Education for Health, Vol. 14, No. 1, 2001, 97–108

CAREER ISSUES

A Screening Process Predicts Success Rates in Residency Re-training among New Immigrant Physicians in Israel

H. REUVENI[1], A. HADAR[1], L. GREEMBERG[1], M. ALKAN[1], R. COHEN[2] & A. ELHAYANY[1]

[1]*Soroka Medical Center, Faculty of the Health Sciences, Ben-Gurion University of the Negev, Beer-Sheva, Israel; and* [2]*Hebrew University, Hadassah Faculty of Medicine, Jerusalem, Israel*

ABSTRACT **Objectives:** *To evaluate predictors of success in training programs for Israeli international medical graduates (IMGs) from the former USSR.*
Subjects: *IMGs up to the age of 45 who passed a national licensing examination and a Hebrew knowledge exam were eligible for participation.*
Intervention: *Each IMG participated in one of three programs that offered similar academic activities. In two programs there was a preliminary selection process and one program had supplementary teaching hours.*
Main outcome measures: *Resident's self-evaluation of skills compared with evaluation by department heads. The evaluation included eight clinical skills, a general evaluation, and the passing rate for Phase I of the National Certification Exam.*
Findings: *A total of 176 IMGs, all graduates from medical schools in USSR who immigrated to Israel from 1990 to 1996, and 20 heads of the participating departments completed the questionnaires. The response rate was 64% among the residents and 71% among the department heads. All residents had a similar level of self-esteem regarding clinical skills and considered themselves equal to or better than Israeli-trained residents. The department heads did not concur with this assessment, particularly for residents who participated in the program with no preliminary selection. Participants in the programs with preliminary selection received better evaluations from department heads than those in the program without and had significantly greater success in the written part of the board certification examination ($p < 0.05$).*
Discussion and conclusions: *Re-training programs for IMGs should include a preliminary process for participant selection. The training program should be*

Author for correspondence: Haim Reuveni, MD, Department of Pediatrics, Soroka Medical Center, Beer-Sheva, Israel 84101. Tel: 972-7-6403405. Fax: 972-7-6403318. E-mail: Reuveni@bgumail.bgu.ac.il

Education for Health ISSN 1357–6283 print/ISSN 1469–5804/online
http://www.tandf.co.uk/journals
DOI: 10.1080/1357628001002189 7

implemented in academic departments, in which case supplementary teaching hours are not required.

KEYWORDS *Immigrant physicians/doctors, residency, training program, career development.*

Introduction

Between 1939 and 1996, four major waves of immigration reached Israel from Europe and from the former USSR. Thousands of physicians were absorbed from the first three waves. The ratio between immigrant physicians and the population of all immigrants varied between 1:120 and 1:390 (Doron, 1974; Shuval, 1983; Sicron, 1957). In the fourth and most recent wave (1989–1996), 412,804 new immigrants arrived from the USSR, among them 10,004 (2.4%) with credentials that qualified them to practice medicine in their countries of origin. The impact of this influx of physicians was significant, almost doubling the number of practicing physicians in Israel (from 12,500 to almost 22,000) (Nirel, 1993).

A basic principle of the immigration policy of the state of Israel is the commitment to provide every new immigrant with the opportunity to practice his/her own profession. Since 1988, physicians trained abroad have been required to pass a written licensing examination as part of the licensing requirements. Almost 80% of the immigrating physicians took the written license examination within four years of their arrival (Neve & Nirel, 1993), and about 80% (6500 physicians) of them passed.

The policy of the government of Israel is to provide financial support for the training programs for new immigrant doctors in preparation for the license examination. Three steps were recommended: (1) a mandatory course in Hebrew, (2) voluntary participation free of charge in a five-month medical re-training course, and (3) a passing grade on the government license examinations. Licensed physicians can obtain a specialist certificate either by recommendation of the National Scientific Committee or by passing a residency program. In these programs, residents are tested twice, together with graduates of Israeli medical schools who take the same examinations at the same time. The first test is a written, multiple choice examination, comprised of 180 questions related to the specific specialization. It is divided into basic science and clinical sections. The second test is an oral one, conducted at the conclusion of the residency. It consists of three committees that present the resident with clinical cases and evaluate the resident's patient management. Residents are required to pass all three committees to obtain a passing grade for the examination.

The Hebrew language course and the five-month medical training course were devised to address specific problems identified among the immigrant physicians (Romem & Benor, 1993), including lack of knowledge of the Hebrew language, over-specialization in too-narrow fields, clinical fields of specialization which do not exist in Israel, having insufficient knowledge in the medical sciences and technologies, lack of awareness of the economic implications of health care, difficulty in solving clinical problems, and lack of skill in answering objective test items. These problems were previously identified by the Israel Ministry of Health and the medical school of the Faculty of Health Sciences of Ben-Gurion University of the Negev in Beer-Sheva, based on accumulated experience over the years with immigrant physicians. Higher success rates in passing the National License Examination were found among immigrant doctors who participated in the combined language and training course (Romem & Benor, 1993).

In the USA there is continuing debate over the criteria and the requirements to be met by international medical graduates (IMG) who seek a license to practice medicine there (Osteen, 1987). Students from US medical schools are concerned that foreign MDs will compete for the available residency positions (Crowley, 1984) and there is increasing concern on the part of the federal government that American students will purchase fraudulent medical degrees from schools outside the US. The US government has adopted a policy that sharply curtails residency training opportunities in the United States for aliens and American graduates of foreign medical schools (Iglehart, 1985). Lately, because of a projected surplus of clinicians in the US, the number of new immigrant physicians has been restricted. All IMGs who wish to practice in the US have to pass three exams, i.e. the United States Medical Licensing Examination (USMLE) Steps 1, 2 and 3.

In the United Kingdom authorities are concerned about the impact of overseas medical graduates on the quality of care and training (Lister, 1986). Foreign-educated physicians in England feel they are being denied access to good posts on racial grounds and that they are clustered in low status specialties like geriatics and psychiatry in non-teaching hospitals (Gray, 1981). Australian authorities have developed training programs similar to those in Israel, to provide IMGs the opportunity to be licensed and to find jobs in their profession (Kidd & Zulman, 1994). As in Israel, a higher rate of IMGs who participated in such programs passed licensing examinations and received MD licenses.

The present study evaluates three parallel training programs developed for IMGs from the former USSR. The programs were offered by the Faculty of Health Sciences of the Ben-Gurion University of the Negev and the Soroka Medical Center. The differences among the three programs were the methods of preliminary selection, the number of teaching hours provided during the residency program, or a combination of the two. The aim of the study was to compare the results of the three programs and to determine whether a pre-training screening program was associated with their success.

Materials and Methods

This study involved two groups at the Soroka Medical Center and the Faculty of Health Sciences of Ben-Gurion University:

1. 198 physicians who immigrated to Israel from the former USSR between the years 1989 and 1996 and who enrolled in residency training programs; and
2. 20 heads of departments in which the residents were in training at the time the evaluation was carried out.

The Russian-trained physicians were divided by self-election into three training programs:

1. program I: 51 residents accepted into their respective programs without pre-selection; and
2. programs II and III: 106 and 41 residents, respectively, who were accepted into the programs after a pre-selection process consisting of a written comprehension test and personal interviews.

Inclusion criteria for the screening of residents for all three programs were agreed upon in advance. They included three administrative elements (1–3, below). Those residents who chose to participate in program II or program III had two additional elements (4 and 5, below):

1. maximum age of 45 years;
2. license to practice medicine issued by the Israel Ministry of Health, after successfully passing the medical licensing exam;
3. completion of a six-month course in Hebrew;
4. all candidates who wanted to participate in programs II or III had to pass a written exam. They were given a two-page passage from a textbook of internal medicine to read and then were asked to answer eight multiple choice questions based on the passage. The questions were prepared by a senior internist;

Table 1. Comparison of the three residency programs

	Program I	Program II	Program III
Residents (*n*)	51	106	41
Additional basic sciences	−	−	+
Selection of residents by faculty	−	+	+

Table 2. Evaluation of clinical skills by residents.* Distribution of responses to the question: "Please evaluate yourself, compared to Israeli trained residents in your department, according to the following parameters" (results are given as mean±SD)

	Program I (n=26)	Program II (n=52)	Program III (n=18)	p
History-taking	3.62±0.80	3.5±0.83	3.33±0.69	NS
Physical examination	3.27±0.92	3.58±0.70	3.67±0.69	NS
Diagnosis	3.38±0.98	3.5±0.87	3.44±0.62	NS
Procedures	3.46±1.10	3.56±1.04	3.33±0.49	NS
Follow-up	3.62±0.75	3.37±0.77	3.39±0.70	NS
Doctor–patient relationship	3.58±1.14	3.67±0.94	3.56±0.92	NS
Relationships with staff	3.19±0.98	3.48±0.92	3.44±0.62	NS
Professional literature	3.04±1.15	2.79±0.85	2.83±0.79	NS
Overall evaluation	3.12±0.82	3.21±0.70	3.22±0.73	NS

*The scores for all parameters are from 1 to 5: 1=less competent, 3=equal, 5=more competent, in comparison with residents trained in Israel.

5. those who passed the written exam then had to pass a non-structured interview conducted by a head of department and a senior physician from the same department. Those few who did not pass the written exam either enrolled in program I or dropped out altogether.

Candidates for program I had to fulfill elements 1–3 only, and were not given the written exam or required to undergo the interview. These programs were differentiated by the following criteria (Table 1):

1. the number of lectures devoted to basic sciences and clinical teaching—residents in program III received additional lectures (460 hours in the first year, 150 hours in the second year) in basic science and training in clinical skills; and
2. the preliminary selection process of residents—programs II and III.

Applicants selected each of the programs freely and without guidance. All residency programs were supervised and monitored by the Faculty of Health Science. The duration of the residency was determined for each medical specialty by the National Scientific Council. The main components common to all three residency programs were:

1. residents participated in all clinical and academic activities of the departments;
2. personal tutoring programs by senior physicians; and

3. residents are eligible to take the written exam after they complete at least half of their residency training.

Physicians who elected to apply to programs II or III knew in advance that they had to pass the written and oral examinations, but were given no formal preparation for these exams. The academic activities of all departments in the Soroka Medical Center, which took place in the department itself, included:

1. *morning report*, in which the staff heard a report of the previous day's clinical activity and discussed issues of interest;
2. *bedside rounds*, in which senior physicians conducted rounds on all patients hospitalized in the department and reviewed all aspects of each case with the residents;
3. *a journal club*, which was conducted at least once per week in each department. The residents prepared and presented current journal articles and the ensuing discussion was moderated by a senior physician from the ward staff;
4. postgraduate *continuing medical education* programs that were conducted weekly. These included "state of the art" lectures; and
5. biweekly *staff meetings* in which clinical cases were presented and discussed in small groups.

Each resident in all departments was assigned a personal tutor (from the senior staff). The tutoring, which was similar in all departments, consisted of presentation and discussion of all new admissions by the resident, review of patients under the resident's care, review of discharge letters, help with literature searches, and help with personal problems and administrative/bureaucratic matters.

Questionnaires

An anonymous, nine-item self-evaluation questionnaire was designed (see Appendix 1), and distributed to the residents. Department heads from the Soroka Medical Center (including internal medicine, general surgery, pediatrics, anesthesiology, psychiatry and the department of family medicine) received questionnaires (see Appendix 2) with the names of residents who were training on their wards. Confidentiality was maintained by the subsequent replacement of all names by numeric codes.

Residents in the three programs were evaluated according to the following criteria:

1. self-evaluation by the residents of their clinical skills;
2. evaluation by the resident's department head; and
3. passing grade in the written part of the board certification examination.

Table 3. Evaluation of clinical skills by department heads.* Distribution of responses to the question: "Please evaluate the resident in your department who was trained in Russia, compared to Israeli-trained residents in your department, according to the following parameters" (results are given as mean$\pm$SD)

	Program I (n=26)	Program II (n=52)	Program III (n=18)	p
History-taking	2.48$\pm$0.77	2.89$\pm$0.83	3.09$\pm$0.75	<0.05†
Physical examination	2.56$\pm$0.74	2.99$\pm$0.85	3.00$\pm$0.76	<0.05†
Diagnosis	2.38$\pm$0.47	3.03$\pm$0.84	3.09$\pm$0.89	<0.01†
Procedures	2.69$\pm$0.72	3.39$\pm$0.86	3.05$\pm$0.72	<0.01†
Follow-up	2.63$\pm$0.76	2.97$\pm$0.84	3.05$\pm$0.95	<0.05†
Doctor–patient relationship	2.75$\pm$0.86	3.13$\pm$0.93	2.95$\pm$0.72	NS
Relationships with staff	2.98$\pm$0.86	3.24$\pm$0.91	3.23$\pm$0.87	NS
Professional literature	2.19$\pm$0.96	2.99$\pm$1.01	2.55$\pm$1.01	<0.01†
Overall evaluation	2.40$\pm$0.68	2.97$\pm$0.82	2.95$\pm$0.90	<0.01†

*The scores for all parameters are from 1 to 5: 1=less competent, 3=equal, 5=more competent, in comparison with residents trained in Israel.
†Program II and program III compared with program I (t-test).

The department head's evaluation of the resident's performance was based on evaluations by senior physicians, nurses and tutors as well as their own personal impression during routine work, clinical presentations and discussions and other academic activities in the department.

The results were analyzed using ANOVA (One Way Analysis of Variance), t-tests and the χ^2 statistic.

Results

The study group was comprised of an equal number of male and female physicians (50% each). The mean age was 37 years (range: 24–45) and 98% were married. The participants graduated from medical schools in the former USSR during the years 1973–1994. Sixty per cent of them graduated in the period 1984–1989. The mean number of years that they practiced medicine before coming to Israel was eight (range: 1–17). On the average they had arrived in Israel two years before the programs were implemented. Three quarters of the residents passed the licensing examination after completing a voluntary five-month preparatory course, conducted free of charge. Prior clinical experience or choice of residency were not taken into consideration by the admissions committee.

A total of 198 residents participated in the study; 142 of the residents (71%) were evaluated by their department heads; 176 questionnaires were distributed among the residents (22 residents could not be located) with a response rate of

Table 4. Evaluation of clinical skills: comparison between department heads and residents, by program (results are given as mean$\pm$SD)

	Program I			Program II			Program III		
	R (n=26)	DH (n=40)	p	R (n=26)	DH (n=26)	p	R (n=26)	DH (n=26)	p
History-taking	3.62$\pm$0.80	2.48$\pm$0.77	$<$0.05	3.50$\pm$0.83	2.89$\pm$0.83	$<$0.05	3.33$\pm$0.69	3.09$\pm$0.75	NS
Physical examination	3.27$\pm$0.92	2.56$\pm$0.74	$<$0.05	3.58$\pm$0.70	2.99$\pm$0.85	$<$0.05	3.67$\pm$0.69	3.00$\pm$0.76	$<$0.05
Diagnosis	3.38$\pm$0.98	2.38$\pm$0.47	$<$0.05	3.50$\pm$0.87	3.03$\pm$0.84	$<$0.05	3.44$\pm$0.62	3.09$\pm$0.89	$<$0.05
Procedures	3.46$\pm$1.10	2.69$\pm$0.72	$<$0.05	3.56$\pm$1.04	3.39$\pm$0.86	NS	3.33$\pm$0.49	3.05$\pm$0.72	NS
Follow-up	3.62$\pm$0.75	2.63$\pm$0.76	$<$0.05	3.37$\pm$0.77	2.97$\pm$0.84	NS	3.39$\pm$0.70	3.05$\pm$0.95	NS
Doctor–patient relationship	3.58$\pm$1.14	2.75$\pm$0.86	$<$0.05	3.67$\pm$0.94	3.13$\pm$0.93	$<$0.05	3.56$\pm$0.92	2.95$\pm$0.72	$<$0.05
Relationships with staff	3.19$\pm$0.98	2.98$\pm$0.86	NS	3.48$\pm$0.92	3.24$\pm$0.91	NS	3.44$\pm$0.62	3.23$\pm$0.87	NS
Professional literature	3.04$\pm$1.15	2.19$\pm$0.96	$<$0.05	2.79$\pm$0.85	2.99$\pm$1.01	NS	2.83$\pm$0.79	2.55$\pm$1.01	NS
Overall evaluation	3.12$\pm$0.82	2.40$\pm$0.68	$<$0.05	3.21$\pm$0.70	2.97$\pm$0.82	NS	3.22$\pm$0.73	2.95$\pm$0.90	NS

R=resident; DH=department head; NS=non-significant.

64% (112/176). Fourteen per cent (16/112) did not complete the questionnaire as required and 36% (64/176) refused to answer. The response rate (fully completed questionnaires), by program, was as follows: program I—26 of 51 (51%), program II—52 of 106 (44%), and program III—18 of 41 (44%). The breakdown of residents evaluated by department heads by training program was: program I—90% (46/51), program II—68% (72/106), and program III—58% (24/41).

The self-evaluation of clinical skills was similar among all residents, who perceived themselves as equal to or better than the residents who had studied in Israel (Table 2). The residents of programs II and III received higher grades by their department heads than those of program I in the following subject areas: history-taking, physical examination, diagnosis, procedures, follow up, reading literature and general evaluation of residents (Table 3). No differences were found among the three groups with respect to doctor–patient relationship and team work.

In program I, a discrepancy was found between the residents' self-assessment and that of the department heads for eight of nine parameters ($p<0.05$), and only one parameter, team work, had a p-value of $p<0.1$. In program II discrepancies were found for four of the nine parameters (doctor–patient relationship, diagnosis, physical examination and history-taking), and in program III for three of the nine parameters (diagnosis, doctor–patient relationship, and physical examination) (Table 4). In all cases the residents had a more positive self-evaluation than the department heads' evaluations of them. The success rate in the written part of the board certification examination was significantly higher ($p<0.05$) for programs II and III than that for program I (Table 5).

Discussion

In general, we expected that IMGs from the former USSR would have lower self-esteem than Israeli-trained graduates. However, in our study, as in a previous study (Shuval & Bernstein, 1997), IMG physicians tended to see themselves as equal to or even better than Israeli-trained graduates with

Table 5. Percentage of residents who passed certification tests (Phase 1), by program

	Number passed (%)	p
Program I (n=43)	18 (42)	
Program II (n=57)	36 (63)	χ^2=5.93; df=2; $p<0.05$*
Program III (n=40)	26 (65)	

*Programs II and III compared to Program I.

respect to medical knowledge, research capability, diagnostic skills and doctor–patient relationship. We have no satisfying explanation for this finding.

Willingness to absorb all the physicians and to provide them with an opportunity to integrate professionally in Israel has created special training tracks. The major element of the programs that correlates with success (as in programs II and III) was the preliminary selection process. The success rate in the written part of the board certification examination supports this finding. It is interesting to note that, in spite of the differences in the amount of supplementary teaching hours between programs II and III, the parameters evaluated remained almost equal, supporting the conclusion that preliminary selection was more important than the amount of supplementary teaching hours.

To date, success rates of training programs for IMGs in the industrialized countries has not been reported. Only in Australia was an approach similar to that of the licensing examination (voluntary participation in a five-month medical training course, free of charge) taken. This approach provided the training necessary for the licensing examination in Israel by creating a separate medical education track for the IMGs. In both countries, IMGs who participated in preparatory courses had a higher success rate on the licensing examination. No similar reports on this subject were found from England, the USA, or West Germany, countries that reported similar problems with absorbing IMGs. A broader implication of this study is that the main element in predicting success in re-educating IMGs is the selection process, in which the senior staff used interviews to form personal impressions and a written examination to test knowledge of basic and clinical science in general medicine.

Conclusion

We propose the inclusion of a preliminary selection process for candidates for participation in re-training programs for IMGs. This should include a written examination and a personal interview with the head of department and another senior physician from the department. The training program should be implemented in academically oriented departments. In this case, supplementary teaching hours do not appear to add to the success of the program and, therefore, are not required.

References

Crowley, A.E. (1984). Residency positions—are there enough? *Journal of the American Medical Association*, *252*, 3386–3389.

Doron, H. (1974). The role of Kupat Holim in the absorption of immigrant physicians. *Israel Journal of Medical Sciences*, *10*, 790–793.

GRAY, C. (1981). Second class status for immigrant doctors in the UK. *Canadian Medical Association Journal*, *124*, 1198–1202.
IGLEHART, J.K. (1985). Reducing residency opportunities for graduates of foreign medical schools. *New England Journal of Medicine*, *313*, 831–836.
KIDD, M.R. & ZULMAN, A. (1994). Education support for overseas-trained doctors. *Medical Journal of Australia*, *160*, 73–75.
LISTER, J. (1986). The impact of overseas medical graduates on service and training in the United Kingdom. *New England Journal of Medicine*, *315*, 1038–1040.
NEVE, G. & NIREL, N. (1993). *Absorption in employment of immigrant physicians from former USSR—first findings (95-239)*. Jerusalem: Joint, Brookdale Institute.
NIREL, N. (1993). *Immigrant physicians from former USSR—demographic characteristics. A report (94-226)*. Jerusalem: Joint, Brookdale Institute.
OSTEEN, A.M. (1987). Medical liscensing requirements. *Journal of the American Medical Association*, *258*, 1053–1054.
ROMEM, Y. & BENOR, D.E. (1993). Training immigrants doctors: issues and responses. Medical Education, *27*, 74–82.
SHUVAL, J.T. (1983). *Newcomers and colleagues: Soviet immigrant physicians in Israel.* Cap and Gown.
SHUVAL, J.T. & BERNSTEIN, J. (1997). *Immigrant physicians: former Soviet doctors in Israel, Canada and the United States*. Westport, CT: Praeger.
SICRON, M. (1957). *Aliyah to Israel* [Hebrew]. Jerusalem: Falk Institute for Economic Research in Israel and the Central Bureau of Statistics.

Appendix 1: Residents' Self-evaluation

Age:__________
Gender:____________
Family status: single/married/divorced/widow(er)
Date of arrival in Israel:____________ _
Date license was obtained:_____________ _
Did you participate in a licensing training program? Y/N

Table 6.

	More competent		Equally competent		Less competent
History-taking	1	2	3	4	5
Physical examination	1	2	3	4	5
Diagnosis	1	2	3	4	5
Procedures	1	2	3	4	5
Follow-up	1	2	3	4	5
Physician/patient relationship	1	2	3	4	5
Relationship with staff	1	2	3	4	5
Professional literature	1	2	3	4	5
Overall comparison	1	2	3	4	5

Which residency program are you affiliated with?______________ _
Did you pass Part 1 of the board certification examination? Y/N/I didn't take it yet
In which department are you doing your residency?________________ _
In the following table, please compare yourself to Israeli-trained residents in your department, by the following criteria:

Appendix 2: Evaluation of Residents by their Head of Department

Resident's name:_______________ _
Department:________________
How long have you worked with this resident?_____________ _
In the following table please compare the Russian-trained residents in your department to Israeli-trained residents, using your own criteria for evaluation:

Table 7.

	More competent		Equally competent		Less competent
History-taking	1	2	3	4	5
Physical examination	1	2	3	4	5
Diagnosis	1	2	3	4	5
Procedures	1	2	3	4	5
Follow-up	1	2	3	4	5
Physician/patient relationship	1	2	3	4	5
Relationship with staff	1	2	3	4	5
Professional literature	1	2	3	4	5
Overall comparison	1	2	3	4	5