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Learning through the Community Service

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Aim. To present a model of teaching general practice to medical students as a part of care for refugees in Mostar, Bosnia and Herzegovina.

Method. With an international support, 33 medical students (from the third study year on) participated in a total of 51 field visits to 4 refugee camps near Mostar, Bosnia and Herzegovina, over a period of two years. Some students made more than 30 visits. Together with residents in family medicine at the Mostar University Hospital, the students performed physical examinations and small interventions, and distributed packs of different pharmaceutical agents to refugees. At the end of the project, participants were surveyed to assess the benefits of the program.

Results. Thirty out of 33 participating students responded to the survey. Fourteen students said that "the opportunity to do something, however small, for the people" was the main benefit from the project, whereas 5 thought that meeting "a real patient" early in their medical studies was very beneficial. The students assisted in 1,302 physical examinations, an average of 25 8 examinations per visit. The most requested physical examination was blood pressure measurement (52%), followed by chest auscultation (24%) and psychological counseling (16%). They also helped with a total of 320 minor procedures, an average of 6 2 per visit. Among the procedures, wound care and dressing were most common (63.4%), followed by nursing care procedures (20%) and minor surgical procedures (suture removal, abscess drainage, and bed sores débridement) in 6.9% of the cases. The students helped distribute 1,917 packs of pharmaceuticals: analgesics (52.5%), antihypertensive drugs (16.1%), antidiabetics (11.2%), cardiovascular drugs (10.9%), vitamins (5.6%), and dermatological remedies (3.6%).

Conclusion. During the first two years of the project, we achieved three objectives. Residents in family medicine had a chance to practice and gain experience as group leaders, health promoters, and teachers. Medical students were exposed to a demanding outpatient environment early in their medical training. Refugees in three camps received health care and attention they needed so much.

Key words: *Bosnia and Herzegovina; curriculum; delivery of health care; education, medical, undergraduate; refugees*

The 1992-1995 war in Bosnia and Herzegovina left the country's health care and medical education system with destroyed or damaged facilities and equipment (1,2). The number of medical professionals and the teaching staff at medical schools severely decreased (1,2). Although 7 years have passes since the war, the lack of funds and all other resources is still a grim reality (3-5).

In an effort to rebuild medical academic life in Mostar, a city in the south of Bosnia and Herzegovina, a group of enthusiasts established a new school of medicine at the Mostar University. After two years of careful planning, the school was finally opened in the spring of 1997. Bearing in mind both the needs and the circumstances, they decided to organize a modest, small institution, based on the principles of contemporary medical education. The new School offered a comprehensive and innovative curriculum, comparable to the curricula of medical schools in Europe. To facilitate the learning process, an optimal use of modern educational tools was established: multidisciplinary teaching laboratories, computer guided training in basic medical science, learning resources center, and library with Internet-connected computers.

Teaching on a daily basis was organized with a significant help from other medical schools in Bosnia and Herzegovina and all medical schools in the neighboring Croatia, who made all their resources available to the new School. With assistance provided by the European Union Tempus-Phare program and five European Universities (Heidelberg, Germany; Semmelweis, Budapest, Hungary; Ghent, Belgium; Granada, Spain; and Florence, Italy) an up-to-date medical library was established. Heidelberg University helped us develop an up-to-date resource center for anatomy teaching, and the assistance of the Queen's University from Kingston, Canada, was instrumental during the establishment of the chair of

Family Medicine and Family Medicine Teaching Center.

The director of the "Help the Children Fund", an Irish humanitarian organization, Mr. Finbar O'Leary drew our attention to the fact that health care in the nearby refugee centers was close to nonexistent. Also, the overall amount of humanitarian aid delivered to the country significantly decreased in 1999, and governmental and non-governmental organizations in Bosnia and Herzegovina started to shift their attention to other troubled parts of the world. "Help the Children Fund" officials asked for our involvement in health care delivery to refugees, pointing out that refugees were the most endangered segment of the local population.

At that time, we were preparing a program for our undergraduate students to help them become skilled, competent, and emphatic physicians. We also wanted to increase the quality of postgraduate family medicine training program, for residents to become not only skillful and highly competent family physicians, but also health promoters and capable teachers.

The situation in refugee camps near Mostar seemed to offer a golden opportunity for us to improve both undergraduate and postgraduate curricula. The principal aims of the project were: 1) to develop a field training as elective part of undergraduate education in the segment of Primary Health Care and Public Health Care courses; 2) to incorporate field training into postgraduate curriculum in Family Medicine; and 3) to establish a formal schedule for students to visit regularly refugee centers under the supervision of teachers and residents in family medicine.

Methods

Setting

At the time of project implementation, there were 4 refugee camps near Mostar: 1) Grude Camp with population of 242 refugees (Fig. 1); 2) Domanovići Camp with 125 refugees and a home for the elderly people, with 36 occupants; 3) Tasovčići Camp with 370 refugees; and 4) "Railroad Camp" with 78 refugees, which was closed in 1999, and the refugees were transferred to Tasovčići Camp.

Living conditions in all camps were generally poor. Grude and Tasovčići were mainly built of makeshift wooden barracks covered with tin plates (an antechamber to living hell during both winter and summer), with a common dining room, kitchen, and hygienic facilities shared by at least 10 people. Domanovići Camp was located in an old abandoned psychiatric hospital. Families living in abandoned passenger cars on a railroad station close to Čapljina were in the worst situation, with each compartment serving as the kitchen, bedroom, bathroom, living room, and dinning room, all at once. This "railroad camp" was closed early in the project and data for those visits were excluded from our study. Basic demographic data for the other three camps are presented in Table 1.

Timeframe

The project started in the 1999/2000 academic year and is still running. By the spring of 2002, there were a total of 51 visits to the Camps, with no visits made during winter and summer academic recesses.

Project Participants

Residents in Family Medicine at the Mostar University Hospital joined the project with enthusiasm and acted as team leaders and tutors during field visits. They explained to students the basic rules of physical examination, pointed out interesting findings, performed minor surgical procedures, distributed pharmaceuticals when needed, and discussed the different treatment strategies.

Figure 1. Medical students of the Mostar University School of Medicine with their "mobile clinic" in the refugee camp Grude.

Figure 2. Refugee camp Grude near Mostar, Bosnia and Herzegovina.

Table 1. Refugee camps included in the program

	Camps			
Refugees	Domanovići	Grude	Tasovčići	Total
Women	70	82	140	292
Men	76	104	130	310
Children (< 12 years of age)	15	56	100	171
Total	161	242	370	773

A registered nurse was another supervisor and tutor. Beside assisting the physicians, she had the task to explain the basics of health care, especially of bed-ridden patients. A resident and a nurse always accompanied a student group, which counted between 2 and 6 students because of limited space inside the vehicle.

Project Protocol

A simple project protocol was developed. It included date and site, description of the visiting team (names of physicians, nurse, and students) and the name of the camp supervisor-in-charge. In the "medical part" of the protocol, the tasks performed had to be carefully noted: patient name and age, medical examination or intervention performed, remedies applied (medicaments, ointment, wound dressing, and counseling), and possible special remarks.

Vehicles and Medications

Two used ambulances (provided by the "Help the Children Fund") were equipped to serve as "mobile clinics" (Fig. 1). Mobile clinics had equipment for basic physical examination (stethoscopes, neurological examination set, ophthalmoscopes, and otoscopes, blood pressure measuring instruments, blood glucose reading, and basic surgical instruments used in wound dressing). Instruments were provided by the Queen's University and the "Help the Children Fund."

We also had syringes, bandages, wound cleaning swabs, elastic bandages, and other disposable material. Finally, our inventory contained basic medications: analgesics, diuretics, antidiabetics, antidepressants, blood pressure control drugs, and other drugs. All this material was provided by the "Help the Children Fund."

Final Survey

In order to validate the project's results, we performed a short survey among the students participating in the project. Out of 33 students asked to fill out a questionnaire, a feedback was received from 30. We asked a single multiple-choice question: was this program good and useful. If they thought it was, they were asked to choose among the following reasons: 1) meeting a real patient early on in the curriculum; 2) feeling good doing something, even if small, for the people; 3) good practice and preparation for clinical years to come; 4) opportunity to develop "human value" attitude beside "technical" skills; and 5) experience of teamwork.

Results

During the first two years of the project, a total of 51 visits were made. Each visit was scheduled for Saturday morning to early afternoon. Twenty-two residents in Family medicine participated regularly, some of them leading the team several (two to four) times. Two registered nurses from the Mostar University Hospital were also involved. A total of 180 students took part in those expeditions, some of them as many as 30 times.

Students assisted in 51 visits and 1,302 physical examinations (we included health counseling in this category), carrying out an average of 25.5 8 examinations per visit. The most requested physical examination was blood pressure measurement (52%), followed by chest auscultation (24%), and health counseling (16%) (Table 2).

Among the total of 320 minor procedures (an average of 6 2 per visit), wound care and dressing were most common (63.4%), followed by nursing care procedures (20.3%), and minor surgical procedures (suture removal, abscess drainage, and bed sores débridement) (Table 3); a total of 1,917 packs of pharmaceutical were distributed: 52.5% were analgesics, 16.1% antihypertensive drugs, 11.2% antidiabetics, 10.9% cardiovascular drugs, 5.6% vitamins, and 3.6% dermatological remedies (Table 4).

In the survey (Table 5), almost half of the students emphasized the opportunity "to do something good (however small) for the people," five students pointed out an opportunity to meet "a real patient" early in medical curriculum as most important. The third major gain reported by students was good preparation for clinical rotations (4). All 33 students enjoyed the teamwork and opportunity to develop a proper attitude towards the patients; only one student was undecided.

Table 2. Type and number (%) of examinations performed during the visits to the refugee camps

Type of examination	Refugee camp			Total (%)
	Domanovići	Grude	Tasovčići	
Blood pressure	245	281	149	675 (51.8)
Chest auscultation	104	138	71	313 (24.1)
Abdomen palpation	11	21	10	42 (3.2)
Neurological testing	20	32	10	62 (4.8)
Health counseling	45	80	78	203 (15.6)
ENT examination	1	4	2	7 (0.5)
Total	426	556	320	1,302 (100.0)

Table 3. Type and number (%) of procedures performed during visits to referee camps

Type of procedure	Refugee camp			Total (%)
	Domanovići	Grude	Tasovčići	
Wound care and dressing	101	60	42	203 (63.4)
Eyes rinsing	0	8	6	14 (4.3)
Ear cleaning and examination	3	1	3	7 (2.3)
Minor surgical procedure	14	6	2	22 (6.9)
Rectal examination	0	5	4	9 (2.8)
Nursing care	46	5	14	65 (20.3)
Total	164	85	71	320 (100.0)

Table 4. Pharmaceuticals distributed during the visits to the refugee camps

Group of pharmaceuticals	Refugee camp			Total (%)
	Domanovići	Grude	Tasovčići	
Analgesics and antipyretics	464	384	159	1,007 (52.5)
Antihypertensive drugs	150	121	37	308 (16.2)
Antidiabetics	33	103	78	214 (11.2)
Cardiovascular drugs	55	83	72	210 (10.9)
Vitamins	33	27	48	108 (5.6)
Dermatological remedies	36	12	22	70 (3.6)
Total	721	730	456	1,917 (100.0)

Table 5. Students' opinion about the projects' principal benefits and gains

Benefits of fieldwork in refugee camps	No. of students
Good feeling to be in service of community	14
To have a "real" patient early in curriculum	5
Good preparation for clinical rotation	4
Opportunity to develop a proper attitude towards the patients	3
Experience of a teamwork	3
Undecided	1
Total	30

Discussion

Our initiative to engage medical students from a newly established school of medicine in the post-war country in care for refugees proved useful on several grounds. Refugees were delivered better care: regardless of students' inexperience, the medical team was empowered by their contribution. Students gained field experience, which was precious not only because of its medical content, but also, or even more, because of its social, epidemiological, psychological, and political significance. Attending physicians were assisted in their hard work scheduled for weekends, enjoyed the company of young colleagues, and developed an appreciation of teaching and transferring satisfaction in providing health care to those who needed it most. The project required, elicited, and

stimulated small but important international collaboration, which always brings about satisfaction for all involved sides, enhances learning, and deepens experience.

Although it is difficult to assess the significance of students' real contributions to the medical team, our survey clearly revealed their feeling of satisfaction to be in service of community. They also reported satisfaction with meeting "real" patients early in their medical education, appreciated the opportunity to develop a proper attitude toward patients, gained experience in clinical rotation awaiting them in their medical studies, and experienced teamwork. Our sample was small and extent of field action relatively modest, but we believe that the message would not be different if we had worked longer, with more students and more refugees, even in war (6).

Indeed, the 1991-1995 war experience gained in Croatia (6,7) and Bosnia and Herzegovina (8) taught us that medical students can get involved in medical aspects of war, that they are very willing to do so, and that this is an extremely important aspect of medical education if there is a war in the country. Students are future physicians, and physicians are a socially respectable group, which, by definition, carries great ethical significance. In war and conflict, this significance increases and adopts meanings wider than medical – directly bordering with political (e.g., in peace promotion, ref. 6), social (e.g., caring for different groups endangered in war, ref. 6), humanitarian (e.g., humanitarian assistance to endangered enclaves, refs. 6,9), and other (6). We agree with Marušić (7) that medical schools and their students bear special significance in war: medical students should be treated as physicians, and physicians are the key population who must engage in all aspects of relief of suffering (10-12). This concerns all levels and kinds of physicians, from general practice doctors (13) to editors of medical journals (14)!

The Mostar University School of Medicine has been founded after the 1991-1995 war in Bosnia and Herzegovina. Our students, fortunately, did not have to experience the war either as students or as physicians, although most of them experienced war horrors as adolescents. However, the remnants or war and suffering, so difficult to ameliorate, awaited them during their medical education, and they honorably offered their share in healing the wounds of war. An uninformed reader should be reminded that this is ever more important because, albeit mostly Croats, both the students from the Mostar School and refugees for whom they cared in the refugee camps belonged to all three nations in Bosnia and Herzegovina who warred among themselves during the early 1990's (15).

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