

Physician participation in alternative health plans

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In this article, physician participation in alternative health plans is examined, using cross-sectional data from the Physicians' Practice Costs and Income Survey, 1983-85. Overall, about one-third of physicians participated in one or more plans, ranging from 18 percent of general practitioners to 46 percent of medical subspecialists. Only 19 percent, however,

received income from prepaid sources, averaging \$5,275 per physician. Reasons for joining or not joining are also examined. Participants joined most often to maintain or increase workload, while nonparticipants most often declined to join because they would be giving up independence.

Introduction

The financing and delivery of physicians' services have undergone rapid change in recent years. The proliferation of alternative health plans (AHP's), such as health maintenance organizations (HMO's),¹ independent practice associations (IPA's), and preferred provider organizations (PPO's), has been embraced by both public and private payers of health care. Viewed as a panacea to rapidly rising health care costs, third-party payers and employers are increasingly looking to prepaid systems (e.g., HMO's, IPA's) and "prudent buyer" arrangements (i.e., PPO's) as alternatives to retrospective reimbursement on a fee-for-service basis.

By June 1986, 23.7 million Americans were enrolled in 595 prepaid plans (e.g., HMO's and IPA's) across the Nation (InterStudy, 1986). This represents a 25-percent increase in enrollees in 1 year. Roughly two-fifths of these plans, enrolling 64 percent of all members, are prepaid group practice models of HMO's, and three-fifths (accounting for 36 percent of all members) are IPA models.

However, the market share of IPA plans has increased relative to other HMO models. From June 1985 to June 1986, for example, IPA enrollments rose 81 percent, while group model HMO's had only a 7-percent growth (InterStudy, 1986). The Office of Technology Assessment (1986) attributes this IPA growth to the formation of IPA's from existing fee-for-service group practices or HMO's that desire rapid expansion.

Legislative activity at both the Federal and State levels has fostered the growth of Medicare and Medicaid enrollments in HMO's and IPA's. For

example, the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) allowed HMO's and competitive medical plans (CMP's) to enroll Medicare beneficiaries on a prospective, capitated, "at-risk" basis.² In addition, revision of statutes prohibiting "selective contracting" under the Medicaid program is a top priority of many State legislatures around the country.

Unpublished data from InterStudy indicate that the growth rate of Medicare and Medicaid enrollments in prepaid plans exceeds that for the population as a whole. From December 1985 to December 1986, Medicare and Medicaid enrollments increased by 52 percent (versus 23 percent overall). Medicare enrollments in prepaid plans may have accelerated as a result of TEFRA risk contracts with HMO's and CMP's, which became effective February 1, 1985. The Health Care Financing Administration (HCFA), Office of Prepaid Health Care reports that, by December 1, 1987, more than 1 million Medicare beneficiaries had enrolled in HMO's or CMP's under TEFRA risk contracts, including 162 contracts in 34 States. In nine States, TEFRA risk enrollees accounted for at least 5 percent of all Medicare beneficiaries: Minnesota (30 percent), Hawaii (25 percent), Nevada (14 percent), Oregon (11 percent), Florida (9 percent), New Mexico (9 percent), Colorado (9 percent), California (8 percent), and Massachusetts (7 percent).

When compared with HMO's and IPA's, preferred provider organizations are a relative newcomer in the reshaping of the financing and delivery of physicians' services. A 1985 nationwide survey of 143 PPO's estimated that 5.75 million people were eligible to use the services of these PPO's (Rice et al., 1985). Less than 1 year earlier, roughly 1.3 million were eligible to use PPO services (Gabel and Ermann, 1985). As of June 1987, however, 535 PPO's were operational, with a membership of 18.8 million. The PPO's are

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¹The term HMO is used herein to refer to the prepaid group practice form of HMO. For a definition of the various forms of alternative health plans, see the Technical Note at the end of this article.

²Final regulations were issued January 10, 1985 (*Federal Register*, 1985). Competitive medical plans must meet the following requirements: (1) be organized under State law; (2) provide a minimum range of services (physicians' services, inpatient hospital services, laboratory services, X-ray services, emergency services, preventive and out-of-area services); (3) provide services through physicians who are employees, partners, or contractors; (4) be at financial risk for providing services; (5) have adequate protection for enrollees in the event of its insolvency; and (6) be compensated by its members on the basis of a predetermined rate.

located in 42 States and the District of Columbia (American Medical Care and Review Association, 1987). Gabel and Ermann describe the generic PPO as a "group of health care providers who agree to provide services to a specific group of patients on a discounted fee-for-service basis." Nevertheless, they note that PPO's exhibit widely diverse organizational structures.

While cost concerns have motivated payers to establish alternative health plans, physicians may join as a result of competitive pressure to build their practice base. As a fixed pool of patients is divided among more and more physicians, AHP's may offer physicians an opportunity to augment their patient load in exchange for discounted fees. Participation in an alternative health plan may involve trade-offs in physician practice, however. The financial viability of these systems depends on the frugal use of ancillary services, limits on specialist referrals, and low hospitalization rates. This is accomplished through monetary incentive to physicians (e.g., performance bonuses or assessments), through intensive utilization review and prior approval, and in some cases risk-sharing for excessive utilization.

Little is known about physicians who participate in alternative health plans: What percent of all physicians join? What types of physicians are most likely to join? How much income do they derive from such plans? Why do they decide to join (or not to join)? These are fundamental questions from both research and policy perspectives. Until recently, only anecdotal information was available on the characteristics of physicians who joined HMO's, IPA's, or PPO's. In this article, we seek to answer these questions, based on a 1983-85 survey of a nationally representative sample of physicians. We begin by describing the data source and methods used. Next we present our results on AHP participation rates, income from AHP's, and physicians' reasons for joining (or not joining). We conclude with a discussion of the implications of our results and area for further research.

Methods

The primary data source for this analysis is the Physicians' Practice Costs and Income Survey (PPCIS) conducted by the National Opinion Research Center (NORC) for HCFA (Health Care Financing Administration, 1983-85). The sampling frame for the PPCIS was the list of 331,264 active, non-Federal patient care physicians contained in the 1984 Physician Master File, maintained by the American Medical Association. NORC used a single-stage, stratified-element-level, random-sampling design, based on 136 discrete strata that were defined in three basic dimensions: specialty group, geographic region, and degree of urbanization. The overall participation rate was 68 percent. Statistical weights used in the analysis include adjustments for nonresponse as well as for the disproportionate probability of selection. The data presented in this article have been weighted

to provide national estimates.

The PPCIS is a nationally representative sample of 4,729 physicians in 1984. All physicians were administered a detailed questionnaire on work effort, practice costs, size and type of practice, physician income, and fees. All information was based on physician self-reports. The PPCIS was chosen as the data base for this article because physicians responding to the Survey, excluding the 515 physicians who were employed by hospitals, were queried on various aspects of their involvement in alternative health plans:

- How many IPA's, PPO's, and HMO's the physician participated in.
- The physician's sources of medical practice income, including prepaid programs, hospital and clinic contracts, and fee-for-service billings.
- The physician's reasons for participating (or not participating) in an alternative health plan.

In this article we examine physicians' participation rates in AHP's across different characteristics. In addition, we explore physicians' reasons for participating or not participating in AHP's and the sources of medical practice income from AHP's.

Physicians were asked how many of each of the following compensation programs they participated in during 1984:

- HMO: Closed panel prepaid group practice.
- IPA: Independent practice association.
- PPO: Preferred provider organization.

We classified physicians according to whether they reported any AHP involvement, that is, if they answered positively to any of the three specific questions on AHP arrangements.

We were also interested in differentiating among physician involvement according to the type of plan in which the physician participated. However, it is possible that some error was introduced if physicians were confused about the type of plan. In particular, there may be confusion between HMO's and IPA's, although the interviewer specifically asked about involvement in closed panel prepaid group practice HMO's (which should be distinct from IPA's). This could raise the participation rates reported for HMO's, while lowering those for IPA's. The magnitude of this bias (if any) is unknown.

Physicians were asked to state what percent of their medical practice income came from the following sources:

- Salary from prepaid programs.
- Bonus arrangements from prepaid programs.
- Capitation arrangements from prepaid programs.
- Other compensation arrangements from prepaid programs.
- Hospital or clinic contracts.
- Private fee-for-service billings from HMO referrals.
- Private fee-for-service billings from main practice.
- Some other financial arrangement.

Categories of the physician's income were designed to be both mutually exclusive and exhaustive. However, a few problems with physician responses required

reconciliation. For 12 percent (551 of 4,729) of the physicians in our sample, the various sources of their income summed to either less than 98 percent or more than 102 percent. For about 300 physicians (roughly 6 percent of the total physician sample), responses were adjusted to sum to 100 percent. This required extensive data cleaning, involving close examination of each individual physician's responses. The remainder (250) were completely unable to allocate their income by source and these responses could not be reconciled.

For the majority of the responses that did not sum to 100 percent, we prorated up or down. This was done when the other information we had about the physician was not sufficient to eliminate double-counting or to add a source of income. Among the other techniques we used were the following:

Example 1: Reconciling overlapping responses because categories were not mutually exclusive. For example, a physician may be hospital-based in an HMO hospital and report 100 percent of income as salary from a prepaid program. Then when asked to report income from hospital or clinic contracts, 100 percent was also recorded. In this situation, we would set the salary from prepaid programs to zero.

Example 2: Inserting residual amounts where a physician reported either alternative health plan activity or a specific financial arrangement, but could not report the corresponding income. An example of this is a physician reporting HMO involvement with 80 percent of income reported as private fee for service, and "don't know" for the salary from prepaid programs. In this situation, we set the salary from prepaid programs equal to 20 percent.

During the first wave of the Survey, the questionnaire had additional problems with the income questions that were resolved in a second version of the questionnaire. Although one-third of the sample answered version 1 of the Survey, one-half of the physicians' responses that were recoded were based on the version 1 questionnaire, with problems specific to version 1. For example, there was no place on the version 1 Survey for reporting income derived from a clinic contract. Additionally, it was not clear to the physician where to report income derived from fee-for-service billings from the main practice. We recoded version 1 responses that did not sum to 100 percent by either placing the residual amount into a new category, "hospital and clinic contracts," if they were HMO/clinic employees, or placing the residual amount in fee-for-service billings, if the physicians were self-employed with no hospital financial arrangement other than admitting privileges. Incomes reported in this article are in 1983 dollars.

The Survey also asked physicians about their reasons for joining or not joining an AHP. First they were asked whether or not a number of specific reasons influenced their decision, and second, whether there were other reasons for joining or not joining.

Upon coding the "other" responses into subcategories, it became clear that participants and nonparticipants often provided information to clarify

or expand upon one of the specific reasons. In these cases, the "other" response was recoded as a specific reason. For example, participants citing regular hours as an "other" reason for joining an AHP were recoded into the specific category, "to have more regular income and caseload."

Of course, the responses coded in these categories vary considerably because of the open-ended nature of the questions. (For examples of the types of responses coded in these categories, refer to the Technical Note.) Although physicians were allowed to provide multiple "other" reasons, only 2 percent of nonparticipants and 3 percent of participants provided a second, unique response. To simplify the analysis of "other" reasons, physicians' multiple "other" reasons were weighted by one-half.

Because physicians could also provide multiple specific reasons for joining or not joining an AHP, the categories are not mutually exclusive. In fact, most physicians (50 percent of participants and 75 percent of nonparticipants) gave at least two reasons. Between 10 and 11 percent gave no reason.

Secondary data from the Area Resource File augment this analysis. In particular, county-level data on the number of physicians per capita, poverty population, and per capita income have been merged to the analytic file. This enables us to compare, for example, participation rates in high-income versus low-income areas. We have constructed trichotomous categories differentiating high, medium, and low values for the community characteristics. First, we computed the quartiles for the variable; then we classified values at or below the first quartile as "low," in the second and third quartiles as "medium," and in the fourth quartile as "high."

Considerable effort was made in this analysis to determine the statistical significance of comparisons made with respect to AHP participation. Two-tailed *t*-tests were used for comparisons of continuous variables and the difference between proportions. Unless otherwise stated in this article, all comparisons are statistically significant at the 0.05 level.

Results

Participation rates

Nearly one-third of all physicians participate in one or more AHP's (Table 1). More physicians participate in HMO's than either IPA's or PPO's. Eighteen percent of all physicians participate in an HMO versus participation rates of 14 and 12 percent for IPA's and PPO's, respectively. Of course, this may be due in large part to the relative newness of IPA's and PPO's in comparison to HMO's.

The participation rate in AHP's differs among specialties. Just 18 percent of general practitioners (GP's) participate in an AHP, compared with 47 percent of other medical specialists (Table 1). Other specialties with high participation rates include urologists (40 percent) and orthopedic surgeons (39 percent).

Although HMO's have the highest participation rate overall, certain specialists are more likely to participate in an IPA or PPO. General practitioners are most likely to participate in IPA's. It is interesting that GP's participate most in IPA's and family practitioners (FP's) have their highest participation rates in HMO's. Both specialties often play the role of gatekeeper in a prepaid group plan. GP's may be found in IPA's more often because they are usually older physicians who have established practices. They are generally more accustomed to an office-based

practice with fee-for-service (FFS) payment arrangements, such as are found in IPA's.

The specialty distribution of physicians participating in AHP's is shown in Figure 1. As might be expected, primary care physicians (GP's, FP's, internists, pediatricians, and obstetricians/gynecologists) account for the highest share—over 41 percent of all participants. (This is proportional to their distribution in the population of nonhospital-employed physicians.) Surgical specialists are another one-fourth of participants, while medical specialists and

Table 1
Physician participation rates in alternative health plans, by specialty and demographic characteristics: United States, 1984-85

Physician characteristic	Type of organization			
	Any alternative health plan	Health maintenance organization	Independent practice association	Preferred provider organization
	Percent of physicians participating			
All physicians	32.0	17.7	13.5	12.4
Specialty				
General practice	18.0	7.1	10.9	4.9
Family practice	28.7	16.6	10.9	10.5
Internal medicine	30.5	18.0	13.3	8.2
Cardiology	38.1	19.8	15.2	17.8
Pediatrics	36.7	23.5	12.6	10.9
Other medical specialties	46.5	25.0	22.3	18.2
General surgery	25.1	13.1	13.2	9.7
Orthopedic surgery	39.3	21.1	15.0	15.7
Ophthalmology	32.6	13.9	16.3	15.5
Urology	40.2	19.6	12.5	23.6
Obstetrics/gynecology	32.9	17.4	12.6	13.5
Other surgical specialties	34.9	18.6	18.3	16.4
Psychiatry	22.5	12.7	6.4	9.9
Anesthesiology	36.3	21.7	11.8	14.5
Pathology	29.5	15.3	13.1	13.0
Radiology	32.5	21.3	14.9	13.7
All other specialties	29.9	15.6	12.2	12.1
Age				
Under 35 years	39.0	23.9	13.7	13.7
35-39 years	37.7	20.6	15.4	15.2
40-49 years	34.4	18.8	14.6	13.1
50-59 years	28.1	14.8	11.6	11.7
60-64 years	25.5	12.8	13.9	10.0
65 years or over	21.0	13.2	9.5	6.7
Sex				
Male	32.4	17.5	14.0	12.9
Female	27.6	20.1	7.4	7.0
Race				
White	33.1	18.4	14.1	12.9
All other	27.7	14.4	10.9	10.5
Medical education				
U.S. medical graduate	34.0	19.1	14.4	13.1
Foreign medical graduate	24.6	12.3	9.9	9.6
Board-certification status				
Board certified	36.2	20.5	15.0	13.6
Not board certified	23.3	11.8	10.4	9.9

NOTES: Physicians may participate in more than one type of AHP. Columns are not mutually exclusive. Excludes physicians employed by hospitals.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the National Physicians' Practice Costs and Income Survey, 1983-85.

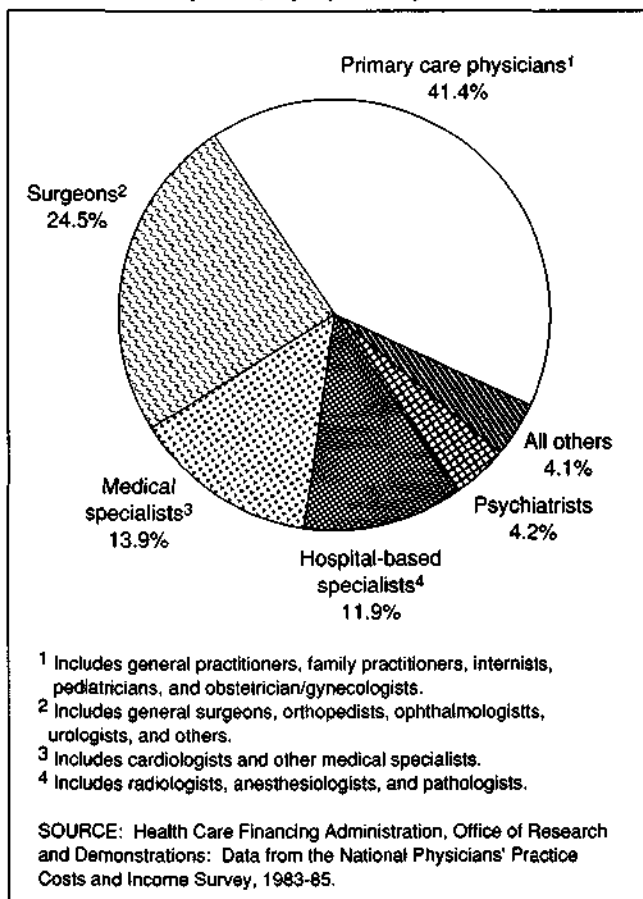
radiologists, anesthesiologists, and pathologists account for 14 percent and 12 percent, respectively. Psychiatrists and all other specialties are the remaining 8.5 percent of participants.

Demographic characteristics

Younger physicians have higher participation rates than their older colleagues. Thirty-nine percent of all physicians under age 35 participate in one or more AHP's (Table 1). This percentage declines steadily among the age groups, and the oldest physicians (65 years of age or over) participate one-half as much. Older physicians tend to have well-established practices and may not feel the competitive pressure as much as younger physicians beginning their careers. In particular, those physicians nearing retirement may want to decrease rather than increase their caseload. In addition, AHP's, particularly HMO's, may not recruit older physicians who are already set in their practice patterns.

Participants in AHP's are more likely to be U.S. medical school graduates and board-certified. GP's have the lowest AHP participation rate and are rarely board-certified. Even excluding GP's, a significant

Figure 1
Physicians participating in alternative health plans, by specialty: 1984-85



difference remained in the participation rates between board-certified (36 percent) and nonboard-certified physicians (25 percent). No significant differences were found with respect to physicians' sex or race.

Location

Alternative health plans are located predominantly in urban areas, which explains in part why the overall AHP participation rate for physicians in urban areas is 2.6 times that of rural physicians (derived from Table 2). More specifically, the participation rate for urban physicians in IPA's is three times that for rural physicians. Urban physicians have a participation rate in PPO's that is four times that of rural physicians. Differences in participation rates narrow substantially but are still significantly different when physicians with no AHP in their area (self-reported) are excluded. For example, the overall participation rate for urban physicians is 45 percent versus 32 percent of rural physicians. Although rural physicians consistently have lower participation rates, the differential is reduced in areas that have an AHP.

There is also considerable regional variation in participation rates: 45 percent of physicians in the West and 41 percent in the North Central regions participate in one or more AHP's, in comparison to participation rates of 27 and 20 percent for physicians in the Northeast and South regions, respectively.

Variation in participation rates for PPO's in particular is in large part due to their distribution across States. Twenty-three percent of physicians in the West participate in a PPO. This is a direct result of two States in this region: California and Colorado have 101 and 20 PPO's respectively, out of the Nation's total of 506 (American Medical Care and Review Association, 1987). According to Gabel and Ermann (1984), more than one-half of California's physicians had contracted with a PPO.

These data on physician participation rates in alternative health plans parallel enrollment data. In 1982, 33 percent of the population in urban areas was enrolled in HMO's in comparison to 4 percent of the Nation's population overall (Morrissey and Ashby, 1982). There are regional parallels as well: In 1983, 15 percent of the population in the West was enrolled in HMO's, compared with 5 percent in both the North Central and Northeast regions. However, only 2 percent was enrolled in the South (Hornbrook and Berki, 1985).

Community characteristics

We would expect characteristics of the environment in which a physician practices to affect the likelihood of participating in an AHP. Participation rates in AHP's across a range of community characteristics are shown in Table 2. Physicians per capita is a measure of competitive pressure to join AHP's. Physicians in a community with a high physician-to-population ratio (defined as greater than the third

quartile of 22.6 per 10,000 population) have higher participation rates (38 percent) than those with a low physician-to-population ratio (22 percent). Where there are more physicians in the community, the competitive pressure apparently is greater to join an AHP to maintain or increase patient workload. In particular, physicians practicing in a community with a high rate of physicians per capita are twice as likely to participate in a PPO than those in a community with a low rate. Hornbrook and Berki (1985) comment that PPO's are formed as a direct response to competition: "PPO's can be viewed as a response by FFS providers to the growing competitive threat of HMO's and the increasing supply of physicians."

Participation rates in AHP's are greater in communities that have higher per capita incomes and a low percent of population living below the poverty level. These are demand characteristics related to the establishment of AHP's in the community as well as community preferences. AHP's (and in particular HMO's) are more likely to be formed in areas of higher income where the population is more educated and employers are more likely to offer a variety of plans to their employees. Until recently, AHP's tended to market themselves to the privately insured rather than the poor or elderly, who may have

Medicaid or Medicare coverage (Morrisey and Ashby, 1982).

Income from prepaid programs

Not all physicians who reported participating in an AHP actually received income from prepaid sources. As shown in Table 3, 19 percent of all physicians had some income from prepaid sources, while 13 percent reportedly were participants but had no income from AHP's. In many cases, physicians have signed up with any and all AHP's in a geographic area and have not realized any financial gain from signing, perhaps because the plan was not fully operational or because signing did not result in anticipated increases in patient load. An anecdote presented in *Medical Economics* illustrates this "join one, join them all" phenomenon (Korneluk, 1986). The author interviewed a Midwestern urologist who had joined six IPA's. When asked, "Why so many?" he replied, "I can't figure out which ones are going to succeed so I'm playing safe by joining them all." The author notes that the IPA's had little effect on the physician's income and one was even a losing proposition, as the physician incurred charges for referrals to other specialists. In the future, we might

Table 2
Physician participation rates in alternative health plans, by location and community characteristics: United States, 1983-85

Community characteristic	Type of organization			
	Any alternative health plan	Health maintenance organization	Independent practice association	Preferred provider organization
Percent of physicians participating				
Location				
Urban	35.9	19.8	15.4	14.4
Rural	13.7	7.9	4.9	3.3
Region				
Northeast	27.3	15.1	13.6	4.8
South	20.0	8.7	8.2	9.1
North Central	40.6	25.6	15.9	13.5
West	44.7	24.7	18.4	23.1
Physicians per capita				
Low (fewer than 12.4 per 10,000)	21.6	12.3	8.6	6.3
Medium (12.4-22.5 per 10,000)	34.3	18.2	15.1	14.9
High (more than 22.5 per 10,000)	37.5	21.7	15.1	13.3
Percent of population below poverty level				
Low (less than 8.7 percent)	42.3	25.3	19.7	12.8
Medium (8.7-13.8 percent)	32.0	17.0	12.5	14.0
High (more than 13.6 percent)	21.6	11.2	9.1	9.0
Per capita income				
Low (less than \$8,554)	14.3	7.8	5.3	4.3
Medium (\$8,554-\$11,349)	36.7	19.9	16.9	6.6
High (more than \$11,349)	39.2	22.3	14.9	16.1

NOTE: Excludes physicians employed by hospitals.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the National Physicians' Practice Costs and Income Survey, 1983-85; Bureau of Health Professions, Health Services and Resources Administration: Data from the Area Resource File, Aug. 1985.

expect a decline in the percent of participants receiving no prepaid income as start-up AHP's expand the number of enrollees or as physicians become more selective in the plans they join.

The relative importance of prepaid sources of income, in relation to FFS, hospital and clinic contracts, and other sources is also shown in Table 3. On average, 5.7 percent of a physician's income came from prepaid sources in 1983, including salaries and bonuses from prepaid programs, capitation payments, and other forms of prepayment. Combining this with the 1.4 percent received from FFS referrals from HMO's, IPA's, and PPO's brings AHP income to about 7 percent of annual income. The dominant form of physician payment was still FFS income from traditional third-party and out-of-pocket payments—fully three-fourths of a physician's income was from such FFS sources. Hospital and clinic contracts (either salaried or FFS) account for 18 percent. Compared with employed physicians, self-employed physicians received significantly more of their income from FFS sources (88 percent) and significantly less from prepaid sources (including HMO referrals, 4 percent).

The percentages and dollar amounts presented in this section are estimates, based on physician self-reports. It should be recalled from the discussion of the methods that some physicians had difficulty reporting sources of income. Residual amounts were imputed in some cases, while overreporting was prorated downward. Nevertheless, comparing the relative magnitude of income received from AHP's across physician groups reveals substantial differences in AHP involvement.

For those paid entirely through prepaid sources, we can estimate the proportion of their earnings from

salaries, bonus arrangements, capitation payments, and other forms of prepayment (data not shown). Of particular interest is the percent of income received from bonuses, because of the potential influence bonuses may have on a physician's performance or practice behavior. On average, we found that salaries accounted for 91 percent of the total, bonuses and capitation payments were each about 3 percent, and other forms of prepayment were about 4 percent. Thus, bonuses appear to be a small fraction of the total compensation package for physicians receiving their entire income from prepaid sources.

Next we examine specialty variations in prepaid income. Earlier we noted differences in overall participation rates by specialty (Table 1). We found that general practitioners and psychiatrists were less likely to participate in an AHP compared with other physicians. On the other hand, other medical specialists (such as allergists and dermatologists) were far more likely to join an AHP. However, the percent of physicians actually receiving income from an AHP was often substantially below the participation rate (Table 4, Figure 2). For example, although 40 percent of urologists joined an AHP, only 19 percent received any income from such plans; thus, one-half of participants received no income from AHP's. Internists had a lower participation rate (31 percent), but a significantly higher proportion of participating internists had AHP income (73 percent). Interestingly, the hospital specialties (anesthesiology, pathology, radiology) had high participation rates, but most did not report income from AHP's. Perhaps the group or hospital joined, but the individual physician did not personally obtain income from prepaid sources.

The amount of income derived from AHP's also varied widely across specialties, both in relative and absolute terms. Pediatricians relied most heavily on income from prepaid sources, although because of the relatively low net incomes in this specialty, their average AHP income amounted to only \$7,300 (or 10 percent of the net income). In absolute terms, cardiologists netted the highest incomes from prepaid programs, averaging \$9,200 (or 6 percent of net income).

Among physicians with any income from prepaid sources, the hospital-based specialties (radiologists, anesthesiologists, and pathologists) had the highest prepaid income (\$36,600-\$39,000, in Table 4). Although we noted earlier that many participants in these three specialties received no income from AHP's, those that did so apparently earned sizable amounts (roughly one-third of their income). Again, pediatricians with any prepaid income relied very heavily on this source of revenue—an average of 44 percent of their income was from this source.

Several specialties receive negligible amounts (less than \$2,500) from prepaid sources, notably psychiatrists, ophthalmologists, and general practitioners. As already mentioned, GP's tend to be older physicians who may not be willing to change their practice styles or who may be satisfied with their current practice as they approach retirement.

Table 3

Physician income, by employment status and source of income: United States, 1983-85

Source of income	All physicians	Self-employed physicians
	Percent of physicians	
Physicians reporting income from prepaid sources ¹	19.1	17.7
Physicians reporting AHP ² participation but no income from prepaid sources	12.9	10.8
	Percent of income	
Prepaid sources	5.7	2.7
Fee-for-service income:		
Main practice	75.2	88.3
HMO ³ referrals	1.4	1.5
Hospital and clinic contracts	18.2	6.8
Other	1.9	1.3

¹Includes salary and bonuses from prepaid programs, capitation payments, and other forms of prepayment.

²Alternative health plan.

³Health maintenance organization.

NOTES: Excludes physicians employed by hospitals. Income reported in 1983 dollars.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the National Physicians' Practice Costs and Income Survey, 1983-85.

Psychiatrists and ophthalmologists may not be in as much demand by AHP's; mental health and routine vision services may be provided by nonphysicians, or these services may not be covered in some AHP's.

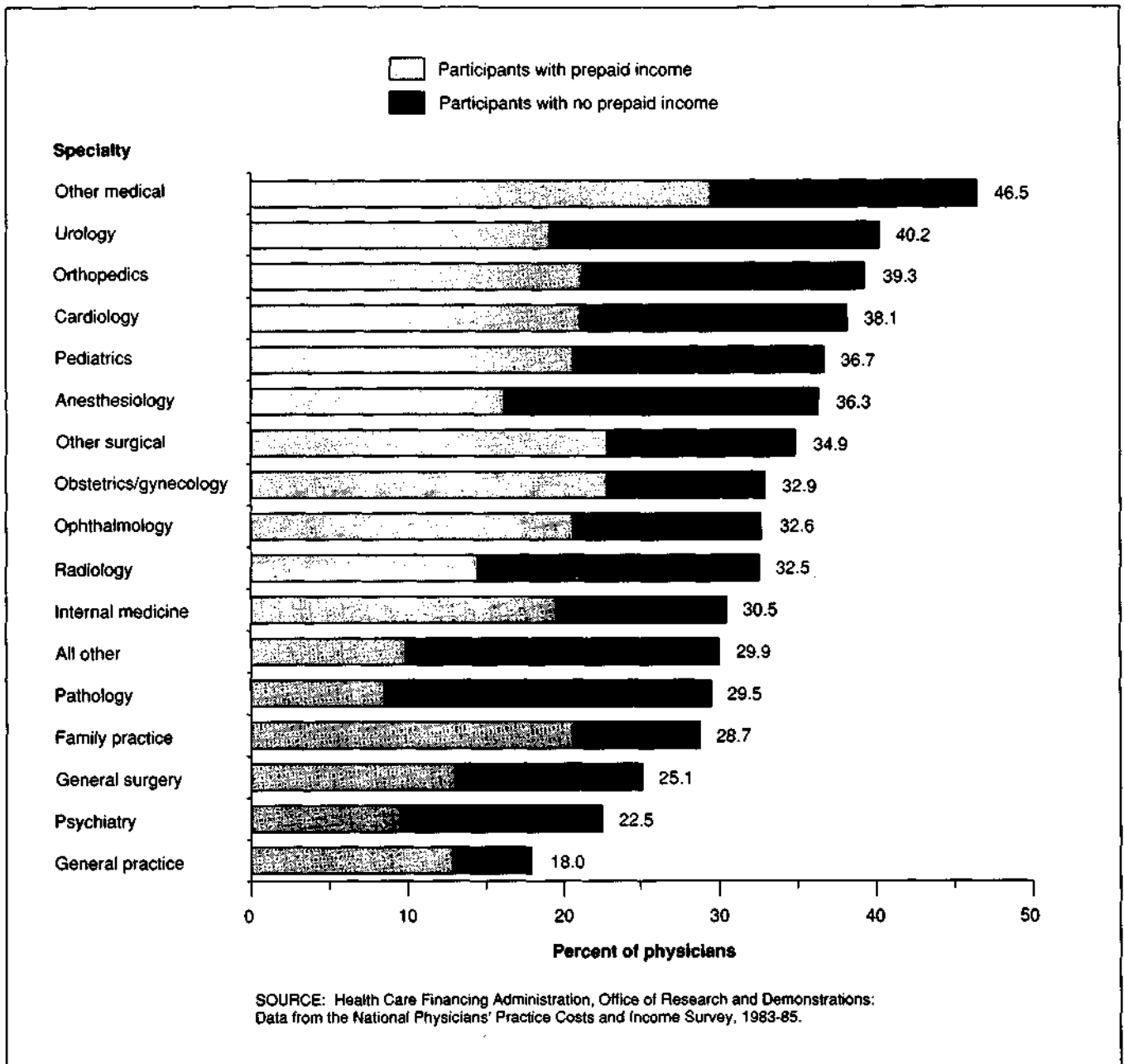
Variations in prepaid income according to biographical characteristics of the physician may be seen in Table 4. We see that younger physicians are more heavily dependent on prepaid income. Those under age 35 average 2.5 times as much in actual dollars as physicians age 65 or over (\$6,400 versus \$2,800). Relative to their total net income, the proportion is almost four times as much. Of those with any prepaid income, earnings ranged from \$25,000 to \$30,000, although again the greatest

difference is observed in the proportion of total income (rather than the actual dollar amounts).

Female physicians with any prepaid income were far more reliant on this income source than their male colleagues. Prepaid income averaged 59 percent or \$44,300 for female physicians versus 26 percent or \$25,300 for male physicians. Although the actual participation rates are not significantly different for male and female physicians, among those who participate, female physicians appear to devote a greater share of their practices to AHP's.

U.S. medical school graduates and board-certified physicians are more likely than their counterparts to have any prepaid income. Furthermore,

Figure 2
Physicians receiving income from alternative health plans,
by specialty: 1984-85



board-certified physicians average significantly higher incomes from this source than do their noncertified colleagues (\$6,100 versus \$3,600).

Geographic variation in prepaid incomes is quite extensive (Table 5). Urban physicians average four times as much prepaid income as those in rural areas (\$6,000 versus \$1,600), although among those with any prepaid income, the income differential narrows to about 1.5 to 1 (\$27,300 versus \$19,500). The

regional variation in income from prepaid sources mirrors participation differences already discussed. Physicians in the West are far more dependent than others on prepaid income, averaging \$11,800 versus \$1,900 in the South. Even when limited to those with any prepaid income, wide variation remains: \$39,600 in the West versus \$16,300 in the South, on average. This represents two-fifths of a western physician's net

Table 4
Physician income from prepaid sources, by specialty and demographic characteristics:
United States, 1984-85

Physician characteristic	Percent of physicians with income from prepaid sources	Percent of AHP ¹ participants with income from prepaid sources	All physicians		Physicians with any income from prepaid sources	
			Average percent of net income from prepaid sources	Average net income from prepaid sources	Average percent of net income from prepaid sources	Average net income from prepaid sources
All physicians	19.1	66.9	5.5	\$5,275	28.6	\$26,747
Specialty						
General practice	13.3	77.2	2.9	2,483	22.0	17,678
Family practice	21.5	78.3	7.6	5,188	35.4	25,005
Internal medicine	20.2	73.1	6.3	5,342	31.2	25,556
Cardiology	22.0	64.3	5.7	9,211	26.1	35,265
Pediatrics	21.6	69.5	10.0	7,323	44.4	31,520
Other medical	29.6	69.7	6.7	6,678	22.8	22,106
General surgery	13.6	57.2	3.4	3,788	25.2	26,181
Orthopedic surgery	22.7	60.2	3.8	4,182	16.2	17,239
Ophthalmology	20.9	68.2	2.0	2,460	9.8	11,380
Urology	19.4	52.2	4.6	5,550	23.7	28,394
Obstetrics/gynecology	23.8	75.6	7.6	7,941	31.9	31,050
Other surgical	23.8	72.2	5.3	7,820	22.4	31,261
Psychiatry	9.8	55.8	2.5	2,392	25.8	22,290
Anesthesiology	16.2	51.1	4.9	6,492	29.7	39,000
Pathology	8.8	53.9	2.7	3,206	30.3	38,776
Radiology	15.1	59.2	4.5	5,568	28.7	36,579
All other	10.3	51.3	4.3	4,105	41.3	36,520
Age						
Under 35 years	22.8	72.4	9.7	6,376	42.4	27,604
35-39 years	24.6	72.7	6.9	6,285	27.9	25,416
40-49 years	19.9	65.3	5.2	5,330	25.9	26,055
50-59 years	15.9	61.9	4.4	5,203	27.4	30,329
60-64 years	16.1	70.2	4.2	3,986	25.8	24,743
65 years or over	10.8	56.0	2.5	2,825	23.2	24,642
Sex						
Male	19.5	66.4	5.1	5,108	26.1	25,343
Female	15.4	74.1	9.1	6,879	58.9	44,287
Race						
White	19.9	66.8	5.5	5,396	27.7	26,208
All other	15.6	67.1	5.2	4,413	33.2	28,026
Medical education						
U.S. medical graduate	20.9	67.7	5.9	5,597	28.0	25,912
Foreign medical graduate	12.9	62.8	4.1	4,133	31.5	31,634
Board-certification status						
Board certified	21.8	66.8	6.2	6,107	28.3	27,139
Not board certified	13.6	67.0	4.0	3,621	29.4	25,512

¹Alternative health plan.

NOTES: Excludes physicians employed by hospitals. Income reported in 1983 dollars.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the National Physicians' Practice Costs and Income Survey, 1983-85.

income and only 18 percent of a southern physician's. AHP's in the West clearly play a more dominant role in physician practices.

In Table 5 we also examine the relationship between community characteristics and prepaid income. As with the geographic variables, community differences result in substantial variation in prepaid incomes. Physicians in more competitive areas (i.e., more physicians per capita) rely more heavily on prepaid income, as do those in areas with high per capita income. For example, physicians in highly competitive areas earn about 2.5 times more from prepaid sources than those in the least competitive areas (6.5 percent versus 2.6 percent). Such physicians may be turning to AHP's to augment their patient loads and increase their net income in the face of competition for patients. Large differences remain among those with any prepaid income, as those in highly competitive areas net \$26,600 from prepaid sources (nearly one-third of their total incomes) compared with \$19,400 (20 percent) for those in the least competitive areas.

In addition, physicians in areas with little poverty and high per capita incomes receive more of their income from prepaid sources than those in poorer areas. For example, physicians in areas of little poverty are more likely to receive any prepaid income (26 percent versus 12 percent) as well as to average higher prepaid incomes (\$6,800 versus \$2,400). Similarly, physicians in areas of high per capita income are the big "gainers" from AHP's, with 9 percent of their income (\$8,800) from prepaid sources versus 2 percent (\$1,800) for physicians in areas of low per capita income.

Why do physicians join?

Physicians were asked about their reasons for participating or not participating in an AHP. The percent of participants and nonparticipants citing three specific reasons and the percent indicating some other reason are shown in Table 6. (Other reasons were provided on a strictly voluntary basis.) As

Table 5
Physician Income from prepaid programs, by location and community characteristics:
United States, 1984-85

Community characteristic	Percent of physicians with income from prepaid sources	Percent of AHP ¹ participants with income from prepaid sources	All physicians		Physicians with any income from prepaid sources	
			Average percent of net income from prepaid sources	Average net income from prepaid sources	Average percent of net income from prepaid sources	Average net income from prepaid sources
Location						
Urban	21.4	67.1	6.2	\$6,039	29.0	\$27,310
Rural	8.0	64.9	1.9	1,615	23.6	19,535
Region						
Northeast	15.2	68.3	3.5	3,214	23.1	20,189
South	11.4	62.4	2.0	1,916	17.7	16,310
North Central	23.7	66.0	6.1	5,335	25.5	21,934
West	29.3	69.7	11.7	11,843	39.9	39,584
Physicians per capita						
Low (fewer than 12.4 per 10,000)	13.0	65.2	2.6	2,461	19.6	19,371
Medium (12.4-22.5 per 10,000)	20.3	65.5	6.3	6,055	31.0	29,046
High (more than 22.5 per 10,000)	22.3	70.4	6.5	6,390	29.2	26,612
Percent of population below poverty level						
Low (less than 8.7 percent)	26.2	67.5	7.3	6,839	28.0	25,343
Medium (8.7-13.6 percent)	19.4	67.7	6.0	5,988	31.0	29,837
High (more than 13.6 percent)	11.5	63.4	2.5	2,401	22.0	20,160
Per capita income						
Low (less than \$8,554)	7.2	57.0	1.8	1,803	24.6	25,063
Medium (\$8,554-\$11,349)	22.5	69.3	5.3	4,845	23.4	20,755
High (more than \$11,349)	23.2	66.3	8.7	8,756	37.4	36,064

¹Alternative health plan.

NOTES: Excludes physicians employed by hospitals. Income reported in 1983 dollars.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data From the National Physicians' Practice Costs and Income Survey, 1983-85; Bureau of Health Professions, Health Services and Resources Administration: Data from the Area Resource File, Aug. 1985.

physicians were allowed to give more than one reason, the percentages for the 4 main categories sum to more than 100 percent.

Three-fourths of all participants said they joined an AHP to maintain or increase their patient load. Slightly less than one-half of AHP participants (48 percent) said they joined to have a more regular income and caseload and fewer still (39 percent) joined because of a philosophical commitment. Many participants (48 percent) cited other reasons for joining as well.

Considerable overlap exists between the first two categories. About 40 percent of participants indicated they joined to increase or maintain their patient load and to receive a regular income or schedule. Another 36 percent signed because of patient load concerns (and not explicitly for the regular income), while 9 percent joined primarily because of lifestyle concerns or for a regular income. This overlap is not surprising given the similarity between these two reasons. Many physicians probably interpreted "maintaining or increasing patient load" as synonymous with "having a regular caseload."

Table 6

Physicians' reasons for participating or not participating in an alternative health plan (AHP)

Reason	Percent citing reason
Physicians participating	
To maintain or increase patient load	74.9
To have more regular income and caseload	47.6
Because of philosophical commitment to AHP's	38.9
Other reasons for participating	148.3
Service to patients	8.5
Increased competition	18.1
Lower administrative burden	2.1
Peer opinion	5.6
Group/hospital joined	8.9
Not elsewhere classified	5.2
Physicians not participating²	
Busy enough in current practice	61.9
Concerned about quality of care offered by AHP's	70.7
Would be giving up independence	75.3
Other reasons for not participating	151.5
Philosophically opposed	9.9
Administrative burden	1.8
Financial disadvantage	15.1
Too old to change	2.0
Was never asked	6.3
Has just joined or will join	3.2
Not elsewhere classified	13.1

¹Physician responses were weighted by the inverse of the number of responses they provided; as a result, these columns sum to 100 percent.

²Excludes physicians with no AHP in their area.

NOTES: Excludes physicians employed by hospitals.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the National Physicians' Practice Costs and Income Survey, 1983-85.

Because of the relative importance of other reasons, physicians' responses have been recoded into six subcategories. (See Technical Note for examples of physician responses.) Of the other reasons for participating, concerns about increased competition dominated, with 18 percent of participants citing this reason. Nearly 9 percent of participants said they joined because of pressure from their group or hospital, while 6 percent cited peer opinion as a reason for joining. Another 9 percent of participants said they joined as a service to their patients. Only about 2 percent of participants joined to reduce administrative costs.

Physicians who reported "increased competition" as a motivation for joining AHP's are an interesting subset. As would be expected, four-fifths also responded that they had joined to increase or maintain their caseload or to receive a regular income (including 37 percent who reported both reasons). Their remarks generally elaborate on the "market share" theme. One physician, for example, commented: "My reason for joining the IPA is a defensive move on the part of the medical community to discourage HMO's from starting in . . . Maryland." This theme is echoed by another physician who joined both a PPO and an IPA: "PPO founded by medical society foundation and I have a loyalty to society. IPA started by friends. Friendship and loyalty . . . to head off threat of competition from other, larger HMO's who might move into the area."

Other physicians noted pressure from the business community. One said: "Either we develop HMO or employers would go elsewhere or develop their own." Another physician said, "Major employer in area has joined IPA." More general remarks centered around the inevitability of AHP's: "It's the way to go; it's the future." "Dislike them but find them inevitable." "They're getting so popular." "We didn't want to be left out." "Being progressively harder not to join." "They are the coming thing, like death and taxes." "I couldn't afford not to; it's a trend."

Physicians not participating in an AHP were first asked whether or not there was an AHP in their area. Nearly one-half of nonparticipants (one-third of all physicians) reported that there was no AHP in their area. Presumably, these physicians did not have the option to join an AHP and were not asked to provide any other reasons for their decision. Of the remaining nonparticipants, three-fourths chose not to participate because they did not want to give up their independence. In addition, concerns over the quality of care in AHP's were cited by 71 percent of the physicians. The majority of nonparticipants (62 percent) also said they did not join because they were busy enough in their current practice, and 52 percent had other reasons for not joining.

Disaggregating nonparticipants' "other" reasons into seven categories shows that 15 percent of nonparticipants cited financial disadvantages as a reason for not joining. Financial concerns included responses that AHP reimbursement was too low, that

costs of joining were too high for the physician, or that the physician was concerned about financial risks involved in joining. Interestingly, more than one-half of those citing the financial disadvantage of AHP's also reported they were "busy enough" in their current practice.

Philosophical opposition was also a relatively important reason for not joining (10 percent of nonparticipants cited this reason). Physicians who were philosophically opposed to AHP's shared several common concerns. One was the severing of the doctor-patient relationship. For example: "Does not give the patient a fair choice." "Lack of continuity. A patient goes for help and doesn't know which physician is going to treat him." "Not personal medicine, it's cattle medicine." "It is too impersonal."

On a related theme, many physicians disapproved of a third party sharing the decisionmaking and the profits. One physician disliked a "contractual arrangement sorting out responsibilities in terms of who does what and I think it acts as a middleman." Another said, "Nonmedical personnel make more than physicians. Doctors work much more and are paid less." A third theme was a "general distaste for regulated medicine," as one physician called it. Several physicians equated AHP's with "socialized medicine" or "organized medicine," and others simply favor the status quo.

More than 3 percent of nonparticipants actually reported that they had recently joined or were planning to join and another 5 percent said they did not join because they had not been asked. Also, many of the participants in the "not elsewhere classified" category reported that they were considering joining,

or that because of their specialty or employment situation, they could not join.

Physicians' reasons for joining or not joining AHP's are displayed by specialty in Table 7. Physicians in the primary care specialties (general and family practice, internal medicine, and pediatrics) more often expressed a philosophical commitment to the concept or practice of AHP's. These physician specialties serve as the gatekeepers in prepaid systems and may develop ongoing relationships with their patients. Anesthesiologists as a group were interesting because of their low response to all three reasons. Because the demand for anesthesia services is derived from the demand for surgery, many anesthesiologists remarked that their decision to join was motivated by whether or not surgeons in their area joined.

Among the nonparticipants, 72 percent of psychiatrists indicated they were busy enough in their current practice. The vast majority of urologists (93 percent) cited "independence" as an important factor in their decision not to join. This includes independence in setting fees, in deciding on a course of treatment, and in choosing patients. Concerns about quality were expressed most often by cardiologists (85 percent) and obstetricians/gynecologists (85 percent). These concerns might center around the tendency of AHP's to substitute outpatient for inpatient care, to reduce diagnostic testing, and to shorten hospital stays.

In Table 8, one can see how participants' reasons for joining an AHP vary by physician and area characteristics. Stronger competitive pressures on younger, less established physicians are expected to force them to seek ways of increasing their workload.

Table 7
Physicians' reasons for joining or not joining an alternative health plan (AHP), by specialty

Specialty	Reasons for joining an AHP			Reasons for not joining an AHP ¹		
	Increase workload	Regular income/caseload	Philosophical commitment	Busy enough	Concern about quality	Maintain independence
			Percent citing reason			
All physicians	74.9	47.6	38.9	61.9	70.9	75.3
General practice	67.5	53.7	43.3	67.9	69.3	76.2
Family practice	69.2	50.9	46.6	57.3	69.0	74.0
Internal medicine	73.7	51.8	48.8	61.4	72.3	79.0
Cardiology	86.9	38.0	31.6	65.3	84.9	78.0
Pediatrics	70.0	54.0	55.1	55.0	65.3	73.4
Other medical specialties	77.6	48.1	32.7	67.6	77.8	74.5
General surgery	84.8	43.5	42.0	51.8	71.9	77.1
Orthopedic surgery	78.6	44.8	29.3	74.2	70.5	86.2
Ophthalmology	85.9	46.1	17.1	69.0	82.9	84.5
Urology	84.4	43.3	28.9	69.5	74.2	93.4
Obstetrics/gynecology	72.6	45.7	35.1	64.1	84.7	77.2
Other surgical specialties	79.5	44.0	39.9	56.1	63.1	74.1
Psychiatry	78.3	54.5	41.8	71.7	67.1	70.0
Anesthesiology	59.5	29.1	33.3	52.0	60.7	73.9
Pathology	72.6	49.3	42.6	53.0	57.8	48.9
Radiology	77.4	47.3	29.1	45.6	61.8	63.4
All other specialties	62.6	57.4	41.5	60.9	57.0	60.9

¹Excludes physicians with no AHP in their area.

NOTE: Excludes physicians employed by hospitals.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the National Physicians' Practice Costs and Income Survey, 1983-85.

Nearly 80 percent of participants under 40 years of age reported joining an AHP to increase their workload, compared with only 63 percent of physicians 65 years of age or over. Similarly, young physicians were more likely to join to have regular incomes and caseloads. This supports Goodman and Swartwout's (1984) hypothesis about why young physicians are more likely to join prepaid plans.

Interestingly, female participants cited philosophical reasons for joining more often than male physicians. Not surprisingly, they also cited joining to have a more regular income and caseload. This finding is consistent with other research indicating that female physicians work fewer hours than do male physicians (Mitchell, 1984). In other words, females may join AHP's for the shorter, more predictable working hours. Minority participants and foreign medical graduates were also more likely to report a desire for regular incomes and caseloads and were less likely to report other reasons for joining (e.g., increased competition, service to patients). In contrast, board-

certified physicians were less likely to report a desire for regular income and caseload.

Compared with participants in rural areas, those in urban areas more frequently cited all three reasons, although the differences are not significant. Fewer southern participants reported joining because of a philosophical commitment. Physicians living in the West were more likely to join to have a regular income or caseload than physicians in other regions.

Although we would expect participants in more competitive areas to join AHP's to increase or maintain their workloads, participants' reasons for joining AHP's vary little by physician availability. The biggest difference is that only 43 percent of participants in physician-scarce areas join AHP's to have regular incomes and caseloads compared with 49 percent in the most physician-dense areas.

Physicians in areas with a large poor population should also face lower demand and tend to join AHP's more to increase or maintain their workloads. However, no significant differences were found in the

Table 8
Physicians' reasons for joining an alternative health plan (AHP), by physician and community characteristics

Characteristic	Reasons for joining an AHP			Characteristic	Reasons for joining an AHP		
	Increase workload	Regular income/caseload	Philosophical commitment		Increase workload	Regular income/caseload	Philosophical commitment
	Percent citing reason				Percent citing reason		
All physicians	74.9	47.6	38.9	Region			
Age				Northeast	74.0	38.7	39.5
Under 35 years	77.8	64.3	40.1	South	78.2	42.6	32.5
35-39 years	79.8	48.4	37.5	North Central	77.1	49.1	39.5
40-49 years	76.1	46.7	35.1	West	71.5	54.3	41.8
50-59 years	72.9	45.5	41.9	Physicians per capita			
60-64 years	62.7	34.8	44.3	Low (fewer than 12.4 per 10,000)	76.0	43.0	39.0
65 years or over	63.0	39.5	48.0	Medium (12.4-22.5 per 10,000)	75.5	48.1	39.2
Sex				High (more than 22.5 per 10,000)	73.2	49.2	38.3
Male	75.9	46.6	36.1	Percent of population below poverty level			
Female	61.3	61.4	50.5	Low (less than 8.7 percent)	75.8	45.0	43.0
Race				Medium (8.7-13.6 percent)	74.9	49.0	37.2
White	75.5	45.5	39.4	High (more than 13.6 percent)	73.0	49.2	35.2
All other	72.2	62.9	34.3	Per capita income			
Medical education				Low (less than \$8,554)	74.3	42.0	35.1
U.S. medical graduate	75.5	46.2	38.8	Medium (\$8,554-\$11,349)	76.1	43.7	38.5
Foreign medical graduate	71.6	55.2	39.5	High (more than \$11,349)	73.3	54.7	40.5
Board-certification status							
Board certified	75.8	45.3	39.0				
Not board certified	71.6	55.6	38.8				
Location							
Urban	75.5	48.1	39.2				
Rural	66.4	41.8	35.7				

NOTE: Excludes physicians employed by hospitals.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the National Physicians' Practice Costs and Income Survey, 1983-85; Bureau of Health Professions, Health Services and Resources Administration: Data from the Area Resource File, Aug. 1985.

proportion of physicians in poor areas citing a desire to increase their workload compared with physicians in higher income areas (as measured by per capita income and the percent of those living below the poverty level in the physician's county). In fact, the only significant difference is that more physicians in areas of high per capita income (55 percent) cite regular income and caseload as a reason for joining, compared with those in areas of low per capita income (42 percent).

Reasons for not joining an AHP are stratified by nonparticipants' characteristics in Table 9. As expected, older nonparticipants with more established practices more often chose not to join because they were busy enough in their current practice.

Differences in reasons for not joining an AHP varied little by other physician characteristics. Male physicians were more likely than female physicians not to join because they were busy enough in their current practice (63 percent versus 53 percent). Significantly more white nonparticipants than

minorities said they did not join because they were busy enough or that they had quality concerns.

Examining reasons for not joining an AHP by area characteristics shows no systematic variation among nonparticipants, particularly with respect to urban/rural distinctions. Despite the wide regional variations in participation rates, physicians' reasons for deciding not to join also vary little across regions. The only significant difference was that more physicians in the West stated concerns about quality than those in the Northeast.

Few differences emerge across community types in the reasons physicians gave for not joining an AHP. Contrary to our expectations, nonparticipants in physician-dense areas (61 percent) were as likely as those in physician-scarce areas (59 percent) to indicate they were busy enough in their current practice. Similarly, 61 percent of physicians in both the least poor and the poorest areas reported they were busy enough.

Table 9
Physicians' reasons for not joining an alternative health plan (AHP), by physician and community characteristics

Characteristic	Reasons for not joining an AHP			Characteristic	Reasons for not joining an AHP		
	Busy enough	Concern about quality	Maintain independence		Busy enough	Concern about quality	Maintain independence
	Percent citing reason				Percent citing reason		
All physicians	61.9	70.7	75.3	Region			
Age				Northeast	63.6	65.6	73.9
Under 35 years	53.1	69.5	66.0	South	60.2	73.3	76.3
35-39 years	54.8	70.7	77.0	North Central	64.5	69.7	73.0
40-49 years	62.1	70.9	74.8	West	60.1	74.2	77.7
50-59 years	63.8	74.6	77.6	Physicians per capita			
60-64 years	71.9	66.5	74.4	Low (fewer than 12.4 per 10,000)	58.6	63.5	76.6
65 years or over	64.8	66.6	75.9	Medium (12.4-22.5 per 10,000)	63.5	73.5	75.8
Sex				High (more than 22.5 per 10,000)	61.0	70.1	73.8
Male	62.8	71.0	76.1	Percent of population below poverty level			
Female	53.4	67.9	68.3	Low (less than 8.7 percent)	61.2	69.0	76.4
Race				Medium (8.7-13.6 percent)	62.8	71.3	73.9
White	63.4	71.6	76.2	High (more than 13.6 percent)	60.8	71.5	76.9
All other	54.3	65.1	71.6	Per capita income			
Medical education				Low (less than \$8,544)	61.2	71.1	76.3
U.S. medical graduate	62.9	70.7	76.4	Medium (\$8,554-\$11,349)	62.9	68.0	74.0
Foreign medical graduate	59.0	70.8	72.1	High (more than \$11,349)	60.9	73.9	76.5
Board-certification status							
Board certified	61.4	70.6	75.0				
Not board certified	62.6	71.0	75.8				
Location							
Urban	62.1	71.4	74.7				
Rural	60.1	64.1	81.9				

NOTE: Excludes physicians employed by hospitals and physicians with no AHP in their area.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations: Data from the National Physicians' Practice Costs and Income Survey, 1983-85; Bureau of Health Professions, Health Services and Resources Administration: Data from the Area Resource File, Aug. 1985.

Discussion

About one-third of physicians participated in AHP's at the time the 1983-85 Physicians' Practice Costs and Income Survey was conducted. However, only about 19 percent received any income from prepaid sources (such as salary, bonuses, capitation, or other forms of prepayment). All physicians on average netted \$5,275 from prepaid sources, although among those with any prepaid income the average was \$26,750 (29 percent of net income). This large gap in the percent signing up and the percent receiving income may be a result of the propensity of physicians to join any and all plans in an area out of uncertainty, ignorance, fear, or just plain speculation.

Physicians seem to be responding to competitive pressures brought about by the increasing supply of physicians. A comparison of participation rates between highly competitive and less competitive areas revealed considerably higher AHP participation rates in physician-dense areas. This was found across all three types of AHP's. Furthermore, earnings from prepaid programs were much more significant for those in highly competitive areas, both in absolute dollar terms and in relation to total net income. Finally, physicians in more competitive areas who joined AHP's had different reasons for their decision—they were more likely to join to obtain a regular income and caseload. This is likely a direct result of competitive pressures, where a fixed patient pool is distributed among an increasing number of doctors.

More attention is now being focused on the spread of AHP's to rural areas. In late 1984 to mid-1985, rural physicians lagged far behind urban physicians in participation rates as well as in the amount of income derived from AHP's. Evidence from this study suggests, however, that rural physicians are willing to join AHP's in their community. The gap in participation rates narrowed considerably when we excluded those with no AHP in their area.

Age is an important factor in the participation decision. The gap between older and younger physicians, particularly in HMO's, was not unexpected. Physicians just starting out may be attracted to AHP's because these plans offer relative security in salary, caseload, and practice costs. Older physicians who are settled in office-based FFS practice are less likely to change their practice styles. Thus, with the entry of younger physicians into AHP's and retirement of older physicians from FFS practices, AHP participation rates presumably will rise. However, as physicians age, will they opt to remain in AHP's, or will they try to build a position in the FFS market?

Questions are often raised as to whether AHP's affect the quality of care or interfere with physician practice styles. Obviously, the physicians in our survey who decided not to join an AHP perceived these questions to be matters of concern. These two issues were important factors in their decision not to join. Unfortunately, we are not able to gauge the

participants' reactions to these two aspects of their current practice within AHP's.

Other criteria that have been used as proxies for "quality" are the credentials and training of physicians, notably whether they are board certified and domestically trained. In fact, the participation rate of U.S.-trained physicians is 10 points higher than that of foreign-trained physicians. An even wider differential is noted between board-certified physicians and those who are not. This gap remains even when general practitioners are excluded. Although these proxies are, at best, superficial measures of quality, they do suggest that AHP's are recruiting and signing up physicians with desirable credentials.

Another concern expressed by observers of HMO's, IPA's, and PPO's is whether they will lead to the denial of necessary medical care, given varying financial incentives to control utilization. In particular, questions have been raised about the role of performance bonuses in altering physician behavior and the likelihood of adverse consequences for patient care. We found that such bonuses amounted to only 3 percent of a physician's compensation package. Further research is needed in this area to ascertain the impact of bonuses on physician behavior and ultimately on quality of care.

Another area for further research is specialty affiliation practices. Psychiatrists, ophthalmologists, and general practitioners were found to have very low participation rates and/or to receive negligible earnings, on average, from AHP's. Is it the physician's choice not to join (or to limit AHP involvement) or is low participation a result of AHP recruitment preferences? Some physicians commented that they wanted to join but were turned down because of their specialty. As HMO/IPA enrollments increase and as the PPO movement spreads, will some physicians be left out because of their specialty? Alternatively, will certain specialties "adapt," such as psychiatry, which has begun a movement to develop specialized mental health PPO's?

Two caveats about this study should be mentioned. First, results presented here are descriptive and do not control for other factors that may simultaneously be influencing AHP participation. Multivariate analytic techniques would be required to control for independent effects of each variable. Nevertheless, these data are the most comprehensive national estimates of physician participation in AHP's, how much income physicians derive from AHP's, and what factors influence the decision to join (or not to join).

A second caveat concerns the time period for this study. We describe the environment in late 1984 to mid-1985. Clearly, the world is changing rapidly, particularly with the spread of PPO's and the formation of IPA's. Follow-up surveys are required to update the data on physician participation in AHP's and on the extent of income derived from AHP participation.

We have entered an era in which purchasers of health care are negotiating with providers over the

allocation of the health care dollar. Additional data of a longitudinal nature would be desirable to ascertain the impact of AHP's on physicians' practice patterns and to determine whether physicians are satisfied with these new arrangements.

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Technical note

Examples of other reasons and responses

Reasons for joining

Service to patients

"patient preference"
"my patients requested it"
"patients can't afford Blue Cross"

Increased competition

"to defend my practice"
"wave of the future"
"it's inevitable"

Lower administrative burden

"pays for overhead"
"prompter pay"
"I'm not interested in paperwork."
"I'm just interested in seeing patients"

Peer opinion

"everybody else was doing it"
"organized by local doctors"
"peer pressure"

Group or hospital joined

"associates wanted to join"
"the corporation made all the decisions for HMO and such before I joined"

Not elsewhere classified

"good job in a location where I wanted to be"
"it's an experiment"
"great offer"

Reasons for not joining

Philosophically opposed

"dislike socialized medicine"
"leading toward unionism"
"I don't like the people in them"

Higher administrative burden

"hate bureaucracy"
"increased level of paperwork"

Financial concerns

"work more and make less"
"cost to buy into plans"
"leaves doctor financially vulnerable"

Too old to change

"because of my age"
"want to cut back on patients in order to retire"

Was never asked

"I've never been asked"
"there was no opportunity to join"
"we asked and they did not want us"

Has joined or will join

"have joined—didn't know enough then"
"we have applied"
"we are presently considering joining"

Not elsewhere classified

"it was a group decision"
"not applicable to my specialty"
"I haven't decided yet about joining"
"I'm not a joiner"

Definitions of alternative health plans

Health maintenance organization (HMO)—a health care organization that acts as both insurer and provider of comprehensive but specified medical services. A defined set of physicians provides services to a voluntarily enrolled population for a prospective per capita amount (i.e., by capitation). Prepaid group practices and individual practice associations are types of HMO's.

Prepaid group practice—a type of HMO consisting of a group practice that provides or arranges comprehensive covered services for enrollees, who pay by capitation.

Independent practice association (IPA)—a type of HMO whose physicians usually practice in private offices and are paid by the HMO on a fee-for-service basis. Members, however, pay the HMO for coverage through capitation payments. Although IPA's are now referred to "individual practice association," the Survey used the term as defined here.

Preferred provider organization (PPO)—a form of health care delivery system in which an agreement is made between providers and purchasers that patients who seek medical care from the "preferred providers" will obtain benefits such as reduced cost sharing. In return for the potential increase in volume of patients, the preferred providers may agree to discount their charges or to submit to enhanced utilization review.

SOURCE: (Office of Technology Assessment, 1986.)

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