

Estimates of Costs of Primary Care Physician Turnover

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Abstract

Objective: To provide estimates of the institutional costs associated with primary care physician (PCP) turnover (job exit).

Subjects and Methods: A cohort of 533 postresident, nonfederal, employed PCPs younger than 45 years of age, in practice between 2 and 9 years, participated in national surveys in 1987 and 1991. Data from a national study of physician compensation and productivity and data from physician recruiters were combined with PCP cohort data to estimate recruitment and replacement costs associated with turnover.

Results: By the time of the 1991 survey, slightly more than half (n = 279 or 55%) of all PCPs in this cohort had left the practice in which they had been employed in 1987; 20% (n = 100) had left 2 employers in that same 5-year period. Among those who left, self-designated specialties and proportions were general/family practice (n = 104 or 37%); general internal medicine (n = 91 or 33%); and pediatrics (n = 84 or 30%). Estimates of recruitment and replacement costs for individual PCPs for the 3 specialties were \$236,383 for general/family practice, \$245,128 for general internal medicine, and \$264,645 for pediatrics. Turnover costs for all PCPs in the cohort by specialty were \$24.5 million for general/family practice, \$22.3 million for general internal medicine, and \$22.2 million for pediatrics.

Conclusions: Turnover was an important phenomenon among the PCPs in this cohort. This turnover has major fiscal implications for PCP employers because loss of PCPs causes healthcare delivery systems to lose resources that could otherwise be devoted to patient care.

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Healthcare services are undergoing dramatic changes in organization and financing.¹ Simultaneously, market forces are driving physicians, once largely individual entrepreneurs in private practice, into alternative employment settings at an accelerated rate.^{2,3} In 1996, the American Medical Association Council on Medical Services reported that the proportion of self-employed primary care physicians (PCPs), defined as those physicians who were owners or part owners of a practice or shareholders in their own professional corporation,

had declined dramatically.² All other physicians were considered employed physicians. In 1983, 23% of all patient care PCPs (excluding residents in training) reported being employed; by 1995, that number had grown to 48%.²

Much of this change in physician employment is due to consolidation of physicians' practices and the growth of enrollment in managed care organizations (MCOs). In 1991, there were 515 health maintenance organizations (HMOs) covering 35 million lives; by 1996 there were 651 HMOs covering 66.8 million lives.⁴ Similarly, in 1986, PCPs indicated that 13% of their practice revenue came from managed care; by 1995 that proportion had grown to 32%.²

Demand for PCPs in MCOs is increasing because of MCO enrollment growth.⁵ In 1994, fewer than 35% of US physicians were in primary care (general pediatrics, general internal medicine, or family practice).⁶ The majority of HMOs responding to a Group Health Association of America (now the American Association of Health Plans) and US Health Resource and Services Administration survey in 1992 indicated that they were experiencing a shortage of PCPs and that PCP turnover (job exit) was important.⁵

In the past, physician turnover was minimal, in part because most physicians owned their own businesses in the form of fee-for-service practices. Because 76% of the young (under the age of 40 years) PCPs surveyed in 1987 began practice as employed physicians, the consequences of employment and turnover will have the greatest impact on this group, the organizations in which they work, and the populations they serve. The purpose of this exploratory study was to provide estimates of institutional costs of PCP turnover.

... PSYCHOLOGICAL AND ECONOMIC
PERSPECTIVES ON TURNOVER OF
PRIMARY CARE PHYSICIANS ...

Voluntary separations from employment are called "quits," "voluntary turnover," or simply, "turnover."⁷⁻¹⁰ Managers and organizational behavior researchers have expressed much interest in job satisfaction and turnover, and most are inclined to view dissatisfaction as a result of job content, employer policies concerning job tasks, working conditions, compensation, productivity, and most recently, intrinsic employee factors.^{8,11-17} Although many psychological researchers will argue regarding the type

and degree of effect that job satisfaction has on employee behavior, few will argue that job satisfaction has been consistently, and significantly, associated with turnover. Most psychological studies of turnover have been correlational studies in which the individual is the primary unit of analysis.

Economists view the phenomenon of job satisfaction somewhat differently. Workers are perceived as choosing jobs and employers from competing alternatives. If they are dissatisfied, they will be motivated to seek other employment (ie, turnover), assuming that other employment is available.¹⁸ Freeman noted that "economists are leery of what purport to be measures of individual utility."¹⁹ Freeman and Hamermesh were among the first economists to provide models for examining job satisfaction as an economic variable.^{19,20} Their thinking was influenced, in part, by the psychological researchers Locke and Vroom, who linked job affect with behavioral outcomes, namely turnover or quit behavior.^{7,21}

Freeman proposed 2 ways of looking at job satisfaction: as an independent variable and as a dependent variable.¹⁹ As an independent variable, job satisfaction becomes a proxy for unobserved objective factors and is related to future mobility (or turnover) and other overt behavior. This empirically demonstrated relationship "rescues" job satisfaction from the otherwise dismal status of being an "emotional state" when it is treated as a dependent variable by researchers. Hamermesh's model states that a worker's subjective appraisal of working conditions (ie, job satisfaction) is a dependent variable and is a function of the difference between actual and expected wages, experience, and the extent of occupation-specific training.²⁰

Becker's landmark work in labor economics, *Human Capital*, states that specific training increases productivity for the institutions providing it.²² Completely specific training can be defined as training that has no effect on the productivity of trainees that would be useful in other institutions. Much on-the-job training is neither completely general nor completely specific but may increase productivity in a given category of institutions, such as HMOs. One of the largest complaints that HMO administrators have voiced is that new PCPs are poorly prepared for practice in managed care.⁵ When a PCP is finally trained to see patients every 15 minutes (or less) and to rely more on history and less on laboratory and radiologic tests, he or she may decide to leave and accept a better offer. The loss of this specifically trained PCP from an HMO means that the HMO must incur the costs of training a new one.

Few authors have studied physician job satisfaction and turnover.^{5,23-25} However, early evidence suggests that there are differences between physicians who are not very likely to turn over and those who are very likely to turn over. Two early studies (1969 and 1974) of PCPs who left group practices indicated that dissatisfaction with income or income distribution was a major reason for leaving.^{26,27} The absolute level of income was not the major factor, but rather the allocation of income among physicians and the relationship between productivity and income often resulted in dissension. These findings seem to have been corroborated by Mick et al in their study of physician turnover in 8 New England prepaid group practices.²³

Mick and his fellow researchers compared stayers with leavers and found that stayer-leaver status was influenced by experiences before and during the physicians' tenure in the prepaid group practices. Those who left reported experience in fee-for-service, hospital-based, and academic positions before they joined prepaid group practices. Leavers reported that while in prepaid group practice, they experienced constraints on autonomy, independence, and professional development. Leavers also reported higher incomes and longer working hours in their new practices. Potential for greater autonomy was cited as the major reason for leaving. The study was limited by its retrospective recall, a limitation of all exit surveys. The authors also indicated that turnover of physicians in prepaid group practices might be desirable, and that it was too early to make recommendations.

More recently, Kerstein et al examined PCP turnover in HMOs.²⁴ They found that turnover was higher among physicians whose HMO patients comprised a greater percentage of their total practice. They also found that PCPs were more likely to leave a plan when they could not control the risks of other physicians' behavior. Additionally, Kerstein et al indicated that market characteristics were significant in explaining physician turnover.²⁴

Intention to quit is the strongest predictor of actual quit behavior.^{7,25} Job satisfaction (or dissatisfaction) is a precursor of intent to quit. The latent period between intent to quit and actual quit behavior is a function of the economic climate and labor market.²⁸ If the turnover of an individual is desired by an organization, then discussions about the costs of turnover are moot. However, if the turnover of the individual is not desired and the time period between the intent to quit and the actual turnover is short, then opportunities for managerial interven-

tions and potential retention of the individual in the organization are diminished, and turnover costs do become important.

... METHODS ...

This descriptive study used a cohort of 533 postresident, nonfederal, employed PCPs younger than 45 years of age, who had been in practice between 2 and 9 years and who had participated in 2 national surveys in 1987 and 1991. The 2 surveys were the American Medical Association/Education and Research Foundation (AMA/ERF) *Practice Patterns of Young Physicians, 1987*²⁹ and Hadley's Robert Wood Johnson Foundation (RWJF) sponsored *Practice Patterns of Young Physicians, 1991*.³⁰ Both were designed to investigate factors that influence career decisions of young physicians and characteristics of their practices.

The AMA/ERF 1987 survey topics included questions on current practice arrangements, career decisions, family background, patient care activities, current income and expenses, and future plans. The survey sample was drawn from the American Medical Association Physician Masterfile, which contains current and historical data on more than 689,000 US physicians, including members and nonmembers. The sample consisted of a simple random sample of 9260 physicians, plus a minority physician oversample of 1821 physicians for a total sample of 11,081 physicians. Telephone interviews were completed with 5865 physicians in the sample for a response rate of 63%.²⁹

The methodology for the RWJF 1991 survey has been published elsewhere.^{30,31} It, too, was designed to represent all allopathic physicians (and osteopathic physicians who completed allopathic residencies) younger than 45 years of age who had been in practice between 2 and 9 years, with a minority physician oversample. Black and Hispanic physicians were oversampled to ensure adequate numbers for subsample analyses. Telephone interviews were again conducted. Questions in the interview included those developed for the first survey in 1987 and new ones developed for the 1991 survey, including questions regarding leaving practices (turnover).

Half of the RWJF 1991 survey sample was drawn from the AMA/ERF 1987 survey, and half was newly drawn from the AMA Physician Masterfile. A total of 9745 physicians were picked for the 1991 interview: 4400 at random from the AMA Masterfile, 1100 in the minority oversample, and 4245 from the 1987

survey to be reinterviewed. Interviews were completed with 6053 (69.8%) of the sample physicians. Response rates in the 3 sample segments were 63.1%, 67.4%, and 76.3%, respectively. Responding and nonresponding physicians were compared using data from the 1987 and 1991 surveys. Multivariate analyses indicated that nonrespondents were more likely than respondents to have been self-employed in 1987. However, the 2 groups were not significantly different in age, hours worked per week, patients seen per week, and debt at graduation from medical school.³¹

The data for this descriptive cohort study consisted of personal and organizational independent variables for PCPs who participated in the AMA/ERF 1987 survey, with turnover-related responses from the same PCPs who participated in the RWJF 1991 survey as dependent variables. For the 18% of the PCPs who worked at more than one practice in 1987, only those variables pertaining to the primary practice (ie, the one in which the PCP worked the most hours per week) were used.

Data from the American Group Practice Association (AGPA) report *1993 Group Practice Compensation Trends and Productivity Correlations*³² were combined with the PCP cohort data to estimate the replacement costs associated with the turnover of these physicians. AGPA collected institutional-level compensation and productivity data from over 500 US medical groups with 10 or more

practicing full-time physicians across the specialties. The AGPA report contained 1991 means for compensation of PCPs by specialty, which were used for this research. Estimates related to loss of productivity were obtained by subtracting the 1991 mean starting salary per PCP specialty from the 1991 gross production revenues per PCP specialty.

Institutional-level PCP recruitment cost estimates were provided by physician recruiters, Thomas Battles, MBA, formerly of Premier Medical Associates (written communication, June 15, 1997) and Chris Tilden, MHSA, PhD, MedicalSearch Institute of Superior Consultant Company (written communication, March 22, 1999). Both Mr. Battles and Mr. Tilden have had experience with large, nationally known organizations that have been in business for over a decade and have placed PCPs nationally. Additionally, all executives of state-level primary care organizations in attendance at a primary care conference (January 19-22, 1999) were interviewed in person at the conference and after the conference by telephone and E-mail (February 16-18, 1999). A number of physician recruitment Web sites were queried as well.³³⁻³⁵ Institutional-level recruitment costs were based on 1994-1996 and 1998 national data and were adjusted to 1991 dollars for this study. Institutional-level recruitment costs included interviewing costs such as airfare, hotel, and meals; relocation costs; search firm fees; and sign-on bonuses. *SPSS for Windows*, Version 6.0, was used for data analysis.³⁶

... RESULTS ...

Table 1. Types of Employers of Primary Care Physicians by Physician Specialty

Employer	No. (%) of Primary Care Physicians			
	General Practice/ Family Practice (n = 182)	General Internal Medicine (n = 167)	Pediatrics (n = 184)	Total (n = 533)
Physician or group of physicians	56 (31)	48 (29)	43 (23)	147 (28)
Hospital	37 (20)	41 (24)	35 (19)	113 (21)
University/college	15 (8)	26 (16)	34 (19)	75 (14)
State/local government	14 (8)	4 (2)	16 (9)	34 (7)
Health maintenance organization	13 (7)	20 (12)	22 (12)	55 (10)
Medical school	4 (2)	5 (3)	8 (4)	17 (3)
Some other type of employer	43 (24)	23 (14)	26 (14)	92 (17)

By definition, at the time of the second survey in 1991, all respondents in this cohort were younger than age 45 years and had been in practice between 7 and 11 years. Also by definition, all respondents were postresident PCPs not employed by the federal government. The self-designated practice specialties of the PCPs were general/family practice (n =182 or 34%), internal medicine (n =167 or 31%), and pediatrics (n =184 or 35%) (Table 1). In 1987, 76% of these young PCPs were employed physicians.

Only 24% started out in solo practice. In 1991, when these same PCPs were reinterviewed, the proportions of employed and solo practice PCPs remained approximately the same at 75% and 25%, respectively (data not shown).

As outlined in Table 1, physicians or groups of physicians were the major employers of PCPs, followed closely by hospitals. Employer patterns were similar across the specialties (general/family practice, general internal medicine, and pediatrics) except that pediatricians were more likely to be employed by universities or medical schools and general internists were less likely to be employed in state or local government. HMOs were more likely to employ general internists and pediatricians than general or family practitioners.

Turnover was an important phenomenon among the PCPs in this cohort (Table 2). By the time of the second survey in 1991, slightly more than half (55%) of all the PCPs in this cohort had left the practice in which they had been employed in 1987. Over one third (n = 100 or 36%) of the PCPs who were leavers (20% of the whole sample) had left two employers in that same 5-year time period (data not shown).

As outlined in Table 3, mean recruitment and replacement costs for individual PCPs for the three specialties were \$236,383 for general/family practice, \$245,128 for general internal medicine, and \$264,645 for pediatrics. Turnover costs for all PCPs in the cohort by specialty were \$24.5 million for general/family practice; \$22.3 million for general internal medicine; and \$22.2 million for pediatrics. Turnover costs for all PCPs in the cohort totaled over \$69 million.

race/ethnicity were *not* predictors of turnover.²⁵ There are no quick fixes; research into PCP job satisfaction and turnover thus far does not point to simple solutions. Additional institutional-level research should be undertaken before implementing managerial interventions for prevention of PCP turnover. Turnover of PCPs causes healthcare institutions to lose large investments in human resources, to commit resources to their replacement, and to increase the salaried labor costs of health services organizations.^{37,38} Additionally, in a case-based analysis of rural hospital specializations, conversions, and closures, it was found that 4 of the 6 rural hospitals' negative changes were due, in large part, to costs related to physician recruitment, retention, and turnover.³⁹

This institutional-level analysis assumed that the individual PCP would obtain another position before leaving a practice. However, if the PCP quits and is unemployed for some time, the costs to the individual can be significant. The 1991 AGPA average annual salaries for PCPs were as follows³²: those in general/family practice earned \$90,379; general internal medicine, \$92,006; and pediatrics, \$82,953. General or family practitioners unemployed for 1 to 3 months could lose between \$7531 and \$22,593. Internists unemployed for the same time period could lose between \$7667 and \$23,001, and pediatricians could lose between \$6912 and \$20,736. Although there may be costs to society or the individual physician, we excluded them from our calculations because we took an institutional perspective.

One of the limitations of this, or any other, cross-sectional survey, however, is that the findings may

... DISCUSSION ...

Turnover was a common phenomenon among this cohort of young PCPs, as evidenced by the fact that more than half of the cohort had left practices between 1987 and 1991. Additionally, we estimated that PCP turnover has major fiscal implications for PCP employers. Previous research conducted by us with this cohort data demonstrated that gender, marital status, number of children living with the respondent, and

Table 2. Turnover Status of Primary Care Physicians

Turnover Status	No. (%) of Primary Care Physicians			
	General Practice/ Family Practice (n = 174)	General Internal Medicine (n = 160)	Pediatrics (n = 173)	Total (n = 507)*
Stayed	70	69	89	228 (45)
Left	104	91	84	279 (55)

*Turnover status was not available for 26 primary care physicians in the cohort.

be dated if events and issues being measured are highly volatile and dynamic in nature. Although this is one of the few longitudinal studies of PCPs available, because the data were collected in 1987 and 1991 some of the information obtained may not be as generalizable now as it would have been a decade ago. Another limitation is that it is unknown whether this rate of turnover continued for the next 5 years, in other words, whether the observed turnover was due in part to the fact that the cohort of PCPs was young (under age 45). Young PCPs may quit practices more often than older PCPs.

Additionally, the data used for this study were taken from databases stripped of potentially identifying variables to preserve the confidentiality of individual respondents. Zip codes, city and state of practice setting, and city and state of potential practice settings were encrypted in the database. Hence, it was not possible to explore practice change behavior in terms of geographical factors.

Finally, the institutional-level cost data used for this study were obtained from 2 national PCP recruiters and 1 national survey of physician compen-

sation and productivity, which may have affected generalizability. The cost data were also conservative estimates of physician compensation, productivity, recruitment, and replacement costs. Mean costs were used and other variable costs, such as locum tenens physician services, continuing medical education, loan forgiveness, and free office space, were not included. Nor were state- or community-level costs, which can be quite significant, contained in this analysis despite the fact that underserved US communities using National Health Service Corps PCPs may suffer disproportionately higher cost burdens.⁴⁰⁻⁴² Executives of rural primary care offices have indicated that inadequate data are collected on these kinds of costs (oral communications, January 19-22, 1999, and February 16-18, 1999).

Despite these limitations, we believe that this exploratory study, based on a nationally representative cohort of PCPs, provides a first estimate of what may well be a costly phenomenon. When PCPs leave, human resources that would otherwise contribute to the production of healthcare services are lost. The resulting diminishment in production, dis-

ruption in continuity of patient care, and need to recruit and train new physicians can be costly and can affect health outcomes.^{43,44} Patient disenrollment also may follow, which is of particular concern for prepaid group practice settings such as MCOs.⁴⁵ PCP turnover adds to the administrative costs of the healthcare delivery system. Money that could be spent on healthcare services and improving healthcare outcomes is instead being spent on costs associated with PCP turnover. PCP turnover is important to patients, physicians, managers, policy makers, healthcare planners, medical educators, and health services researchers.^{10,41-45} Improved understanding of PCP turnover and the associated institutional costs may stimulate interventions that promote retention of PCPs.

Table 3. Average Physician Turnover Costs by Specialty

Type of Cost	Cost (1991 Dollars)		
	General/Family Practice (n = 104)	General Internal Medicine (n = 91)	Pediatrics (n = 84)
Recruitment			
Interviewing	8900	8900	8900
Relocation	4450	4450	4450
Search firm	19,580	19,580	19,580
Sign-on bonus	7120	7120	7120
Loss of productivity*			
Gross production minus starting salary	196,333	205,078	224,595
Turnover costs per individual physician	236,383	245,128	264,645
Total costs (all physicians)	24,583,832	22,306,648	22,230,180

*Loss of productivity is defined as specific training costs of a new primary care physician, including, but not limited to, orientation costs, increased time seeing patients, and increased utilization of laboratory tests and radiologic procedures.

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