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## **A Survey of PhD programs in European medicine and health sciences: a compilation of answers to a questionnaire**

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### **INTRODUCTION**

A survey of the Internet pages of medical schools in Europe, given in the next paper and partly in the Introduction, showed that in the field of medicine and health sciences, PhD studies exist in all possible forms. In Europe there are universities without PhD programs in Medicine. There are universities with American type of joint MD-PhD programs. There are universities where PhD programs consist mostly of advanced learning; there are universities where PhD programs consist of research only. To the best of our knowledge, there is no single monograph, paper published in available journal or web pages where those different programs could be found. In fact, quite time-consuming Internet surfing is needed in order to obtain a limited number of information. Therefore we have performed a survey using a written Questionnaire of PhD programs at different universities, which were filled out in all cases by our highly qualified colleagues. Here we report the results of the survey.

### **MATERIAL AND METHODS**

The Questionnaire was designed containing 13 questions aimed at first to establish the existence of PhD programs at a particular university. If there was a PhD program, the major aims were to identify how it was organized, what are the conditions for the enrollment, what are the prerequisites for obtaining the final PhD thesis, and finally, to assess some basic information on the thesis and its presentation.

**Table 1. Questionnaire**

## **QUESTIONNAIRE**

1. **University/ Medical School/ School of Public Health/ Institutions**  
.....  
..  
.....
2. **Person in charge of the PhD Program at your institution (contact person for the conference, e-mail address)**  
.....
3. **Is the PhD program at your medical school organized:**
  - a) as research under the guidance of a supervisor of the PhD thesis only or
  - b) as a combination of research for the thesis and organized courses?
4. **If your answer to the previous question was b, :**
  - a) Is the study divided into fields (disciplines)?
  - b) Are the students allowed to choose courses regardless of disciplines?
  - c) How many hours of teaching (per year, per program of study).....
5. **Duration of the study: ..... years.**
6. **Is there an intermediate degree (Master of Science) before or during attaining the PhD?**
  - a) Yes (Name of degree): .....
  - b) No
7. **Conditions for enrollment into the PhD study:**
  - a) MD degree Yes/No
  - b) Other degrees Yes/No (which?.....)
  - c) average grades.....
  - d) supervisor .....
  - e) other .....
8. **Duration of undergraduate study: .....**
9. **Prerequisites for obtaining the PhD thesis:**
  - a) number of accumulated credits: .....
  - b) number of published papers (give us a details):  
.....
  - c) other: .....
10. **Appearance of the PhD thesis (IF YOU ARE COMING TO THE CONFERENCE WE WILL APPRECIATE VERY MUCH TO HAVE ONE COPY OF PhD THESIS FROM YOUR INSTITUTION):**
  - a) It contains published papers.
  - b) It doesn't contain published papers.
11. **Is the PhD Thesis presented (defended) publicly.....**
12. **Who are the members of PhD Thesis evaluating body**
  - a) Professors from your Institutions only.....
  - b) Professors from other Institutions within your country.....
  - c) Professors from abroad.....
  - d) .....

**13. Is the attainment of the PhD degree a prerequisite for academic advancement (i.e. attaining a status of associate professor or other)?**

- a) Yes
- b) No

Table 2 gives the list of countries and universities from which we have completed the Questionnaire. In addition, the Table 2 provides the names of the persons in charge of the PhD program and in parentheses are given names of the persons who have filled out the Questionnaire, if they are not the ones in charge of the PhD program. The Questionnaires were first distributed on the occasion of the Annual Conference of AMSE in Prague in 2003, and the Questionnaire was a part of the Registration Form for the Conference in Zagreb. Up to now it was filled out by 33 universities from 19 European countries. While analyzing the Questionnaire, we observed some of its lacks and possible misunderstandings, e.g. on the question No.3, some universities answered that their PhD program consists only of research (answer a); however, some of those universities have intermediate degree (Master of Science) with plenty of advanced learning before preparing PhD thesis. If such circumstances were known to us, we have corrected it (Mostar, Rijeka).

**Table 2.** An overview of received responses (in alphabetic order by country name)

Country	University / School	Person in charge of PhD program (contact person for the Conference who gave information)	Received*	
			questionnaire	manuscript
Belgium	University of Antwerpen Faculty of Medicine	(Prof. Z. Berneman)	✓ *	
	Université Catholique de Louvain, Brussels	(Prof. M. Crommelinck)	✓ *	
Bosnia and Herzegovina	University of Mostar Medical School	Prof. Filip Čulo, MD, PhD, Dean	✓	
	University of Tuzla Medical School	Prof. Lejla Begić, MD, PhD Vice Dean for Science (Mr. Osman Sinanović)	✓	
Bulgaria	Higher Medical Institute of Pleven	Prof. Maria Simeonova, MD, PhD Head of Medical Genetics Department	✓	
Croatia	J.J. Strossmayer University Osijek, Medical School	Assist. Prof. Ante Tvrdeić Vice Dean	✓	
	University of Rijeka Medical School	Prof. Anđelka Radojčić Badovinac Vice Dean for the postgraduate study	✓	✓
	University of Split Medical School	Prof. Mladen Boban, Dean and Prof. Željko Dujčić, coordinator of postgraduate studies (Ms. Marita Mimica, Head of Postgraduate Studies Department)	✓	
	University of Zagreb Medical School	Prof. Zdravko Lacković, MD, PhD PhD Program coordinator and Deputy Dean for postgraduate studies	✓	✓
Czech Republic	Charles University in Prague First Faculty of Medicine	Prof. MUDr. Stanislav Štípek Vice Dean for Pedagogical Affairs	✓	
Finland	University of Helsinki Faculty of Medicine and Helsinki Biomedical Graduate School (HBGS)	Prof. Seppo Meri Haed of the Committee for Postgraduate Studies and Prof. Tomi Mäkelä, Dean of the Helsinki Biomedical Graduate School (Mr. Kirsi Saukkonen, coordinator)	✓	✓

Germany	University of Münster Medical Faculty		✓ *	
	University of Bielefeld, School of Public Health	Prof. Dr. Claudia Hornberg	✓	✓
Hungary	Pécs University Medical School	Prof. Emil Fischer, MD, PhD, President of PhD Program	✓	
	University of Szeged Albert Szent-Gyorgyi Medical and Pharmaceutical Center, Faculty of General Medicine	Professor László Vécsei, MD, PhD, DSc	✓	
Ireland	University of Dublin Trinity College	Prof. Charles Normand, DPhil	✓	
Italy	University of Pavia Faculty of Medicine and Surgery	Prof. Alberto Calligaro, Deputy Dean	✓	✓
Macedonia	Sts. Cyril and Methodius University Skopje, Medical School	Prof. Magdalena Žanteva Naumoska, Vice Dean	✓	
Norway	Norwegian University of Science and Technology (NTNU), Faculty of Medicine	Prof. Ole-Jan Iversen, Vice Dean for Research (Ms. Anne Britt Storeng, Senior Executive Officer, Research Administration)	✓	
	University of Oslo Faculty of Medicine	Prof. Ole Sejersted, Vice Dean for Research (Mr. Sigrid Bergseng, Senior Executive Officer and Head of PhD Program)	✓	
Poland	Jagiellonian University Medical School	Prof. Tadeusz Cichocki (Prof. Jadwiga Mirecka)	✓	
	Poznan University of Medical Sciences	Prof. Maciej Zabel Head of PhD Program	✓	
	Medical Centre of Postgraduate Education Warsaw	Zbigniew Wegrzyn, MD	✓	✓
Romania	Iuliu Hatieganu University of Medicine and Pharmacy Cluj-Napoca	Prof. Petru Adrian Mircea, Vice-president of the University	✓	✓
Serbia and Montenegro	University of Kragujevac	Prof. Slobodan Janković, Vice Dean for Research	✓	✓
	University of Niš School of Medicine	Prof. Stevan Ilić, Dean (Dr. Goran Nikolić, Vice Dean)	✓	
	University of Novi Sad Faculty of Medicine	Prof. Nevena Sečen, MD, PhD, Vice Dean for foreign communication and foreign students	✓	
Slovakia	Comenius University Jessenius Faculty of Medicine	Prof. Javorka Kamil Vice Dean for PhD Study	✓	✓
	P.J. Šafarik University Košice	(Prof. Andrej Jenča, MD, PhD)	✓ *	
Slovenia	University of Ljubljana Faculty of Medicine	Prof. Lovro Stanovnik	✓	
Spain	University of Navarra Medical School	Prof. Alfonso Ibarrola	✓	
	Universitat Rovira i Virgili, Tarragona	(Francesca Vidal, Veronica Piera)	✓ *	
Switzerland	University of Bern Medical Faculty	Dr. Marlene Wolf	✓	

\* Questionnaires were distributed and completed at the Annual Conference of AMSE in Prague in 2003

**Table 3.** Organization of PhD programs and higher education in general. Results of survey by Questionnaire (Questions 3-4)

University / School	Program	3) How is organized		4) Disciplines?		
		a) as a research only	b) as a combination	a) Divided in disciplines?	b) Courses regardless disc.	c) hrs per program
University of Antwerpen Faculty of Medicine		✓				
Université Catholique de Louvain, Brussels			✓	✓	✓	
University of Mostar Medical School			✓		✓	
University of Tuzla, Medical School		✓		N/A		
Higher Medical Institute of Pleven		✓		N/A		
J.J. Strossmayer University Osijek, Medical School			✓		✓	360
University of Rijeka, Medical School	Biomedicine Clinical Immunology		✓	✓	✓	
University of Split, Medical School			✓	✓	✓	180
University of Zagreb, Medical School	5 thematic programs		✓	✓	✓	360
Charles University in Prague, First Faculty of Medicine			✓	✓	✓	60 per year
University of Helsinki, Faculty of Medicine and HBGS			✓	✓		400 or 800
University of Münster Medical Faculty			✓			
University of Bielefeld, School of Public Health			✓	✓		240
Pécs University Medical School			✓	✓	✓	180
University of Szeged, Faculty of General Medicine	Experimental and Clinical Neuroscience Program integrated in Clinical Medical PhD		✓	✓	partially	
University of Dublin, Trinity College	Health Policy & Management	✓		N/A		
University of Pavia Faculty of Medicine and Surgery		mainly			✓	
Sts. Cyril and Methodius University Skopje, Medical School		✓		N/A		

Norwegian University of Science and Technology (NTNU), Faculty of Medicine	5 thematic PhD programs		✓	✓	✓	300
University of Oslo, Faculty of Medicine			✓		✓	
Jageiellonian University Medical School	all participants must follow the same courses		✓	No	No	205+360
Poznan University of Medical Sciences			✓			240-480
Medical Centre of Postgraduate Education Warsaw	postgraduate and continuing professional education/training in all biomedical specialities		✓	✓		
Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca			✓ for int	✓	✓	120-160
University of Kragujevac		✓				N/A
University of Niš, School of Medicine		✓				N/A
University of Novi Sad, Faculty of Medicine		✓				N/A
Comenius University, Jessenius Faculty of Medicine			✓			
P.J. Šafarik University Košice		✓				N/A
University of Ljubljana, Faculty of Medicine			✓	✓		200
University of Navarra, Medical School			✓	✓	✓	200
Universitat Rovira i Virgili, Tarragona			✓			
University of Bern, Medical Faculty			✓	✓	✓	

## RESULTS AND DISCUSSION

Table 3 provides the results on answers to the question No. 3 and 4.

3. **Is the PhD program at your medical school organized:**
  - a) as research under the guidance of a supervisor of the PhD thesis only or
  - b) as a combination of research for the thesis and organized courses?
4. **If your answer to the previous question was b, :**
  - a) Is the study divided into fields (disciplines)?
  - b) Are the students allowed to choose courses regardless of disciplines?
  - c) How many hours of teaching (per year, per program of study)

From the table we can see that several universities like Antwerpen, Tuzla, Plevna, Dublin, Pavia, Kragujevac, Niš, Novi Sad and Košice have a PhD program which consists only of research. However, it is possible that in some of those universities, for example from Serbia and Montenegro, advanced learning is part of intermediate programs. Obviously, most of the universities have a combination of advanced learning and research. In most surveyed universities, the programs are divided into disciplines, but at the same time in most of them, students can choose courses regarding of disciplines. The amount of advanced learning varies very much several times between different universities.

Table 4 shows the answers to questions 5, 6, 7 and 8. We can see that PhD program in most surveyed countries lasts three years. In most of the countries there is an intermediate degree, which in the countries of former Yugoslavia, Poland and possibly in the Czech Republic is called Master of Science.

Conditions for enrollment into PhD program, MDs and other related degrees exist in most universities. Only in few countries of the Former Yugoslavia, high grades in graduate study are conditions for enrollment into the program. The existence and probably recommendation of a supervisor are required in most of the surveyed countries.

Table 5 shows answers to questions 9 to 13 and addresses the issues how PhD thesis is obtained, presented, evaluated and published. Only 14 examined universities have some form of a credit system out of 33 universities. However, it is not clear what kind of credits and systems is used where the number of acquired credits ranges from 20 to 360. Prerequisite for obtaining PhD thesis for most of the universities are scientific papers published by applicants. The number of required papers ranges from 1 to 5. In some countries it is specified that the papers must be published in journals indexed in CC. Some universities have additionally expressed the condition that the applicant should be the first author, and some of them have expressed the requirement that the paper should be published in a journal with the defined impact factor. At 15 universities, the published PhD thesis contains published papers and at the same number of universities PhD thesis is presented publicly. In most universities, members of PhD thesis evaluation bodies come not only from those universities, but also from other institutions within the country. At 11 universities, the members of PhD evaluation bodies come occasionally or often from abroad.

Except the Trinity College, Dublin and the University of Bern, in all other universities PhD thesis is prerequisite for academic advancement.

**Table 4.** Duration of PhD and graduate programs, conditions for enrolment in PhD program, MSc degree as a prerequisite or an intermediate stage. Results of survey by Questionnaire (Questions 5-8)

University / School	5) Duration (in years)*	6) Intermediate degree?		7) Conditions for enrolment					8) Duration of undergraduate study (yrs)**
		a) yes (name of degree)	b) no	a) MD	b) other degrees	c) average grades	d) supervisor	e) other (which)	
University of Antwerpen Faculty of Medicine			✓	✓	✓				7
Université Catholique de Louvain, Brussels	4	✓ DEA		✓	✓				7
University of Mostar Medical School		✓ MSc		✓	✓	✓ 3.5	✓	✓	6
University of Tuzla, Medical School		✓ MSc		✓	✓				6
Higher Medical Institute of Pleven	3		✓	✓			✓	✓	6
J.J. Strossmayer University Osijek, Medical School	3	✓ MSc		✓	✓	✓ 3.5	✓	✓	6

University of Rijeka, Medical School	3	✓ MSc		✓	✓	✓ 3.5	✓		6 (4-5)
University of Split, Medical School	3		✓	✓		✓ 4.0			6
University of Zagreb, Medical School	3	it was till now	✓	✓	✓	✓ 3.5	✓	✓	6 (4-5)
Charles University in Prague, First Faculty of Medicine	3	✓ MSc		✓	✓		✓	✓	6
University of Helsinki, Faculty of Medicine and HBGS	4	✓		✓	✓		✓		6-7 (5)
University of Münster Medical Faculty	1-3	✓					✓		6
University of Bielefeld, School of Public Health	3	✓ MPH, MSc		✓	✓	✓	✓	✓	4
Péecs University Medical School	3		✓	✓	✓	✓	✓		5–6
University of Szeged, Faculty of General Medicine	3	✓		✓	✓				6 (5)
University of Dublin, Trinity College	3		✓	✓	✓		✓		
University of Pavia Faculty of Medicine and Surgery	3		✓	✓	✓		✓		5–6
Sts. Cyril and Methodius University Skopje, Medical School		✓ MSc		✓					6
Norwegian University of Science and Technology (NTNU), Faculty of Medicine	3	✓		✓	✓	✓	✓	✓	5–6
University of Oslo, Faculty of Medicine	3			✓	✓		✓	✓	6
Jageiellonian University Medical School		✓ MSc		✓	✓	✓	✓	✓	5–6
Poznan University of Medical Sciences	4		✓	✓					5–6
Medical Centre of Postgraduate Education Warsaw	4		✓	✓	✓				6
Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca	4 int 6 ext			✓	✓				4–6
University of Kragujevac	3	✓ MSc		✓	✓	✓	✓	✓	6
University of Niš, School of Medicine	3	✓ MSc		✓	✓		✓	✓	6
University of Novi Sad, Faculty of Medicine	5	✓ MSc		✓					6
Comenius University, Jessenius Faculty of Medicine	3-4 int 5 ext		✓	✓	✓			✓	6 (5)
P.J. Šafarik University Košice	3-4			✓					
University of Ljubljana, Faculty of Medicine	4	✓ MSc		✓	✓	✓	✓		6 (4-5)
University of Navarra, Medical School	2-3		✓	✓	✓		✓		6
Universitat Rovira i Virgili, Tarragona	3-4	✓		✓	✓				6
University of Bern, Medical Faculty	3		✓	✓			✓		

\* int – internal or full time students; ext – external or part time students

\*\* Duration of study is 6-7 years for medical doctors, shorter for other graduates



**Table 5.** Conditions for PhD thesis obtaining, evaluation body, presentation and publishing requirements. Results of survey by Questionnaire (Questions 9-13)

University / School	9) Prerequisites for obtaining the PhD thesis?			10) Appearance of PhD thesis		11) Is the PhD thesis presented publicly?	12) Who are the members of PhD thesis evaluation body?			13) Is the PhD degree prerequisite for academic advancement?	
	a) no of accumulated credits	b) no of published papers	c) other	a) it contains published papers	b) it doesn't contain pub. papers		a) from institution only	b) other inst. within country	c) from abroad	a) Yes	b) No
University of Antwerpen, Faculty of Medicine		✓ 2 published papers		✓						✓	
Université Catholique de Louvain, Brussels Faculte de Medicine	not defined	✓ 4 published papers			✓ no					✓	
University of Mostar Medical School		✓ 1 paper published in indexed journal						✓	✓	✓	
University of Tuzla, Medical School		✓ 3 papers published in indexed journals			✓			✓	✓	✓	
Higher Medical Institute of Pleven		✓ published papers are necessary but their number is not specified	✓		✓			✓		✓	
J.J. Strossmayer University Osijek, Medical School	180 ECTS	✓ 30 credits out of published papers altogether, student must be first author of 1 CC in particular	✓		✓			✓		✓	
University of Rijeka, Medical School	180 ECTS	✓ at least 1 in CC (after PhD)		✓		✓		✓		✓	
University of Split, Medical School		✓ 1 CC			✓			✓		✓	
University of Zagreb, Medical School	180 ECTS	✓ 3-4 papers published in peer reviewed journals or books, out of them at least one in CC journal as a first author, cumulative impact factor of all papers at least 1.2			✓	✓	✓	✓		✓	
Charles University in Prague, First Faculty of Medicine	2 courses and state exam	✓						✓	✓ in some cases	✓	
University of Helsinki, Faculty of Medicine and HBGS	20 or 40	✓ generally 4-5 (alternatively but rarely monograph dissertation)	✓	✓				✓	✓ often	✓	
University of Münster Medical Faculty	72 credits		✓		✓					✓	
University of Bielefeld, School of Public Health					✓	✓		✓		✓	
Pécs University Medical School	180 credits	✓ 2-3 papers published in int. journals			✓	✓		✓		✓	
University of Szeged,		✓ at least 3 original papers		✓		✓		✓		✓	

Faculty of General Medicine		cummulative impact factor in field of Neuroscience around 4.5-5										
University of Dublin, Trinity College								✓				✓
University of Pavia Faculty of Medicine and Surgery			✓	✓		✓		✓	✓	✓		
Jagiellonian University Medical School			✓		✓			✓	occasionally		✓	
Poznan University of Medical Sciences			✓		✓			✓			✓	
Medical Centre of Postgraduate Education Warsaw		✓ 3 papers			✓			✓			✓	
Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca		✓ at least 2 papers in field of research in outstanding national (international) journals different titles depending on publications	✓ sev. titles	✓		✓		✓			✓	
Sts. Cyril and Methodius University Skopje, Medical School		✓ 4 as an author and 2 as a co-author	✓ MSc	✓		✓	✓				✓	
Norwegian University of Science and Technology (NTNU), Faculty of Medicine	180 credits	✓ 3-5 articles published in international peer reviewed journals, first authorship of at least half of them	✓ publ. trial lecture	✓		✓		✓	✓		✓	
University of Oslo, Faculty of Medicine	not defined	✓ 3-5 articles published in international peer reviewed journals, first authorship of at least two of them	min 30 credits training	✓		✓		✓	✓		✓	
University of Kragujevac, Medical Faculty		✓ one paper published in medical journal, the candidate being the first author			✓			✓			✓	
University of Niš, School of Medicine		✓ min. 2 papers in an international journal (SCI list)			✓	✓		✓	possibly		✓	
University of Novi Sad, Faculty of Medicine		✓ MSc+5 papers published int. journals on topic of PhD		✓		✓	✓				✓	
Comenius University, Jessenius Faculty of Medicine	150	✓ 1-3 papers published in peer reviewed journals (depending on a sci. filed), min. 1 as the first author	✓ exam	✓		✓		✓	✓		✓	
P.J. Šafarik University Košice	✓			✓							✓	
University of Ljubljana, Faculty of Medicine	90	✓ at least 1 paper published in a journal indexed in SCI		✓			✓	✓	✓		✓	
University of Navarra, Medical School	32	✓ not compulsory	✓ if possible			✓		✓	✓		✓	
Universitat Rovira i Virgili, Tarragona	✓		✓			✓					✓	
University of Bern, Medical Faculty	✓	✓ at least 1 published paper candidate being the first author		✓		✓	✓					✓ not yet

## CONCLUSION

Since 21 out of 33 questionnaires were filled out by the universities from the “countries in transition”, the pleasant surprise of the survey presented is the fact that all those universities are imposing high criteria for obtaining PhD thesis, which currently requires from the candidate to have his/her scientific papers published before presenting his/her scientific thesis. In these countries, if it is already not being done so, there is only one step towards the thesis that will contain those papers as an integral part of PhD thesis.

Among the countries surveyed, there is not one of them that has already introduced the ECT System which would really reflect the workload required for the study and research. However, it is obvious that some universities are going toward this direction. However, while it should not be so difficult to measure the workload required for advanced learning, it is quite difficult to design a credit system which would accurately measure the workload required to publish a scientific paper. We all know that for some scientific papers, if we are lucky and a part of a good team, we are able to design them in a few months or even weeks time. On other hand, we have probably all have experienced to have been working on some of them for years and years. There is obviously a paradox here. We are all able to recognize good science and a good scientist. However, the tendency to put it into numbers – any kind of numbers – places us in front of obstacles we are still not aware how to deal with.

In conclusion, from the results of the survey presented here, it is clear that all surveyed countries are organizing their PhD program in medicine with high ambitions. Since PhD degree is prerequisite for academic career in most of the surveyed countries, we are obviously all aware that by designing PhD programs from advanced learning to the independent research of the applicants, we are designing the program for leaders of our European medicine in the times to come.