MID-LEVEL PRACTITIONERS IN RURAL HEALTH CARE:
A THREE-YEAR EXPERIENCE IN APPALACHIA

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ABSTRACT: The use of mid-level practitioners (nurse practitioners, physician's assistants, and so on) is advocated to improve the access of rural people to health care. A remote rural area of southern Appalachia is served by a network of three clinics staffed by mid-level practitioners (MLPs) and an M.D. During the first three years of operation 76% of the geographically defined target population of 5,500 received services. MLPs provided care in half of the 40,252 medical encounters and 89% of their contacts were managed without consultation with or referral to the M.D. They managed 36% of first-year visits, 51% of second-year visits, and 54% of third-year visits. Concurrent with this shift in patient care responsibility from M.D. to MLP, differences in the types of conditions managed by M.D. and MLP decreased with time. Population surveys indicate that consumer satisfaction with MLP services is high and that health care from this system is perceived as being more accessible than care from alternative sources. In this setting the role of the MLP evolved in the direction of, but was not limited to, that of an M.D. substitute. Experience with this delivery system suggests that, as members of a health care team, MLPs can manage a majority of problems encountered in rural primary care with a high level of consumer satisfaction and improved access.

The use of mid-level practitioners (MLPs), such as physician's assistants and nurse practitioners, is advocated as a means of improving access to health care in rural areas. Such practitioners are specially trained to manage a variety of acute and chronic medical problems and to provide preventive care, health maintenance, education for health, and counseling services. Accumulating evidence indicates the capabilities of these professionals to assume many of the responsibilities and functions traditionally confined to physicians without sacrificing quality of care.1-4

Two approaches have been taken to utilize MLPs in rural medical practice. In one model, the practitioner provides services in an outpost facility geographically separated from a supervising physician with whom the MLP can communicate and to whom difficult cases can be referred.5-8 Under this arrangement, a primary care provider is readily available locally while access to secondary care levels is assured. In the other model, the practitioner and physician work concurrently at the same site allocating tasks and responsibilities according to the preferences, skills, and experiences of the individuals in the provider teams.9 In

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both delivery models specific standing orders or protocols guide the work of the MLPs.

This study describes a health care project that incorporates operational features of both models. The program represents an effort to improve access to primary care by decentralizing the delivery of services and by dispersing patient care responsibility appropriately among health professionals with different skills and levels of expertise who function as a team. Ambulatory care is provided in an isolated poor rural area of southern Appalachia by clinic-based MLPs and a full-time physician who divides his work time among the three clinics. This analysis of the first three years of operation of this system assesses the role of the MLPs in the delivery of services and describes the distribution of patient care responsibilities between health professionals.

THE HEALTH PROGRAM

The setting of this study is an economically deprived four-township area containing 5,500 people situated in the mountains of North Carolina that has been served by a federally subsidized health program since 1972. The program operates a home health agency and three clinics. Each clinic is staffed full-time by an MLP and by a physician who spends three days a week in the central clinic, located in the only town in the area, and one day a week in each of two satellite clinics. Since the closest hospital is an hour away from the central clinic, the program does not provide inpatient care. The remainder of the county has a population of 10,500 people and is served by five physicians, all of whom practice outside the program target area.

The clinics, located approximately 15 miles apart, are equipped to provide ambulatory primary care. Each clinic has at least two examining rooms, a small pharmacy, a laboratory, EKG machine, suture supplies, emergency equipment, and other items such as a sigmoidoscope and LP Tray. The central clinic has an x-ray machine. Urinalysis, hematocrits, white counts with differential, gram stains, stool examinations, pregnancy tests, and bacteriological cultures are performed at the clinics, with more sophisticated services obtained from outside commercial laboratories.

During the three-year period, one family physician, two pharmacists, two administrators, two home health nurses, one physician's assistant, and six nurse practitioners worked in the program. The same three family nurse practitioners staffed the clinics during the last 30 months of this period and accounted for a large majority of MLP encounters. The family nurse practitioners are certified by a special licensing process established jointly by the North Carolina Board of Medical Examiners and by the North Carolina Board of Nursing. Physician's assistants are certified by the Board of Medical Examiners.

The medical practices of the MLPs are determined by written standing orders, and records of medical services provided by the MLPs are reviewed and countersigned by the physician. The clinics are interconnected by telephone and