

## SPECIAL ARTICLE

# Trends in Care by Nonphysician Clinicians in the United States

Benjamin G. Druss, M.D., M.P.H., Steven C. Marcus, Ph.D.,  
Mark Olfson, M.D., M.P.H., Terri Tanielian, M.A., and Harold Alan Pincus, M.D.

## ABSTRACT

**BACKGROUND**

From the Rollins School of Public Health, Emory University, Atlanta (B.G.D.); the University of Pennsylvania School of Social Work, Philadelphia (S.C.M.); Columbia University College of Physicians and Surgeons, New York (M.O.); RAND, Washington, D.C. (T.T.); RAND, Pittsburgh (H.A.P.); and the University of Pittsburgh School of Medicine, Pittsburgh (H.A.P.). Address reprint requests to Dr. Druss at the Department of Health Policy and Management, Rollins School of Public Health, Emory University, 1518 Clifton Rd. NE, Atlanta, GA 30322, or at bdruss@emory.edu.

The 1990s saw rising numbers of graduates of training programs for nonphysician clinicians, passage of legislation expanding their scope of practice, and a proliferation of managed-care models that emphasized the use of these providers as a strategy for containing health care costs.

**METHODS**

We used two nationally representative surveys to examine trends in outpatient care provided by physicians and nonphysician clinicians between 1987 and 1997, adjusting for the case mix. Analyses examined care provided by 10 categories of nonphysician clinicians: chiropractors, midwives, nurses or nurse practitioners, optometrists, podiatrists, physician assistants, physical or occupational therapists, psychologists, social workers, and others.

**RESULTS**

Between 1987 and 1997, the proportion of patients who saw a nonphysician clinician rose from 30.6 percent to 36.1 percent (adjusted relative risk for 1997 as compared with 1987, 1.42 [95 percent confidence interval, 1.35 to 1.50]). The trend was driven by an increase in the proportion of persons who visited both a physician and a nonphysician clinician (from 23.5 percent to 30.9 percent; adjusted relative risk, 1.49 [95 percent confidence interval, 1.40 to 1.58]), rather than an increase in the proportion who saw only a nonphysician clinician (from 7.2 percent to 5.3 percent; adjusted relative risk, 0.81 [95 percent confidence interval, 0.70 to 0.93]). This pattern was consistent in analyses of specific medical conditions and specific types of nonphysician clinicians. There was an increase in the proportion of patients obtaining preventive services from nonphysician clinicians and a decline in the proportion receiving acute care services from such clinicians.

**CONCLUSIONS**

From 1987 to 1997, there was a degree of differentiation between physicians and nonphysician clinicians with respect to the services they provided but not with respect to the patients they treated. The implications of these findings hinge on the degree to which the increase in conjoint service delivery represents growing coordination or fragmentation of care.

N Engl J Med 2003;348:130-7.

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SEVERAL TRENDS DURING THE 1990S brought the potential for a major reshaping of the nation's health care workforce and, more specifically, a shift in the provision of care from physicians to nonphysician clinicians. First, the number of nonphysician clinicians increased rapidly, with the number of graduates of training programs for nonphysicians more than doubling between 1992 and 1997.<sup>1</sup> Second, state legislatures passed a series of laws expanding the allowable scope of practice for these providers<sup>2,3</sup>; in 1997 alone, 37 states enacted 83 such laws.<sup>4</sup> Finally, this period saw the rapid growth of managed-care plans, which sought to shift the provision of care from physicians to nonphysician clinicians as a means of cost containment.<sup>5</sup>

These changes have raised a number of important questions about the role of nonphysician clinicians in the U.S. health care workforce. How much care is being delivered by these providers, and how is that care changing over time? Are nonphysician clinicians providing care autonomously or in conjunction with physicians? What are the implications of these patterns for providers and patients?

Using two nationally representative surveys, we examined patterns of treatment by nonphysician clinicians in the United States and the degree of overlap between the care provided by nonphysician clinicians and that provided by physicians. We examined trends in these patterns between 1987 and 1997, a period of major change both for nonphysician clinicians and for organized medicine as a whole.

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## METHODS

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### STUDY SAMPLE

We used data on ambulatory care from the 1987 National Medical Expenditure Survey<sup>6</sup> and the 1997 Medical Expenditure Panel Survey,<sup>7</sup> each of which provides national estimates of the use of, expenditures for, and financing of health services for the civilian, noninstitutionalized population of the United States. Response rates were 80.1 percent for the National Medical Expenditure Survey and 74.1 percent for the Medical Expenditure Panel Survey. Respondents who had not used medical services (28.2 percent of the total in 1987 and 28.4 percent in 1997) were excluded from our study.

### PROVIDER GROUPS

For each contact with the health care system, respondents were asked, "Did you see a medical doc-

tor during this particular visit?" If the answer was no, they were asked, "What type of medical person did you talk to?" Each of the two surveys identified the following options: nurse or nurse practitioner, chiropractor, midwife, optometrist, podiatrist, physician assistant, physical or occupational therapist, psychologist, social worker, or other. In each survey, the respondent could identify only one provider per visit. There were small changes in wording between the two surveys; whereas the 1987 survey listed "foot doctor," the 1997 survey listed "podiatrist," and the 1987 survey used the term "psychiatric social worker," whereas the 1997 category used "social worker."

These provider groups are similar to the 10 categories of nonphysician clinicians identified in previous reports,<sup>1,3</sup> although with a somewhat greater focus on clinicians providing routine outpatient care that might overlap with that provided by physicians. For instance, the list used in the surveys did not include clinical nurse anesthetists or two categories of clinicians who practice complementary and alternative medicine (naturopaths and acupuncturists) but did include psychologists, social workers, and physical or occupational therapists. Visits for which the type of provider was not recorded (4.4 percent of all visits) were excluded from the analysis.

### MEDICAL CONDITIONS

In both the National Medical Expenditure Survey and the Medical Expenditure Panel Survey, respondents were asked what condition or conditions were responsible for each contact with the health care system. Conditions reported by the respondent were assigned three-digit diagnostic codes, according to the *International Classification of Diseases, Ninth Revision*,<sup>8</sup> by trained coders. Diagnoses were grouped into clinical categories with the use of software developed by the Agency for Healthcare Research and Quality.<sup>9</sup>

### SERVICES PROVIDED

The National Medical Expenditure Survey and the Medical Expenditure Panel Survey asked respondents what type of care they received during the visit.<sup>10</sup> The following mutually exclusive categories of care were used in both surveys: general checkup, preventive care (including immunizations), psychotherapy, maternity care, acute care (all visits for diagnosis or treatment of specific ailments), and other care.

**Table 1. Characteristics of Respondents Who Made One or More Visits to a Physician or a Nonphysician Clinician, 1987 and 1997.**

Characteristic	One or More Visits to a Physician		One or More Visits to a Nonphysician Clinician	
	1987 (N=20,012)	1997 (N=21,390)	1987 (N=6414)	1997 (N=7703)
<i>percentage of respondents</i>				
Age				
<18 yr	27.6	26.2	22.7	17.8
18–44 yr	36.6	33.4	39.5	36.6
45–64 yr	21.4	24.0	22.7	27.2
≥65	14.4	15.9	15.2	18.4
Sex				
Male	42.7	44.1	41.1	38.8
Female	57.3	55.9	59.0	61.2
Race or ethnic group				
White	82.7	76.9	87.5	84.6
Black	8.8	10.5	6.0	6.2
Hispanic	5.9	9.2	4.4	6.4
Other	2.7	3.3	2.1	2.8
Education				
<12 yr	25.6	35.2	20.3	27.5
12 yr	35.6	26.7	37.2	27.2
13–16 yr	30.6	30.5	31.8	35.5
≥17 yr	8.2	7.6	10.7	9.7
Income status*				
Below poverty level	11.3	12.1	10.2	9.9
Near poverty level	4.0	4.2	3.4	3.6
Low	12.9	13.3	11.9	12.1
Middle	35.8	33.3	37.0	33.6
High	36.0	37.1	37.6	40.9
Health insurance†				
None	9.9	7.5	9.8	6.8
Public	25.8	31.0	26.1	31.4
Private	78.2	76.2	80.7	79.5
Region of United States				
Northeast	20.8	19.2	19.8	17.3
Midwest	26.8	24.0	29.3	28.4
South	33.0	34.9	26.3	29.8
West	19.5	22.0	24.6	24.5
Area of residence				
Urban	74.6	80.3	75.4	77.8
Rural	25.4	19.7	24.6	22.2
Employment status				
Employed	70.0	73.1	70.0	70.0
Unemployed	30.0	26.9	30.0	30.0
Number of conditions				
<2	50.2	54.7	37.6	41.1
2 or 3	39.0	34.6	44.8	39.8
≥4	10.8	10.6	17.6	18.9

\* Near poverty level denotes 100 to 124 percent of the poverty level, low income 125 to 199 percent of the poverty level, middle income 200 to 399 percent of the poverty level, and high income more than 400 percent of the poverty level.

† The categories are not mutually exclusive.

## COSTS

When data from medical providers were complete, these were used as the basis for estimating expenditures; when they were not available, costs were estimated with the use of data from individual respondents. Whereas in the 1987 survey, variables for expenditures reflected providers' charges, the 1997 survey used actual payments made for services. To achieve comparability between the surveys, the cost estimates in the National Medical Expenditure Survey were adjusted (deflated) with the use of methods developed by the Agency for Healthcare Research and Quality for this purpose<sup>11</sup> and were then adjusted for inflation (inflated) with the use of the Consumer Price Index.

## OTHER VARIABLES

Selected characteristics of the respondents were analyzed to examine differences between patients who saw nonphysician clinicians and those who saw physicians and to adjust for any changes in the case mix between the 1987 and 1997 surveys. These characteristics, listed in Table 1, included demographic factors, insurance status, geographic factors, and the total number of conditions (as an indicator of the burden of illness).<sup>12</sup>

## STATISTICAL ANALYSIS

The characteristics and expenditures of respondents who made one or more visits to nonphysicians were compared between the two study years. We analyzed changes in the proportion of respondents in each of three mutually exclusive categories — those who visited nonphysician clinicians only, those who visited physicians only, and those who visited both nonphysician clinicians and physicians — between 1987 and 1997. After examining these trends for the whole sample, we conducted a similar set of analyses for each of the eight conditions treated most frequently by nonphysician clinicians. Next, we conducted a two-stage analysis to examine trends among persons treated by each of the 10 groups of nonphysician clinicians, first determining the proportion of persons who made one or more visits to a particular type of clinician and among those persons, determining the proportion who also made one or more visits to a physician. A subsequent set of analyses compared the proportion of respondents who received each type of service (e.g., preventive care) during one or more visits to nonphysician clinicians in 1987 and 1997.

Polytomous logistic-regression models were

conducted for each set of analyses outlined above to adjust for changes in demographic characteristics, insurance status, geographic factors, and the total number of conditions between the two time points.<sup>13</sup> The year 1987 (as compared with 1997) was used as the reference group for the independent variable, and the group of respondents who saw only physicians (as compared with those who saw only nonphysician clinicians and those who saw both nonphysician clinicians and physicians) was used as the reference group for the dependent variable. We used ordinary logistic regression to model the trend in overall visits to the physician-only group in 1997 as compared with 1987, using the two other groups combined as the reference group for the dependent variable.

Because odds ratios may not provide accurate estimates of relative risk when the outcome of interest is relatively common, the method described by Zhang and Yu was used to convert the odds ratios from the logistic models to risk ratios.<sup>14</sup> Ninety-five percent confidence intervals were calculated for all estimates; point estimates with intervals that did not overlap were considered to indicate statistical significance. To provide nationally representative estimates and to account for the multistage

sampling design of the surveys, all analyses were conducted with the use of the SUDAAN statistical package,<sup>15</sup> with appropriate weighting and nesting of variables. All reported P values are based on two-sided tests.

## RESULTS

### CHARACTERISTICS OF RESPONDENTS WHO VISITED NONPHYSICIANS

Among patients who visited physicians and those who visited nonphysician clinicians, the demographic, geographic, and clinical characteristics of the respondents were similar in 1987 and 1997 (Table 1). In 1997, as compared with respondents who made one or more visits to physicians, those who made one or more visits to nonphysicians were significantly more likely to be 65 years of age or older ( $P=0.04$ ), female ( $P<0.001$ ), white ( $P=0.003$ ), and college-educated ( $P=0.002$ ), and to have a high income ( $P=0.009$ ), private insurance ( $P=0.02$ ), and two or more medical conditions ( $P<0.001$ ).

### OVERALL TRENDS IN CARE

Between 1987 and 1997, the proportion of patients who saw a nonphysician clinician rose from 30.6

**Table 2. Visits to Physicians and Nonphysician Clinicians According to the Medical Condition.**

Condition*	1987 Visits (N=21,501)			1997 Visits (N=22,505)			Adjusted Relative Risk, 1997 vs. 1987 (95% CI)†	
	Physician Only	Nonphysician Clinician Only	Both	Physician Only	Nonphysician Clinician Only	Both	Nonphysician Clinician Only	Physician and Nonphysician Clinician
	<i>percentage of respondents</i>							
Total	69.3	7.2	23.5	63.9	5.3	30.9	0.81 (0.70–0.93)	1.49 (1.40–1.58)
Back problems	37.5	13.8	48.7	35.1	5.9	59.0	0.38 (0.25–0.60)	1.18 (1.04–1.30)
Acute respiratory infection	71.3	2.7	26.0	66.7	1.7	31.6	1.02 (0.60–1.72)	1.48 (1.31–1.66)
Arthropathy	58.7	3.4	37.9	47.5	1.4	51.1	0.49 (0.20–1.18)	1.41 (1.25–1.56)
Eye disorder	49.7	8.4	41.9	47.5	3.7	48.8	0.34 (0.21–0.54)	1.18 (1.06–1.30)
Mood disorder	32.3	10.0	57.7	34.8	3.0	62.2	0.20 (0.08–0.46)	1.02 (0.83–1.21)
Normal pregnancy	77.2	1.4	27.4	54.9	3.4	41.7	3.11 (1.17–7.97)	1.76 (1.46–2.06)
Essential hypertension	68.1	2.4	29.5	58.2	1.3	40.5	0.70 (0.33–1.44)	1.40 (1.23–1.58)
Diabetes	64.2	3.1	32.7	53.4	1.0	45.6	0.13 (0.04–0.53)	1.37 (1.16–1.59)

\* Some visits were made for more than one condition.

† For each condition, the relative risk represents the likelihood of being treated only by a nonphysician clinician or by both a nonphysician clinician and a physician in 1997 as compared with 1987, with adjustment for age, sex, race or ethnic group, level of education, income level, insurance status, region, employment status, urban or rural residence, and number of medical conditions. The physician-only group is the reference group for the dependent variable. CI denotes confidence interval.

percent to 36.1 percent (adjusted relative risk for 1997 as compared with 1987, 1.42 [95 percent confidence interval, 1.35 to 1.50]). Outpatient visits to nonphysician clinicians cost an estimated \$15.0 billion in 1987 (adjusted for inflation to 1997 dollars) and \$22.7 billion in 1997, accounting for 24.9 percent and 22.2 percent of total expenditures for outpatient visits, respectively, during those years.

The proportion of patients who saw both nonphysician clinicians and physicians rose from 23.5 percent in 1987 to 30.9 percent in 1997 (adjusted relative risk, 1.49 [95 percent confidence interval, 1.40 to 1.58]) (Table 2). There were declines in the proportions of persons treated only by nonphysician clinicians, from 7.2 percent in 1987 to 5.3 percent in 1997 (adjusted relative risk, 0.81 [95 percent confidence interval, 0.70 to 0.93]), and treated only by physicians, from 69.3 percent to 63.9 percent (adjusted relative risk, 0.87 [95 percent confidence interval, 0.84 to 0.90]).

The pattern was similar for each type of provider. There was a significant decline in the mean num-

ber of visits among respondents who visited physicians only (from 4.13 to 3.89 visits,  $P=0.001$ ) and in those who visited nonphysician clinicians only (from 5.49 to 3.51 visits,  $P<0.001$ ). In contrast, among respondents seeing both types of providers, there was a substantial increase in the number of visits to physicians (from 5.88 to 6.68,  $P<0.001$ ), accompanied by a decline in the number of visits to nonphysician clinicians (from 6.52 to 5.27,  $P<0.001$ ).

In addition, for each visit to a nonphysician clinician, respondents were asked whether any physicians worked at the same location. Whereas in 1987, only 14.3 percent of respondents said yes, in 1997 the proportion was 41.1 percent.

**TREATMENT OF SPECIFIC CONDITIONS**

A similar pattern was seen for the eight most common conditions treated by nonphysician clinicians — namely, an increase in the proportion of patients treated by both physicians and nonphysician clinicians, and a corresponding decrease in the

**Table 3. Visits to Specific Types of Nonphysician Clinicians.\***

Type of Clinician	One or More Visits to a Nonphysician Clinician†			One or More Visits to a Physician as Well as to a Nonphysician Clinician‡		
	1987 (N=21,501)	1997 (N=22,505)	Adjusted Relative Risk (95% CI)	1987 (N=6414)	1997 (N=7703)	Adjusted Relative Risk (95% CI)
	% of respondents			% of respondents		
Chiropractor	6.4	4.1	0.66 (0.57–0.75)	71.9	82.2	1.20 (1.13–1.24)
Midwife	0.1	0.3	4.14 (2.44–6.99)	62.1	72.9	1.56 (1.10–1.61)
Nurse or nurse practitioner	11.6	15.8	1.60 (1.46–1.75)	77.0	85.6	1.14 (1.10–1.17)
Optometrist	2.6	6.3	2.45 (2.09–2.86)	70.7	77.3	1.25 (1.18–1.29)
Podiatrist	3.2	0.7	0.22 (0.17–0.27)	82.8	93.7	1.16 (1.09–1.19)
Physician assistant	0.7	2.2	3.82 (2.80–5.18)	64.2	80.1	1.17 (0.86–1.38)
Physical or occupational therapist	1.5	2.6	1.82 (1.53–2.18)	90.2	97.2	1.07 (1.01–1.09)
Psychologist	1.8	2.0	1.22 (0.98–1.50)	78.9	89.1	1.18 (1.09–1.22)
Social worker	0.4	0.7	2.35 (1.56–3.53)	81.4	90.5	0.78 (0.22–1.14)
Other	7.8	12.4	1.84 (1.65–2.04)	83.7	94.3	1.12 (1.10–1.14)

\* Some respondents visited more than one type of nonphysician clinician. The relative risks represent the likelihood of one or more visits to the particular type of nonphysician clinician and the likelihood of one or more visits to a physician as well in 1997 as compared with 1987, with adjustment for age, sex, race or ethnic group, level of education, income level, insurance status, region, employment status, urban or rural residence, and number of medical conditions. CI denotes confidence interval.

† The denominator for the percentages is the total number of respondents who saw a physician or a nonphysician clinician or both.

‡ The denominator for the percentages is the total number of respondents who saw a nonphysician clinician.

proportions treated by only one of the two types of providers (Table 2). The only conditions that did not follow this pattern were pregnancy, for which there was an increase in the proportion of women who saw nonphysician clinicians with and without accompanying physician visits, and mood disorders, for which there was a large drop in visits to nonphysician providers that was not offset by a commensurate increase in conjoint care.

#### TREATMENT BY SPECIFIC GROUPS OF NONPHYSICIAN CLINICIANS

For 7 of the 10 groups of nonphysician clinicians, the proportion of respondents who made one or more visits increased significantly between 1987 and 1997 (Table 3). Among respondents who visited a nonphysician clinician, the proportion of persons who also visited a physician increased significantly for 8 of the 10 groups. A respondent was more than twice as likely to have visited more than one type of nonphysician clinician in 1997 as in 1987 (8.6 percent vs. 4.7 percent; adjusted relative risk, 2.11 [95 percent confidence interval, 1.86 to 2.40]).

#### TYPE OF CARE DELIVERED BY NONPHYSICIAN CLINICIANS

In 1987, the proportion of persons who received one or more preventive care services was similar whether the services were provided by a physician (9.9 percent) or a nonphysician clinician (9.5 percent) (Table 4). In 1997, however, the proportion differed

substantially between the two groups, with 16.2 percent of persons receiving preventive care services from a physician and 30.3 percent receiving such services from a nonphysician clinician. Thus, although the delivery of preventive care services increased among both types of providers, the increase among nonphysician clinicians was approximately twice that among physicians (adjusted relative risk for preventive care in 1997 as compared with 1987, 3.40 [95 percent confidence interval, 2.98 to 3.85] vs. 1.64 [95 percent confidence interval, 1.50 to 1.80], respectively) (Table 4).

There were several other changes in the care delivered by the two groups of providers over time. Whereas the proportion of persons receiving acute care from physicians remained stable, the proportion receiving such care from nonphysician clinicians declined by 28 percent between 1987 and 1997 (Table 4). Although the proportion of persons who received psychotherapy from physicians increased, the proportion who received this service from nonphysician clinicians decreased. Finally, a decrease in the proportion of women who received maternity care from physicians was accompanied by a trend toward an increase in the proportion who received such care from nonphysician clinicians (Table 4).

## DISCUSSION

During the study period, there was an increase in the proportion of persons who received conjoint treatment from nonphysician clinicians and physi-

**Table 4. Type of Care Provided by Nonphysician Clinicians and Physicians.\***

Type of Care	Nonphysician Clinicians			Physicians		
	1987 (N=6414) % of respondents	1997 (N=7703) % of respondents	Adjusted Relative Risk (95% CI)	1987 (N=20,012) % of respondents	1997 (N=21,390) % of respondents	Adjusted Relative Risk (95% CI)
General checkup	12.0	14.7	1.26 (1.11–1.42)	43.4	53.2	1.24 (1.19–1.28)
Acute care	68.1	49.2	0.69 (0.64–0.73)	79.1	76.3	0.98 (0.96–1.00)
Psychotherapy	9.7	7.5	0.82 (0.69–0.95)	2.0	3.3	1.70 (1.41–2.03)
Preventive care	9.5	30.3	3.40 (2.98–3.85)	9.9	16.2	1.64 (1.50–1.80)
Maternity care	1.7	2.0	1.10 (0.80–1.51)	3.5	2.6	0.74 (0.63–0.86)
Other	8.2	18.6	2.28 (1.98–2.63)	4.5	5.8	1.30 (1.15–1.47)

\* Respondents may have had more than one visit during which a particular type of care was provided. The relative risks represent the likelihood of having received a particular type of care in 1997 as compared with 1987, with adjustment for age, sex, race or ethnic group, level of education, income level, insurance status, region, employment status, urban or rural residence, and number of medical conditions. CI denotes confidence interval.

icians; this pattern was consistent among a diverse group of providers and persons with a wide variety of medical conditions. There was also a shift in the types of services provided by nonphysician clinicians and physicians. The implications of these findings can best be understood by considering them from both the clinician's perspective and the patient's perspective.

Clinicians have expressed concern about the nature and degree of overlap of services provided by nonphysician clinicians and physicians.<sup>16</sup> Are these two groups working in a complementary fashion, delivering the same services to different groups of patients; as collaborators, offering different services to the same patients; or as competitors, providing the same services to the same patients?

A major argument for expanding the privileges of nonphysician clinicians and the rates of reimbursement for their services has been that these clinicians will serve in a complementary role, providing care for populations that are underserved by physicians, such as poor patients and those living in rural areas.<sup>17</sup> However, we found that, for the most part, patients treated by nonphysician clinicians were more similar to than different from patients treated by physicians. If anything, our data on race or ethnic group, education, income, and insurance status suggest that nonphysician clinicians see patients who are somewhat less disadvantaged than those seen by physicians.

On the other hand, our findings provide evidence of increased collaboration between nonphysician clinicians and physicians. Between 1987 and 1997, there was a shift toward the provision of preventive services by nonphysician clinicians, a decline in the delivery of acute care services by nonphysician clinicians, an increase in the proportion of patients seen by both types of providers, an increase in the number of visits to physicians among patients who received care from both types of providers, and a large increase in the proportion of persons who visited a nonphysician clinician at a site where a physician also practiced. These findings support previous research suggesting that physicians are increasingly enlisting nonphysician clinicians to extend their coverage capabilities, particularly for their sicker patients.<sup>18</sup>

In a market with finite resources, however, there is a fine line between collaboration and competition. The provision of health care services is highly regulated and is dependent on reimbursement policies dictated by state and federal agencies and, in-

creasingly, by large health care organizations. A relaxation of these rules and policies may reduce the current level of role differentiation and increase competition between nonphysician clinicians and physicians. The stakes are highest for providers with the greatest overlap in training and in pools of prospective patients. For example, the battle between psychiatrists and psychologists over the authority to prescribe medications has been particularly bitter.<sup>19</sup>

For patients, the type of clinician who provides care is less important than whether that care meets their medical needs. Although the issue of the quality of care has usually been addressed by studies comparing nonphysician clinicians and physicians who practice independently,<sup>20,21</sup> the growing use of groups of clinicians to provide care suggests the need for a better understanding of how those services are coordinated in actual practice. Multidisciplinary models have been shown to improve care for chronic conditions<sup>22</sup> and the provision of preventive services<sup>23,24</sup>; however, these approaches hinge on successful integration of the services provided by multiple clinicians. Without effective communication, the increase in the provision of services by multiple clinicians is likely to reduce both the continuity and the quality of care.<sup>25</sup> It is important to determine whether the increase in the proportion of patients receiving care from multiple providers, as observed in our study, reflects greater integration or increased fragmentation of care.

Our study has several limitations. First, relatively little clinical detail was available about the content of care or the interactions between nonphysician clinicians and physicians, which made it impossible to determine the level of coordination, quality of care, or outcomes of care for various provider arrangements.

Second, the categories used for the questionnaires limited the information that could be ascertained about specific classes of nonphysician clinicians; for instance, it was not possible to distinguish among nurse practitioners, clinical nurse specialists, and other types of nurses. Small changes in wording between the two surveys may also have influenced service-use estimates for podiatrists and social workers.

Third, because the survey respondents were asked to identify a main provider for each visit, it was not possible to identify visits during which more than one type of provider delivered care. As a result, the total amount of care provided conjointly by phy-

sicians and nonphysician clinicians was probably underestimated.

Finally, the term “nonphysician clinician” represents an amalgamation of providers with a wide spectrum of training and philosophical approaches to treatment. Given this heterogeneity, the trends among the various types of nonphysician clinicians were surprisingly consistent. However, like previous studies of nonphysician clinicians as a group, our study may ultimately be more useful for understanding the care provided by physicians than the care provided by nonphysician clinicians.

The results of this study suggest that in order to ensure that patients receive the best possible care, it is essential to measure, understand, and ultimately optimize the degree of integration among the services they receive from different providers. This undertaking will require an effort that is itself collaborative, engaging health care purchasers and patients, health care administrators and researchers, and physicians and nonphysician clinicians.

Supported in part by grants from the Robert Wood Johnson Foundation and from the National Institute of Mental Health (K08-MH01556-01A).

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