A Performance Comparison: USMG-FMG Attending Physicians

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Abstract: To determine whether patterns of differences in performance exist between United States Medical Graduate and Foreign Medical Graduate attending physicians, two types of inpatient hospital audits (Payne Process Audit and the Joint Committee on Accreditation of Hospitals' Performance Evaluation Program-P.E.P. Audit) were conducted in 22 Maryland and Pennsylvania non-federal, short-term hospitals. A total of 6,980 medical records were abstracted from eight diagnostic categories for 1,321 attending physicians; 985 of which were USMGs and 331 were FMGs. The results from both audits indicate that while there is evidence of a strong hospital-type of physician interaction for many of the diagnoses, there was no significant overall difference in performance between USMG and FMG attending physicians. The largest and most consistent differences in physician performance were associated with hospital characteristics, not physician characteristics. (Am. J. Public Health 69:57-62, 1979.)

Introduction

During the past 15 years, the number of Foreign Medical Graduates (FMGs) entering the United States has been expanding at an increasing rate. Today, approximately 20 per cent of all physicians in the United States are FMGs compared to 10 per cent in 1963 and approximately six per cent in 1959. In recent years, more FMGs were entering the U.S. health care system annually than there were physicians graduating from U.S. medical schools.[1] However, the new health manpower legislation—P.L. 94-484—seems certain to have a substantial effect on the future immigration of FMGs by placing restrictions on FMGs in graduate medical education programs.

The increased reliance on FMGs has not been without controversy. First there is the issue of the "brain-drain"—the removal and importation of highly skilled professionals from developing impoverished donor countries without compensation for the loss of human capital investment.[2-5] Second, some contend that the increased number of FMGs defers action on much needed reform in the United States health system since the presence of the FMGs conceals the deficiencies and masks the problems found in both the U.S. health care delivery and graduate medical education systems.[5-7]

Third is the question of whether FMGs provide services to populations that are discernibly different socioeconomically from populations served by United States Medical Graduates (USMGs).[8] Fourth, and of most concern, is the issue of FMG competency and the charge from some quarters that the FMG may be providing medical care which is inferior to the quality of care provided by USMGs. A report on the Health Manpower bill, H.R. 5546, by a health subcommittee of the House Interstate and Foreign Commerce Committee concluded that the "widely varying training, background and competence of foreign medical graduates is severely diluting the quality of the U.S. health care system. Even by the crudest measures of input, process, and certification examinations, it is apparent that many FMGs do not come close to the minimal standards set for United States Medical Graduates."[9] In 1974, the Association of American Medical Colleges stated that "it is generally acknowledged,

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though not proven, that the medical care rendered by some FMGs is of poorer quality than that rendered by graduates from domestic schools."[1] The purpose of this study was to address the latter question regarding differences in the quality of care provided by FMGs in comparison to USMGs.

Measuring the quality of care provided by physicians can be approached from several directions. The overall validity and reliability of the methods of assessment used greatly affect the outcome. Generally, most studies of the quality of care provided by FMGs, often contrasted with USMGs, involve the use of "proxy" measures of quality rather than more direct measures. Proxy measures such as board certification status, licensure status, performance on various state licensing examinations, performance on the Education Council of Foreign Medical Graduates (ECFMG) examination, language ability, and colleague and peer assessment involving intuitive value judgments have been used to generate and support the idea that FMGs offer an inferior quality of medical care.[9-15]

This study used a more direct measure of quality. Inpatient medical record audits were conducted using two different audit procedures to determine if differences existed between USMGs and FMGs in the performance of certain process of care tasks including history, physical examination, laboratory, roentgenology, and management therapy procedures.

Study Methodology, Design and Setting

The study evaluated the performance of 1,321 attending physicians, 985 USMGs (74.6 per cent), 331 FMGs (25.1 per cent) and five unknown (0.3 per cent), treating patients in eight diagnostic categories in 22 non-federal, short-term hospitals located in Maryland and Pennsylvania. A total of 6,980 medical records from 1973-1975 discharges were abstracted within the eight diagnoses (Table 1).

Hospitals were limited to the geographic area of Maryland and Western Pennsylvania due to budget and time constraints. Of the 42 non-federal, short-term hospitals in Maryland and Western Pennsylvania asked to participate in the study, 22 agreed.

Table 2 displays the varied character and range of all 42 hospitals. There are no important differences between the participating hospitals and the non-participating hospitals in terms of bed size, admissions, occupancy rate, personnel per bed, medical school affiliation and urban-rural distribution.

The 1,321 physicians included in the study represented 56 countries. Excluding the 985 USMGs (includes Canada and Puetro Rico), the 331 FMGs represented 53 countries: the Philippines 50 (18.1 per cent), India 38 (11.1 per cent) Iran 27 (8.2 per cent), and South Korea 22 (6.6 per cent). Eighteen countries were represented by a single FMG each.

At the start of the project, it was agreed that for each diagnosis in each hospital, the sample size would be no larger than 75 cases due to the time constraints established by the project. The discharges were stratified by diagnosis and attending physician; then a simple random sample of cases was selected with the constraint of only 75 cases per diagnosis. The random selection of cases at the physician-specific level increased the chances of using comparable cases within each hospital and diagnosis. Overall, a sample of 6,980 discharges was selected from the 230,996 discharges (43 per cent sampling fraction) for the years 1973-1975 from the 22 participating hospitals. Total primary discharges for the eight diagnostic categories used in the study accounted for 16,170 cases, or 7.0 per cent of the total study hospital discharges.

Throughout the project, 11 trained medical record abstractors were involved in the auditing process. As a continuing abstractor reliability check, a random selection of 18 per cent of all completed abstracts were rechecked for accuracy and reliability. The per cent agreement across all diagnoses and all combinations of team abstractors was 90 per cent. Also, the development of an abstractors' instruction manual eliminated the need for making many value judgment

TABLE 1—Eight Final Diagnoses Used in the USMG-FMG Quality of Care Study by Total Number of Cases Abstracted and Per Cent of Total Cases

Diagnosis No.	Final Diagnosis	Number of Cases	Per Cent of Total Study Cases
Dx-1	Malignant Neoplasm of the Breast	642	9.2
Dx-2	Pneumonia in Adults	1,099	15.7
Dx-3	Fibromyomata of the Uterus	882	12.6
Dx-4	Malignant or Benign Neoplasm of the Prostate	910	13.0
Dx-5	Urinary Tract Infection	1,144	16.4
Dx-6	Gastroenteritis and Colitis in Children	660	9.5
Dx-7	Bronchitis, Laryngo-Tracheitis, Acute Respiratory Infection in Children	495	7.1
Dx-8	Cholelithiasis and Cholecystitis	1,148	16.4

TABLE 2—Participating Hospitals and Non-participating Hospitals by Bed Size, 1975 Admissions, Occupancy Rate, Personnel per Bed, Medical School Affiliation and Urban-Rural Distribution

	Participating Hospitals	Non-participating Hospitals
Bed Size		
1–49	2	0
50–99	5	3
100–299	5	9
300–499	6	6
≥500	4	2
1975 Admissions		
≤6,999	9	10
7,000–12,999	5	5
13,000–18,999	6	4
≥19,000	2	1
Occupancy Rate		
≤59.9	1	0
60.0–69.9	4	2
70.0–79.9	4	10
80.0–84.9	5	2
≥85.0	8	6
Personnel per Bed		
≤1.99	2	0
2.0–2.49	4	3
2.5–2.99	4	10
3.0–3.49	7	4
3.5–3.99	4	2
≥4.0	1	1
Medical School Affiliation		
Primary Teaching	5	3
Limited Affiliation	5	1
Non-Affiliated	12	16
Urban	17	16
Rural	5	4

Source: American Hospital Association Guide to the Health Care Field, 1975 Edition

decisions which are often a source of variation in medical record abstracting.*

The two types of medical audit procedures used by the study were the Payne Process Audit[17] and the Joint Commission on Accreditation of Hospitals Performance Evaluation Program (PEP)—Intermediate Outcome Audit.[18] Two types of audit were used to increase the validity of the study results.

The Payne Process Audit method of evaluation concentrates on three major areas:

1. Appropriateness of the hospital admission;
2. Appropriateness of the hospital length of stay; and,
3. The Physician Performance Index (PPI) which measures the concordance of the health process with pre-established optimal criteria for overall management of the case. The PPI, the most important process quality of care indicator, measures the weighted per cent of recommended hospital service item criteria observed as having been provided by the attending physician or by the entire medical team in the case of house-staff or consultant participation, in each of five individual process tasks: 1) history; 2) physical examination; 3) laboratory routines; 4) roentgenology procedures; and 5) management therapy.

The second quality of care instrument used was the Performance Evaluation Program (PEP) audit with categories of performance criteria based on three major areas:

1. *Justification of the Diagnosis:* Was the appropriate diagnosis made?; was the intervention appropriate?; was the admission justified?;
2. *Outcome:* Was the patient's outcome what it should have been or what was expected?; what effect did the intervention have?; did the patient survive the intervention?: and,
3. *Quality Indicators:* Did the patient receive optimal care during the hospitalization?; was the length of stay appropriate?; did the patient develop any complications, and if so, what was done about them, and, was something done to prevent them from occurring?

The individual measures of performance developed in this paper include the per cent PPI score from the Payne Process Audit and the per cent Flag Rate score from the JCAH PEP audit. The per cent PPI score indicates the degree to which the attending physician team provides the recommended hospital services, as measured by the sum of the observed item weights divided by the sum of the maximum possible criteria weights for that case.

The per cent Flag Rate represents the total number of unjustified variations expressed as a per cent of the total possible variations. An unjustified variation is defined as an element that is not met either by providing the appropriate aspect of care or by meeting the exception to the element. In the case of complications being present, the physician team does not provide the proper critical management processes of care.

Analysis

Three questions were addressed by this study: 1) does the quality of care provided by attending physicians differ by hospital?; 2) does the quality of care differ between USMG-FMG attending physicians?; and, 3) is there an interaction between hospital and attending physician regarding quality of care? The per cent PPI score and the per cent Flag Rate score, were calculated for each attending physician in each of the participating hospitals. Since the number of patients seen by each physician varied, these scores were based on different sample sizes. In order to have equal variability among the scores, each score was weighted inversely to its estimated variance which is simply the estimate of variance for a binomial proportion. If the physician had only one patient and the PPI score was 1, the value of the proportion used in estimating the variance was 0.99999; similarly, if the Flag Rate score was 0, the estimated proportion for variance purposes was set equal to 0.00001. This procedure was done to avoid the problem of having an estimated variance equal to zero; the variance in such situations was $.99999 \times 10^{-5}$. These weighted scores were then used in a two factor analy-

*The Instruction Manual and the Audit Criteria Sets are available on request to the author.

TABLE 3—The p-values of the Physician Performance Index (PPI) Scores for each Hypothesis by Diagnosis

Diagnosis No.	Final Diagnosis	Hospital	Type of Physician	Hospital/ Physician
Dx-1	Malignant Neoplasm of the Breast	.0001	NS	.0063
Dx-2	Pneumonia in Adults	.0001	NS	.0009
Dx-3	Fibromyomata of the Uterus	.0001	.0330	.0001
Dx-4	Malignant or Benign Neoplasm of the Prostate	.0001	NS	NS
Dx-5	Urinary Tract Infection	.0001	NS	.0042
Dx-6	Gastroenteritis and Colitis in Children	.0001	NS	NS
Dx-7	Bronchitis, Laryngo-Tracheitis, Acute Respiratory Infection in Children	.0001	NS	NS
Dx-8	Cholelithiasis and Cholecystitis	.0001	NS	.0032

sis of variance to test for the hospital and type of physican effects and the hospital-type of physician interaction. The results of this analysis are presented in Tables 3 and 4.

Inspection of the tables indicates that there are highly significant differences ($p < .0001$) among hospitals in the quality of care, as measured by both the per cent PPI score and the per cent Flag Rate score, provided by attending physicians across all eight diagnoses. Further analyses are currently being conducted to identify the characteristics of the hospitals that might explain these differences. The results of these analyses will be presented in a later paper.

With the exception of Diagnosis 3—Fibromyomata of the Uterus—the analysis also indicates that the quality of care provided does not differ significantly (assuming a .05 significance level) between type of attending physician (USMG vs. FMG). The significant differences for Fibromyomata of the Uterus are interesting (but without explanation) especially in light of the p values and consistency across indicators.

The most significant finding is the strong hospital-type of physician interaction for many of the diagnoses, indicating that the performance of the USMG and FMG physicians differs for different hospitals. Tables 5 and 6 present the mean per cent PPI scores and the mean per cent Flag Rate scores for each diagnosis for each hospital by USMG-FMG attending physician. Inspection of these tables illustrates the nature of the interaction. For example, for Diagnosis 1—Malignant Neoplasm of the Breast cases in Hospital H-01—FMG physicians had an average PPI score of 82.3 per cent as compared to an average PPI score of 77.7 per cent for USMG physicians. However, in Hospital H-19, the average PPI score for FMG physicians was 44.0 per cent as compared to an average PPI score of 65.4 per cent for USMG physicians. Significant interactions are also present for diagnoses Dx-2,3,5, and 8. Results using the per cent Flag Rate scores display similar significant interactions with the exception of Diagnosis 8.

Further inspection of the results suggests that inter-

TABLE 4—The p-values of the Per cent Flag Rates for Each Hypothesis by Diagnosis

Diagnosis No.	Final Diagnosis	Hospital	Type of Physician	Hospital/ Physician
Dx-1	Malignant Neoplasm of the Breast	.0001	NS	.0583
Dx-2	Pneumonia of Adults	.0001	NS	.0001
Dx-3	Fibromyomata of the Uterus	.0001	.0041	.0013
Dx-4	Malignant or Benign Neoplasm of the Prostate	.0001	NS	NS
Dx-5	Urinary Tract Infection	.0001	NS	.0215
Dx-6	Gastroenteritis and Colitis in Children	.0001	NS	NS
Dx-7	Bronchitis, Laryngo-Tracheitis, Acute Respiratory Infection in Children	.0001	NS	NS
Dx-8	Cholelithiasis and Cholecystitis	.0001	NS	NS

TABLE 5—Physician Performance Index (PPI) Score for USMG-FMG Attending Physicians, by Hospital, by Diagnosis

Hospital	DX-1		DX-2		DX-3		DX-4		DX-5		DX-6		DX-7		DX-8	
	USMG	FMG	USMG	FMG	USMG	FMG	USMG	FMG	USMG	FMG	USMG	FMG	USMG	FMG	USMG	FMG
H-01	77.7	82.3	68.1	69.8	60.8	52.6	63.7	65.9	54.0	58.1	67.0	71.0	67.7	68.1	81.4	82.3
H-02	78.4	80.9	70.2	74.9	80.2	72.4	75.4	66.4	66.1	53.5	71.9	87.0	78.2	75.1	93.3	93.1
H-03	64.4	78.5	66.2	67.1	71.8	67.8	62.0	52.9	61.9	60.3	72.0	67.6	80.7	83.0	73.2	77.7
H-04	75.6	75.1	83.1	84.8	66.5	69.1	67.0	65.5	63.1	69.1	77.4	76.0	84.5	72.7	80.0	84.9
H-05	86.9	NA	81.1	76.5	NA	NA	55.7	NA	71.3	59.8	NA	NA	NA	NA	79.0	NA
H-06	NA	NA	NA	NA	NA	NA	NA	NA	46.6	48.3	71.0	81.8	75.7	79.4	NA	NA
H-07	69.4	NA	NA	NA	64.6	57.5	NA	NA	57.7	29.6	NA	NA	NA	NA	NA	NA
H-08	83.2	NA	76.5	79.8	56.3	NA	55.7	63.1	61.4	67.8	NA	NA	NA	NA	76.5	94.5
H-09	72.9	NA	71.1	73.3	56.0	17.4	53.1	44.7	56.0	56.3	66.1	NA	74.1	NA	77.0	86.5
H-10	79.7	81.3	77.8	72.1	48.8	36.3	57.1	51.6	69.2	72.9	76.3	81.8	81.8	75.0	77.0	64.3
H-11	89.4	NA	87.6	90.6	79.8	79.1	58.7	61.5	61.0	57.3	81.4	NA	87.7	NA	80.5	89.0
H-12	73.9	68.6	74.0	74.3	59.5	64.0	50.1	47.5	49.6	45.0	75.2	86.7	73.4	76.2	75.4	72.0
H-13	74.6	NA	62.3	64.0	50.5	35.2	43.2	44.4	57.3	54.7	79.7	67.7	68.2	100.0	81.2	94.1
H-14	71.6	NA	59.6	62.9	40.7	53.0	54.5	NA	59.7	88.0	NA	NA	NA	NA	69.3	70.0
H-15	46.2	77.9	58.3	64.1	56.5	56.9	51.4	57.8	48.7	53.1	68.1	66.4	52.4	66.5	62.0	77.1
H-16	51.9	NA	54.9	55.0	51.5	53.1	45.3	56.2	52.1	51.5	60.6	68.0	67.8	69.8	70.4	71.5
H-17	58.5	62.8	38.1	48.6	NA	58.0	59.0	59.6	35.6	47.0	46.1	70.0	46.2	NA	60.6	63.3
H-18	62.9	71.0	46.3	56.2	62.9	NA	49.6	57.0	29.8	46.2	61.4	NA	64.2	NA	62.0	69.9
H-19	65.4	44.0	60.3	67.6	65.8	61.6	50.6	51.0	48.9	48.2	79.9	71.2	63.7	72.9	75.7	68.7
H-20	30.1	65.4	52.6	54.9	NA	NA	NA	NA	43.5	52.7	56.8	47.8	71.7	64.3	67.2	71.9
H-21	NA	NA	NA	57.3	NA	43.9	NA	50.4	47.9	44.9	NA	53.8	NA	NA	87.9	70.2
H-22	68.3	68.3	59.3	61.7	68.3	72.4	57.6	NA	49.9	58.7	66.2	70.9	67.7	52.4	70.4	70.6
TOTAL	73.1	69.7	67.3	66.1	62.0	60.6	55.3	58.0	56.0	52.7	71.0	70.9	72.6	70.9	75.5	76.3

TABLE 6—Per Cent Flag Rates for USMG-FMG Attending Physicians, by Hospital, by Diagnosis

Hospital	DX-1		DX-2		DX-3		DX-4		DX-5		DX-6		DX-7		DX-8	
	USMG	FMG	USMG	FMG	USMG	FMG	USMG	FMG	USMG	FMG	USMG	FMG	USMG	FMG	USMG	FMG
H-01	1.3	3.2	11.4	8.3	11.5	12.0	6.4	9.6	10.1	8.2	24.1	15.4	12.0	14.0	5.2	5.6
H-02	5.6	6.8	12.1	12.8	5.1	5.4	5.9	10.1	7.2	9.9	20.5	15.4	5.0	7.6	8.2	7.0
H-03	4.6	1.3	10.2	8.9	8.6	10.5	9.4	16.6	7.4	5.9	19.8	34.7	11.6	6.7	6.5	5.7
H-04	6.2	5.5	6.1	9.7	9.3	14.3	6.9	6.3	9.5	11.8	18.2	14.7	8.9	0.0	4.7	5.3
H-05	5.1	NA	9.2	0.0	NA	NA	8.3	NA	8.3	11.8	NA	NA	NA	NA	8.6	NA
H-06	NA	NA	NA	NA	NA	NA	NA	NA	8.1	5.9	17.7	17.3	13.0	20.0	NA	NA
H-07	3.5	NA	NA	NA	4.4	6.1	NA	NA	4.9	17.6	NA	NA	NA	NA	NA	NA
H-08	3.7	NA	11.2	10.9	4.8	NA	9.0	22.2	8.4	9.8	NA	NA	NA	NA	10.6	15.8
H-09	3.9	NA	8.2	13.0	3.3	0.0	7.7	10.0	7.9	10.3	21.9	NA	9.4	NA	12.9	15.0
H-10	2.3	7.7	15.3	9.4	4.4	13.6	7.1	6.1	6.6	7.8	13.8	11.5	15.8	6.7	11.3	13.2
H-11	5.8	NA	9.3	6.3	13.5	18.2	6.7	6.2	8.1	11.8	14.9	NA	7.1	NA	8.6	5.3
H-12	9.5	7.7	7.0	3.5	10.3	9.5	9.2	5.0	8.3	12.9	18.4	9.2	14.8	7.0	10.6	6.2
H-13	5.7	NA	14.1	9.9	2.5	4.6	9.7	11.1	9.3	8.7	25.0	30.8	22.2	20.0	12.2	12.0
H-14	12.0	NA	14.3	15.6	9.9	9.1	4.7	NA	9.3	5.9	NA	NA	NA	NA	8.6	6.7
H-15	2.6	5.8	10.8	8.8	12.6	13.2	16.7	11.1	5.9	14.7	21.2	24.8	20.0	13.6	7.3	7.1
H-16	10.9	NA	10.5	12.9	12.1	13.4	9.3	5.6	12.4	16.3	36.4	23.1	18.3	10.0	8.8	7.9
H-17	15.4	13.5	14.4	12.5	NA	9.8	18.2	18.2	18.0	16.7	39.4	15.4	18.1	NA	5.6	7.2
H-18	6.2	0.0	14.0	12.5	14.3	NA	12.3	11.1	14.8	11.8	31.8	NA	16.7	NA	15.0	16.6
H-19	10.4	8.2	10.5	13.2	15.0	14.5	17.4	7.5	9.1	8.0	17.6	23.7	11.3	9.4	8.5	8.1
H-20	12.8	12.1	18.0	9.7	NA	NA	NA	NA	15.0	10.9	34.7	21.2	17.0	16.6	11.0	10.0
H-21	NA	NA	NA	11.9	NA	14.8	NA	22.2	11.8	14.9	NA	35.1	NA	NA	13.1	14.2
H-22	11.0	7.0	13.1	14.6	14.6	9.8	8.8	NA	11.7	15.7	23.1	23.1	15.1	20.0	10.4	8.3
TOTAL	5.8	6.5	11.0	10.5	7.8	11.1	8.6	10.4	9.3	12.0	21.2	21.2	12.7	11.1	9.6	8.5

actions of at least the first order are the rule rather than the exception. In addition there is evidence of a second order interaction of hospital by type of attending physician by diagnosis. For example, in the nine hospitals with USMG-FMG cases in both Dx-1 Malignant Neoplasm of the Breast and Dx-3 Fibromyomata of the Uterus (Hospitals: H-01, H-02, H-03, H-04, H-10, H-12, H-15, H-19, and H-22), wherever FMG cases had the higher mean PPI score on Dx-1 (H-01, H-02, H-10), the USMG cases had the higher mean PPI score on Dx-3. The same type of interaction is present for other diagnosis combinations and also for the per cent Flag Rate scores.

While there are sometimes very large differences between FMGs and USMGs within a given diagnosis, within a specific hospital, these marginal differences should be viewed with extreme caution. The above interaction effects and the changing number of cases available for comparison make direct comparison on the basis of averages questionable. Overall, no consistent and generalizable pattern of differences between the performance of USMG and FMG attending physicians appears to be present.

Discussion

Although the FMG house-staff physician is likely to be affected by language problems and cultural shock, by the time an FMG is able to function as a private attending physician, he/she has survived a long series of screening mechanisms: state licensure examinations, analysis of credentials before receiving hospital privileges, the continuous review of his/her performance by the internal quality assurance programs within the hospital and other forms of informal peer and consumer surveillance. The results of this study indicate that for attending physicians, the differences in performance are greater among hospitals than for the USMG-FMG groups of physicians within any hospital. One might expect that certain kinds of hospitals, such as medical school-university-affiliated hospitals tend to attract a "better" physician. To the extent that this is true, physicians with certain characteristics are more likely to end up at certain types of hospitals than others. For example, board certified physicians tend to be found in higher proportions in large, urban university-affiliated institutions than in small, rural, non-medical school-affiliated institutions.

The dilemma in interpreting the results of this study is that a number of variables, some related to the hospital, some related to the physician and some to the patient, all tend to influence the overall level of physician performance. The USMG-FMG distinction is not a very useful one in explaining differences in the performance of attending physicians in general, since the constellation of hospital variables appears to exert such a strong influence on the performance of the physicians practicing within these institutions. The ways in which that interaction occurs are complex and demand further research. The authors are currently examining this relationship.

In conclusion, the findings of this study stand in rather sharp contrast to the restrictions placed on the immigration of FMGs in the new Health Professions Educational Assistance Act of 1976, PL 94-484. Although the law states that Congress . . . "finds and declares that there is no longer an insufficient number of physicians and surgeons in the United States and that there is no further need for affording preference to alien physicians and surgeons in admission to the United States," its enactment was probably bolstered by the widespread assumption that FMGs are simply inferior to their USMG colleagues. Although the nation's concern over the issue reached a dramatic point when the influx of FMGs each year surpassed the total annual output of American medical schools, it cannot be denied that an assumption of FMG inferiority also added weight to these concerns.

REFERENCES

1. Association of American Medical Colleges: Graduates of Foreign Medical Schools in the United States: A Challenge to Medical Education. J Med Educ 49:813-822, August 1974
2. Knobel RJ: Placement of foreign trained physicians in U.S. medical residencies. Med Care XI:224-239, May-June 1973
3. Mason HR: Foreign medical graduates: Profiles of those qualifying for practice in the United States, 1957 to 1971. JAMA 229:428-430, April 1974
4. Bergen SS, Lenoble B: The foreign medical graduate as a medical resource. Arch of Int Med 135:1613-1616, December 1975
5. Sprague CC: The foreign medical graduate—A time for action. N Eng J Med 290:1482-1483, June 27, 1974
6. Sun Valley Forum on National Health Incorporated: The Foreign Medical Graduate in the United States Health Care System. Monograph Prepared for the Bureau of Health Manpower, DHEW 1975
7. Millis JS: The foreign medical graduate: Problem and opportunity. J Med Educ 46:312-316, April 1971
8. Studnicki J, Saywell RM, Wiecheteck W: Foreign medical graduates and Maryland Medicaid. N Eng J Med 294:1153-1157, May 20, 1976
9. Nile: Behind the squeeze on the FMGs. Hosp Phys 16-19, 37, January 1976
10. Kosa J: The foreign trained physician in the United States. J Med Educ 44:46-51, January 1969
11. Williams KA and Brook RH: Foreign medical graduates and their impact on the quality of medical care in the United States. MMFQ:549-581, Fall 1975
12. Halberstam J and Dasco M: Foreign and U.S. residents in university-affiliated teaching hospitals: An investigation of U.S. graduate education. Bull NY Acad Med. 42:182-208, March 1966
13. Dasco M: The foreign medical resident training in the U.S. Ann Int Med 68: 1105-1113, May 1968
14. Halberstam JL, et. al: Foreign surgical residents in university-affiliated hospitals: A unique case in United States graduate medical education. Ann Surg.: 485-500, April 1970
15. Myers JD: Patterns of training for internal medicine. J Med Educ 44:797-804, September 1969
16. Shires GT. The foreign graduate as a surgical resident. Surg 70:549-550, October 1971
17. Payne BC: Episode of Illness Study. Ann Arbor: The University of Michigan Medical School, 1972
18. _____: The P.E.P. Primer. Chicago: The Joint Commission on Accreditation of Hospitals, 1974

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