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A Program for Successful Integration of International Medical Graduates (IMGs) into U.S. Surgical Residency Training

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OBJECTIVE: U.S. surgery residency programs have traditionally attracted international medical graduates (IMGs). However, the qualifications and performance of IMGs are variable and difficult to predict. Poor performance negatively affects patient care, the residency program, and the IMGs. We sought to identify causes of poor performance and to develop a program to identify those with chances to succeed.

DESIGN: Longitudinal study. Retrospective analysis. Description of a new program.

SETTING: University of Washington, a tertiary care teaching hospital.

PARTICIPANTS: Performance of former IMG residents was reviewed to define the most common reasons for failure. In August 2002, we developed an IMG Certificate Program that enrolls IMGs into a formal 8-week clinical experience with duties, responsibilities, and evaluations similar to fourth-year medical students. A final global score is given for potential for success as a resident in our program.

RESULTS: Poor performance in past IMG residents could be attributed to: credential problems and poor performance. Performance problems were further subdivided to include knowledge issues and personal/cultural issues. Since August 2002, our Certificate Program enrolled 15 IMGs. Fourteen graduated, and 10 were offered preliminary spots in our program: 4 are successful interns, 1 returned to Italy, and 5 will start in 2004. One entered the 2004 match in Anesthesiology, and 1 was counseled to not be a candidate for a U.S. program. Three had above average performance and were felt to be better suited to a smaller program (1-2 hospitals). The mean "potential for success" global score was 3.9 (all grads), 4.6 (current interns), 1.0 (nongraduate), and 3.0 for the above average performers better suited to a smaller U.S. program.

CONCLUSIONS: We developed a program that provides

IMGs an 8-week clinical experience in a busy U.S. training program; it provides them with enough experience to successfully integrate into a U.S. residency and identifies those with better chances to succeed. Wide application of this program and exchange of information among program directors may facilitate recruitment and the successful completion of training of IMGs and provide the number of residents needed to fill critical positions in the United States. (Curr Surg 61:492-498. © 2004 by the Association of Program Directors in Surgery.)

KEY WORDS: International medical graduate (IMG) residency pretraining certificate program surgical training program.

SUMMARY

We analyzed the reasons for failure in 6 of 9 IMGs entering our residency program in July 2001 and 2002. Reasons for failure were caused by problems with credentials or performance. Performance problems were further subdivided into 5 areas related to knowledge and 4 areas related to personal/cultural factors. We then developed a Certificate Program that provides IMGs a unique 8-week clinical experience in a busy U.S. training program; it provides them with a rich educational experience and enough practice to successfully integrate into a U.S. residency, and it provides the program director enough time to correct deficiencies, to get to know the IMG, and to identify those with better chances to succeed. Wide application of a Certificate Program for IMGs and exchange of information among program directors should facilitate recruitment and provide the number of residents needed to fill critical positions in the United States.

INTRODUCTION

It is the goal of all programs to select IMGs who will be successful residents. However, IMG performance in surgical training is variable and can be difficult to predict. The traditional mode of exposure to U.S. medicine is through a research laboratory that

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may not be the best way to assess a candidates' suitability for clinical training. International medical graduates (IMGs) lack an opportunity to acquire valid clinical experience in the United States, and programs suffer without a base of reference to assess candidates' abilities. Although the 1998 Clinical Skills Assessment (CSA) requirements for certification by the ECFMG has improved applicant quality,¹ we found that there were still problems with many of the IMGs entering our residency program. Some of the reasons for poor performance included inadequate command of English language, a low level of basic medical/surgical knowledge, cultural differences, and a lack of understanding of technology developments and procedures unique to the U.S. hospital systems. Successful integration of IMGs into our residency programs is important because poor performance negatively impacts patient care, the residency program, and the IMG. We sought to identify root causes of poor IMG performance and to develop a program that would simultaneously provide a rich educational experience and a process that identifies those IMGs likely to succeed.

METHODS

Demographics

The University of Washington (UW) general surgery residency program is a university-based training program. The program has 70 resident positions: 35 categorical, 22 designated preliminary, and 13 nondesignated preliminary (preliminary). During residency, each resident rotates through 5 hospitals: (1) UW Medical Center—a 450 bed, tertiary referral center; (2) Harborview Medical Center—a tertiary referral and high-volume level I trauma center with over 5000 trauma admissions per year and 68 intensive care unit beds; (3) VA Puget Sound Regional Hospital; (4) Children's Hospital Regional Medical Center—a tertiary referral children's hospital; and (5) Providence-Swedish Hospital—a local community hospital. This multiple hospital system involves unique computer systems, patient care forms, nurses, and workflow processes at each hospital. Our residents manage large services. The complexity of patient care in these tertiary care centers requires maximum efficiency and multi-tasking ability. During the R1 year, residents rotate to a new hospital every 3.5 weeks and spend no more than 12 nonconsecutive weeks at any given hospital.

Analysis of IMG Failures Prior to Certification Program

Nine IMG nondesignated preliminary residents entered our residency program in July 2001 and July 2002. All application materials and all performance evaluations were reviewed for the 6 IMGs who entered our program and failed. Residency program failure for these 6 IMGs was defined as either a credentials problems or poor performance. Credential failure was defined as a failure to provide proof of completion of ECFMG certification (plans for a residency position were made based on a

TABLE 1. Goals of the Certificate Program Included in the Letter All Enrollees Receive the First Day

1. To give you the opportunity to work in an American system, that is very different from your own, so that you know what we expect and can make an informed decision about whether you really want a position in our residency program.
2. To give you the opportunity to learn how our system works prior to becoming a resident, so you acquire the knowledge of our system that is necessary to succeed as a resident.
3. To give us the opportunity to evaluate you in our system prior to offering you a job. We are mostly concerned about your ability to evaluate and care for the surgical patient on the wards, intensive care unit, and clinics and your ability to communicate effectively in English to patients and all members of the health care team. We do not necessarily care about your surgical skills in the operating room at this time, because we believe those can be learned with time.

pending certificate). Poor performance was defined as one that led to dismissal or counseling out of the surgery residency program at the end of an academic year.

Development of the Certificate Program for International Medical Graduates

In August 2002, we developed a formal Certificate Program for IMGs that is administered through the University of Washington Extension Office. Details are available on our website at <http://depts.washington.edu/surgery/traing-educ/img-cert.html>. This Program enrolls 4 to 10 IMGs per year into an intensive 8-week surgical subinternship program giving the IMG first-hand clinical experience in a U.S. hospital setting. The IMG subintern curriculum of the Certificate Program closely parallels the clinical requirements of U.S. medical students in a fourth-year subinternship in general surgery. Thus, although geared toward the evaluation of IMGs who have an interest in joining our residency program, the Certificate Program offers a legitimate educational experience. International medical graduates are required to take full responsibility for all ward activities under direct supervision of residents and attendings. By the end of the 8-week period, the IMG is expected to function at the level of an intern. A notable difference in the Program for IMGs is an emphasis on intern level floor/clinic activities and minimal-to-no operating room exposure. The emphasis of the Program and its goals are clearly outlined in a form letter given by the Program Director to each IMG (Table 1).

Enrolled IMGs rotate on 1 tertiary referral gastrointestinal and general surgery service at the University hospital. At a weekly meeting, the Program Director gives each IMG the collective resident/faculty evaluation of their performance. A final evaluation is performed in the 6 competency areas on a special form designed for this IMG Program using a 5-point Likert scale. Given the wide variety of residency programs in the

TABLE 2. Application Checklist and Prerequisites

1. Copy of current ECFMG certificate issued after 1998.
2. Transcripts of USMLE Step 1 score and Step 2 score (USMLE Step 1 score of 175 or better with examination taken in last three years)
3. Copy of medical school transcript with a medical degree in the last ten years
4. Current curriculum vitae (CV) or resume
5. Three letters of recommendation
6. Written statement explaining your career goals and why you are seeking this opportunity. Only those applicants planning to apply for a 2-year preliminary position in surgery at the University of Washington are accepted
7. E-mail, address, telephone number
8. Valid certification of U.S. citizenship, landed immigrant status, or qualify for an F-1 student visa

United States and the understanding that not every physician (U.S. graduate or IMG) would thrive in our particular system, we also gave each enrollee a final global score given for predicted potential for success as a resident in *our* residency program (5-point scale). All final evaluations are completed by the Program Director at the end of the 8 weeks, and they incorporate the collective review from all residents and faculty who worked with the enrollee. Successful graduates receive a Certificate of Completion from the Extension Office of the UW School of Medicine, 16 CME credits, and a letter of reference from the Residency Program Director (only if they are leaving UW). After completing the program, the graduates are solicited for feedback about their views of the program. Top candidates are offered a 2-year preliminary position in our program and/or a preliminary ranking in the NRMP match.

In order to provide the Program at minimal cost to the IMGs, malpractice insurance, administrative, and tuition fees are offered for \$975. This amount is budget neutral. Malpractice coverage is equal to the level of a fourth-year medical student and is provided through an arrangement with the School of Medicine. Application materials and candidate prerequisites

are listed in Table 2. The selection of applicants does not proceed until the completion of all required ECFMG paperwork has been confirmed, U.S. reference sources have been contacted, and whenever possible, the applicant has been interviewed over the phone.

RESULTS

IMG Failures Prior to Certificate Program

The failure of 6 of the 9 IMGs who entered our residency program in 2001 and 2002 emphasized the need to evaluate the causes for these failures. Three physicians passed the ECFMG prior to the 1998 CSA, and 3 were certified after. The median USMLE Step 1 score was 200 for this group (range: 179–220). Credential problems occurred in 2 cases because of the lack of a requirement for early confirmation of application materials. These 2 highly recommended IMGs were offered last-minute positions just prior to the July start of our residency program to fill 2 positions left open by 2 residents who dropped out at the last minute. They had both just completed the CSA examination and had a “pending” ECFMG certificate, and each told us they had passed the CSA examination. It was later determined that they failed the examination and were not permitted to enroll in the residency program.

The remaining 4 unsuccessful IMGs failed because of poor performance. Analysis of performance evaluations demonstrated problems that could be attributed to either knowledge deficits or personal/cultural factors (Table 3).

Certificate Program for International Medical Graduates

We decided to take the challenge imposed by the unacceptable failure rate of IMGs in our residency program and to create a program that would allow us to interact directly with potential applicants and at the same time provide them with a rich edu-

TABLE 3. Factors Associated With Failing a U.S. Residency in our Program and Others^{1,3}

Reasons for Failure	Frequency of Problems Found in the Six Failures
i. Credential issues	1, 2
ii. Poor performance	
A. Knowledge-related problems	
1. Inadequate level of medical/surgical knowledge	3, 4
2. Poor command of English, both receptive and expressive	3, 4, 6
3. Difficulty in adapting to the technology/procedures in U.S. hospitals	
4. Poor time management and multitasking techniques	3, 5, 6
5. Poor synthetic reasoning skills and inability to understand how to execute standard surgical algorithms in patient evaluation and management	3, 4, 5
B. Personal/cultural problems	
1. Interpersonal difficulties with faculty, residents, and staff	5,
2. Lack of acceptance of deficiencies and inability to accept constructive criticism	3, 4, 5
3. Poor work ethic	5
4. Poor adjustment to the fast pace of residency training in large, multihospital systems	5,

TABLE 4. Descriptive Data for 13 Certificate Program Graduates (Data for the IMG Who Applied to Anesthesiology Residency Is Not Included)

IMG	Current successful Univ of WA resident: 2003-2004	Offered prelim position	Ranked in NRMP ranklist	# years of clinical experience in country of origin after med school	English language skills at entry (excellent-fair-poor)	USMLE Step 1 USMLE Step 2 ABSITE
1		x		0	fair	Not available
2	x			4	fair	1-189 2-182 ABSITE-77% tile
3	x			3	excellent	1-204 ABSITE-88% tile
4	x			6	excellent	1-194 2-219 ABSITE-80% tile
5	x			4	fair	1-194 2-198 ABSITE-99% tile
6		x		0	excellent	1-242 2-237
7		x		0	excellent	1-195 2-237
8		x		0	excellent	1-243 2-219
9		x		2	fair	Not available
10		x		4	fair	Not available
11			x	1	excellent	1-196 2-180
12			x	2	fair	1-206 2-188
13			x	4	poor	1-186 2-178

educational experience. In the 19-month period between August 2002 and February 2004, we have had 3164 hits on our website, we have received and processed 44 applications, and we have accepted 15 applicants to our Certificate Program. The individuals who were accepted came from all corners of the planet to wit: Argentina (1), Bulgaria (1), China (1), Colombia (2), India (1), Iran (1), Israel (1), Italy (1), Japan (2), Peru (2), Russia (1), and Uganda (1).

Since the Certificate Program was initiated, 14 of the 15 enrollees have graduated: 4 are currently successful preliminary interns at UW, 1 outstanding physician returned to Italy after deciding he preferred the slower pace of the Italian system, 5 were offered future preliminary spots at UW, 1 entered the 2004 NRMP for an Anesthesiology position, and 1 physician was counseled not to be a candidate for a U.S. program and did not complete the program. His main deficiencies were poor fund of knowledge, a very poor work ethic, and a mild English language deficiency. The 3 remaining physicians were placed on our 2004 NRMP ranklist for preliminary spots but did not match with us. These physicians were listed in matchable range on our NRMP ranklist had above average performances in all 6 competency areas, but they were felt to be better suited to a smaller program (1-2 hospitals). They were encouraged to enter the match with the goal of finding a smaller program to maxi-

mize their fullest potential. Since this Program started, we have had no problems with credential issues. Table 4 summarizes the performance data for this cohort. It should be noted that USMLE Step 1/Step 2 scores neither correlated with performance nor ABSITE results in this small group (statistical analysis not performed because of underpowered sample size).

The median "potential for success" global score was 3.9 (all graduates), 4.6 (current interns and those offered preliminary positions), 1.0 (nongraduate), and 3.0 for the above average performers felt better suited to a smaller U.S. program. It should be noted that this last group did not have any negative performance problems. The evaluations regarding these physicians consistently noted that they would do better in a program with fewer hospitals, fewer residents, and more direct supervision from a smaller group of faculty. None of these 3 physicians got positions in the 2004 Match and are currently without a position. Should a spot open at our institution, we will take them prior to looking outside of our institution. All but 1 of our graduates returned our request for feedback about the program, with uniformly positive feedback.

DISCUSSION

Since the early 1960s, IMGs have played a major role in the provision of health care in the United States. International

medical graduates constituted 18% of the physician work force in 1970, and by 1995, nearly a quarter of all U.S. physicians were IMGs. International medical graduate representation in surgery is equally strong, and these physicians continue to fill GME positions not taken by U.S. medical school graduates. In fact, Whitcomb et al² reported that 12% of general surgery residency programs were "IMG dependent." In the 2003 match, 20% of the 7241 general surgery positions were filled by IMGs (5.5% of the categorical positions and 14.4% of the preliminary positions).^{3,4} Many IMGs come to the United States with prior training and experience, giving them an expertise not typical of U.S. medical school graduates. International medical graduates add diversity to our residency programs and offer different perspectives about the U.S. health care system.⁵ Many IMGs are talented, knowledgeable, and highly motivated physicians who do very well in U.S. residency programs. Upon graduation, those who return to their native countries rise to leadership positions in the medical field, which affords the United States a unique opportunity to influence health care in developing nations. Among IMG surgery graduates who remain in the U.S., 9% enter academic practice, a percentage that compares favorably with the 13% of U.S. residents who enter academic practice.⁶ However, IMG performance in a U.S. residency program is variable and difficult to predict.

We developed a Certificate Program for IMGs that provides IMGs with a unique 8-week educational experience in a clinical setting of a University hospital. This training also provides them with enough experience to successfully integrate into a U.S. residency and helps the program director identify those more likely to succeed in *our* particular residency program. The only reference to similar programs in the literature include a 2-5-day "induction course" given to IMGs in England prior to commencing work in the National Health Service⁷ and the thoughtful recommendation for development of a "pre-residency training program" for IMGs entering internal medicine residencies.⁸ With a large applicant pool, we enhanced our success rate by limiting our consideration of only the top-ranked group of applicants and accepted only one-third of those who applied for this program. Certificate Program graduates who are now interns in our residency program started on par with our U.S. medical school graduates, not behind. Furthermore, despite low-to-moderate Step 1 and Step 2 scores, the performance of this group on the ABSITE was outstanding. This strong pool of preliminary residents will be able to move into openings in our own categorical program or others. Finally, spring graduates of the Certificate Program comprise a waiting group of potential residents who are ready to fill a last-minute June opening rather than waiting for the next academic year.

Our goal in developing this Program was to create a "win-win" for all involved. We felt that this could be best done in the context of creating a working educational experience for IMGs. Emulating the fourth-year medical student "subinternship," we had a unique ability to evaluate these individuals while they were involved in the process of learning. We described the high

failure rate for IMGs who entered our program in 2001 and 2002. A resident who performs poorly in a residency system may jeopardize patient care and create multiple problems for the residency program. Equally important is that it is difficult for the IMG to get a second chance once they fail in a U.S. training program. Obtaining ECFMG certification in the United States has been estimated to cost \$3445, excluding travel, hotel, and living costs.⁹ This amount of money is equivalent to 1-year's salary in some Third World countries. Thus, the stakes are high and the motivation to succeed is also high. We wanted to tip the balance for IMGs entering our program toward a high likelihood of success.

The first step was to analyze the reasons for failure or poor performance. We focused on those elements that were remediable and built our Certificate Program around this. An easy problem to remedy was the issue of incomplete credentials. Wading through 50 faxed residency applications in an effort to fill a last-minute opening in the residency program lends itself to administrative error. Visa delays compound the problem because the IMG begins residency late, which puts them at a double disadvantage when compared with U.S. graduates. Some never catch up. Delayed development results in poor performance evaluations when compared with their peers and a "black cloud" effect that is difficult to shake. As applications for Certificate Program enrollment are only reviewed after credential documents are complete, and our new policy is that *all* IMGs must enter our residency via the Certificate Program, all credential problems have been eliminated.

Failures in our residency program caused by performance problems related to knowledge and/or personal/cultural issues have also been minimized. The 8-week Certificate Program allows us to personally evaluate all IMG applicants to our residency program in a manner similar to fourth-year subinterns from the United States. We have found this to be the crucial element, because USMLE Step 1 and Step 2 scores neither predicted clinical performance nor future ABSITE scores (Table 4). We recognize that our sample size is small here, and a type II error is possible. Problems, such as not understanding a U.S. hospital system and our patient care methods (eg, how to present a patient or write orders), are remediable. U.S. medical school graduates have 2 years of clinical experience in a U.S. hospital system prior to starting residency. IMGs have none. During the intense 8-week Certificate Program where clinic and ward work is highlighted, the IMG is able to learn about our health care system and test their abilities to multitask and prioritize work. The residents and faculty are able to assess fund of medical/surgical knowledge, work ethic, initiative, ability to accept constructive feedback, both receptive and expressive issues with English, and any interpersonal problems.

English language issues were the most significant determinant of failure prior to the institution of the Certificate Program, probably because it affects abilities in other areas. The ability to interview patients, interact with medical staff, and properly understand the data being collected can all be impeded by poor language skills. Poor time management and multitask-

ing skills are also affected. These can all have a negative impact on patient care.¹⁰ The new CSA examination, instituted by the ECFMG in July 1998, was designed as a rigorous assessment of clinical skills such as history taking, physical examinations, and communicating with patients in spoken English.¹ A number of studies have validated the CSA and demonstrated that it assesses proficiencies distinct from those assessed by the USMLE components.^{10,11} However, concerns about clinical and interpersonal skills and language, which should be less common and less severe with the CSA examination, are still more likely among IMGs than U.S. graduates.¹²⁻¹⁴ Performance issues related to time management and ability to multitask were intertwined with English language problems in our cohort. To excel in a U.S. residency program, the ability to think fast, talk fast, and change gears quickly is essential. Half of the pre-Certificate Program failures that had performance problems related to English language had passed the CSA examination. This supports that the additional clinical evaluation provided by the Certificate Program is helpful. Also, some IMGs clearly improved their language skills during the 8-week period.

The graduates from our Certificate Program fell into 3 groups. The strongest group adapted quickly to our system and was managing the service at the level of an intern by the end of the 8 weeks. They clearly thrived in our environment. Many had prior experience in a residency training program in their own country as shown in Table 4; however, this was not predictive of success in the Certificate Program. These physicians were offered preliminary positions in our program. The above average group was the most interesting. All 3 were evaluated to be average to above average in all 6 competency areas and were bright, motivated, and hard-working. They had no strong deficiencies and were also managing the service at the level of an intern by the end of the program. However, all faculty and residents with whom they worked remarked that they would be concerned about their potential to thrive in our particular residency. With 5 hospitals, our interns spend no more than 12 nonconsecutive weeks at any 1 hospital where they need to learn a new computer system, medications, nurses, faculty, residents, and individual hospital subtleties quickly and once they have mastered it, move on to another hospital. We do not believe that every resident, be they U.S. graduate or IMG, would thrive in our challenging program. Needing a smaller, 1- or 2-hospital system with a more intimate working environment where they deal with fewer people does not detract from the potential to succeed. In fact, U.S. graduates self-select themselves for a larger, fast-paced program versus smaller more intimate residency programs based on advice from their deans and mentors, or through their own self-awareness and "gut instinct" on the interview trail. The IMGs do not have these advantages. For this middle group, we give them a strong letter of recommendation and rank them on our preliminary NRMP list, knowing that they might match with us. As we have had a chance to evaluate them and they have succeeded, we rank them in a matchable range. However, we also help them and encourage them to search for a smaller program. The third, or weakest

group, had only one physician, who although profiting (we hope) from our educational experience was counseled that he should not pursue a surgical position in the United States.

Finally, another value of this Certificate Program is to save some the time, expense, and psychological energy of failing a U.S. residency. The IMG group is inherently diverse. Although most can do well in a U.S. surgical residency, others simply do not have the basic knowledge, focus, or synthetic abilities required to "see the forest through the trees" and practice surgery in our system. It is known that, "The use of inductive reasoning in making clinical judgments, assumed in Western culture, is not a part of all cultures or educational systems."¹⁵ U.S. medical school graduates have these issues evaluated during their clerkships. Furthermore, program directors develop a fairly sophisticated sense of rank order of U.S. medical schools based on information, personal experience, experience of colleagues, published rankings, and prior impressions of graduates matching their program. This information is not available for the hundreds of foreign medical schools.

CONCLUSION

We developed a program that provides IMGs a unique 8-week clinical experience in a busy U.S. training program; it provides them with a rich educational experience and enough practice to successfully integrate into a U.S. residency and identifies those with better chances to succeed. It is essential that IMGs be set up to succeed in their preliminary years so that they are able to move into open categorical positions and continue in graduate medical education. In this manner, IMGs should be treated like other categorical and designated preliminary residents with regard to education with a clear plan for their future integration into a categorical system. Wide application of a Certificate Program for IMGs and exchange of information among program directors may facilitate recruitment and successful completion of training for IMGs, provide the number of residents needed to fill critical positions in the U.S., and improve healthcare not only in the United States, but also in many other parts of the world.

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