conducted on the general theme of "Ethics Training and the Public Sector"; the survey questionnaire was piloted with twenty senior managers. A covering letter mailed with the questionnaire indicated there was general support for the research from the PSMC and guaranteed complete confidentiality and a summary report to interested agencies.

17. Kernaghan, K. and Langford, J.W. *The Responsible Public Servant*, The Institute for Research on Public Policy, Halifax, Nova Scotia, 1990, p. 191. See also pp. 187-188.

18. PCEAR, *op. cit.*, p. ii.

19. Uhr, J. "Managing the Process of Ethics Training", in Preston, N. *Ethics for the Public Sector*, Federation Press, Sydney, 1994, Chapter 8.

20. Gutman, A. and Thompson, D. *Ethics and Politics: Cases and Comments*, (2nd edn.) Nelson-Hall, Chicago, 1990.

21. Jackson, M. "Pro Bono Publico" *Australian Quarterly*, 59, 3-4, (Spring-Summer 1987):377-386; Parker, R. S. *The Administrative Vocation: Selected Essays of R.S. Parker*, Hale and Iremonger, Sydney, 1993.

22. See Jackson, *Ibid.*

Physician Recruitment and Retention: A Rural-Suburban Comparison

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PHYSICIAN RECRUITMENT AND RETENTION: A RURAL-SUBURBAN COMPARISON

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ABSTRACT

This study examined the recruitment and retention experience of medical group practices (MGPs), based on a 1991 national survey of all administrators of MGPs who are members of the Medical Group Management Association. Specifically, we compared rural (n=269) and suburban (n=169) MGPs regarding their recruitment and retention experience to assess the relevancy of physician recruitment theories that focus on the characteristics of the physician, practice, or community. The results indicate that, in terms of physician personal characteristics, rural MGPs were more likely to view rural background and exposure to rural

practice as important to both recruitment and retention than suburban MGPs. The finding that both rural and suburban MGPs needed family practice physicians most and found it difficult to recruit them suggests the need for more primary care tracks in medical schools and the enhancement of primary care physician reimbursements relative to other specialties. In terms of practice characteristics, our study shows most rural and suburban MGPs were concerned about the financial aspects of the practice environment and provided generous recruiting benefits. In terms of community characteristics, physician's spouse and family was identified as an important factor particularly by rural MGPs.

INTRODUCTION

In the United States, rural communities have long faced serious difficulty attracting and retaining physicians.[1-8] In 1988, there were 90.5 patient care MDs per 100,000 population in nonmetro counties versus 215.6 in metro counties.[9] In the least populated counties, those with fewer than 10,000 residents, there were only 40.5 patient care physicians for every 100,000 people–about one physician for every 2,469 residents. This geographic maldistribution limits access to medical care and leaves many rural communities medically underserved.[10-12] Recruiting and retaining physicians thus becomes an important concern for rural medical group practices and communities.

Models of physician recruitment and retention often focus on three groups of factors: the characteristics of the physician, the practice, and the community.[13-16] The emphasis on physicians' personal characteristics in practice location decision, as reflected by the affinity model, is premised on the assumption that physicians are more likely to be attracted to rural practice if they have a rural background or exposure to rural practice settings in their clinical training.[17] To ensure a sufficient supply of rural physicians, one comprehensive approach would be to assist rural persons in the competition for admission to medical school, foster premedical training in rural settings, emphasize rural background in the admission policies of medical schools, and use rural preceptorships or externships by medical schools and rural

residency training programs to expose students to medical practice in small towns and rural areas.[18-19]

The economic incentive and practice characteristics models emphasize the characteristics of medical practices that influence physician recruitment and retention including workload, income and benefits, the opportunity to join a partnership or group practice, the chance for professional interaction, continuing education, the presence of a local hospital, medical technology, staff support, referral to specialists, and the level of practice autonomy.[20-22] The emphasis on medical practice characteristics is based on the assumption that the practice environment is important and that physicians are more likely to be attracted to rural practice if they have adequate financial and economic incentive, collegial, technical and staff support, and professional autonomy. To ensure a sufficient supply of rural physicians, one approach is to improve the economic and non-economic climate of practice setting through providing competitive salary and benefits, malpractice insurance, reasonable work hours and load, opportunities for group practice, professional interaction and continuing education, better facilities, an effective referral system to specialists, an effective support staff, and practice autonomy.[23-25]

Community characteristics that affect physician recruitment and retention include spouse employment and satisfaction, good educational institutions for children, climate, geography, culture and lifestyle, religion, medical needs, socioeconomic characteristics, recreational activities and sports facilities.[26-28] The emphasis on community characteristics in practice location decision presumes that the community environment is important and that physicians are more likely to be attracted to rural practice if the community provides them with favorable amenities. To attract physicians to rural practice, an approach is to emphasize the positive amenities of the rural environment (e.g., lifestyle, clean air, sports facilities) and improve on ones that are viewed negatively (e.g., a poor school system, lack of recreational activities).

Despite the availability of these models, recent empirical research that describes physician recruitment and retention has

been scarce. With the trend toward managed care and integrated systems[29-32], it is important to re-examine how these conceptual models are reflected in current recruitment and retention efforts and to find out which elements of the models are particularly emphasized by rural medical practices compared to nonrural medical practices. This knowledge will enable us to assess the applicability of these models and identify the major differences in physician recruitment and retention between rural and non-rural communities. It will assist the formulation of health manpower policy in the midst of health care reform.[33-34]

The purpose of this article is to describe the recruitment and retention experience of medical group practices (MGPs). In particular, we will compare the experience of rural MGPs and suburban MGPs. The comparison will focus on the following specific aspects of their recruitment and retention experience: overall recruiting characteristics, recruiting activities conducted, recruiting benefits offered, factors believed to account for recruitment success, orientation activities conducted, important factors associated with physician retention, and proposed changes to improve the general environment of physician recruitment and retention in rural areas. The relevance and usefulness of the conceptual models of recruitment and retention will be analyzed in the context of our study findings.

METHODS

Subjects

In 1991, the Medical Group Management Association (MGMA) conducted a national survey of medical group practices about their recent physician recruitment and retention experience.[35] Based in Englewood, Colorado, MGMA is the largest private association of MGPs in the United States with about 6,100 MGPs and 16,000 individual physician members located throughout the 50 states and the District of Columbia. In January 1991, MGMA mailed survey questionnaires to all its member MGPs (4,838) and requested only the nonmetropolitan groups to return the survey. In response, 560 questionnaires were returned.

reflecting the general maldistribution of physicians, we estimate the survey had a response rate of about 40-45 percent among all eligible nonmetropolitan MGPs within MGMA.

Among the questionnaires returned, 269 (48%) were from MGPs situated in areas 50 miles or greater from a large metropolitan area, 169 (30%) were from MGPs situated in areas less than 50 miles from a large metropolitan area, 83 (15%) were groups with rural or suburban satellite facilities, and 39 (7%) did not specify their rural classification. For the purpose of this article, we only analyzed the returned questionnaires (N=438) of the first two groups: those situated in areas 50 miles or greater from a large metropolitan area (the rural MGPs) and those situated in areas less than 50 miles from a large metropolitan area (the suburban MGPs). The remaining questionnaires were excluded from this analysis because of difficulty in classifying them into either of the two groups.

Survey Instrument

The survey questionnaire addressed the following areas related to physician recruitment and retention in MGPs: basic practice information (such as rural classification of the group, number of full-time equivalent (FTE) physicians, and single specialty versus multiple specialty groups), general recruiting characteristics (such as recent recruiting experience, specialties sought, candidate evaluation factors, cost of recruiting, and physician compensation methods), specific recruiting activities (such as writing a formal feasibility plan, placing advertisements, involving community members, performing background checks, arranging for site visit, focusing on spouse, and making the offer), recruiting benefits (such as offering malpractice, health, life, and disability insurance, covering relocation expenses and professional dues, and providing automobile and continuing education allowance), recruiting and retention success factors and recruiting barriers (such as community location, spouse, hospital support, compensation, coverage, medical equipment, and professional isolation), orientation activities (such as newspaper announcement, social gatherings, and speaking engagements), and proposed changes. Most of the variables included in the survey instrument were

consistent with the factors identified in the conceptual models of physician recruitment and retention.

Analysis

The analytical strategy was to compare rural MGPs with suburban MGPs in terms of their physician recruitment and retention practices. We recognize that suburban MGPs are not identical to urban MGPs and the results may well underestimate the true differences between rural and urban MGPs. Bivariate statistical comparisons were performed to test the relationship between recruitment and retention practices and group classification. The study employed the *Chi* square statistic for categorical variables and Student's t-statistic for ordinal and continuous variables. Three significance levels were provided in the tables, at α=.1, .05, and .01. The data were analyzed on Mac Quadra personal computer using SYSTAT 5.2 software.(36)

RESULTS

General Recruiting Characteristics

Table 1 presents the general recruiting characteristics of the rural and suburban medical group practices surveyed. Most MGPs (77%) were actively recruiting physicians. Family practice and internal medicine were the two specialties identified as most needed by both rural and suburban MGPs. The specialty identified as third most needed by rural MGPs was pediatrics and for suburban MGPs it was obstetrics and gynecology. The specialties identified as most difficult to recruit were family practice, obstetrics and gynecology, and orthopedic surgery. In the last two years, the average non-retiring turnover rate in medical group practices was 2.3 physicians. The number one source of recruiting new physician candidates identified was inhouse (39%). Rural MGPs were more likely to use recruiting firms than suburban MGPs (23% vs. 19%). Suburban MGPs were more likely to use residence programs (23% vs. 19%). The top three candidate evaluation factors identified by both rural and suburban MGPs were technical competency, practice philosophy, and

communication skills/personality. The final hiring decision was mainly based on consensus of all group members (45%), and secondarily made by the board of directors (38%). The cost of recruiting one physician was under $10,000 for most MGPs (62%). Only 2 percent of MGPs surveyed (all were suburban MGPs) spent more than $40,000 in recruiting one physician. In terms of compensation, 17 percent MGPs used salary, 10 percent used equal share, and the majority (73%) relied on an individual productivity basis. Most of the MGPs (82%) started recruiting 6-18 months in advance. Rural MGPs were likely to start recruiting earlier than their suburban counterparts (X^2=6.8; p<.1). The average number of site visits per candidate was 1.9 in suburban MGPs and 1.7 in rural MGPs (t=2.4; p<.05). The average number of candidates interviewed by MGPs before hiring was 3.9.

Recruiting Activities

Table 2 summarizes the recruiting activities of rural and suburban MGPs. Rural MGPs were more likely than their suburban counterparts to have the spouse accompany the candidate on site visit (98% vs. 91%; X^2=9.8, p<.01), to develop the site visit to meet candidate's needs (95% vs. 86%; X^2=10.3, p<.01), to focus on the spouse during the site visit (90% vs. 78%; X^2=9.6, p<.01), to provide a copy of the group's physician contract (86% vs. 78%; X^2=5.3, p<.05), to recognize and overcome problem areas (76% vs. 68%; X^2=3.1, p<.10), to place advertisements (74% vs. 66%; X^2=3.0, p<.10), to involve community members in site visit (73% vs. 48%; X^2=25.8, p<.01), to inform of financial package prior to site visit (58% vs. 50%; X^2=3.0, p<.10), to make a decision about hiring the candidate after one site visit (57% vs. 37%; X^2=16.2, p<.01), to extend an offer to the candidate within 2 days after initial interview (44% vs. 29%; X^2=9.4, p<.01), and to attend recruiting fairs (30% vs. 20%; X^2=4.9, p<.05).

Recruiting Benefits

Table 3 describes the benefits MGPs offered to newly recruited physicians. Most MGPs offered to pay for their new recruits

Table 1
Recruiting Characteristics of Rural and Suburban Medical Group Practices (MGP)

Variables	Total MGP *N=438*	Rural MGP *N=269*	Suburban MGP *N=169*	X^2	*t-statistic*
Actively recruiting physician(s)					
Yes	77%	79%	73%	1.6	
No	23%	21%	27%		
Top three specialties needed					
First	FP 39%	FP 41%	FP 37%		
Second	IM 26%	IM 26%	IM 26%		
Third	OBG 15%	PED 22%	OBG 15%		
Top three specialties difficult to recruit					
Family Practice	32%	34%	29%		
OB-Gyn	22%	19%	27%		
Surgery-orthopedic	11%	12%	9%		
# of non-retiring physicians leaving in last 2 years	2.3	2.4	2.1		1.3
Top three recruiting sources					
First	Inhouse 39%	Inhouse 40%	Inhouse 39%		
Second	Rec Firm 21%	Rec Firm 23%	Residence 24%		
Third	Residence 21%	Residence 19%	Rec Firm 19%		
Top three candidate evaluation factors@					
Technical competency	7.1	7.0	7.3		1.0
Practice philosophy	7.0	6.8	7.0		.7
Communication skills /personality	6.3	6.4	6.2		.9
Who makes the final physician hiring decision					
Consensus of all group members	45%	43%	48%		
Board of directors	38%	41%	34%		

Table 1 (continued)

Variables	Total MGP *N=438*	Rural MGP *N=269*	Suburban MGP *N=169*	X^2	*t-statistic*
Cost of recruiting one physician					
≤ $10,000	62%	59%	66%	17.2***	
$10,001-$20,000	16%	17%	15%		
$20,001-$30,000	17%	19%	14%		
$30,001-$40,000	4%	5%	2%		
$40,001-$50,000	1%	0%	2%		
>$50,000	1%	0%	1%		
Group's compensation method					
Equal share to all physicians	10%	11%	9%	6.4	
50% or less based upon productivity	12%	10%	15%		
51-75% based upon productivity	17%	18%	16%		
76-99% based upon productivity	14%	15%	11%		
100% based upon productivity	30%	31%	29%		
Salary	17%	15%	20%		
How far in advance do you begin recruiting					
< 6 months	3%	3%	4%	6.8*	
6-12 months	43%	39%	50%		
13-18 months	39%	42%	33%		
>18 months	15%	16%	13%		
Average visits per candidate before hiring	1.8	1.7	1.9		2.4**
Average # of candidates interviewed before hiring	3.9	3.8	4.0		1

@Ratings were done on a 10-point scale ranging from 10, "the most important", to 1, "the least important".
*p<.10; **p<.05; ***p<.01.

Table 2
Recruiting Activities of Rural and Suburban Medical Group Practices (MGP)

Variables	Total MGP N=438	Rural MGP N=269	Suburban MGP N=169	χ^2
Having spouse accompany on site visit	95%	98%	91%	9.8***
Paying interview expenses	92%	93%	89%	1.7
Developing a site visit to meet candidate's needs	91%	95%	86%	10.3***
Focusing on spouse during site visit	85%	90%	78%	9.6***
Providing a copy of group's physician contract	83%	86%	78%	5.3**
Performing background check	75%	76%	72%	1.0
Recognizing and overcoming problem areas	73%	76%	68%	3.1*
Placing advertisements	71%	74%	66%	3.0*
Involving community members in site visits	63%	73%	48%	25.8***
Informing of financial package prior to visit	55%	58%	50%	3.0*
Using direct mail	55%	58%	51%	2.2
Making a decision about candidate after one site visit	50%	57%	37%	16.2***
Using national association meetings	42%	40%	46%	1.2
Extending an offer within 48 hours after initial interview	38%	44%	29%	9.4***
Writing a formal feasibility plan	36%	39%	33%	1.4
Attending recruiting fairs	26%	30%	20%	4.9**

*p<.10; **p<.05; ***p<.01.

Table 3
Recruiting Benefits Offered by Rural and Suburban Medical Group Practices (MGP)

Variables	Total MGP N=438	Rural MGP N=269	Suburban MGP N=169	χ^2
Malpractice insurance	97%	97%	97%	.3
Health insurance	94%	94%	94%	.03
Professional dues	92%	92%	92%	.01
Relocation costs	86%	89%	81%	6.5***
Life insurance	85%	84%	85%	.004
Continuing medical education allowance	83%	82%	84%	.3
Disability insurance	79%	78%	79%	.004
Automobile allowance	28%	27%	30%	.7
Signing bonus	22%	17%	20%	2.1
Time before a new physician is eligible for partnership				
<1 year	3%	3%	2%	15.1***
1-2 years	76%	81%	68%	
3-4 years	10%	6%	16%	
>4 years	2%	1%	2%	
No partnership	10%	9%	12%	
Current cost to buy into the group				
$0	21%	21%	22%	11.5**
<$5,000	11%	14%	7%	
$5,001-$10,000	9%	9%	9%	
$10,001-$25,000	16%	16%	15%	
$25,001-$50,000	20%	22%	18%	
>$50,000	23%	18%	30%	

*p<.10; **p<.05; ***p<.01.

malpractice insurance (97%), health insurance (94%), professional dues (92%), relocation costs (86%), life insurance (85%), disability insurance (79%), and provide a continuing medical education allowance (83%). Rural MGPs were more likely to cover relocation costs than suburban MGPs (89% vs. 81%; X^2=6.5, p<.01). Most new physicians (79%) were offered eligibility for partnership within two years. New physicians joining rural MGPs were eligible for partnership sooner than in urban MGPs (X^2=15.1, p<.01). The cost to buy into the group was more in suburban than rural MGPs (X^2=11.5, p<.05).

Recruiting Success Factors

Fourteen possible factors associated with successful recruiting were presented for rating on a five-point scale, from 5 "exceedingly important" to 1 "not important at all" (Table 4). Factors identified as important (above 3.0) included adequate physician coverage (4.0), access to hospital facilities (3.9), presence of hospital support (3.8), positive community atmosphere (3.7), attractive benefits (3.7), attractive partnership agreement (3.5), positive economic status of the community (3.3), more time-off (3.3), high compensation (3.2), and community location (3.1). Rural MGPs were more likely than their urban counterparts to find the following factors as significant: access to hospital (4.0 vs. 3.8; t=1.7, p<.10), presence of hospital support (3.9 vs. 3.7; t=2.4, p<.05), positive community atmosphere (3.8 vs. 3.6; t=1.8, p<.10), more time-off (3.3 vs. 3.1; t=2.0, p<.05), community location (3.4 vs. 2.6; t=6.1, p<.01), rural background or exposure (3.0 vs. 2.4; t=3.7, p<.01), and employment opportunity for spouse (2.7 vs. 2.3; t=4.2, p<.01).

Orientation Activities

Table 5 displays the orientation activities by MGPs for newly recruited physicians. They included newspaper announcement (97%), social gatherings (85%), announcement to patients (82%), formal orientation (57%), and speaking engagements (54%). Rural MGPs were more likely to have newspaper announcement (99% vs. 93%), and social gatherings (87% vs. 81%) than suburban MGPs, which were more likely to announce their appointment to the practice patients (86% vs. 80%).

Table 4
Recruiting Success Factors@ of Rural and Suburban Medical Group Practices (MGP)

Variables	Total MGP *N=448*	Rural MGP *N=209*	Suburban MGP *N=169*	*t-statistic*
Adequate physician coverage possibilities	4.0	4.0	4.1	1.1
Access to hospital facilities	3.9	4.0	3.8	1.7*
Presence of hospital support	3.8	3.9	3.7	2.4**
Positive community atmosphere	3.7	3.8	3.6	1.8*
Attractive benefits package	3.7	3.7	3.7	.2
Attractive partnership agreement	3.5	3.6	3.5	.1
Positive economic status of an area	3.3	3.3	3.3	.6
Providing more time off	3.3	3.3	3.1	2.0**
High compensation	3.2	3.2	3.3	.9
Community location	3.1	3.4	2.6	6.1***
Low malpractice incidence	3.0	3.0	2.9	.7
Focusing on candidates with rural background/exposure	2.8	3.0	2.4	3.7***
Employment opportunity for spouse	2.6	2.7	2.3	4.2***
Offering a signing bonus	1.8	1.9	1.7	1.2

@Ratings were done on a 5-point scale ranging from 5,"exceedingly important", to 1, "not important at all".
*p<.10; **p<.05; ***p<.01.

malpractice insurance (97%), health insurance (94%), professional dues (92%), relocation costs (86%), life insurance (85%), disability insurance (79%), and provide a continuing medical education allowance (83%). Rural MGPs were more likely to cover relocation costs than suburban MGPs (89% vs. 81%; X^2=6.5, p<.01). Most new physicians (79%) were offered eligibility for partnership within two years. New physicians joining rural MGPs were eligible for partnership sooner than in urban MGPs (X^2=15.1, p<.01). The cost to buy into the group was more in suburban than rural MGPs (X^2=11.5, p<.05).

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Fourteen possible factors associated with successful recruiting were presented for rating on a five-point scale, from 5 "exceedingly important" to 1 "not important at all" (Table 4). Factors identified as important (above 3.0) included adequate physician coverage (4.0), access to hospital facilities (3.9), presence of hospital support (3.8), positive community atmosphere (3.7), attractive benefits (3.7), attractive partnership agreement (3.5), positive economic status of the community (3.3), more time-off (3.3), high compensation (3.2), and community location (3.1). Rural MGPs were more likely than their urban counterparts to find the following factors as significant: access to hospital (4.0 vs. 3.8; t=1.7, p<.10), presence of hospital support (3.9 vs. 3.7; t=2.4, p<.05), positive community atmosphere (3.8 vs. 3.6; t=1.8, p<.10), more time-off (3.3 vs. 3.1; t=2.0, p<.05), community location (3.4 vs. 2.6; t=6.1, p<.01), rural background or exposure (3.0 vs. 2.4; t=3.7, p<.01), and employment opportunity for spouse (2.7 vs. 2.3; t=4.2, p<.01).

Orientation Activities

Table 5 displays the orientation activities by MGPs for newly recruited physicians. They included newspaper announcement (97%), social gatherings (85%), announcement to patients (82%), formal orientation (57%), and speaking engagements (54%). Rural MGPs were more likely to have newspaper announcement (99% vs. 93%), and social gatherings (87% vs. 81%) than suburban MGPs, which were more likely to announce their appointment to the practice patients (86% vs. 80%).

Table 4
Recruiting Success Factors[@] of Rural and Suburban Medical Group Practices (MGP)

Variables	Total MGP *N*=438	Rural MGP *N*=269	Suburban MGP *N*=169	*t-statistic*
Adequate physician coverage possibilities	4.0	4.0	4.1	1.1
Access to hospital facilities	3.9	4.0	3.8	1.7*
Presence of hospital support	3.8	3.9	3.7	2.4**
Positive community atmosphere	3.7	3.8	3.6	1.8*
Attractive benefits package	3.7	3.7	3.7	.2
Attractive partnership agreement	3.5	3.6	3.5	.1
Positive economic status of an area	3.3	3.3	3.3	.6
Providing more time off	3.3	3.3	3.1	2.0**
High compensation	3.2	3.2	3.3	.9
Community location	3.1	3.4	2.6	6.1***
Low malpractice incidence	3.0	3.0	2.9	.7
Focusing on candidates with rural background/exposure	2.8	3.0	2.4	3.7***
Employment opportunity for spouse	2.6	2.7	2.3	4.2***
Offering a signing bonus	1.8	1.9	1.7	1.2

@Ratings were done on a 5-point scale ranging from 5,"exceedingly important", to 1, "not important at all".
*p<.10; **p<.05; ***p<.01.

Table 5
Orientation Activities of Rural and Suburban Medical Group Practices (MGP)

Variables	Total MGP N=438	Rural MGP N=269	Suburban MGP N=169	χ^2
Newspaper announcement	97%	99%	93%	7.8***
Social gatherings	85%	87%	81%	2.7*
Announcement to patients	82%	80%	86%	3.5*
Formal orientation	57%	56%	59%	.2
Speaking engagements for the new physician	54%	53%	55%	.1

*p<.10; **p<.05; ***p<.01.

Retention Factors

Respondents were asked to identify important retention factors (Table 6). Rural background or exposure were believed to be the most important retention factor. This was particularly true in rural areas where 64 percent of rural MGPs believed that rural background was crucial compared with 49 percent suburban MGPs (X^2=9.0, p<.01). Sixty-two percent of rural MGPs believed that exposure to rural practice was important compared with 42 percent suburban MGPs (X^2=16.7, p<.01). Other factors considered more important by Rural MGPs than suburban MGPs included spouse and family (38% vs. 25%), location of practice (18% vs. 11%), and professional isolation (10% vs. 4%). Factors considered more important by suburban MGPs than rural MGPs were the political atmosphere of the group (30% vs. 22%) and insufficient practice volume (11% vs. 4%).

Proposed Changes

During the survey, MGPs were asked to propose recommendations for future changes that might improve the

Table 6
Important Retention Factors Identified by Rural and Suburban Medical Group Practices (MGP)

Variables	Total MGP N=438	Rural MGP N=269	Suburban MGP N=169	χ^2
Which physicians are most likely to stay				
Physician/spouse from a rural background	59%	64%	49%	9.0***
Physician trained with exposure to rural practice	54%	62%	42%	16.7***
Experienced physicians	26%	27%	26%	.1
Physicians immediately out of training	19%	18%	19%	.1
Spouse/family	33%	38%	25%	6.7***
Political atmosphere in group	25%	22%	30%	3.0*
Retirement	17%	19%	14%	1.8
Desire for solo practice	16%	16%	16%	.01
Compensation too low	16%	17%	15%	.2
Community atmosphere	16%	17%	15%	.2
Location of practice	15%	18%	11%	3.2*
Lack of social opportunities	15%	16%	13%	.4
Lack of coverage	9%	9%	9%	.01
Insufficient practice	7%	4%	11%	7.2***
Professional isolation	7%	10%	4%	4.0**
Economy of community	6%	7%	6%	.3
Climate	6%	6%	6%	.1
Hospital facilities	6%	7%	5%	.5

*p<.10; **p<.05; ***p<.01.

general environment of physician recruitment and retention. Table 7 records those suggestions and shows that most MGPs would like to see the following improved or expanded: education loan repayment incentives for rural physicians (90%), tax incentives for rural physicians (86%), reduction of reimbursement inequity in Medicare schedule (84%), rural preceptorships for medical students and residents (77%), and revision of the process for designating underserved areas (61%). Compared with suburban MGPs, rural MGPs were significantly more interested in improving or expanding education loan repayment incentives for rural physicians (93% vs. 86%; X^2=4.4, p<.05), revision of the process for designating underserved areas (64% vs. 54%; X^2=4.3, p<.05), and reinstatement of the National Health Service Corps (26% vs. 18%; X^2=3.6, p<.05).

DISCUSSION

Even in societies where physicians are employees of the state, placement of physicians in rural areas is problematic. Shi reviewed the health care system of China and concluded that one of the major limitations of the system is its conspicuous failure to deploy physician manpower to the countryside where most of the population reside.(37) If the much more pluralistic and decentralized American health care system is to succeed in meeting rural physician manpower needs, it must learn from the lessons of the recruiting experiences of MGPs, take advantage of the factors associated with successful recruiting and retention and overcome the obstacles related to unsuccessful recruiting and retention. The results presented here yield a number of conclusions which may be of use in guiding future recruitment and retention practices.

In terms of physician personal characteristics, rural MGPs were more likely to view rural background and exposure to rural practice as important to both recruitment and retention than suburban MGPs (Tables 4 and 6). This finding is consistent with the affinity model that attributes physician practice location decision to rural background and/or exposure to rural practice settings. From a public policy perspective, mechanisms should be explored to increase the pool of rural people applying to medical school, including motivating top science students to pursue medical careers, developing premedical programs for these

Table 7
Proposed Changes Identified by Rural and Suburban Medical Group Practices (MGP)

Variables	Total MGP *N*=438	Rural MGP *N*=269	Suburban MGP *N*=169	X^2
Education loan repayment incentives for rural physicians	90%	93%	86%	4.4**
Tax incentives for rural physicians	86%	88%	82%	3.3*
Reduction of reimbursement inequity in Medicare schedule	84%	87%	80%	3.4*
Rural preceptorships for medical students and residents	77%	79%	75%	.7
Revision of the process of designating underserved areas	61%	64%	54%	4.3**
Indigent/uninsured population in area is low	58%	57%	59%	.1
Development of rural hospital alliances	55%	55%	54%	.1
Development of a telemedicine hook-ups	36%	36%	36%	.004
Development of rural community health clinic	27%	27%	27%	.003
Reinstatement of the National Health Service Corps	23%	26%	18%	3.6**

*p<.10; **p<.05; ***p<.01.

students, providing scholarship assistance for rural medical school applicants, reducing interest rates for education loans, and reinstating National Health Service Corps scholarships. The process of medical education and specialty training should also support interest in rural practice, through the provision of rural externship experiences and residency programs based in nonmetropolitan settings.

The finding that both rural and suburban MGPs needed family practice physicians most and found it difficult to recruit them suggests the need for more primary care tracks in medical schools and the enhancement of primary care physician reimbursements relative to other specialties. Nationally, income levels for family physicians in group practice are approximately two-thirds the amount netted by other specialists.(38) In general, rural physicians' income is lower than that of their urban counterparts. The current health care financing system in the U.S. produces an economic disincentive for physicians to practice in rural areas due to inequitable reimbursement policies of third-party payers, particularly Medicare and Medicaid. The recent phase-in of the Resource-Based Relative Value Scale (RBRVS) by Medicare, will reimburse family physicians at more favorable levels.

In terms of practice characteristics, our study shows most rural and suburban MGPs were concerned about the financial aspects of the practice environment and provided generous recruiting benefits. Compared with suburban MGPs, rural MGPs were more likely to provide relocation support and the opportunity to join a partnership (Table 3). Rural physicians seemed to feel more isolated and miss the company of colleagues (Table 6). On the other hand, more suburban MGPs reported insufficient practice opportunity as one of the important retention factors (Table 6). Those findings confirm the economic incentive and practice characteristics models that stress the importance of financial and nonfinancial incentives of physician recruitment and retention.(39-40) High practice costs and the presence of too many physicians in practice location may cause physicians to relocate and deter new physicians from coming. It appears that many rural MGPs are providing competitive salaries, income guarantees, malpractice insurance coverage, or other local initiatives to alter the economic climate of rural practice.

Access to hospital facilities and availability of hospital support were perceived to be more important by rural MGPs than suburban MGPs in accounting for recruitment success (Table 4). This finding is consistent with other physician surveys that identified the availability of health facilities as a major factor in choosing a practice location and an even bigger factor in deciding to leave a given rural community.(41) The presence of hospitals is less crucial for suburban MGPs presumably because suburban communities are closer to metropolitan areas where major medical centers are often situated. Improved transportation also accounts for the increased mobility of suburban and, to a lesser extent, rural residents.(42-43)

In terms of community characteristics, physician's spouse and family was identified as an important factor particularly by rural MGPs (Table 6). Appropriate employment opportunities for the spouse and educational facilities for the children significantly affect physician recruitment and retention.(26-27) For many MGPs, the increase in the number and availability of female physicians may mean recruiting the physician's husband to the community. Ogle and colleagues found that employment opportunities for the spouse play a more important role for female than male physicians: 50 percent of female family practice physicians versus 11 percent of male family practice physicians rated employment opportunities for the spouse as important in selecting a practice location.(44) In addition to spouse employment, the economic and quality of life issues in the community also need to be improved to modify those attributes of rural community currently viewed as undesirable.

Based on the major findings summarized above, the following actions are recommended:

- For rural MGPs, recruitment emphasis should be placed on those candidates with rural background and exposure to rural practice.
- For policy makers and medical schools, medical education and training funding should support interest in rural practice, through the provision of rural externship experiences and residency programs based in nonmetropolitan settings.
- For policy makers, incentives (e.g., better reimbursement) should be provided to encourage physicians to practice primary

care specialties, the most needed and difficult-to-recruit specialties.

- For both rural and suburban MGPs, maintaining generous financial incentives (e.g., income, bonus, malpractice insurance coverage, benefits) is critical to both the recruitment and retention of physicians.
- For rural MGPs, gaining access to local hospital is critical for the recruitment of physicians.
- For rural MGPs in particular, recruitment of physicians should be tied to the concerns of their spouses and children (e.g., employment, education).

The current study was limited in its scope since the data source permitted only the comparison between rural and suburban MGPs. Urban MGPs were not included in the original survey. It can be expected that the differences observed between rural and suburban MGPs could be much greater if urban MGPs were used for comparison. Despite such limitation, the study offers suggestive evidence of the differences in importance of physician recruitment and retention factors between rural and suburban MGPs. It is our contention that rural MGPs will increase success in their efforts to recruit and retain physicians by improving their practice and community characteristics, emphasizing on the strengths of practicing in rural communities, and identifying physicians and spouses with rural background or exposures.

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REFERENCES

1. Weiskotten, Herman G., Wiggins, Walter S., Altenderfer, Marion E., Gooch, Marjorie and Tipner, Anne. "Trends in Medical Practice–An Analysis of the Distribution and Characteristics of Medical College Graduates, 1915-1950." *Journal of Medical Education* 35 (1960):1071-1095.

2. American Medical Society. *Availability of Health Services in Rural Areas: A Status Report.*, American Medical Association, Department of Health Manpower, Department of Rural and Community Health, Chicago, 1975.

3. American Medical Association. *Physician Characteristics and Distribution in the U.S.*, America Medical Association, Department of Data Release Services, Division of Survey and Data Resources, Chicago, 1983.

4. US Department of Agriculture. *Physician in Nonmetro Areas During the Seventies*, US Department of Agriculture, Rural Development Report Number 46, Washington DC, March 1985.

5. Office of Technology Assessment. *Health Care in Rural America*, US Government Printing Office, US Congress, Publication OTA-H-434, Washington DC, September 1990.

6. Cooper, Richard A. "Seeking a Balanced Physician Workforce for the 21st Century." *JAMA* 272(9) (1994): 680-687.

7. Grandin, Judith. "Coordinating Efforts to Remove Barriers to Workforce Balance." *Inquiry* 31 (1994): 338-341.

8. Shi, Leiyu. "Balancing Primary Versus Specialty Care." *Journal of the Royal Society of Medicine* 88 (1995): 428-432.

9. US Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Office of Data Analysis and Management. *The Area Resource File, 1989 and 1990*. Rockville, Maryland, 1991.

10. Kindig, David and Movassaghi, Hormoz. "The Adequacy of Physician Supply in Small Rural Counties." *Health Affairs* 8 (1989): 63-76.

11. Rosenblatt, Roger A. and Lishner, Denise M. "Surplus or

Shortage? Unraveling the Physician Supply Conundrum." *The Western Journal of Medicine* 154 (1991): 43-50.

12. Mick, Stephen S. and Moscovice, Ira. "Health Care Professionals." In Stephen J. Williams and Paul R. Torrens (eds.). *Introduction to Health Services,* Delmar Publishers Inc., Albany, New York, 1994, pp.269-296.

13. Crandall, Lee A., Dwyer, Jeffrey W. and Duncan, R. Paul. "Recruitment and Retention of Rural Physicians: Issues from the 1990s." *Journal of Rural Health* 6 (1990):19-38.

14. Samuels, Michael E. and Shi, Leiyu. *Physician Recruitment and Retention: A Guide for Rural Medical Group Practice,* Medical Group Management Press, Englewood, Colorado, 1993.

15. Eisenberg, John M. "Physician Utilization: The State of Research about Physician's Practice Patterns." *Medical Care* 23 (1985): 461-483.

16. Rosenblatt, Roger A. Saunders, Greg, Shreffler, Jean, Pirani, Michael J., Larson, Eric H. and Hart, L. Gary. Beyond Retention: National Health Service Corps Participation and Subsequent Practice Locations of a Cohort of Rural Family Physicians. WAMI Rural Health Research Center, Seattle, Washington, 1995.

17. Bruce, Thomas A. "How Do We Prepare Providers: Physicians." *Journal of Rural Health* 1 (1985): 18-21.

18. Rabinowitz, Howard K. "The Effects of a Selective Medical School Admissions Policy on Increasing the Number of Family Physicians in Rural and Physician Shortage Areas." *Proceedings of the Annual Conference for Research in Medical Education* 26 (1987): 157-162.

19. Rosenblatt, Roger A. "Synergism in Medical Education and Service: An Example from the Northwest." *Public Health Reports* 95 (1980):12-15.

20. Rhodes, James F. and Day, Frederick A. "Locational Decisions of Physicians in Rural North Carolina." *Journal of Rural Health* 5 (1989):137-153.

21. Lee, David W. and Gillis, Kurt D. "Physician Responses to Medicare Payment Reform: An Update on Access to Care." *Inquiry* 31 (1994): 346-353.

22. Rosenthal, Michael P., Diamond, James J., Rabinowitz, Howard K., Bauer, Laurence C., Jones, Robert L., Kearl, Gary W., Kelly, Robert B., Sheets, Kent J., Jaffe, Arnold, Jonas, A Patrick and Ruffin, Mack T. "Influence of Income, Hours Worked, and Loan Repayment on Medical Students' Decision to Pursue a Primary Care Career." *JAMA* 271(12) (1994): 914-947.

23. Parker, Ralph C. and Sorenson, Andrew A. "The Tides of Rural Physicians: The Ebb and Flow, or Why Physicians Move Out of and into Small Communities." *Medical Care* 16 (1978): 152-166.

24. Christensen, Ronald G. and Russell, Charles. "A Catalyst for Cooperation." *Minnesota Medicine* 70 (1987): 35-36.

25. Riley, Katherine, Myers, Wayne and Schneeweiss, Ronald. "Recruiting Physicians to Rural Practice: Suggestions for Success." *Western Journal of Medicine* 155 (1991): 500-504.

26. Cooper, James K., Herald, Karen, Samuels Michael E. and Coleman, Sinclair. "Rural or Urban Practice: Factors Influencing the Location Decision of Primary Care Physicians." *Inquiry* 12 (1975): 18-25.

27. Grimer, Richard M., Lee, Joel M., Lefka, Lewis A. and Hemphill, F.M. "A Study of the Factors Influencing the Rural Location of Health Professionals." *Journal of Medical Education* 52(9) (1977): 771-772.

28. Brierly, Carol. "If We Want More Country Doctors." *Prism* 2(4) (1974): 39-41.

29. Iglehart, John K. "Physicians and the Growth of Managed Care." *New England Journal of Medicine* 331(17) (1994): 1167-1171.

30. Iglehart, John K. "The Struggle Between Managed Care and Fee-for-service Practice." *New England Journal of Medicine* 331 (1994): 331: 63-67.

31. Weiner, Jonathan P. "Forecasting the Effects of Health Reform on US Physician Supply." *JAMA* 272 (1994): 223-230.

32. Schroeder, Steven A. "The latest Forecast: Managed Care Collides with Physician Supply." *JAMA* 272 (1994): 239-240.

33. Schroeder, Steven A. "Managing the U.S. Health Care Workforce: Creating Policy amidst Uncertainty." *Inquiry* 28 (1994): 266-275.

34. LeRoy, Lauren B. "Meeting the Challenge: A Health Workforce Prepared for the Future." *Inquiry* 31 (Fall 1994): 334-337.

35. Lazarus, Steven S., Bergstrom, Anna M. and Mueuer, Laura E. ***1991 Physician Recruitment Survey Report Based on 1990 Data,*** Medical Group Management Association, Englewood, Colorado, 1991.

36. Wilkinson, Leland, Hill, MaryAnn and Vang, Erin. ***SYSTAT Statistics,*** SYSTAT, Inc., Evanston, Illinois, 1992.

37. Shi L: Health care in the People's Republic of China: A rural-urban comparison after the economic reform. ***Bulletin of the World Health Organization*** 71(6):723-736, 1993.

38. Weber, Diane. ***Physician Compensation Survey: 1993 Report Based on 1992 Data,*** Medical Group Management Association, Englewood, Colorado, 1993.

39. Hemenway, David, Killen, Alice and Cashman Suzanne B. "Physician Reaction to Financial Incentives: Evidence from a For-profit Ambulatory Care Center." *New England Journal of Medicine* 322 (1990): 1059-1063.

40. Hafferty, Frederic W. "Physician Oversupply as a Socially Constructed Reality." ***Journal of Health and Social Behavior*** 27 (1986): 358-369.

41. Lawley, James R. and Copeland, Henry N. "Physician Recruitment," in Silvius L. Weiss (ed.). ***Management Issues for Rural Hospitals,*** American Hospital Association, Chicago, 1986, pp.143-156.

42. Morrisey, Michael A., Kletke, Phillip R. and Marder, William D. "The Role of Local Hospitals in Physician Rural Location Decisions." ***Inquiry*** 28 (1991): 7-18.

43. Cordes, Samuel M. "The Rural Health Care Environment: A Synthesis and Relevant Implications." in Lavonne Straub and Norman Walzer (eds.). ***Financing Rural Health Care,*** Praeger, New York, 1988, pp.191-208.

44. Ogle, Karen S., Henry, Rebecca C., Durda, Kate and Zivick, Judith D. "Gender Specific Differences in Family Practice Graduates." ***The Journal of Family Practice*** 23 (1986): 357-360.