

Variations in Content of Care in a Family Medicine Residency Relating to Types of Insurance Coverage

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The content of care in a family practice residency program was analyzed using a microcomputer information system. The distribution of recorded diagnoses in the training program was found to be very similar to results of two national studies of family medicine. Despite this overall similarity, important differences were found when distributions for patients with six types of insurance coverages were analyzed separately. This study demonstrates the potential effect of insurance coverage on the clinical content of family medicine. As the health care system changes, residency programs will need to remain adaptable to maintain patient bases reflecting the broad content of family medicine.

During the last decade the structure of the medical care delivery system in the United States has gone through a number of dramatic changes. Traditionally, most patients received various types of indemnity insurance plans through their employment. For large employee groups, most of the costs for these plans were covered by the employer. With increasing costs of medical care in recent years, however, financial incentives of health insurance plans offered by employers have encouraged employees to opt for alternative managed health care systems such as preferred provider organizations (PPOs) and health maintenance organizations (HMOs).¹ These systems limit the range of providers from whom patients can receive their care.

The expansion of government health insurance programs has similarly segregated the care for patient groups among specific providers. The Medicaid system was originally structured to provide "mainstream" medical care for its beneficiaries. Efforts to contain costs, however, have led to diminished levels of physician payment relative to usual and customary rates. As a result, a limited group of physicians are willing to provide care for Medicaid beneficiaries. Furthermore, many state Medicaid programs

are now either experimenting with or requiring various forms of alternative managed care systems.^{2,3} Similar changes in the Medicare program may also limit the choice of providers for those patients. Stricter rules for physicians accepting assignment of benefits and lower levels of reimbursement have been implemented. There are also plans to increase the number of Medicare beneficiaries enrolled in an alternative delivery system that pays providers on a capitated basis.^{4,5}

It is not known to what extent this segregation of patient care into alternative delivery or payer systems will affect the content of family medicine for both family physicians in practice and family practice residency programs. Since patients in alternative delivery-payer systems are likely to have different health care needs, it will be important to know the differences and their impact on the content of care. Practicing physicians and training programs in particular may need to be flexible and adaptable to maintain a patient base representing the broad content of family medicine; that is, to continue providing care for specific groups of patients, it may become increasingly desirable to become involved in these various systems.

The UCLA Family Health Center is the practice site of a family practice residency program that includes a variety of alternative delivery-payer systems among its patient population. This paper reports the results of an in-depth study of the content of care provided in the UCLA Family Health Center among these various delivery-payer systems. The content of care in this setting was also compared with that reported in previous studies of family medicine.

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METHODS

The content of medical care in the UCLA Family Health Center was measured by abstracting data from the medical record. Progress notes for 6,003 patient visits from a total of 18,777 visits during the calendar year of 1985 were randomly selected for abstraction. Each selected progress note was reviewed for the required information by a trained abstractor. The records for each visit were typed and therefore quite legible. The data were stored and subsequently analyzed using a customized microcomputer database system.

The demographic characteristics of the patient, including age, sex, and insurance coverage, were recorded for each visit. During the sample year, six categories of insurance coverage encompassed the range of delivery-payer systems for Family Health Center patients. Traditional indemnity (fee-for-service) health insurance covered patients seen for 20.9 percent of the total visits. The two government-sponsored programs, Medicaid and Medicare, provided 12.5 percent and 16.4 percent of the total visits, respectively; "assignment of benefits" was accepted for all Medicare patients. Two alternative types of insurance, Bruin Care and Health Net, provided 11.8 percent and 24.1 percent of the visits at the Family Health Center, respectively. Bruin Care was a special PPO arrangement offered to UCLA employees; these employees were provided an added discount for care received in the UCLA Medical Center. Health Net, a federally qualified HMO, contracted with the Family Health Center to serve as one of its primary care gatekeepers. The Family Health Center received a capitated payment for enrolled patients to provide all medical services including consultations, ancillary tests, and laboratory tests; negotiated contracts for services needed outside the primary care group were paid from the primary care group's capitation payment. The final group represented were uninsured patients constituting 14.3 percent of the total visits.

All medical problems addressed by the physician during the patient visit and recorded in the progress notes were categorized into diagnostic clusters.⁶ Newly prescribed medications and medication adjustments were similarly recorded. These medications were subsequently grouped into common pharmacological categories. Office procedures performed within the Family Health Center, ancillary tests scheduled (eg, radiology, nuclear medicine, electrocardiogram, and ultrasound), and laboratory tests ordered (eg, blood chemistries, urine analysis, and cytology reports) during each visit were recorded.

This information within the database was then analyzed, and rank orders and percentages of each of the various elements were tabulated across the six different financial account types as well as the total for the Family Health Center. Chi-square tests were used for statistical analysis.

RESULTS

The percentage of total visits varied between 11.8 percent and 24.1 percent among the financial account types, indicating all six groups were well represented in the Family Health Center (Table 1). There were significant differences between the groups in distributions of visits by both sex and age ($P < .001$). Overall, about two thirds of the visits were by female patients. The Health Net group had the largest percentage of visits by female patients, with Medicaid second. Similarly for age, the Medicaid group had the largest percentage, 29 percent, of patients under 18 years of age, with the Health Net group having the second largest percentage of patients, 15 percent, in this age group. The majority of Health Net patients were in the 19- to 35-year-old group. Age distributions for the Medicare group had by far the highest percentage of visits among patients over 65 years old. The insured, Bruin Care, and uninsured groups were intermediate.

The average number of problems addressed, medications prescribed, office procedures performed, and ancillary and laboratory tests ordered per visit are reported in Table 2 by each financial account type. The two groups known to have greater health care needs, Medicare and Medicaid, had the highest average number of problems per visit and medications prescribed per visit. The Health Net group was the lowest for both of these categories. There were no consistent trends for office procedures, ancillary tests, and laboratory tests per visit.

The ten most commonly encountered diagnoses for the UCLA Family Health Center accounted for 48.7 percent of the total number of diagnoses recorded. This distribution is very similar to those found in the National Ambulatory Medical Care Survey (1977-78) and the Medical Activities and Manpower Project for family and general practitioners.^{6,7} The ten most common diagnoses, except contraception, at the Family Health Center were among the top 11 to 13 diagnoses for the national studies.

Despite the UCLA Family Health Center having an overall distribution similar to the national studies, a much different distribution was found when the top ten diagnoses for each individual account type were examined (Table 3). Although the general medical examination was still the most common problem encountered for all account types, for the Medicare group the other most common problems were predominantly the chronic diseases of the elderly, eg, hypertension, degenerative joint disease, diabetes, emphysema and chronic bronchitis, and heart disease (ischemic and organic). The Medicaid group similarly had a relatively high percentage of visits for such chronic diseases as hypertension, diabetes, and degenerative joint disease. In addition, there was a nearly fourfold increase in the percentages of visits for psychiatric problems compared with the overall percentage. In contrast, the Health Net group had fewer visits for chronic disease

TABLE 1. CHARACTERISTICS OF PATIENT VISITS: DISTRIBUTION OF AGE GROUP AND SEX, BY INSURANCE COVERAGE

Type of Coverage	Visits No. (%)	Percent by Age (years)					Percent by Sex	
		0-2	3-18	19-35	36-65	>65	Male	Female
Total for all categories	6,003 (100)	7.1	5.7	37.6	33.6	15.9	32.8	67.2
Medicaid	750 (12.5)	19.7	9.3	22.8	38.1	10.0	29.9	70.1
Medicare	982 (16.4)	2.2	0.8	2.1	13.8	81.1	31.3	68.7
Insured	1,256 (20.9)	5.2	4.0	41.5	46.0	3.3	36.9	63.1
Bruin Care	710 (11.8)	3.8	7.3	33.1	51.4	4.4	38.7	61.3
Health Net	1,447 (24.1)	6.4	9.2	59.0	25.2	0.2	27.4	72.6
Uninsured	858 (14.3)	7.8	3.7	50.6	35.3	2.6	34.6	65.4

TABLE 2. AVERAGE NUMBER OF PROBLEMS AND SERVICES PER VISIT, BY INSURANCE COVERAGE

Type of Coverage	Total Visits	Problems	Medications	Office Procedures	Ancillary Tests	Laboratory Tests
All coverage categories	6,003	1.76	0.75	0.15	0.12	0.57
Medicaid	750	1.82	0.85	0.12	0.08	0.43
Medicare	982	2.24	1.01	0.13	0.15	0.68
Insured	1,256	1.76	0.72	0.17	0.15	0.69
Bruin Care	710	1.73	0.73	0.15	0.10	0.55
Health Net	1,447	1.43	0.63	0.19	0.06	0.39
Uninsured	858	1.75	0.71	0.13	0.13	0.76

and many more visits for conditions relating to obstetrical and gynecological problems (eg, prenatal and postnatal care, contraception, vaginitis, vulvitis, cervicitis, and menstrual disorders). The other groups—privately insured, Bruin Care, and uninsured—were seen for a variety of problems more resembling the overall distribution.

The most frequently prescribed medications for the various accounts reflect the variation in problems encountered. For example, the Medicare group received a large proportion of prescriptions used for hypertension, heart disease, diabetes, and pulmonary diseases. In contrast, the Health Net (HMO) group was prescribed medications associated with prenatal and postnatal care, gynecological problems, and skin disorders.

The most frequently performed office procedures and ancillary tests were examined among the financial types of accounts. Slide preparations were the most frequently performed procedures for all groups except Medicare, for which colorectal cancer screening (sigmoidoscopy and stool occult blood testing) were more frequent. Chest x-ray examinations and electrocardiograms were the most frequently ordered ancillary test for all groups. Variation in relative frequency for other procedures and ancillary tests did occur among the different types of accounts, but there were no clear relationships to the problems encountered. In examining laboratory tests ordered, minimal variation was found; complete blood counts, routine urinalysis, chemistry panels, and Papanicolaou smears were most frequently ordered for all types of accounts.

DISCUSSION

Several major studies have described and evaluated the content of care in family medicine.⁶⁻⁸ Using Schneeweiss' diagnostic cluster groupings to compare the types of problems seen,⁶ variations in content have been shown to be related to age and sex of patients; age, sex, training level, and type of physician; and geographic variations in competing specialists and practice norms.^{6,7}

In this study the content of care in a family medicine residency program was found to be very similar to that observed in two national studies of family medicine. The importance of this finding is not that it was achieved but rather the manner in which it was achieved. Visits from patients with six insurance coverage types with distinct patterns of care combined to form this overall content of care pattern. Excluding one of several insurance groups from the patient base, such as the Medicare group with its preponderance of chronic illnesses, or the Health Net group with its preponderance of obstetric-gynecologic problems, could dramatically change the overall content of care. This study demonstrates the influence of different insurance coverages on the content of care.

It certainly is not necessary for practicing family physicians to maintain a patient base that represents the broad content of family practice, although the earlier analyses have shown that family practice as a whole has adapted effectively to the needs of local communities by varying its content of care. To continue meeting the needs of their

TABLE 3. RANK ORDER AND PERCENTAGE OF PROBLEMS ENCOUNTERED IN THE UCLA FAMILY HEALTH CENTER, BY INSURANCE COVERAGE

Rank	Total	Health Net (HMO)												
		Percent	Medicaid	Percent	Medicare	Percent	Insured	Percent	Bruin Care	Percent	Uninsured	Percent		
1	General medical examination	18.1	General medical examination	18.1	General medical examination	15.5	General medical examination	18.9	General medical examination	19.5	General medical examination	18.2	General medical examination	19.4
2	Hypertension	6.8	Nonpsychotic psychiatric illness	15.6	Hypertension	12.6	Hypertension	7.2	Hypertension	8.0	Prenatal and postnatal care	7.6	Nonpsychotic psychiatric illness	5.3
3	Nonpsychotic psychiatric illness	3.9	Diabetes mellitus	5.3	Degenerative joint disease	5.1	Nonpsychotic psychiatric illness	3.7	Upper respiratory tract infection	7.1	Contraception	6.7	Hypertension	5.2
4	Upper respiratory tract infection	3.8	Hypertension	5.3	Diabetes mellitus	4.6	Upper respiratory tract infection	3.6	Nonpsychotic psychiatric illness	3.9	Upper respiratory tract infection	5.6	Prenatal and postnatal care	4.8
5	Prenatal and postnatal care	3.7	Prenatal and postnatal care	5.3	Emphysema and chronic bronchitis	3.6	Musculoskeletal disorder	3.5	Musculoskeletal disorder	3.7	Dermatitis and eczema	4.1	Musculoskeletal disorder	3.7
6	Musculoskeletal disorder	3.3	Degenerative joint disease	3.8	Nonpsychotic psychiatric illness	3.6	Contraception	3.0	Low back pain disease	2.4	Vaginitis, vulvitis, and cervicitis	3.7	Benign neoplasm	3.1
7	Contraception	2.9	Upper respiratory tract infection	3.7	Musculoskeletal disorder	3.5	Prenatal and postnatal care	2.8	Contraception	2.4	Musculoskeletal disorder	2.8	Headache	3.1
8	Diabetes mellitus	2.4	Musculoskeletal disorder	2.7	Ischemic heart disease	2.5	Abdominal (except pelvic) pain	2.7	Urinary tract infection	2.4	Benign neoplasm	2.7	Upper respiratory tract infection	2.8
9	Degenerative joint disease	2.4	Asthma	2.6	Other organic heart disease	2.3	Headache	2.6	Emphysema and chronic bronchitis	2.3	Menstrual disorder	2.3	Abdominal (except pelvic) pain	2.7
10	Dermatitis and eczema	2.3	Dermatitis and eczema	2.4	Vertiginous syndrome	2.0	Benign neoplasm	2.4	Degenerative joint disease	1.8	Nonpsychotic psychiatric illness	2.1	Chest pain	2.7

community, practicing physicians should be aware of the consequence of patients being segregated into the various types of financial accounts. Also, maintaining clinical skills in areas such as pediatrics, obstetrics, and geriatrics may depend upon providing care for patient groups with these needs.

Residency training programs have a much greater need to influence the content of care seen by their trainees. Their objective is to provide an environment that most closely resembles the real-life family practice experience their graduates will ultimately encounter. Attempts have been made to achieve a representative patient panel in residency training. One program selectively enrolled families with specific problems into the practices of residents lacking sufficient numbers of those types of patients.⁹ This process provides a more uniform experience for residents within a program. If the total patient base of a program lacks sufficient numbers of patients with specific problems, however, this process cannot achieve a representative patient mix for all its residents. A recent report of one residency network experience showed the content of care and the age distributions of patients varied considerably among their six sites, but specifically noted relatively few visits for such chronic diseases as hypertension, degenerative joint disease, diabetes mellitus, and ischemic heart disease among most of their sites.¹⁰ Regardless of whether it would be feasible, the enrollment into this network of more patients with chronic diseases (eg, Medicare patients) would almost certainly increase visits for these diseases. Thus, involvement in different delivery-payer systems could be used by training programs as a means to achieve a desired content of care.

In coming years the medical delivery systems will continue to evolve. More patients will join HMOs or receive their care through PPOs.¹ The Medicare program may continue to expand its capitated payment systems for Medicare beneficiaries.^{4,5} Ultimately, residency programs could face a restricted range of patients for whom they provide care. It is possible, however, for teaching programs

to maintain their broad mix of patients by effectively participating in the alternative delivery systems. Providing care in these systems is certainly not new to the programs.¹¹⁻¹³ The future for family medicine residency programs will be to remain administratively and philosophically adaptable. As patients are segregated into specific payer systems, arrangements can be made to provide care for these patients.

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