# Medical Residency Training in the US : Important Considerations

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**Abstract**

The United States attracts medical scholars from abroad. However, the previously open- armed welcome extended to medical residents in America no longer exists for a variety of reasons. A series of barriers based on high educational standards and a rigid system of testing scientific and clinical skills and communication abilities, now tend to eliminate many applicants. Added to this is that American medical colleges now produce a near adequate number of new graduates and that foreign trained residents are often relegated to less desirable programs. These may not provide the level of training expected by the applicant. Less attractive programs are also less likely to enhance the scholar's chances of gaining an academic career and professional recognition on returning home. Applicants for residencies in the US should now be aware that only the best are likely to gain entrance to highly desired posts and to quality fellowships after completing a residency in America. All of this should be weighed against the stress and high costs that are now entailed in obtaining postgraduate medical training in America. This study endeavors to summarize what a young doctor should know about the application process for an American residency position and what he might expect from it.

**Key word** : US Medical Residency Training, Foreign Medical Graduates

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Once upon a time every aspiring physician hoped to spend some time observing medicine in Europe. It was considered to be the medical Mecca before World War I. After World War II, however, the United States became the new magnet drawing medical scholars to it; after war ravaged Europe's institutions had been left in tatters. This new migration had not only to do with the excellent training and advanced technology available. A major attraction of America was economical. The standard of living for a physician in North America was superior to that in Europe and Asia. Also, America was experiencing a dearth of doctors and welcomed foreign medical graduates (FMGs). Most of these remained in the United States as permanent residents, making significant contributions not only to health care but also to science and education.

That situation no longer exists. The United States is now producing a near adequate number of doctors, and the government has decided that there is no longer a need for physician immigrants. Those still accepted for training, have been mandated to return home after finishing their education under a clause known as the "two year foreign residence requirement". They can, however, apply for waiver under some specific circumstances. However, the American health care system has become used to the willing labor of FMGs, and jobs are still available to them as residents in less desirable programs which are difficult to fill with American graduates.

America, nevertheless, has a vested interest in providing specialized training for qualified young physicians from abroad. From the perspective of the FMG, much of the education sought may only be available in North America and other select regions. The United States, on the other hand, should recognize that by taking such residents into fellowship programs it aids public health worldwide, enhances international academic dialogue, encourages the demand for the sale of American technology and, last but not least, creates a fertile field from which they could recruit exceptional talents.

Competition for top fellowships is fierce even among American graduates. The most competitive ones accept only the best US and Canadian graduates. Such advanced training is not available to foreigners, unless applicants have first completed a residency program in the United States or Canada. This leaves graduates, even from outstanding foreign medical schools with a difficult decision: stay in their home country system for residency and fellowships, or apply first to a residency program in the United States so that there is a chance for a subspecialty fellowship later.

Thailand, a country with an evidence based quality medical education system, is a good example to illustrate these issues further. Public and political pressures have resulted in a new government effort to provide free universal health care that was implemented without much cost analysis or advance planning. This has led to overcrowded hospitals and an increasingly difficult working environment for doctors and nurses as government facilities are ill prepared for the large influx of new patients. In response, the government created a policy intended to increase the number of general practice doctors by two means: 1) creating a new specialty "family medicine", and 2) limit scholarships for specialist training. This policy, right or wrong, will reduce specialty training opportunities in the future. Other countries, conscious of the ever increasing cost of specialist and "high tech" medical services, may follow. Some, like Indonesia, may require that residents pay tuition for their training even while providing clinical services. Other countries simply do not have international standard postgraduate specialty programs and may even be reluctant to develop them as they know this will increase health care costs beyond what they can afford.

As a result of these policies, prospective trainees in Asia now recognize that the road to specialist training is becoming increasingly difficult. This paper will describe the process of securing a residency position in the United States.

## The legal and administrative structure

The Educational Commission for Foreign Medical Graduates (ECFMG) is charged with assessing international (non USA, Canadian or Puerto Rican) medical graduates before they can be considered by American residency or fellowship programs. Since 1998, the ECFMG certificate requirements include passing the following: the United Stated Medical Licensing Examinations step 1 and step 2 (USMLE step 1and 2), an English test (TOEFL), and the Clinical Skills Assessment (CSA)[1]. In the year 2000 resident matching processed, 33,528 candidates competed for the 20,598 first year post-graduate residency positions. Among the successful candidates, 15 per cent were FMGs (3,089). Of this group, 50 per cent were from India and the others came mostly from China, Pakistan or the Philippines[2]. Only a few came from Thailand.

**Why go to the United States?**

The United States is attractive for the following reasons:

1) It is an English speaking country; a language with which most international medical graduates are at least familiar.

2) It has a tradition of providing postgraduate medical education for foreigners and many teachers of current applicants had training in America.

3) Working times are now mostly limited to not more than 24 consecutive hours of continuous duty.

4) Almost all residency programs provide a salary adequate for basic life expenditures

5) Most approved residencies do provide training which ranges from barely adequate to excellent.

6) The American Specialty Boards are recognized in many (but not all) foreign countries.

**What must the prospective applicant know?**

The process of applying for a residency in the US is lengthy and costly. For example, one source estimates that approximately 60 per cent of Thai applicants will drop out of the process, even after having passed the first two qualifying examinations. The percentage of drop-outs will be greater in countries with poorer medical education systems. The entire process is designed to eliminate marginal doctors from entering the American health care system.

***Medical education requirements and certification by the ECFMG(1).***

To be eligible for ECFMG certification, the applicant's medical school must be listed in the *World Directory of Medical Schools,* published by the World Health Organization (WHO) (available at www.who.int) All FMGs must have had at least four years of medical school training, and must document the completion of all requirements for the final medical diploma in order to receive ECFMG certification. They must supply two photocopies of the original language diploma, an official English translation and two passport photographs. If the applicant is still a medical student, he or she is eligible to take the USMLE step 1 and 2, TOEFL and CSA before graduation. They then submit their medical diploma to the ECFMG after graduation. Verification must be received directly from the medical school and accepted by the ECFMG. FMGs must have ECFMG certification before they can enroll in a residency and receive a visa. ECFMG certification requirements are:

a) Having fulfilled the prescribed medical educational requirements

b) Having passed the USMLE step 1 exam.

c) Having passed the USMLE step 2 exam

d) Having passed the TOEFL exam with an acceptable score.

e) Having passed the Clinical Skills Assessment (CSA).

Examinations a-d are given in many major cities worldwide.

The CSA is only available in Philadelphia or Atlanta throughout the year.

Prior to acceptance to a first year residency position in the US, the ECFMG certificate must still be valid. It becomes invalid if the expiration date has passed for TOEFL, USMLE step 1 and 2. Permanent ECFMG certificate validation will follow acceptance into a graduate medical program. After applicants have completed steps a-e, they must enroll in the National Resident Matching Program (NRMP) and in the electrical residency application system (ERAS). They must then be interviewed for selected programs (Go back to the USA for a second trip). After ranking their choice for the programs selected, they must wait for the match day to learn their fates.

***USMLE step 1 and 2 examinations***

The USMLE is a three-step qualifying examination. FMGs are required to pass the first two steps of the USMLE (1 and 2). They are the first two prerequisites for ECFMG certification(3). The applicants can take the USMLE step 1 and 2 in any order. These written multiple choice exams are available in many major cities worldwide. For more information and application forms, go to www.ecfmg.org. The USMLE step 3 is only needed by applicants who will be required by their programs to have an unrestricted medical license to practice in that state. USMLE step 3 is not required for the ECFMG certificate and for many programs. Medical Licensure differs between US states, and licensure in one state does not allow one to practice medicine in an other. There are various prerequisites for eligibility according to each State's regulations. Most states, however, will provide temporary or limited licensure for residents or fellows. For more information, contact the Federation of State Medical Boards.

The USMLE step 1 is a computer based multiple choice test. It evaluates the student's basic medical science knowledge. Subjects include Ana-

tomy, Biochemistry, Physiology, Pathology, Pharmacology, Microbiology, Immunology, and Behavioral Science[1].

The USMLE step 2 is also a computer based test and covers the clinical sciences: Internal Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Preventive Medicine, and Psychiatry[1].

Preparations for these exams should start as soon as one knows that he or she has an inclination to study in the US. Medical students may find that the USMLE step 1 is easier to take when the basic sciences are still fresh in their mind.

In order to pass the USMLE step 1 and 2 one must score in the 75$^{th}$ percentile. This score is valid for seven years after the exam date. Examinees who passed with a low score cannot sit for re-examination until 7 years after the first examination. The grades of the USMLE step 1 and 2 scores have great influence on a program director's decision.

## TOEFL

Postgraduate trainees must demonstrate proficiency in English by passing the Test of English as a Foreign Language (TOEFL)[1]. This exam evaluates grammar and structure, vocabulary, reading, listening comprehension, and writing ability[4]. TOEFL is offered throughout the world by the Educational Testing Service (ETS). For more information contact www.toefl.org. The ECFMG requires FMGs to pass this test with a score greater than 550 on a paper-pencil based test or 213 on a computer based test[1]. Passing this test is valid for 2 years[1]. There are no prerequisites for the TOEFL[4].

## The clinical skills asessment (CSA)[1]

The CSA is provided by the ECFMG and evaluates one's ability to gather and interpret clinical data as well as to communicate effectively in medical English. The CSA is available throughout the year at the CSA test centers in Philadelphia and Atlanta for a limited number of candidates at any one time. The application form is available at www.ecfmg.org.

The CSA evaluates a resident's ability to obtain a relevant medical history, perform a focused physical exam and compose a patient record. The CSA also requires proficiency in spoken English and appropriate interpersonal skills as evaluated by the model patients the candidate will encounter in the 11 test stations. Each station has a standardized patient; a lay person trained to realistically present an appropriate history, complete with signs and symptoms. Examinees have fifteen minutes to interact with the patient and ten minutes to compose a concise record.

## Interviews and the match

Early match programs involve those in ophthalmology, neurosurgery and otolaryngology, for more information go to: www.sfmatch.org. These are highly competitive programs and are very difficult to enter. The most desirable locations are: Boston, Chicago, San Diego, San Francisco and Seattle[5]. Residencies ranked in order of competitiveness include: dermatology, otolaryngology, orthopedics, ophthalmology, radiology, anesthesiology, emergency medicine, obstetrics and gynecology, general surgery, pediatrics, family practice, internal medicine and psychiatry[6]. Canadian programs have their own separate matching process. More can be found in www.acmc.ca/resident_matching.htm[7].

Programs that are in the National Residency Matching Program (NRMP) form the main group. The first match organized by the National Residency Matching Program (NRMP) was held in 1952. It abolished the chaos inherent in the preexisting selection process. The method has remained largely unchanged. Applications become available in June or July of each year (www.nrmp.org). There are three steps to get a postgraduate year one (PGY-1) position through the NRMP. One must: 1) apply on the ECFMG website for ERAS (Electronic Residency Application System), 2) interview with program directors and 3) rank the desirable programs. FMGs who can complete this process must have ECFMG certification. This may require a third trip to the USA.

### *Electronic Residency Application Service (ERAS)*

Developed by the Association of American Medical Colleges, the Electronic Residency Application Service (ERAS) is an applicant's electronic briefcase for the required medical credentials that are reviewed by the residency program directors *via* the Internet. ERAS. It has four components: MyERAS applicant webstation, the Dean's Office Workstation, the Program Director Webstation, and the ERAS Post Office. Using MyERAS, applicants complete their applications, select their residency programs, and attach any supporting documents[5]. The application is transmitted to the Dean's Office Workstation, where

the dean's letter, letters of recommendation, and transcripts are added to the applicant's file. The applicant's photograph will be scanned and attached to the application as well. The completed application is then transmitted to the ERAS Post Office, where it can be downloaded by the applicant's chosen residency programs *via* the Program Directors Workstation. ERAS 2001 is used by most residency programs One must, however, be aware that some programs may not be using ERAS, so one may need to contact these programs separately for applications[5]. FMGs interested in using ERAS should contact the ECFMG at http://www.ecfmg.org. ECFMG acts as the dean's office for foreign graduates. It will attach dean's letters, transcripts, and letters of recommendation, and transmit USMLE scores. The ERAS application material of the coming year matching will be available on mid-July.

*Interview*

The interview season runs from November to early February. After the program directors receive application forms *via* ERAS, they will send out invitations for interviews. Good preparation for interviews is essential in order to make the best impression[5].

**The rank list and match day**

All rank lists must be submitted electronically through the Internet using the Rank Order List and Input Confirmation System (ROLIC) after interviews are completed. The applicants will indicate preferences among the programs at which they interviewed[5]. More detailed information can be found in the NRMP Handbook for medical students or on the NRMP website (http://www.aamc.org.nrmp).

Outlined below is a simplified explanation of the NRMP algorithm. The NRMP Handbook describes the steps in greater detail[5].

1. The process begins with an attempt to place an applicant into his or her first choice program. If a match cannot be made because the program is already filled or the applicant was not ranked by the program, then an attempt is made to match the applicant with the next program on his or her rank list. This process continues until a tentative match is made or the applicant is left unmatched.

2. In the next round, an attempt is made to place the next applicant into his or her first choice program. If this new applicant is more attractive to a program than another applicant who is already tentatively matched, the least preferred applicant is removed to make room for the more desirable applicant and a new tentative match is made. The process will be repeated for the candidate who was removed from the match.

3. The process is carried out for all applicants until each applicant has been tentatively matched to the most preferable choice possible or all choices have been exhausted.

4. When all applicants have been considered, the tentative matches become final.

The NRMP Match itself is run in late February. The results are known usually in mid March (the Match Day). A list of unmatched independent applicants by code is available on the day before the Match Day.

About one thousand US unmatched medical students and several thousand FMG unmatched applicants enter a final scramble every year. Most of them find residency positions. One must contact the unfilled programs at this time to fax an application file directly to that program director[5]. After the Match, residency employment contracts and a large number of forms are sent out to those who matched.

**Immigration and visa requirements**

FMGs need a visa to train in the US unless they are US citizens or permanent residents (i.e. hold a green card). Two types of visas are available for FMGs: the "J1" and "H1B". The "J1", also known as the Exchange Visitor's Visa, was introduced to FMGs as a chance to gain added experience in the US so they could improve patient care in their home countries. The law requires that "J1" visa holders must leave the US after completing their training and reside in their home country for at least two years before returning to the US for any reason. Currently, there is pressure to extend this period to five years. An FMG on a "J1" visa is ordinarily not allowed to change from "J1" to most other types of visas. However, the immigration law allows medical residency programs to sponsor FMGs for "H1B" visas in very special cases. This visa was designed for FMGs who have already finished their USMLE step 3 and have state medical licenses. There is no restriction to changing the "H1B" visa to any other kind of visa, including permanent resident status. They are, however, granted only in very select situations; mostly as a mechanism for "head hunting" exceptional talents.

**Costs of application, examinations and travel**

| | US $ |
|---|---|
| Fees: USMLE step I | 770 |
| USMLE step II | 770 |
| TOEFL | 100 |
| TOEFL acceptant request | 40 |
| CSA | 1,200 |
| ERAS token | 75 |
| Residency program application Fees | |
| - First ten programs | 60 |
| - Additional 11 to 20 each | 8 |
| - Additional 21 to 30 each | 15 |
| - Extra from 30 each | 25 |
| NRMP application Fees | 90 |
| Fee for B1/B2 Visa | 100 |
| Fee for J1 Visa | 140 |
| State Medical License application | 100 |
| Total (no travel, hotel and living costs included) | 3,445.- |

**What can one expect from all of this?**

Applying for a residency in the US will cause anxiety and expenses. If the applicant has done exceptionally well in all exams, interviews, and has secured several glowing letters from his professors (preferably those with international reputations), the chances of placement into a residency program are good. Unfortunately, finding a residency does not guarantee passing the American specialty board examinations or securing a fellowship of choice. After residency, the applicant who wishes further training, will enter a new matching effort for a fellowship. The outcome will be greatly influenced by ones performance as a resident and the recommendations that one receives from a program director. However a brilliant resident, particularly one who has passed the respective specialty boards, is likely to be viewed in the same manner as a local American or Canadian graduate when applying for a desirable fellowship.

It is, however, likely that an FMG will only match to a third class residency in a non-university affiliated inner city hospital. The training that he or she will receive may be inferior to that which is available in Thailand. After spending a residency in that type of program, the chances of placing in a competitive fellowship and passing specialty board examinations are not good. Most more advanced foreign countries may not regard such training well when returning home. Desirable specialty and sub-specialty training is becoming increasingly difficult to attain.

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# ข้อควรพิจารณาในการเลือกฝึกอบรมแพทย์ประจำบ้านในสหรัฐอเมริกา

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การเข้ารับการฝึกอบรมแพทย์ประจำบ้านในสหรัฐอเมริกาเป็นทางเลือกหนึ่งในการศึกษาต่อของแพทย์ผู้สนใจ ในระยะเวลาสิบปีที่ผ่านมากระบวนการสมัครเข้าฝึกอบรม ฯ ได้เปลี่ยนแปลงไปเป็นอุปสรรค์ในการสมัครเข้ารับการฝึกอบรม นอกจากนี้สถาบันฝึกอบรม ฯ ในสหรัฐอเมริกายังมีความหลากหลายนำมาซึ่งคำถามถึงคุณภาพของแต่ละสถาบัน คณะผู้เรียบเรียงจึงได้รวบรวมข้อมูลเกี่ยวเนื่องกับกระบวนการสมัครเข้าฝึกอบรม ฯ จากแหล่งข้อมูลอันเป็นปัจจุบัน ได้แก่ กระบวนการสอบเพื่อได้รับ ECFMG Certificate, การส่งใบสมัครยังสถาบันต่าง ๆ ด้วยระบบอินเตอร์เนต หรือ ERAS, การเข้ารับการสัมภาษณ์, และการจัดสรรตำแหน่งโดยคอมพิวเตอร์ หรือ Matching Process และข้อควรพิจารณาในการเลือกฝึกอบรม ฯ จากมุมมองของนักศึกษาแพทย์ในสหรัฐอเมริกาและแพทย์ผู้สนใจในประเทศไทย ซึ่งเป็นที่น่าสังเกตว่าความแตกต่างด้านศักยภาพและคุณภาพของสถาบันฝึกอบรมแพทย์ประจำบ้านแต่ละสถาบันในสหรัฐอเมริกาอาจทำให้คุณภาพของแพทย์ที่สำเร็จการฝึกอบรมแตกต่างกัน การสำเร็จการฝึกอบรมแพทย์ประจำบ้านจากอเมริกาจึงเป็นทางเลือกหนึ่งซึ่งอาจมิใช่ทางเลือกที่ดีที่สุดสำหรับการศึกษาต่อของแพทย์

**คำสำคัญ** : การฝึกอบรมแพทย์ประจำบ้านในสหรัฐอเมริกา, ข้อควรพิจารณาในการศึกษาต่อในสหรัฐอเมริกา

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