

# WHAT CAN WE LEARN FROM EACH OTHER ABOUT UNDERGRADUATE MEDICAL EDUCATION IN GENERAL PRACTICE/FAMILY MEDICINE? KAJ SE LAHKO O DODIPLOMSKEM IZOBRAŽEVANJU NA PODROČJU DRUŽINSKE MEDICINE NAUČIMO DRUG OD DRUGEGA?

Irena ZAKARIJA-GRKOVIĆ<sup>1\*</sup>, Davorka VRDOLJAK<sup>1</sup>, Venija CEROVEČKI<sup>2</sup>

<sup>1</sup>University of Split, School of Medicine, Department of Family Medicine,  
Soltanska 2, 21000 Split, Croatia

<sup>2</sup>University of Zagreb, School of Medicine, Department of Family Medicine, Šalata 3, 10000 Zagreb, Croatia

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## ABSTRACT

**Introduction:** There is a dearth of published literature on the organisation of family medicine/general practice undergraduate teaching in the former Yugoslavia.

## Keywords:

general practice,  
family medicine,  
undergraduate  
teaching, former  
Yugoslavia,  
The Split Initiative

**Methods:** A semi-structured questionnaire was sent to the addresses of 19 medical schools in the region. Questions covered the structure of Departments of Family Medicine (DFM), organisation of teaching, assessment of students and their involvement in departmental activities.

**Results:** Thirteen medical schools responded, of which twelve have a formal DFM. Few DFM have full-time staff, with most relying upon external collaborators. Nine of 13 medical schools have family doctors teaching other subjects, covering an average of 2.4 years of the medical curriculum (range: 1-5). The total number of hours dedicated to teaching ranged from 30 - 420 (Md 180). Practice-based teaching prevails, which is conducted both in city and rural practices in over half of the respondent schools. Written exams are conducted at all but two medical schools, with the written grade contributing between 30 and 75 percent (Md=40%) of the total score. Nine medical schools have a formal method of practical skills assessment, five of which use Objective Structured Clinical Examinations. Student participation is actively sought at all but three medical schools, mainly through research.

**Conclusion:** Most medical schools of the former Yugoslavia recognise the importance of family medicine in undergraduate education, although considerable variations exist in the organisation of teaching. Where DFM do not exist, we hope our study will provide evidence to support their establishment and the employment of more GPs by medical schools.

## IZVLEČEK

**Uvod:** V državah nekdanje Jugoslavije je zelo občutno pomanjkanje literature o organizaciji dodiplomskega izobraževanja na področju družinske medicine.

## Ključne besede:

splošna medicina,  
družinska medicina,  
dodiplomsko  
poučevanje, države  
nekdanje Jugoslavije,  
Splitska iniciativa

**Metode:** Polstrukturiran vprašalnik smo posredovali na naslove 19 medicinskih fakultet. Vprašalnik je vseboval vprašanja o strukturi kateder za družinsko medicino, organizaciji izobraževanja, ocenjevanju študentov in njihovi vključenosti v dejavnosti kateder.

**Rezultati:** Odzvalo se je 13 fakultet, od tega jih ima 12 uradno katedro za družinsko medicino. Le nekaj kateder za družinsko medicino ima zaposleno osebje za polni delovni čas, večina pa se zanaša na zunanje sodelavce. Devet od 13 medicinskih fakultet zaposluje družinske zdravnike za poučevanje drugih predmetov, kar pokriva v povprečju 2,4 let medicinskega učnega načrta (razpon: 1-5). Celotno število ur, ki je posvečeno izobraževanju, se giblje med 30 in 420 (Md 180). Prevladuje izobraževanje, ki temelji na praksi, in se opravlja v mestnem okolju in na ruralnih območjih v več kot polovici fakultet, ki so se odzvale. Pisni preizkusi znanja se opravljajo na vseh fakultetah, razen dveh, pisna ocena pa prispeva k celotni oceni od 30 do 75 odstotkov (Md=40 %). Devet medicinskih fakultet uporablja uradno metodo za ocenjevanje praktičnih sposobnosti, pet od teh pa posega tudi po objektivno strukturiranem kliničnem preverjanju (Objective Structure Clinical Examination, OSCE). Aktivno sodelovanje študentov je zaželeno v vseh, razen na treh fakultetah, predvsem na raziskovalnem področju.

**Zaključek:** Večina medicinskih fakultet iz držav nekdanje Jugoslavije prepoznava pomembnost družinske medicine v dodiplomskem izobraževanju, čeprav obstaja veliko različic pri sami organizaciji poučevanja. Upamo, da bo naša študija prispevala k ustanavljanju kateder za družinsko medicino in k večjemu zaposlovanju splošnih zdravnikov na medicinskih fakultetah.

\*Corresponding author: Tel. + 385 2 15 57 823; E-mail: irena.zakarija-grkovic@mefst.hr

## 1 INTRODUCTION

“Coming together is a beginning; keeping together is progress; working together is success”. These words, by Henry Ford, describe the series of events that have taken place in the countries of the former Yugoslavia among health professionals dedicated to the teaching of family medicine/general practice (FM/GP). The first Department of Family Medicine (DFM) in this part of Europe was founded in 1980 at the University of Zagreb, Croatia. This motivated other medical schools in the region to establish DFM. For almost 40 years now, they have been working towards developing family medicine into a recognised scientific, educational and professional discipline.

In order to follow and utilise the paths of cooperation already tested and developed in other medical disciplines, a group of Croatian and Slovenian teachers in FM/GP organised a continuous medical education course in October 2011, at the University of Split School of Medicine, Croatia, on the topic ‘Modern trends in teaching family medicine’. The course attracted a large number of participants and speakers from Slovenia (Ljubljana and Maribor), Bosnia and Herzegovina (Mostar), Montenegro (Podgorica) and Croatia (Zagreb, Osijek, Rijeka and Split), attesting to the need for mutual support and enlightenment among teachers of FM/GP. This was particularly relevant for those countries in the process of joining the European Union, which required them to adapt their curricula to European standards. Hence, the aim of the initiative, later named *The Split Initiative*, was to “renew our collaboration and to exchange information on the way we conduct teaching of family medicine”. (1) Given common past of the countries involved, similar languages and health systems (2), this initiative proved to be a success and has led not only to regular, annual meetings of the Split Initiative Group (Ljubljana ’13, Zagreb ’14, Podgorica ’15, Skopje ’16 and Sarajevo ’17) (3), each with its own carefully selected theme, but also to scientific collaboration, exchange of students/teachers and joint publications. (4) Most importantly, we believe this ongoing initiative has enabled its participants to regain confidence in their profession and in themselves, leading to a better-quality teaching in FM/GP and ultimately, better doctors.

An ongoing topic of interest among members of The Split Initiative is the organisation of undergraduate teaching in family medicine. Despite the similarities in the health and education systems between participant countries, numerous differences in approaches and content exist, revealing both obstacles and achievements in the pursuit of better teaching in family medicine. We felt that these similarities and differences, highlighted at our annual meetings, should be documented in a systematic and

objective manner, in the hope that, once published, they might offer our colleagues, including international readers, reference points for feedback into local and national educational boards. Our aim is to improve the position of academic FM/GP in Europe, especially in countries of South Eastern Europe where it may be less developed. Hence, a working group was appointed with the task of collecting the following data: 1) general information on DFM; 2) organisation of undergraduate teaching in FM/GP; 3) student assessment during FM/GP teaching; and 4) involvement of students in the activities of DFM.

## 2 METHODS

We used a cross-sectional study design, aimed at comparing the form and content of FM/GP teaching in medical schools from the region of the former Yugoslavia. A 5-page, semi-structured questionnaire with 45 questions was created for the purpose of this study and was revised several times following consultations with heads of DFM in Croatia and Slovenia and the Vice-Dean of Teaching at the University of Split School of Medicine. It consisted of four parts: 1) general information (establishment of a DFM, the structure of teaching staff, participation in the teaching of other subjects, number of enrolled students); 2) the organisation of teaching (number of lectures, seminars and practical classes, models of teaching, recommended literature, funding of field work, student obligations, dealing with absenteeism); 3) assessment (structure: written, oral, practical exam, thresholds, selecting questions, the final grade) and 4) cooperation with students (participation in meetings and activities of the department, student evaluation of teaching).

The questionnaire was sent by letter and e-mail in July 2015 to the valid addresses of 19, out of a total of 21, medical schools in the region of the former Yugoslavia (Banja Luka, Belgrade, Foča, Kragujevac, Ljubljana, Maribor, Mostar, Novi Sad, Osijek, Podgorica, Priština, Rijeka, Sarajevo, Skopje, Split, Štip, Tetovo, Tuzla and Zagreb). The questionnaire was addressed to heads of DFM or their representatives. Where there were no “heads of departments”, the questionnaire was addressed to the Dean or Vice-Dean for Teaching of the relevant medical school. Two follow-up reminder emails were sent at monthly intervals and personal contacts were utilised to facilitate the return of completed questionnaires. Data were analysed using MedCalc software (version 15) and methods of descriptive statistics.

### 3 RESULTS

A total of 13 out of 19 medical schools returned completed questionnaires, giving a response of 68%. We were able to obtain information on the teaching of FM/GP from the following medical schools: Belgrade (Serbia), Foča, Mostar, Sarajevo, Tuzla (Bosnia and Herzegovina), Ljubljana, Maribor (Slovenia), Osijek, Rijeka, Split, Zagreb (Croatia), Podgorica (Montenegro) and Skopje (Macedonia).

Almost all participating medical schools have a formal DFM, with the exception of The University of Belgrade, where it is in the process of being established. The first DFM was established in Zagreb, in 1980, and the most recent in Skopje, in 2010. In 11 out of 13 medical schools, FM/GP is taught as an independent subject, whereas in Osijek, it is part of the combined subject 'Family medicine, school medicine and medical sociology'. In Belgrade, it is taught during clinical rotations in the final semester of the medical course. The median number of students enrolled into the year in which FM/GP is taught is 90, ranging from 35 in Podgorica to 550 in Belgrade. The curriculum in FM/GP is available on the websites of all but three medical schools (Osijek, Foča, Tuzla).

Very few DFM have full-time staff employed by the medical school or visiting speakers (Table 1). Most departments have part-time staff employed in various arrangements, some spending only 10% of their time at the department and the rest in practice (e.g. Sarajevo), while others have a 50-50 arrangement. All medical schools, apart from Belgrade, rely upon a large number of external collaborators for teaching. Most medical schools have GPs/FM doctors teaching different subjects in multiple years, attesting to a high degree of interdepartmental and interdisciplinary collaboration. The maximum number of years covered by GP/FM staff is five (out of six), in Ljubljana, and the average is 2.4 (range: 1-5), with the final year of medicine most frequently covered. Subjects taught by GP/FM staff include 'Fundamentals of clinical practice', 'Medical informatics', 'Research in biomedicine', 'Communication skills', 'First aid', 'Breastfeeding medicine', 'Clinical skills' and 'Motivational interviewing'.

Table 1. Distribution of teaching staff at family medicine/general practice departments\*.

Medical school (n=13)	Full-time staff	Part-time staff	Staff with academic/teaching title	External collaborators/practice mentors	Visiting speakers
Belgrade	0	0	0	0	2
Foča	1	1	2	4	0
Ljubljana	0	6	9	130	2
Maribor	0	1	2	100	0
Mostar	0	0	7	6	0
Osijek	1	1	0	21	0
Podgorica	0	1	1	3	1
Rijeka	0	7	0	10	0
Sarajevo	1	5	3	31	0
Skopje	0	0	2	60	0
Split	1	1	2	18	1
Tuzla	0	1	0	7	0
Zagreb	0	5	7	32	3

\*Numbers only approximation, as definition of staff members in questionnaire is inadequate.

There was a considerable amount of variation in the total number of hours dedicated to the teaching of FM/GP, ranging from 30 (Skopje) to 420 (Maribor) with a median of 180 (Table 2). Practical classes (practice-based teaching) are the predominant form of teaching (M=99h; range:12-206), followed by seminars (M=27h; range: 2-60) and lectures (M=25h; range: 3-60). Seminars are mainly conducted as a combined effort of students and teaching staff, with only two medical schools (Split, Belgrade) applying the predominantly teacher led model. Practical classes are held in both city and rural GPs' offices in just over half of the medical schools, with the remainder of students spending time in city practices only. Expenses associated with practical classes (travel, accommodation, food) are covered by six out of 13 medical schools. Expectations of students during visits to GP offices include: practising clinical skills (n=12), keeping a diary (n=9), preparing a case study (n=8), spending time with the community nurse (n=7), writing letters to patients (n=4), filling out a questionnaire (n=3) and writing medical documents (n=1) (results not shown).

Table 2. Organisation of teaching in FM/GP.

Medical school (n=13)	Lectures (h)	Seminars (h)	Seminars: student led (S); teacher led (T) or both (B)	Practical classes (h)	Location of prac. classes city practice (C), rural practice (R) or both (B)	Expenses covered by medical school: yes (Y); no (N)	Total hours of teaching in FM/GP
Belgrade	20	15	T	85	C	N	120
Foča	60	10	S	120	B	N	180
Ljubljana	10	25	B	20	B	N	170
Maribor	15	60	B	120	B	Y	420
Mostar	22	44	B	114	B	Y	180
Osijek	18	40	B	130	B	Y	188
Podgorica	30	13	S	52	C	N	90
Rijeka	30	30	S	100	B	N	160
Sarajevo	45	9	B	146	C	Y	200
Skopje	3	12	S	12	C	N	30
Split	20	56	T	104	B	Y	180
Tuzla	30	2	S	206	B	Y	236
Zagreb	20	40	B	80	C	N	140

Written exams are conducted at all but two medical schools (Belgrade, Rijeka). The median cut-off mark is 60% (range: 51-70), with the written grade contributing to between 30 and 75 percent (Md=40%) of the total score in FM/GP (Table 3). In all medical schools with a written exam, multiple choice questions (MCQs) are used, with

an average of 57 questions per exam paper (range: 30-100) and 1.7 min allowed per question (range: 1-3 min.). In addition to MCQs, short answer and modified essay questions are employed by five and two universities, respectively.

**Table 3.** Assessment of undergraduate medical students in GP/FM: written exam.

Medical school (n=13)	Written exam Yes/No	% cut-off score	% of total score	Type of questions-MCQs	Type of questions-short answers	Type of questions-other	No. of questions/time (min.) per question
Belgrade	No	N/A <sup>†</sup>	N/A	N/A	N/A		N/A
Foča	Yes	60	50	Yes	Yes	MEQ*	50/1.5
Ljubljana	Yes	60	60	Yes	No		80/1.12
Maribor	Yes	60	70	Yes	No		50/1
Mostar	Yes	60	33	Yes	Yes		70/1
Osijek	Yes	60	33	Yes	Yes		60/2
Podgorica	Yes	51	30	Yes	No		30/1.5
Rijeka	No	N/A	N/A	N/A	N/A		N/A
Sarajevo	Yes	55	75	Yes	Yes	MEQ	arbitrary/3
Skopje	Yes	70	30	Yes	No		30/1.3
Split	Yes	60	30	Yes	No		30/2
Tuzla	Yes	60	66	Yes	Yes		66/3
Zagreb	Yes	60	40	Yes	No		100/1.5

\*Modified Essay Question, † N/A: Not Applicable

Five out of 13 medical schools do not conduct an oral exam as part of the assessment in FM/GP (Belgrade, Maribor, Osijek, Podgorica, Tuzla). Of the remaining respondents, the majority allow students to draw questions, whereas at other medical schools, the examiner determines the question (Skopje, Zagreb), or a combination of both approaches is used (Foča, Ljubljana). Oral assessment represents between 10% and 45% of the total score in FM/GP (M=29). Table 4 shows details of the assessment

of practical skills in the FM/GP undergraduate program. Out of the 13 respondent medical schools, only three did not have a formal method of assessment of practical skills. Five medical schools run OSCEs (Ljubljana, Maribor, Mostar, Split, Tuzla). Overall, the practical exam comprises between 10% and 40% of the total score in FM/GP (M=25). No formal assessment of teaching in FM/GP is conducted at the medical school in Belgrade, given that the subject is part of clinical rotations/internship.

**Table 4.** Assessment of undergraduate medical students in GP/FM: practical exam.

Medical school (n=13)	Practical exam-OSCE Yes/No	Practical exam-patients Yes/No	No. of patients/student	OSCE set-up	% cut-off score	% of total score
Belgrade	No	No	N/A*	N/A	-	-
Foča	No	Yes	3	N/A	80	10
Ljubljana	Yes	No	N/A	9 stations	-	40
Maribor	Yes	No	N/A	Variable	60	15
Mostar	Yes	No	N/A	5 stations	33	33
Osijek	No	No	N/A	N/A	-	-
Podgorica	No	No	N/A	N/A	0	0
Rijeka	No	Yes	1	N/A	65	40
Sarajevo	No	Yes	1	N/A		25
Skopje	No	No	N/A	N/A	-	-
Split	Yes	No	N/A	6 stations	60	25
Tuzla	Yes	No	N/A	12 stations	60	20
Zagreb	No	Yes	20	N/A	-	20

\*N/A- Not Applicable

Student participation is actively sought by GP/FM staff at all but three medical schools (Podgorica, Belgrade, Tuzla), usually in the form of participation in research (n=10) or conferences (n=7). In Split, students are invited to departmental meetings and in Zagreb, they organise additional, non-compulsory seminars in areas of interest. Students are also invited to evaluate GP/FM academic staff (results not shown) at all respondent medical schools (except for Skopje), either via official university surveys (n=11), internal departmental surveys (n=7) or both (n=6) (Belgrade, Maribor, Osijek, Rijeka, Tuzla, Zagreb).

#### 4 DISCUSSION

The evaluation of undergraduate education in general practice/family medicine throughout Europe has shown that most universities in Europe have a GP/FM curriculum but in some European countries, it is still possible to graduate without having been exposed to GP/FM. The absence of a GP/FM curriculum is most evident in the countries of Eastern and Southern Europe (5). This study is one of the examples of successful interdepartmental and cross-national collaboration that has arisen from The Split Initiative, an annual gathering (since 2011) of teachers in FM/GP from the former Yugoslavia, aimed towards "renewing our collaboration and exchanging information on the way we conduct the teaching of family medicine" (1).

In 2012, the European Academy of Teachers in General Practice and Family Medicine (EURACT), announced a project "to establish and facilitate collaboration within the academic sphere of FM/GP" (6). We believe the results of this study will contribute to the objectives of the project, namely: 1) network and collaboration in basic medical education; 2) create a platform for the exchange of students and teachers; 3) contribute towards a teaching agenda for undergraduate education in FM/GP; 4) quality improvement of undergraduate (and post-graduate) teaching; 5) innovative approaches in undergraduate (and post-graduate) teaching and 6) supporting less developed departments/medical schools.

As expected, given that respondents are members of The Split Initiative, i.e., teachers in FM/GP, all participating universities have a GP/FM curriculum. In 11 out of 13 medical schools, FM/GP is an independent subject, whereas in the remaining universities, it is combined with other subjects or part of the final clinical rotations. It is known that countries with well-developed and strong family medicine have quality health care and better population health at lower costs (7). Family doctors are expected to solve most medical problems of the population in care, providing continuous and comprehensive health care. In light of that, teaching of family medicine is becoming

increasingly important. Mandatory family medicine clerkship and appropriate exposure to GP mentors as role models are essential for further professional development of every young doctor. Evidence shows that medical students can be encouraged to pursue GP/FM as a career if they undertake GP/FM curriculum, which is of sufficient quantity, quality and duration (8). Our findings attest to the rising importance of family medicine in the undergraduate medical curriculum.

In a descriptive study of undergraduate education in GP/FM (5), it was observed that as the length of the clinical teaching period in GP/FM increased, so did the number of level of years that are involved in the teaching of FM/GP. In our respondent medical schools, FM/GP is primarily taught during the final year of medicine, reflecting the relatively short time allocated to practice-based learning, amounting to a mean of 2.5 weeks. Brekke et al., are of the opinion that practice-based teaching (in a GP's office) should be offered for at least four weeks. Although practice-based teaching is only offered during final years of medicine in our sample, it is very encouraging to see participation between GP/FM staff with other departments within medical schools. Nine out of 13 GP/FM departments participate in teaching other subjects apart from FM/GP, including subjects seemingly unrelated such as 'Medical informatics', to traditional subjects such as 'Clinical skills' and 'Communication skills'. As stated by Švab "family medicine has a lot to offer medical schools" (9), therefore, it should be in our interest to share our knowledge and experience with as many colleagues as possible, and by doing so, expose medical students to the breadth, depth and beauty of family medicine.

All cross-sectional studies are limited by the timing of the study; hence our results may not be representative of the current situation. Another limitation of this study is the lack of definition for the term "departmental staff members". Some respondents calculated only the number of staff employed by the medical school, whereas others included clinical preceptors (practice mentors) as well. In addition, although our response rate is very good and comparable with other published studies, we still have "white spots on our map", i.e., lack information on the remaining eight medical schools in the region whom we were unable to contact or did not respond. All medical schools from Croatia, Montenegro and Slovenia were included, four out of five from Bosnia and Herzegovina, but only one out of four and one out of three are from Serbia and Macedonia, respectively, and none from Kosovo. Since this was not an individual survey but an institutional one, one would expect a response rate closer to 100%.

## 5 CONCLUSION

Our study reveals that the large majority of surveyed medical schools in the region of the former Yugoslavia has a formal DFM, in which family medicine is taught as an independent subject and is formally evaluated by students. This testifies to the importance of FM/GP in the education of future doctors and can be considered standard practice at medical schools. Hopefully, this will lead to the establishment of new departments of FM/GP, where they do not exist in Europe, as well as the employment of more GPs by medical schools. Additional incentives, revealed by our study, for the employment of teachers of FM/GP, are the versatility and breadth of knowledge and experience they possess, demonstrated by their involvement in the teaching of different subjects in multiple years of the undergraduate medical curriculum. The universal need for mutual support, acknowledgement and enlightenment among teachers of FM/GP is particularly relevant in countries where historically FM/GP has been less developed. We hope that this report might offer our colleagues reference points for feeding back into their local and national educational boards, with the aim of improving the position of academic FM/GP in Europe. Encouraging reports of these activities already exist (10).

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## CONFLICTS OF INTEREST

The authors declare that no conflicts of interest exist.

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## ETHICAL APPROVAL

The study was approved by the Ethics Committee of the University of Split School of Medicine (approval no.: 2181-198-03-04-15-0004).

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