland*	*3 (37.5)*
	Northern Europe: *Finland, Iceland*	*2 (40.0)*
	Central-Eastern Europe: *Bosnia-Herz., Bulgaria, Hungary, Serbia&Mont*	*4 (57.1)*

Involvement of National Multimodal 'Tumor Groups' or scientific societies with several specialist representatives in the production and/or dissemination of national guidelines

National Multimodal 'Tumor Groups' and/or scientific societies with several specialty representatives are involved in the production and/or dissemination of national guidelines in almost all countries in Central and Northern Europe and in the Baltic and White Russia area.

Table 3.14: involvement of National Multimodal 'Tumor Groups' or scientific societies in the production and/or dissemination of national guidelines

	AREA/COUNTRY	WITH	N (%)
No			**13 (41.9)**
	Mediterranean area: *Albania, Greece, Turkey*		*3 (75.0)*
	Baltic and White Russia area: *Moldova*		*1 (16.7)*
	Northern Europe: *Iceland*		*1 (20.0)*
	Central-Eastern Europe: *Bosnia-Herz, Bulgaria, Croatia, Hungary, Romania, Serbia&Mont*		*6 (100)*
	Non-Europe: *India, Israel*		*2 (66.7)*
Yes			**18 (58.1)**
	Mediterranean area		*1 (25.0)*
	Italy	Specialist societies	
	Baltic and White Russian area		*5 (83.3)*
	Estonia	Specialist societies, local health authorities	
	Latvia	Specialist societies, local health authorities	
	Lithuania	Alone	
	Georgia	Local health authorities	
	Russian Fed	Local health authorities	
	Central Europe		*7 (100)*
	Belgium	-	
	Germany	Specialist societies	
	Czech Rep	Specialist societies	
	Poland	Specialist societies	
	Slovakia	Local health authorities	
	Switzerland	Specialist societies	
	United Kingdom	Specialist societies, local health authorities, National Bodies (e.g. National Institute for Clinical Excellence)	
	Northern Europe		*4 (80.0)*
	Denmark	Specialist societies	
	Finland	Specialist societies	
	Norway	National Society for Oncology	
	Sweden	Specialist societies	
	Non-Europe		*1 (33.3)*
	Peru	Specialist societies	

Not applicable: Spain
Not reported: Ireland, Slovenia

Use of guidelines by cancer specialists

Cancer specialists, as well as medical oncologists, follow guidelines, but, in most cases, only in part. Following guidelines is a strict process only in the United Kingdom and Northern Europe.

Table 3.15: use of guidelines by cancer specialists

	AREA/COUNTRY	N (%)
Partly		**23 (69.7)**
	Mediterranean area: *Greece, Italy, Spain, Turkey*	*4 (80.0)*
	Baltic and White Russia area: *Latvia, Lithuania, Georgia, Russian Fed*	*4 (33.3)*
	Central Europe: *Belgium, Czech Rep, Germany, Ireland, Poland, Switzerland*	*6 (83.3)*
	Northern Europe: *Iceland*	*1 (20.0)*
	Central-Eastern Europe: *Bulgaria, Croatia, Romania, Serbia&Mont, Slovenia*	*5 (71.4)*
	Non-Europe: *India, Israel, Peru*	***3 (100.0)***
Yes		**10 (30.3)**
	Mediterranean area: *Albania*	*1 (20.0)*
	Baltic and White Russia area: *Estonia, Moldova*	*2 (33.3)*
	Central Europe: *United Kingdom*	*1 (14.3)*
	Northern Europe: *Denmark, Finland, Norway, Sweden*	*4 (80.0)*
	Central-Eastern Europe: *Bosnia-Herz, Hungary*	*2 (28.6)*

Following guidelines is a controlled process in a minority of European countries, particularly in low-income nations and in countries where specific economic barriers exist. It is a partly controlled process in the United Kingdom and in some countries within Northern Europe and the Baltic and White Russia area. A specific system for clinical audit is foreseen only in few countries and is represented by local health authorities or scientific societies.

Table 3.16: controlled process for guidelines use

	AREA/COUNTRY	SYSTEM FOR CLINICAL AUDIT	RESPONSIBLE	N (%)
No				**20 (58.2)**
	Mediterranean area: *Greece, Italy, Spain, Turkey*			*4 (80.0)*
	Central Europe: *Czech Rep, Germany, Ireland, Switzerland*			*4 (50.0)*
	Northern Europe: *Denmark, Iceland, Norway*			*3 (50.0)*
	Central-Eastern Europe: *Bosnia-Herz, Bulgaria, Croatia, Romania, Serbia&Mont, Slovenia*			*6 (85.7)*
	Non-Europe: *India, Israel, Peru*			*3 (100)*
Partly				**9 (26.5)**
	Baltic and White Russia area: *Latvia, Lithuania, Russian Fed*			*3 (50.0)*
	Central Europe: *Belgium, Poland, Slovakia, United Kingdom*			*4 (50.0)*
	Northern Europe: *Finland, Sweden*			*2 (40.0)*
Yes				**5 (14.7)**
	Mediterranean area			*1 (20.0)*
	Albania	Yes	Medical specialist societies, local health authorities, hospitals	
	Baltic and White Russia area			*3 (50.0)*
	Estonia	-	Multimodal tumor groups/Scientific societies, hospitals	
	Georgia	Yes	local health authorities	
	Moldova	Yes	local health authorities, comprehensive Cancer Institute (Institute of Oncology)	
	Central-Eastern Europe			*1 (14.3)*
	Hungary	No	-	

Correlation between availability of cancer treatment and guidelines

Availability of cancer treatment is based on guidelines (at least partly) in almost 80% of reporting countries. The correlation is strong in the United Kingdom and in countries with economic barriers.

Table 3.17: availability of cancer treatment based on guidelines.

	AREA	N (%)
No		**7 (20.6)**
	Mediterranean area: *Greece*	*1 (20.0)*
	Central Europe: *Germany, Ireland, Switzerland*	*3 (37.5)*
	Northern Europe: *Finland, Iceland, Sweden*	*3 (60.0)*
Partly		**18 (52.9)**
	Mediterranean area: *Italy, Spain, Turkey*	*3 (60.0)*
	Baltic and White Russia area: *Latvia, Lithuania, Georgia, Russian Fed*	*4 (66.7)*
	Central Europe: *Belgium, Poland*	*2 (25.0)*
	Northern Europe: *Denmark*	*1 (20.0)*
	Central-Eastern Europe: *Bulgaria, Croatia, Hungary, Serbia&Mont, Slovenia*	*5 (71.4)*
	Non-Europe: *India, Israel, Peru*	3 (100)
Yes		**9 (26.5)**
	Mediterranean area: *Albania*	*1 (20.0)*
	Baltic and White Russia area: *Estonia, Moldova*	*2 (33.3)*
	Central Europe: *Czech Rep, Slovakia, United Kingdom*	*3 (37.5)*
	Northern Europe: *Norway*	*1 (20.0)*
	Central-Eastern Europe: *Bosnia-Herz, Romania*	*2 (28.6)*

Correlation between reimbursement for treatment costs and guidelines

Reimbursement for treatment costs is based on guidelines in 50% of the reporting countries. With the exception of the United Kingdom, this is mainly the case for low-income countries.

Table 3.18: reimbursement for treatment costs based on guidelines

	AREA	N (%)
No		**15 (44.1)**
	Mediterranean area: *Greece, Italy, Spain, Turkey*	*4 (80.0)*
	Central Europe: *Belgium, Germany, Switzerland*	*3 (37.5)*
	Northern Europe: *Denmark, Finland, Iceland, Sweden*	*4 (80.0)*
	Central-Eastern Europe: *Croatia, Slovenia, Romania*	*3 (42.9)*
	Non-Europe: *India*	*1 (33.3)*
Partly		**11 (32.4)**
	Mediterranean area: *Albania*	*1 (20.0)*
	Baltic and White Russia area: *Latvia, Lithuania, Georgia, Russian Fed*	*4 (66.7)*
	Central Europe: *Poland*	*1 (12.5)*
	Northern Europe: *Norway*	*1 (20.0)*
	Central-Eastern Europe: *Bulgaria, Hungary*	*2 (28.6)*
	Non-Europe: *Israel, Peru*	*2 (66.7)*
Yes		**8 (23.5)**
	Baltic and White Russia area: *Estonia, Moldova*	*2 (33.3)*
	Central Europe: *Czech Rep., Ireland, Slovakia, United Kingdom*	*4 (50.0)*
	Central-Eastern Europe: *Bosnia-Herz., Serbia&Mont*	*2 (28.6)*

In almost half of the European countries, the general opinion is that having or following guidelines improves the outcome of cancer treatments. In the rest of Europe this is an unknown process. In only two countries, cancer specialists think that too strict guidelines have no positive influence on the treatment outcome.

In conclusion, in most European countries Continuous Medical Education is only an optional process after specialization or sub-specialization in Medical Oncology. National healthcare systems, scientific societies, universities and medical chambers are key elements in supervising the CME accreditation. Medical oncologists are required to obtain a minimum number of CME points per year in half of Europe, although this is not mandatory in order to maintain the status of specialist. Establishment of national societies for medical oncology is indeed a growing process that reflects the necessity for Medical Oncology to be recognized as specialty, which could only be advocated with the support of associations of professionals. Within the National Societies for Medical Oncology, working groups on specific topics exist in the majority of the developed countries. Medical oncologists follow national guidelines on cancer in 50% of European countries. ESMO Minimum Clinical Recommendations are adopted as national guidelines in only one third of European countries. Medical oncologists follow guidelines but mostly only in part. Following guidelines is a controlled process in only a few countries, particularly those with well-defined social systems and health insurance policies. On the other hand, in countries with economic barriers availability and reimbursement for treatment costs are very restrictive and based on guidelines, although specific systems for clinical audit exist only in few European countries.

4. CLINICAL RESEARCH

Prevalence of clinical studies in each phase

At the moment it is not possible to have a complete overview of oncological research activities in Europe. Two thirds of the European countries do not produce any annual report on research activities, while one third have an annual report mainly prepared by national cancer research organizations. More than 50% of the research activities are focused on phase III studies and only Central and Northern Europe seem to be involved in phase I studies (Table 4.1).

Table 4.1: prevalence of clinical studies in each phase of development during 2004

COUNTRY	PHASE I	PHASE II	PHASE III	PHASE IV	DEGREE OF CONFIDENCE
Italy	0	61	38	1	Sure
Turkey	0	0	60	40	Uncertain
AVERAGE	***0***	***30.5***	***49.0***	***20.5***	
Estonia	0	20	60	20	Quite sure
Latvia	0	20	80	0	Sure
Lithuania	0	10	80	10	Uncertain
Georgia	0	50	50	0	Sure
Russian Fed	0	40	50	10	-
AVERAGE	***0***	***28.0***	***64.0***	***8.0***	
Belgium	5	15	75	5	-
Czech Rep	5	20	65	10	Quite sure
Germany	5	30	50	15	-
Poland	5	30	55	10	Uncertain
Slovakia	1	15	80	4	Sure
Switzerland	32	18	39	11	Sure
AVERAGE	***8.8***	***21.3***	***60.7***	***9.2***	
Denmark	20	40	40	0	Quite sure
Norway	20	40	40	0	Uncertain
Sweden	5	40	50	5	Uncertain
AVERAGE	***15.0***	***40.0***	***43.3***	***1.7***	
Bosnia-Herz	0	10	70	20	Sure
Bulgaria	0	10	80	10	-
Croatia	0	10	80	10	Sure
Hungary	5	25	60	10	Quite sure
Serbia&Mont	1	29	70	0	Quite sure
Slovenia	0	10	40	50	Quite sure
AVERAGE	***1.0***	***15.7***	***66.7***	***16.7***	
India	10	40	50	0	Quite sure
Peru	0	50	50	0	Quite sure
AVERAGE	***5.0***	***45.0***	***50.0***	***0***	
TOTAL AVERAGE	**4.7**	**26.4**	**58.8**	**10.1**	

Not reported: Albania, Greece, Spain, Moldova, Ireland, United Kingdom, Finland, Iceland, Romania, Israel

Percentage of studies in different institutions

Phase I studies are mainly carried out within comprehensive cancer centers or academic institutions. Phase II and III studies are performed in the same institutions but also in non-academic institutions and general hospitals (tables 4.2 and 4.3)

Table 4.2: percentage of phase II studies in different institutions

COUNTRY	ACADEMIC INSTITUTIONS	NON-ACADEMIC RESEARCH INSTITUTIONS	GENERAL HOSPITALS	COMPREHENSIVE CANCER CENTERS	DEGREE OF CONFIDENCE
Italy	30	10	30	30	Uncertain
SUBTOTAL	***30.0***	***10.0***	***30.0***	***30.0***	
Estonia	50	50	0	0	Quite sure
Latvia	50	0	0	50	Sure
Moldova	20	0	0	80	Uncertain
SUBTOTAL	***40.0***	***16.7***	***0***	***43.3***	
Belgium	70	0	10	20	Quite sure
Czech Rep	90	10	0	0	Quite sure
Switzerland	70	0	30	0	Uncertain
SUBTOTAL	***80.0***	***5.0***	***5.0***	***10.0***	
Denmark	0	0	20	80	Quite sure
Norway	40	0	20	40	Uncertain
SUBTOTAL	***20.0***	***0***	***20.0***	***60.0***	
Bosnia-Herz	100	0	0	0	Sure
Bulgaria	50	0	0	50	-
Hungary	50	0	0	50	Quite sure
Serbia&Mont.	0	0	5	95	Quite sure
Slovenia	100	0	0	0	Quite sure
SUBTOTAL	***60.0***	***0***	***1.0***	***39.0***	
Peru	0	20	30	50	Quite sure
SUBTOTAL	***0***	***20.0***	***30.0***	***50.0***	
TOTAL	***48.0***	***6.0***	***9.7***	***36.3***	

Not reported: Albania, Greece, Spain, Turkey, Lithuania, Georgia, Russian Fed, India, Israel, Germany, Ireland, Poland, Slovakia, Switzerland, United Kingdom, Finland, Iceland, Sweden, Croatia, Romania

Table 4.3: percentage of phase III studies in different institutions

COUNTRY	ACADEMIC INSTITUTIONS	NON-ACADEMIC RESEARCH INSTITUTIONS	GENERAL HOSPITALS	COMPREHENSIVE CANCER CENTERS	DEGREE OF CONFIDENCE
Italy	25	25	25	25	Uncertain
Turkey	80	0	20	0	Uncertain
SUBTOTAL	***52.5***	***12.5***	***22.5***	***12.5***	
Estonia	50	50	0	0	Quite Sure
Latvia	50	0	0	50	Quite Sure
Moldova	20	0	0	80	Uncertain
SUBTOTAL	***40.0***	***16.7***	***0***	***43.3***	
Belgium	50	0	40	10	Quite Sure
Czech Rep	60	30	10	0	Quite Sure
SUBTOTAL	***55.0***	***15.0***	***25.0***	***5.0***	
Denmark	0	0	20	80	Quite Sure
Norway	40	0	20	40	Uncertain
SUBTOTAL	***20.0***	***0***	***20.0***	***60.0***	
Bosnia-Herz	100	0	0	0	Sure
Bulgaria	50	0	0	50	-
Hungary	25	25	25	25	Quite Sure
Serbia&Mont	0	0	5	95	Quite Sure
Slovenia	50	50	0	0	Quite Sure
SUBTOTAL	***45.0***	***15.0***	***6.0***	***34.0***	
Peru	0	20	30	50	Quite Sure
SUBTOTAL	***0***	***20.0***	***30.0***	***50.0***	
TOTAL	***40.0***	***13.3***	***13.0***	***33.7***	

Not reported: Albania, Greece, Spain, Lithuania, Georgia, Russian Fed, Germany, Ireland, Poland, Slovakia, Switzerland, United Kingdom, Finland, Iceland, Sweden, Croatia, Romania, India, Israel

The interpretation of the distribution of research activities between comprehensive cancer centers and academic institutions requires caution, since most comprehensive cancer centers are at the same time academic institutions.

Involvement of ethical committees in each phase of development of clinical trials

The Ethical committee approval of clinical studies is foreseen in all European countries. In the Mediterranean area, the Baltic and White Russia area and in Central-Eastern Europe both central and local ethical committees are involved in the approval process, while mainly local ethical committees approve studies performed in Central and Northern Europe (Table 4.4).

Table 4.4: involvement of ethical committees in each phase of development of clinical trials
* A: Ethical Committee of each hospital/institution in a particular country
* B: Ethical Committee of a group of hospitals/institutions in a particular country

	CENTRAL ETHICAL COMMITTEE (CE) – LOCAL ETHICAL COMMITTEE (LE)								
COUNTRY	**I**		**II**		**III**		**IV**		**DEGREE OF CONFIDENCE**
Greece	CE	-	CE	LE	CE	LE	CE	-	Quite sure
Italy	-	LE (A*)	-	LE (A*)	-	LE (A*)	LE (A*)	LE (A*)	Quite sure
Spain	CE	LE	CE	LE	CE	LE	CE	LE	Sure
Turkey	CE	LE	CE	LE	CE	LE	CE	LE	Sure
SUBTOTAL	***3 (60%)***	***3 (60%)***	***3 (60%)***	***4 (80%)***	***3 (60%)***	***4 (80%)***	***3 (60%)***	***3 (60%)***	
Estonia	CE	-	CE	-	CE	-	CE	-	Sure
Latvia	-	-	CE	-	CE	-	-	-	Sure
Lithuania	CE	-	CE	-	CE	-	CE	-	-
Georgia	-	-	CE	-	CE	LE	-	LE	Sure
Russian Fed	CE	LE	CE	LE	CE	LE	-	LE	Sure
SUBTOTAL	***3 (60%)***	***1 (20%)***	***5 (100%)***	***1 (20%)***	***5 (100%)***	***2 (40%)***	***2 (40%)***	***2 (40%)***	
Belgium	-	LE	-	LE	-	LE	-	LE	Sure
Czech Rep	CE	LE	CE	LE	CE	LE	CE	N/A	Sure
Germany	CE	LE	CE	LE	CE	LE	CE	LE	Sure
Poland	-	LE	-	LE	-	LE	-	LE	Sure
Slovakia	-	LE (AB*)	-	LE (AB*)	-	LE (AB*)	-	LE (AB*)	Sure
Switzerland	-	LE (A*)	-	LE (A*)	-	LE (A*)	-	LE (A*)	Sure
United Kingdom	-	LE	-	LE	-	LE	-	LE	Sure
SUBTOTAL	***2 (28.6%)***	***7 (100%)***	***2 (28.6%)***	***7 (100%)***	***2 (28.6%)***	***7 (100%)***	***1 (14.3%)***	***6 (100%)***	
Denmark	-	LE (B)	-	LE (B)	LE (B)	LE (B)	-	-	Sure
Finland	-	LE (B)	CE	LE (B)	CE	LE (B)	-	LE	Sure
Iceland	CE	LE	CE	LE	CE	LE	-	-	Sure
Norway	-	LE		LE		LE	-	LE	Sure
Sweden	-	LE (B*)		LE (B*)		LE (B*)	-	LE (B*)	Sure
SUBTOTAL	***1 (20%)***	***5 (100%)***	***2 (40%)***	***5 (100%)***	***2 (40%)***	***5 (100%)***	***0 (0%)***	***3 (60%)***	
Bosnia-Herz	CE	LE	CE	LE	CE	LE	CE	LE	Sure
Bulgaria	-	LE	-	LE	-	LE	-	LE	Sure
Croatia	CE	-	CE	-	CE	-	CE	-	Sure
Hungary	CE	LE	CE	LE	CE	LE	CE	LE	Sure
Romania	-	-	CE	-	CE	-	-	LE	Sure
Serbia&Mont	CE	LE (A*)	CE	LE (A*)	CE	LE (A*)	CE	LE (A*)	Sure
Slovenia	CE	LE	CE	LE	CE	LE	N/A	N/A	Sure
SUBTOTAL	***5 (71.4%)***	***5 (71.4%)***	***6 (85.7%)***	***5 (71.4%)***	***6 (85.7%)***	***5 (71.4%)***	***4 (66.7%)***	***5 (83.3%)***	
India	-	LE	-	LE		LE		LE	Sure
Israel	CE	LE	CE	LE		LE		LE	Sure
SUBTOTAL	***1 (50.0%)***	***2 (100%)***	***1 (50.0%)***	***2 (100%)***	***0 (0%)***	***2 (100%)***	***0 (0%)***	***2 (100%)***	

Not reported: Albania, Moldova, Ireland, Peru

Average time for approval by the Ethical Committees

The composition of the ethical committees differs among the countries. Clinicians and pharmacologists are represented in most of the central and local committees. Other members are patient representatives, bureaucrats, statisticians, epidemiologists and lawyers.
The approval time is less than 2 months in around 60% of the countries.

Table 4.5: average time for approval by the Ethical Committees

COUNTRY	TIME (months)		
Albania	<2		
Greece	2-4		
Italy	2-4		
Spain	2-4		
Turkey	2-4		
Estonia	<2		
Latvian	<2		
Lithuania	<2		
Georgia	<2		
Russian Fed	<2		
Belgium	<2		
Czech Rep	<2		
Germany	<2		
Ireland	<2		
Poland	<2		
Slovakia	<2		
Switzerland	<2		
United Kingdom	2-4		
Denmark	<2		
Finland	<2		
Iceland	2-4		
Norway	2-4		
Sweden	<2		
Bosnia-Herz	<2		
Bulgaria	<2		
Croatia	2-4		
Serbia&Mont	<2		
Slovenia	2-4		
India	>4		
Israel	2-4		
Peru	2-4		
TOTAL	**N (%)**	**<2 months**	**19 (61.3)**
		2-4 months	**11 (35.5)**
		>4 months	**1 (3.2)**

Not reported: Moldova, Hungary, Romania

Percentage of clinical research studies not fully funded by the pharmaceutical industry

The pharmaceutical industry is the major sponsor of clinical research in Europe. In about half of the countries less than 25% of the clinical studies is not fully funded by the pharmaceutical industry. In Northern Europe a larger percentage of studies are not fully funded, however up to 50% of the studies receives some kind of funding from the industry.

Table 4.6: percentage of clinical research studies not fully funded by the pharmaceutical industry

COUNTRY		%	DEGREE OF CONFIDENCE
Albania		25-50	Sure
Greece		25-50	Quite sure
Italy		25-50	Quite sure
Spain		<25	Quite sure
Turkey		<25	Uncertain
Estonia		<25	-
Latvia		<25	-
Georgia		50-75	Uncertain
Moldova		>75	Sure
Russian Fed		<25	Sure
Belgium		<25	Quite sure
Czech Rep		<25	Sure
Germany		50-75	Sure
Ireland		<25	Quite sure
Poland		<25	Quite sure
Slovakia		<25	Sure
Switzerland		25-50	Quite sure
Denmark		50-75	Sure
Finland		50-75	Quite sure
Iceland		25-50	Uncertain
Norway		>75	Quite sure
Sweden		50-75	Quite sure
Bosnia-Herz		50-75	Sure
Bulgaria		<25	Sure
Croatia		50-75	Sure
Hungary		>75	Sure
Romania		<25	Quite sure
Serbia-Mont		<25	Sure
Slovenia		>75	Quite sure
India		<25	Sure
Israel		<25	Quite sure
Peru		50-75	Quite sure
TOTAL	**N (%)**	**<25%**	**15 (46.9)**
		25-50%	**5 (15.6)**
		50-75%	**8 (25.0)**
		>75%	**4 (12.5)**

Not reported: Lithuania, United Kingdom

Percentage of clinical research studies sponsored by the pharmaceutical industry

Table 4.7: percentage of clinical research studies sponsored by the pharmaceutical industry

COUNTRY		%	DEGREE OF CONFIDENCE
Albania		>75	Sure
Greece		25-50	Quite sure
Italy		50-75	Sure
Spain		50-75	Quite sure
Turkey		>75	Uncertain
Latvia		>75	-
Lithuania		>75	Quite sure
Georgia		<25	-
Moldova		<25	Sure
Russian Fed		>75	Sure
Belgium		50-75	Quite sure
Czech Rep		25-50	Sure
Germany		>75	Sure
Ireland		>75	Quite sure
Poland		50-75	Quite sure
Slovakia		>75	Sure
Switzerland		50-75	Quite sure
Denmark		25-50	Sure
Finland		25-50	Quite sure
Iceland		25-50	-
Norway		<25	Quite sure
Sweden		50-75	Quite sure
Bosnia-Herz		25-50	Sure
Bulgaria		50-75	Sure
Croatia		<25	Sure
Hungary		>75	Sure
Romania		>75	Quite sure
Serbia&Mont		>75	Sure
Slovenia		50-75	Uncertain
India		>75	Sure
Israel		>75	Quite sure
Peru		25-50	Quite sure
TOTAL	**N (%)**	**<25**	**4 (12.5)**
		25-50	**7 (21.9)**
		50-75	**8 (25.0)**
		>75	**13 (40.6)**

Not reported: Estonia, United Kingdom

Other sources of funding for clinical research are mainly the Health Ministry in Central and Central-Eastern Europe. The main funding provider in Northern European countries is represented by private organizations/foundations. In a few countries there are some funding opportunities from universities.

In conclusion it is not possible to get a complete overview of clinical cancer research in Europe at the moment. Academic institutions and comprehensive cancer centers perform the majority of clinical studies, but phase II and III studies are also performed at non-academic institutions and general hospitals. All European countries foresee ethical approval processes of clinical studies and the approval time is less than 2 months in more than half of the countries. The pharmaceutical industry is the major sponsor of clinical cancer research in Europe and only a minor part of the clinical research is funded by money from governments or private foundations.