A Study of the Economic Viability of Low-Cost, Fee-For-Service Clinics Staffed by Nurse Practitioners

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NURSE PRACTITIONERS (NPs) have demonstrated that they can diagnose and treat many common clinical conditions with quality outcome equal to that of physicians (*1–3*). Public acceptance of NPs generally is reported to be high, and the types of problems that patients seek care for from NPs are similar to those of the patients who seek care from primary physicians (*2,4,5*). NPs can also extend ambulatory care services to more people than can physicians who practice alone in a variety of clinic settings (*2,3,6,7*). Despite a flourishing movement, however, the results of studies indicate that NPs cannot exist economically in a fee-for-service medical system and simultaneously lower medical costs, which has been a goal of NP advocates (*8–10*). NPs have been used primarily in settings that are publicly subsidized or in private settings where evidence is lacking that costs to patients were reduced significantly (*4–11*). A recent report from the State of Washington showed that NPs in rural settings could not attain financial self-sufficiency after 2½ years of operation (*12*).

We conducted a feasibility study that demonstrated that NPs in two clinics became economically viable and significantly reduced ambulatory health care costs in a fee-for-service system. The clinics, opened in the eastern region of Los Angeles County in 1976, were satellites of a larger clinic staffed by at least one full-time physician and other medical and administrative personnel. Data for the study were gathered for the period July 1, 1977 through June 30, 1978.

Mailers were sent to private physicians, pharmacists, hospital emergency rooms, clergymen, the health department, schools, and social service agencies so that they could inform the public about the availability of the clinics. A community advisory board of 12 persons representing a variety of professions and disciplines was appointed by the director (Tennant) of the project to meet monthly and to provide consumer and public guidance with respect to the satellite clinics.

The population within a 3-mile radius of each clinic was approximately 250,000. The physician-to-population ratio in this area is about 1 to 1,100, which is lower than the overall Los Angeles ratio of 1 to 800. The mean family income in the catchment area at the time of the study was about $15,000 a year, and almost 15 percent of the families earned less than the official poverty level of about $5,000 a year. The racial distribution was Mexican-American, 30 percent; black, 10 percent; and white, 60 percent.

Clinic Operations

Each satellite clinic was staffed by a family nurse practitioner and two assistants to help with clinical and administrative tasks. A physician was always available for consultation by telephone during clinic hours, and usually, but not always, the same physician visited each clinic one-half day a week to attend patients with problem cases and to look at the clinic operations. The physician reviewed charts to insure quality performance and continuity of care, as well electrocardiograms and the results of laboratory tests. Each clinic contained two examination rooms, electrocardio-

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graphs, and a laboratory for performing hematocrit determinations; urine analysis; throat, urine, and gonococcal cultures; wet mounts; pregancy tests; and stool examination. The NP performed and interpreted the laboratory tests, and the physicians interpreted the electrocardiograms. Radiological and more sophisticated laboratory procedures were performed at nearby hospitals and laboratories; they were interpreted by the attending physician.

The satellite clinics were open to the general public from 8 am to 6 pm, Monday through Friday. Each patient attending one of these clinics completed a medical intake card and a short consent form, which stated that a specially trained nurse would provide his or her care, and that a physician would be consulted if the nurse could not deal with the problem competently. Standing orders, procedures, and protocols were prepared for the NPs' use with respect to respiratory infections, dermatological conditions, venereal and genitourinary infections, family planning, cardiovascular conditions, gastrointestinal conditions, musculoskeletal conditions, substance abuse, and well-person examinations. Medications were formulated in standard dosages and administered to patients as indicated in pre-arranged protocols and standing orders. The consulting physician arranged for referral or hospitalization of all patients with complicated or emergency conditions.

A standard clinic fee of $8 was charged per patient visit, unless the patient was eligible for Medicaid or Medicare; an average fee of $18 was charged by private primary care physicians in the area. Fees in the larger base clinic were comparable to those of private physicians. An additional amount, usually $2 to $4, was charged for any administered medication or in-clinic laboratory procedure. Each clinic was subsidized initially with special grant funds; the goal was that financial self-sufficiency would be attained within 1 year. Staff salaries, including that of the consulting physician, were competitive with those paid in the area.

Table 1. Primary reasons for visits of patients to two clinics staffed by nurse practitioners, July 1, 1977 through June 30, 1978 [1]

Reasons for visits	Number of visits	
	Clinic A	Clinic B
Routine physical examinations (for example, preschool, well-baby, pre-employment, sports)	1,422	653
Immunizations	1,510	742
Family planning	320	159
Drug and alcohol abuse	257	539
Laboratory and screening (for example, premarital blood test, TB skin test, pregnancy test, glucose tolerance)	303	1,167
Gastrointestinal	69	92
Respiratory	153	205
Genitourinary	176	235
Musculoskeletal	130	174
Dermatological	160	215
Cardiovascular, including hypertension	160	214
Venereal disease	80	358
Total	4,740	4,753

[1] Visits averaged 1.19 per patient.

Results

Six months after the clinics were opened, each NP had attained financial self-sufficiency and was treating almost 400 different patients a month. Since then, the number of patients has increased. The tables show basic operational

Table 2. Income and expenses of two clinics staffed by nurse practitioners, July 1, 1977 through June 30, 1978

Income and expenses	Clinic A	Clinic B
Income		
Patients' fees	$53,874	$66,451
Third-party payments (Medicaid, Medicare)	24,564	10,244
Total	78,438	76,695
Expenses		
Salaries	39,588	36,739
Fringe benefits	5,656	5,028
Laboratory and X-ray services	6,433	11,768
Pharmaceutical supplies	4,868	3,922
Clinical and office supplies	4,795	5,319
Rent and equipment leases	6,368	4,540
Repairs and janitor services	1,398	1,526
Utilities	2,295	2,149
Consulting services	388	388
Insurance and licenses	793	450
Printing	310	310
Miscellaneous	1,010	874
Total	73,902	73,013
Net income	$ 4,536	$ 3,682

data for the two clinics for the period July 1, 1977 through June 30, 1978. During that year, approximately 8,000 different patients were treated in 9,493 visits—an average of 1.19 visits per patient per year. About 5 percent of these patients had conditions that required consultation with the physician. The reasons for visits by patients to the NPs correlated closely with those reported for the practices of other NPs, except that more patients were seen for immunizations and substance abuse in the satellite clinics than reported for other NP practices (*2,4,5*). The total income for the year for both clinics was $155,132; $120,324 (77.6 percent) was generated by patients' fees and the remainder ($34,808 or 22.4 percent) was generated by Medicaid, Medicare, and other third-party payments. After expenses were paid, a sufficient amount was available for contingencies and further operation of the clinics.

About 25 percent of the clinics' patients were referred by private physicians and local hospitals. To date, no complaints concerning these clinics have been received from local, private physicians. Patients' acceptance has been very favorable, as reported in other studies (*1,7*).

Discussion

This study disclosed that clinics operated by nurse practitioners may be able to attain economic self-sufficiency and simultaneously provide care for common medical problems of ambulatory patients at about half the cost prevailing in the community. However, these achievements probably can be attributed to certain factors that may not prevail in every community, population, or primary care clinic. The NPs in the satellite clinics were trained to provide a wide variety of services, including preventive medicine and substance abuse services; thus, each clinic could attract and treat by protocol a high volume of patients per month. About 20 to 25 percent of the patients' fees were covered by government third-party payments. Lack of the third-party payment mechanism has been cited frequently as a barrier to financial viability for NPs (*9,10*). Some observers have criticized the NP movement for its inability to provide adequate referral, supervision by a physician, and continuity of care (*11*). The two NP-operated clinics in this study, however, were satellites of a larger medical facility, which insured adequate physician supervision, consultation, and administrative support.

All patients treated by the NPs were informed in writing that physician consultation and referral were available immediately. It is possible that such large numbers of patients would not have attended the clinics without such assurance. The catchment area for each NP's clinic contained about 250,000 persons within a 3-mile radius. Failure of rural NPs in the State of Washington to attain economic viability has been attributed primarily to the relatively small number of people in the area of a NP clinic (*12*). The physician-to-population ratio in the catchment areas of the clinics in this study was about 1 physician to 1,100 persons, which is about 20 to 30 percent below ratios in the remainder of Los Angeles County and California. Thus, it is also possible that the absence of complaints from nearby practicing physicians might be related to the low physician-to-population ratio in the catchment areas (*13*). At least some special factors —including adequate physician supervision, below-average physician-to-population ratio, and a sufficiently large catchment area—seem to be necesary for a NP-operated clinic to attain economic self-sufficiency while providing low-cost care for ambulatory patients.

References

1. Lewis, C. E., and Resnick, B.: Nurse clinics and progressive ambulatory care. N Engl J Med 277: 1236–1241 (1967).
2. Schulman, J. J., and Wood, C.: Experience of a nurse practitioner in a general medical clinic. JAMA 219: 1453–1461 (1974).
3. Merenstein, J. H., Wolfe, H., and Barker, K. M.: The use of nurse practitioners in a general practice. Med Care 12: 445–452 (1974).
4. Pesznecker, B. L., and Draye, M. A.: Family nurse practitioners in primary care: a study of practice and patients. Am J Public Health 68: 977–980 (1978).
5. Lewis, C. E., and Linn, L. S.: The content of care provided by family nurse practitioners. J Community Health 2: 259–267 (1977).
6. Sullivan, J. A., Dachelet, C. Z., and Sultz, H. A.: The rural nurse practitioner: a challenge and a response. Am J Public Health 68: 972–976 (1978).
7. Voltmann, J. D.: Jamestown medical clinic system. JAMA 234: 303–304 (1975).
8. Draye, M. A., and Stetson, L.: The nurse practitioner as an economic reality. Nurse Practitioner 1: 60–63 (1975).
9. Sullivan, J. A., et al.: Overcoming barriers to the employment and utilization of the nurse practitioner. Am J Public Health 68: 1097–1103 (1978).
10. Mauksch, I. G.: The nurse practitioner movement—where does it go from here? Am J Public Health 68: 1074–1075 (1978).
11. Roemer, M. I.: Primary care and physician extenders in affluent countries. Int J Health Serv 7: 545–555 (1977).
12. Moscovice, I., and Rosenblatt, R.: The viability of mid-level practitioners in isolated rural communities. Center for Health Services Research, University of Washington, June 1978.
13. Burkett, G. L., et al.: A comparative study of physicians' and nurses' conceptions of the role of the nurse practitioner. Am J Public Health 68: 1090–1095 (1978).