Clinical Practice Plans in Family Practice Residency Programs

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This paper examines clinical practice plans (CPPs), systems for remunerating physician faculty based on their clinical productivity, in family practice residency programs. A stratified random sample of residency directors responded to a CPP survey. CPPs were found significantly more frequently in residencies (usually operated by universities) either with CPPs in their parent institutions or with high patient volume. Residencies operated by community hospitals were more likely to distribute CPP benefits to faculty based on individual clinical activity, whereas residencies operated by universities were more likely to distribute equal benefits to all faculty or to include academic as well as clinical activities in the benefit determination. While most residency directors felt that CPPs brought financial benefits to a residency and to individual faculty, many directors who did not have CPPs feared that such a plan would create conflicts between patient care and teaching. A case report tracing the evolution of a CPP in one university-administered residency is presented.

Concern about future funding of family practice residency programs has quickened the search for reliable income sources.[1,2] Since patient care is a source of income inherent in the operation of a family practice residency, it is reasonable to examine and, if possible, improve the contribution of clinical income to program finances.

Clinical practice plans (CPPs), systems through which physician faculty receive some form of remuneration based on their clinical practice, have been proposed as vehicles for increasing faculty involvement and productivity in patient care.[3-5] The use of CPPs in medical schools has been detailed in the literature,[4-8] but studies of CPPs in family practice residencies have not been reported.

This paper investigates the prevalence and character of CPPs in family practice training programs and describes the evolution of a CPP in one such residency.

Methods

In the spring of 1982, to determine how many family practice residencies have CPPs, 100 residencies were selected from the 369 nonmilitary programs in the 1981 listing of *Approved Graduate Residency Training Programs in Family Practice* published by the American Academy of Family Physicians (AAFP). Stratified random sampling was used to ensure that each of the four nonmilitary program structure types defined by the AAFP would be adequately represented in the study. Selection included 20 residencies from the 48 community-based programs with no university affiliation, 40 from the 205 community-based programs with university affiliation, 20 from the 54 community-based and university-administered

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Table 1. Frequency of Family Practice Clinical Practice Plans (CPP) by Program Type and Presence of Parent Institution Plan

Program Type	Parent Institution CPP		No Parent Institution CPP	
	CPP	No CPP	CPP	No CPP
Community based	4	0	1	12
Community based, University affiliated	5	2	5	15
Community based, University administered	9	2	2	5
University based	11	1	2	0
Total	29	5	10	32

programs, and 20 from the 62 university-based programs.

In the first phase of the study, a letter soliciting participation in the study was sent to directors of the 100 selected residencies. Each director was asked to return a prepaid postcard with answers to two fixed-response questions: "Does your program have a clinical practice plan?" and "Would you be willing to complete a brief questionnaire about clinical practice plans?" Telephone contact was made with all directors who did not return the postcard. The telephone follow-up disclosed that two of the residencies were no longer in operation. These programs were replaced with randomly selected substitutes of the same program structure type. Between the postcards and the telephone calls, 100 percent response was obtained from the sampled programs.

In the second phase of the study, a questionnaire was mailed to each of the 85 directors who in the first phase of the study had indicated willingness to complete it. The 15 directors who were unwilling to complete the questionnaire were replaced with randomly selected substitutes of the same program structure type; 9 of these substitutes agreed to fill out the questionnaire. The directors were asked to return the questionnaire within two weeks. After four weeks nonrespondents received a follow-up letter and another copy of the questionnaire. Of the 94 directors surveyed, 76 (81 percent) returned the questionnaire.

The questionnaire asked all respondents to describe their residency programs by indicating the number of residents currently enrolled in all three years of training, the current number of full-time family physician faculty, and the approximate number of annual patient visits to the program's family practice center. A respondent whose residency did not have a CPP was asked whether the parent institution had a CPP and whether the residency would like to have a CPP. A respondent whose program had a CPP was asked whether that CPP was part of an overall institutional plan; additional questions inquired about the nature of the residency's CPP benefits, about the methods whereby the benefits were distributed to the faculty, and about any procedures used to evaluate the impact of the CPP. Finally, all respondents were also asked to report benefits and problems they perceived with CPPs.

Results

Responses to the postcard or telephone follow-up in the first phase of the study disclosed that CPPs were significantly less common in community-based programs with or without university affiliation than in university-based and university-administered programs ($P < .001$). When combined, only 18 percent (11/60) of the first two types of programs had CPPs compared with 68 percent (27/40) of the latter two types.

The remaining findings are based on the responses of the 76 programs completing the questionnaire in the second phase of the study. This group did not differ significantly in distribution of program structure type and use of CPPs from the initial sample of 100.

Table 1 shows the distribution of CPPs by program structure type and by presence of a CPP in the residency's parent institution among the 76 programs responding in the second phase of the study. When program structure type was ignored as a variable, the presence of a CPP in a family practice residency was found to be significantly related to the presence of a CPP in the parent institution ($P < .001$). Residency programs differed

from their parent institutions in presence or absence of a CPP in only 20 percent (15/76) of the cases. When the presence of a CPP in the parent institution was used as a control variable, the relationship between program structure type and presence of a CPP observed in the total sample of 100 was not longer statistically significant.

A logistic regression analysis was performed in an attempt to identify additional variables associated with the presence of a CPP. Independent variables introduced were program structure type, presence of CPP in the parent institution, number of residents currently in training, number of full-time family physician faculty, and total number of annual patient visits to the family practice clinic. Two variables were found to be statistically significant predictors of the presence of a CPP: the presence of a CPP in the parent institution ($P < .001$), and the total number of annual patient visits ($P < .03$).

Sixty-nine of the 76 program directors responding to the questionnaire reported the total number of annual patient visits to their practices. These programs were classified into four groups based on the presence or absence of a CPP in the residency and in the parent institution. The Kruskal-Wallis test showed a significant relationship between CPP category and total annual visits, ie, patient volume was larger in residencies with CPPs whose parent institutions did not have CPPs than was the volume in residencies with CPPs whose parent institutions had CPPs and in residencies without CPPs ($P < .01$).

To further investigate the relationship between patient visits and presence of a CPP, the total number of patient visits for each residency was divided by the number of residents and full-time family physician faculty to estimate the program's average number of visits to each physician. The same nonparametric analysis performed for total annual patient visits was repeated for average number of visits to each physician. This analysis did not yield a significant difference among CPP category groups. Thus, the presence of CPPs in residencies without CPPs in their parent institutions was associated with the total number of visits to a residency's practice, not with the average productivity of individual physicians.

Among those directors whose programs did not have a CPP ($n = 36$), a majority (56 percent) said they would like to have a plan, but only 8 (22 percent) indicated they were actually developing one.

Two general approaches to distributing CPP benefits to faculty members were identified from the 32 questionnaires that reported their distribution methods. In the first approach (37 percent), an individual faculty member's benefits were determined directly from a measure of his or her clinical productivity, ie, based on the number of patients seen or gross revenue generated by the individual physician. For example, an individual might receive 40 percent of the clinical revenue he or she produced. In some cases a maximum benefit was established. In the second approach (63 percent), an individual faculty member's benefits were determined by policies of the program other than the single criterion of individual clinical productivity. For example, some residencies divided the total CPP income pool equally among all physician faculty. Others gave credit for academic endeavors such as teaching, administration, and research as well as for clinical productivity. In still others the benefit was negotiated between the program director and the individual faculty member. Sixty-nine percent (9/13) of the community-based programs with or without university affiliation distributed benefits using the first approach, whereas 84 percent (16/19) of the university-based and university-administered programs distributed benefits using the second approach ($P < .01$).

Table 2 summarizes the benefits and problems that the directors identified with CPPs. Directors of residencies with CPPs reported actual benefits and problems they experienced, whereas directors of residencies without CPPs reported the benefits and problems they would anticipate if CPPs were implemented in their programs. The first two benefits listed in the table were given as response selections on the questionnaire. For 82 percent of programs with CPPs and 62 percent of the programs without CPPs, directors indicated increased faculty income as a benefit. Approximately one half of all the directors felt that CPPs increase a program's revenue. Three additional items were mentioned by at least three respondents as "other" benefits: encouraging faculty to keep clinically current, enabling faculty to serve as better role models for residents, and helping directors recruit qualified faculty. Two items were mentioned by at least three respondents as problems: creating conflict between a faculty member's clinical and teaching responsibilities, and fostering competition between faculty and residents for patients. It is noteworthy that only 8 percent (3/39) of

Table 2. Positive Responses to Questions on Benefits and Problems from Clinical Practice Plans (CPP)

Responses	Respondents With CPP (n=39) No. (%)	Respondents Without CPP (n=37) No. (%)
Benefits*		
Increase faculty income**	32 (82)	23 (62)
Increase program revenue**	22 (56)	21 (57)
Keep faculty clinically current	8 (21)	3 (8)
Improve faculty role models	3 (8)	2 (5)
Help recruitment of faculty	3 (8)	2 (5)
Problems*		
Practice/teaching conflict	3 (8)	17 (46)†
Competition with residents for patients	0 (0)	4 (11)

*Items mentioned by at least three respondents
**Given as options on the questionnaire; the others appeared as responses to open-ended questions
†$\chi^2 = 12.42$, $df = 1$, $P < .001$

the directors who had CPPs reported actual conflicts between teaching and patient care, whereas 46 percent (17/37) of the directors who did not have CPPs worried about this problem ($P < .001$).

The percentage of physicians' salaries derived from CPPs ranged from 5 percent to 50 percent with a median of 25 percent. The amount of additional fringe benefits also varied greatly, ranging from $1,000 to $10,000, with a median of $5,000.

Case Report

The Duke-Watts Family Medicine Program is a university-administered residency with clinical rotations in Durham County General Hospital, Duke University Medical Center, and additional sites in the North Carolina Area Health Education Center system. The program is operated through a relatively autonomous nonprofit corporation, Durham Health Care, Inc (DHC), jointly sponsored by Duke University Medical Center and Durham County General Hospital. Although faculty members have full appointments at Duke, the unique corporate status of DHC prohibits the faculty from participating in the Private Diagnostic Clinic partnership, Duke's CPP. Durham County General Hospital has no salaried physicans and no CPP.

The Duke-Watts Program initiated its own CPP in July 1980 with two objectives: to increase total program revenue by encouraging faculty and residents to see more patients, and to increase faculty salaries.

Four practice teams of faculty and residents provide physician services in the Family Medicine Center. A professional fee goal was set for each team based on the team's specific composition of faculty and residents at each level of training. Once a team reached 90 percent of its goal, 17 percent of all subsequent professional fees was divided among the team's faculty members in proportion to the amount of time that each spent in clinical care, and another 17 percent of those fees was placed in a discretionary fund for use by the team as a whole with the restriction that no funds were available for individual distribution to residents.

This plan was continued for two years. During year one, no change in total patient volume occurred. During year two, the total number of visits to the practice rose less than 3 percent.

The CPP was not popular with the faculty. Faculty often voiced their irritation that the CPP favored clinical care over teaching, research, and professional development. Their negative reactions were documented by a survey completed anonymously by nine faculty at the end of the second year. Most of the respondents felt that this CPP incentive system had not provided motivation for generating more professional fees and that this particular incentive system should not be continued.

Other problems surfaced. Setting professional fee goals for the teams was difficult. Some teams easily surpassed goals while others never reached them. Several faculty and residents felt that the

amount of money directed to the discretionary funds of some teams was excessive. However, the teams did use their funds responsibly (eg, to support lunches during weekly noon-hour team meetings, to purchase plants and art for the center, to cover the medical bills of patients who had large balances with the practice, and to acquire a fetal monitor for the office).

After the first two years of operation with a CPP, the following changes were made: a total clinic revenue goal was substituted for individual team goals, profit sharing would occur only after 100 percent of the total clinic revenue goal was attained, maximum amounts were established for team discretionary funds, faculty members would receive credit for time spent in teaching and advising residents, and a minimum of 50 percent of each faculty member's benefits would be transferred to a personal research and education fund in lieu of direct income.

In the few months that the revised CPP has been in operation, satisfaction with the plan has improved. Faculty report that, in particular, equal treatment of both clinical and academic activities has made the plan much more acceptable.

Discussion

Overall, 38 percent of the family practice residencies surveyed by this study have embraced the concept of increasing clinical activity and providing faculty benefits through clinical practice plans, as has been done for many years in the specialty departments of universities and other teaching hospitals.[3-9] CPPs are found more often in family practice residencies whose parent hospitals have institutional plans and in residencies located in or administered by universities.

As a group, residencies with their own CPPs in institutions without CPPs have larger total patient volume than do other programs. Thus, if a residency's parent institution does not have a CPP, that residency may still be able to implement a successful CPP of its own, providing it has substantial patient volume to produce income for distribution in the CPP and to avoid competition for patients between faculty and residents.

Residency directors without CPPs raised concern about the potential conflict between practicing and teaching, a problem that beset the Duke-Watts CPP for two years. This conflict appears as a constant theme in discussions of CPPs.[4-6] Yet only 8 percent (3/39) of the residency directors with CPPs mentioned this as an actual problem, perhaps because most CPPs obviate the conflict through ceilings on practice benefits or through equivalent rewards for academic productivity. Furthermore, 21 percent (8/39) of the directors with CPPs noted that the plans provided an impetus for faculty to keep current clinically, a benefit that may in fact contribute to the quality of a residency's teaching program.

Two general types of CPPs were discovered in the survey, those that distribute benefits directly to faculty based solely on individual clinical productivity, and those that distribute benefits based on policies related to group clinical productivity or individual contributions in nonclinical areas. The clear association between type of residency and method of distributing benefits suggests that CPPs have evolved differently in community hospital and university settings, with community programs favoring direct distribution and university programs favoring distribution policies that account for other faculty responsibilities.

The satisfaction of most directors with CCPs may help allay the concerns of program directors without CPPs who would like to develop plans for their own residencies. The results of this study suggest these program directors will stand the best chance of implementing workable CPPs if their parent institutions have CPPs or they have substantial patient volume in their family practice clinics, and if the selected method of distributing benefits has a record of adoption by residencies of similar program structure type.

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