Rural Primary Care Programs: A Longitudinal Study of their Organization and Environments

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ABSTRACT

This report describes in detail a study of a cohort of programs which represent a population of clinics and primary care projects that emerged in the nineteen-sixties and seventies as a result of a series of major public policy initiatives meant to equalize health care access for rural residents of the United States. The study was carried out by staff of the Rural Health Research Program of the Health Services Research Center of the University of North Carolina at Chapel Hill, and was supported by a grant from the U.S. Office of Rural Health Policy in the Health Resources and Services Administration, U.S. Public Health Service. The 40 programs that are the subjects of this 12-year study serve to illuminate the changes that have taken place in rural America where problems of persistent lack of access to health care services coupled with waxing and waning state and federal policies to alleviate those problems have produced a "life course" for these rural primary care programs. This report will focus on the organization and environments of the programs, looking at the natural history of the rural primary care programs from the standpoint of how the ecology of the programs changes their operations, organizational form, and survivability.[1]

[1] Ricketts TC, Konrad TR, Stein JS, DeFriese GH. Population Ecology and Health Policy Analysis: The Case of Rural Primary Care Centers. *Medical Care Review*, 44(2):345–373, Fall 1987.

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SUBSIDIZED RURAL PRIMARY CARE PROGRAMS

The push to make health care readily available to a significant portion of the American public was, and is, important to the ten million rural residents without a regular source of care, to the sixteen million who live in communities without adequate primary care providers, and the almost seventeen million rural residents who suffer from some form of chronic or serious illness.[2] This public policy has been typically American in that it has combined several political and social viewpoints into a single structural solution. This single solution of placing health centers and health manpower in underserved areas has produced its own plural system of organizational forms. The comparison and contrast of those forms was the topic of a National Evaluation of Rural Primary Care Programs conducted by the University of North Carolina Health Services Research Center during the period 1977-1985 with support from the Robert Wood Johnson Foundation and the U.S. Department of Health and Human Services. In-depth descriptions of the National Evaluation have appeared as reports, journal articles, and dissertations. The project described in this report represents an extension of that evaluation by analyzing one of the four samples selected by the National Evaluation to determine patterns of development and change in the populations served by rural primary care centers.

The pressure on distributive social policies to produce their intended effects as efficiently as possible was an implicit reason for the inception of the National Evaluation. This economic and political reality remains part of the policy environment of the programs. However, neither the National Evaluation nor this analysis are intended to focus on efficiency; the intention of this analysis is instead to develop a new understanding of the long-term natural history of programs that were born in subsidy, and have had to survive by either continuing to generate that subsidy, or by weaning themselves from external subvention to become free-standing programs. Not all have survived as they intended, as we shall see.

Changes in the Environments of the Programs

Rural clinics and rural primary care programs developed rapidly during the late 1960s and 1970s due mostly to the availability of federal funds for Neighborhood, then Community, Health Centers. From 1971, the National Health Service Corps was expanding its field strength which reached a peak of 3,304 practitioners in 1986, and this provided a steady stream of providers for underserved areas. Residency programs in family medicine were also opening at a rapid pace and the output of new family physicians grew to approximately 1,200 per year before steadying at that level in 1985. The Corps met with strong resistance in Reagan era budgets and subsequent appropriations

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[2] Norton CH, McManus MA. Background Tables on Demographic Characteristics, Health Status and Health Services Utilization. *Health Services Research*, 23(6):725-757. February 1989.

reflected administration policy toward a phasing down of the program. New scholarship awards were reduced to 49 in 1989 down from a peak of 6,408 in 1979, and 937 in 1983, the last year that the program received significant funding for new students. The reduction in support for the program is largely a result of the interpretation of manpower distribution studies that predicted a physician surplus and extrapolated those results into rural areas.[3] In truth, physicians have not moved into nonmetropolitan areas, especially the smallest of these areas,[4] and nonmetropolitan America has not seen the rate of overall growth in physician supply that metropolitan and suburban America have experienced. There have been subsequent efforts to increase and expand the Corps, resulting in the National Health Service Corps Revitalization Act which was passed in 1991 and increased the authorized funding for the NHSC to $91.7 million in fiscal 1991.

Partly as a result of the continuing flow of federal support the total number of subsidized rural primary care programs increased to approximately 1,500 different entities administering one or more delivery sites during the period 1980-82.[5] In 1982, there was a distinct change in federal policy toward support for social programs. Initially, the community health centers programs were to be included in a primary care block grant which was to be funded at 75 percent of the total 1981 level of funding for all categorical programs included under the block grant. Only one state, West Virginia, opted to accept the block grant arrangement and the remaining states more or less actively supported the independence of the community and migrant health centers through their congressmen or state health agencies. Despite repeated efforts by the Reagan Administration to de-fund the Section 329 (Migrant Health) and 330 (Community Health Centers) programs, they remained funded at maintenance levels through the 1980s, holding at $325 million in 1980 through 1985 and currently at $463 million in the FY 1990 budget. Adjusting for inflation and subtracting the special projects provisions from the current appropriation, real funding for Community Health Centers has dropped. The number of Community Health Centers funded in 1988, 526, has dropped from 608 in 1984. Most of the closures or mergers have been in rural centers, which dropped from 399 in 1984 to 319 in 1988, a 20 percent decrease.

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[3] Schwartz WB, Newhouse JP, Bennett BW, Williams AP. The Changing Geographic Distribution of Board-Certified Physicians. *New England Journal of Medicine* 303(18):1032-38, 1980; and Newhouse JP, Williams AP, Bennett BW, Schwartz WB. Where Have All the Doctors Gone? *Journal of the American Medical Association* 247(17):2392-96, 1982.

[4] Kindig DA, Movassaghi H. The Adequacy of Physician Supply in Small Rural Counties. *Health Affairs* 8(2):63-76, 1989.

[5] This number represents an adjustment to the total estimated number of programs based on the surveying completed in 1979, and the increase by 200 in the number of funded Community Health Centers and estimated increase by 300 in the number of state and privately-funded health centers. The latter estimate is based on data collected from several sources including reports of state rural health offices, foundation annual reports, and informants contacted throughout the course of the National Evaluation.

Community Health Centers funding is a principal source, but only one of several sources, of funding for rural primary care programs. There are, however, no comprehensive data on current and recent changes in state and private funding programs for such programs. Major philanthropies have continued to support programs and projects in existing sites. For example, the Robert Wood Johnson Foundation and the W.K. Kellogg Foundation remain very active in support of projects. Several states remain active in supporting clinics and programs either directly or indirectly. These initiatives, however, do not approach the 1970s levels of support and encouragement for program development and operation.

The Area Health Education Centers (AHEC) program has survived since its inception in 1972 as one means of developing state- and regional-level linkages between academic health centers and practicing physicians in rural areas. Their impact on rural physician location decisions has been hard to assess and their use of primary care centers and programs is very unevenly recorded.[6] Several new AHECs were funded during the period between studies but their impacts are not well understood.

Medicaid and Medicare provide significant amounts of revenue for the rural primary care centers, as almost 45 percent of total patient revenue for the programs came from these sources in 1980. However, Medicaid payment levels are traditionally lower than average costs, and Medicare pays rural physicians at lower rates than urban physicians. The size of the rural-urban payment differential in Medicare for physician services has increased over the past decade and the proposed reforms in Medicare fee schedules are intended to remove the geographic and specialty differentials. One planned mechanism to support primary care services in rural areas through the Medicaid and Medicare programs included in the Rural Health Clinics Act (PL 95-210) allowed for direct reimbursement of nurse practitioners, certified nurse midwives, and physician assistants. Clinics could be certified for this reimbursement if they were located in underserved areas and were primarily primary care providers. There were 563 certified rural health clinics in October 1990 with 60 percent of these concentrated in 10 states (CA, NC, WV, PA, TN, ME, NY, NM, SD, GA). This number is far less than was expected when the program was begun; poor administrative coordination between agencies and little incentive for the programs to apply for designation have been cited as reasons for low participation. The regulations for designation and the levels of payment have recently been expanded, and the passage of the Federally Qualified Health Centers (FQHC) provisions has expanded the potential number of centers eligible for cost-based reimbursement, but these changes have come after the closure of this study of the rural primary care programs.

The general economic climate for rural America during the 1980s was one of crisis. Bad weather in farm-dependent states, the reversal of the urban-to-rural migration pattern, and a general softening

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[6] Evaluation of the Impact of the National Area Health Education Center Program (Contract No. 240-88-0031) Final Report. (American Institutes for Research) Rockville, MD: Division of Medicine, BHPr, January 1990.

of the economy left many rural communities in desperate straits by the end of the decade. These trends were reflected in the fiscal positions of primary care programs and physicians' practices throughout the rural portions of the United States.[7]

THE NATIONAL RURAL PRIMARY CARE EVALUATION PROJECT

The National Rural Primary Care Evaluation Project was undertaken in 1977 by the Health Services Research Center of the University of North Carolina at Chapel Hill with the support of the Robert Wood Johnson Foundation and the Office of the Assistant Secretary for Health (Planning and Evaluation). The goal of the project was to determine the overall effect of the wide array of programs intended to improve access to primary care among rural, underserved populations. The National Evaluation began with an effort to establish a comprehensive inventory of subsidized rural primary care programs sponsored by both public and private sources in the United States. At the outset of the study, listings of projects that were supported by private foundations, state governmental agencies and federal programs were compiled. A resulting inventory of programs included the names of over 1,300 separate organizations or programs supposedly offering primary health care services and having received some form of subsidy in order to begin or continue their operations. Efforts were made to estimate the extent to which the inventory actually included all of the programs that were of interest; where possible experts known to have first-hand local knowledge of such programs were asked to examine the inventory compiled by the project for their state. Comprehensive information was obtained from officials in California, West Virginia, North Carolina, New Mexico, Washington, and Florida, and those listings compared to the evaluation's listings. From this process it was estimated that the national inventory contained more than 90 percent of all of the potential rural primary care programs that had received some form of subsidy at some time in their operation. Using the inventory, a national mail survey was conducted of all known potential rural primary care programs which had been subsidized at some time in their history; 998 could be located and telephoned. The survey process led to the identification of 627 programs which delivered primary care at least 4 days per week in a rural community and were either receiving or had received external support at some time in their history.

A central objective of the project was the confirmation of the existence of a typology of rural primary care clinics. Sheps and his colleagues[8] had suggested that the overwhelming majority of

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[7] Community Health Centers and the Rural Economy: The Struggle for Survival. Kansas City, MO: National Rural Health Association and the National Association of Community Health Centers, December 1988.

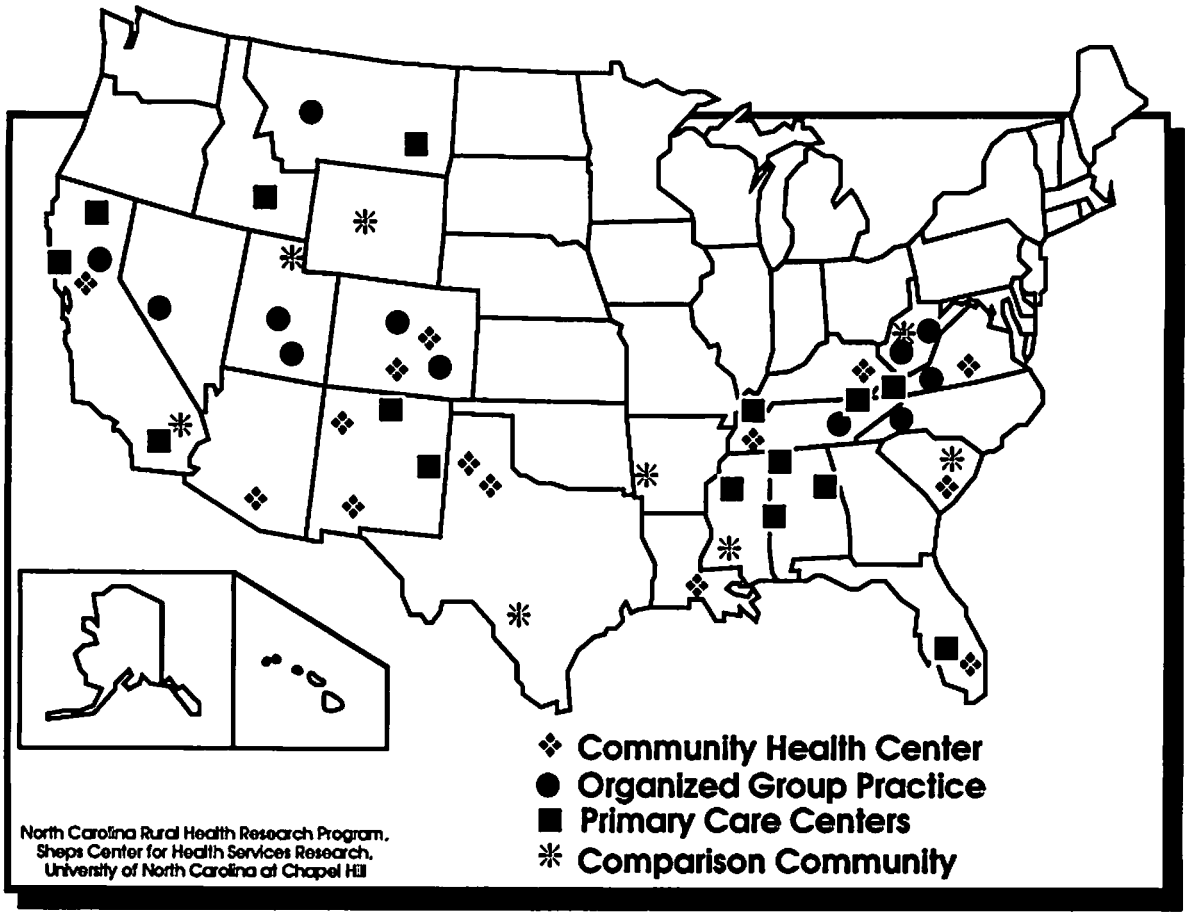
[8] Sheps CG, Bachar M. Rural Areas and Personal Health Services: Current Strategies. *American Journal of Public Health.* 71 (Supplement):71-82, 1981.

subsidized rural primary care programs fell into five classifications: comprehensive health centers, organized group practices, institutional extensions, primary care centers, and traditional solo or partnership practices. The project wished to determine the degree to which these programs met the intentions of their original funders in terms of organizational viability, as well as access to services and access to care for the population in the communities. Because of financial limitations in the project, two levels of data collection were designed. First, a telephone and mail survey of a sample of the universe of 627 qualifying programs was designed to allow for comparisons between the five organizational forms, single or multiple-site versions of each form, and three broad regions of the United States (southeast, north, and west). The target sample for this component of the analysis was 259 programs which were distributed proportionally to their representation in the universe among 30 cells (5 organizational forms x 2 site configurations x 3 regions). During preliminary interviews with this sample of programs, 66 were eliminated from further analysis because they failed to meet strictly applied criteria for inclusion in the study (i.e., the subsidy was less than $50,000 in the previous three year period (n=12); they were not open at least four full days per week year round (n=8); they did not deliver general primary care as defined by the project (n=28); Indian Health Service Clinics were excluded (n=8); the distance from urban centers was measured more accurately and programs that were closer than a 20-minute drive to the boundary of a place of 50,000 or more people were dropped (n=2); several programs had closed (n=5); or sites previously identified as independent were part of a multi-site program (n=2)). These exclusions produced a final study sample of 40 sites which were studied in-depth as described below, and 153 other programs which were surveyed twice by mail for financial data and provider turnover data, and twice by telephone, for structural data and community data, in both 1980 and 1981. All 193 programs responded to all four survey sections.

Collecting data to measure a program's impact on access required extensive and costly community surveys. The project chose to focus its in-depth studies in regions of the country where levels of underservice were highest. Because funds restricted the number of site visits that were possible, the project chose to conduct the community surveys and in-depth studies of the programs through site-visits to a sample of 40 programs chosen to represent the three most common organizational forms and the two regions where programs were concentrated, and where problems of access to services for minorities were determined to be greatest. This roughly approximated the southeast and western parts of the United States. The selection of the 40 sites was made as part of the selection of the sample of 193 programs by extracting two candidate sites from 20 of the 30 sampling cells. One of the regions, the Midwest-Northeast, was excluded from this selection step. The map in Figure 1 locates the forty sites that were chosen for in-depth site visits as well as 8 comparison communities that were matched to the program sites in size and degree of health manpower need. The comparison sites had been in the process of planning for or seeking support for a subsidized clinic during 1979.

Figure 1

Location of Study Sites for Follow-up Study



The group of forty programs was site-visited in 1980 and 1981 by teams from the Health Services Research Center with participation by project staff of the Robert Wood Johnson Foundation and the Office of the Assistant Secretary for Health. Survey teams contacted the programs and arranged for two-to-three-day visits to the programs and the surrounding communities. Interviews were arranged with: 1) program clinicians, 2) managers or administrators, 3) governing board members, 4) staff, and 5) community key informants. Site visitors, who underwent a two-day training session at the University of North Carolina at Chapel Hill, were asked to complete an extensive site-visit protocol that included over 400 study questions directed at the five general types of informants: administrators, clinicians, board members, support staff, and community informants. The surveys of the 153 other programs which were mailed and used over the telephone paralleled the site visit questionnaires but the latter went into far greater depth with regard to program operations, structure, staffing, and performance. Thirty-six of the 40 programs were also the target of community surveys of users and non-users of the target clinics. These surveys, of approximately 250 adults and 125 children in

each community, were meant to develop indices of access for users compared to non-users. The surveys were also completed in the eight comparison communities.

FINDINGS FROM ORIGINAL STUDY

The study confirmed the central hypothesis of the evaluation that there would be a limited number of organizational forms in the universe of organizations delivering primary care in rural communities. The data supported the division of the forms into four major types, with a residual category that accounted for less than 5 percent of the total cases. The forms and their characteristics included:

Program Typologies and Structures

1. **Institutional Extension Practices (IEPs):** primary health care programs developed by existing institutions such as hospitals, health departments, group practices, etc. The leading example of this approach was the W. K. Kellogg Foundation-supported Innovative Ambulatory Primary Care Award Program. There were also rural satellites developed by health departments, established group practices and university medical centers or Health Underserved Rural Areas (HURA) projects sponsored by DHHS.

2. **Comprehensive Health Centers (CHCs):** primary health care programs characterized by comprehensive program development on a relatively large scale, together with substantial community involvement and control. Social and health objectives were to be achieved by a relatively broad range of non-clinical services to support and extend the impact of basic medical services. Examples included the neighborhood health centers and family health centers (mainly supported by DHHS), of which a sizeable number served rural populations.

3. **Organized Group Practices (OGPs):** primary health care programs which consist of at least two full-time physicians in group practice operating autonomously, through a pooled income arrangement, not providing any outreach services. Some, like the practices fostered and supported by the Robert Wood Johnson Foundation Rural Practice Project, emphasized leadership by physicians, sophisticated administration and staff development.

4. **Primary Care Centers (PCCs):** smaller primary health care programs stimulated and/or subsidized by indigenous community initiative, with or without financial assistance from outside the community, and often involving the use of new health practitioners (family nurse practitioners, nurse midwives, physician's assistants) with physician backup, on-site or elsewhere. There was usually no formal institutional affiliation.

5. **Other Forms of Practice (Other):** In very few cases, the characteristics of a program were such that it could not be classified into one of the other four forms. In such circumstances, it was classified as "other." The placement of an isolated physician in a community with no other support

has been the traditional approach to rural health care delivery, and was intended to be included in this category.

The analysis of these five organizational types and their performance led to the following eight observations and conclusions:

1. The classification of programs by organizational form followed an explicit algorithm and incorporated most of the principal criteria for program selection by public or private funding agencies. Hence, the differences among these organizational forms were usually *by design* and occurred in response to the mandatory requirements of a funding agency. Moreover, certain organizational forms of practice tended to be associated with particular types of communities, to offer a distinctive set of services, and to have a particular set of financial policies regarding patient payment for services received.[9]

2. Organizational forms differ in financial performance after controlling for community characteristics. Comprehensive health centers (CHCs) have higher costs and lower efficiency; organized group practices (OGPs) have lower costs and greater efficiency; primary care centers (PCCs) are intermediate between the other two types with respect to both of these variables.[10]

3. When faced with reductions in subsidy, rural primary care programs attempt to increase revenues before cutting costs and reducing services.[11]

4. The competitive environments of subsidized rural primary care centers can be classified into two categories: isolated and underserved. The centers have a variety of options available to them as they consider competitive reactions to alternative primary care resources in their communities. These revolve around managerial actions to reduce costs or to increase revenues or a combination of both. The choices made by the centers tend to relate to either (a) their perceived clinical mission (as a comprehensive program targeted to specific subpopulations), (b) their practice organization (emphasizing structural access to care), and/or (c) their providers' patterns of practice (emphasizing hospital practice or screening, prevention, and diagnosis versus conventional episodic care).[12]

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[9] Sheps CG, Wagner EH, Schonfeld WH, DeFriese GH, Bachar M, Brooks EF, Gillings DB, Guild PA, Konrad TR, McLaughlin CP, Ricketts, TC, Seipp C, Stein JS. An Evaluation of Subsidized Rural Primary Care Programs: I. A Typology of Practice Organizations. *American Journal of Public Health.* 73(1): 38-49, 1983.

[10] Bradham DD, McLaughlin CP, Ricketts TC. The Ability of Aggregate Data to Predict Self-Sufficiency Levels in Subsidized Rural Primary Care Practices. *Journal of Rural Health* 1 (2):56-68, 1985.

[11] Ricketts TC, Guild PA, Sheps CG, Wagner EH. An Evaluation of Subsidized Rural Primary Care Programs: III. Stress and Survival, 1981-82. *American Journal of Public Health* 74(8):816-9, 1984.

[12] University of North Carolina Health Services Research Center. National Evaluation of Rural Primary Health Care Programs: Supplementary Analyses. Chapel Hill, NC. 1985; and Ricketts TC. Competition and Rural Primary Care Clinics. *Journal of Rural Health* 6(2), 1990.

Stability of Programs

5. There are significant differences between physicians and new health practitioners in the way each views and reacts to service in rural primary care practice situations. New health practitioners are more likely to view such settings as a suitable place to fulfill their long-term career aspirations, and are more likely, in fact, to stay. Physicians generally view service in rural, subsidized health care programs as a temporary, less-than-optimal professional employment situation. Physicians' intentions to leave can be influenced by the organizational structures of these primary care centers. The data indicate that if physicians in these centers are given the ability to modify the structure and operation of the centers, they tend to report higher levels of work satisfaction and higher levels of retention after any obligated service commitments are met.[13]

6. The type and source of subsidy greatly affect the structure, operation and fiscal stability of programs. The extent of subsidy in the centers is related to the costs of care. For every $100,000 in program subsidy, the average increase in costs (per encounter) of care is $0.70. The extent to which the state Medicaid program covers the poor has a strong effect on the ability of the programs to cover costs as does the degree to which programs apply sliding fee schedules.

Access to Care

7. Access to care in subsidized rural primary care centers, measured in terms of use of services in relation to symptoms and disability rates, was higher for users of the sponsored clinics than for non-users in the surveyed communities. However, statistical significance for the comparisons was reached only for children on a measure of use related to disability and time spent in the hospital.

8. Satisfaction with care was higher in all communities with subsidized programs when compared to similar communities without such programs, and there were higher levels of satisfaction among program users than non-users where the programs offered a broader array of clinical and support services.

Funding Sources

One of the principal criteria for inclusion in the study was the fact that the programs received subsidies at the time of the survey or in their recent past. Over half of the programs were started in 1975 or later and three-quarters after 1971. One hundred and fifty seven (81.3 percent) were receiving some form of federal funding or personnel support at the time of the survey in 1981; 16 (8.3 percent) were receiving some form of private foundation funding; 44 (22.8 percent) were receiving some form of non-

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[13] University of North Carolina Health Services Research Center. National Evaluation of Rural Primary Health Care Programs: Report to The Robert Wood Johnson Foundation. Chapel Hill, NC. 1983.

federal governmental funding; and 19 (9.8 percent) were receiving some private or local funding. The funding sources for the programs did not vary significantly among regions of the country. Programs in the west were slightly more likely to receive migrant health, local, and Comprehensive Educational and Training Act (CETA) subsidies, while those in the southeast were slightly more likely to receive funding from the Community Health Centers Program, CETA, or "other" federal programs. The pattern of subsidy among organizational forms showed comprehensive medical centers (CHCs) far more likely to receive Migrant (Section 329) and Community Health Center (Section 330) support, while Primary Care Centers (PCCs) were subsidized much more often from state and local governments and local civic organizations.

There were a number of combinations of subsidy that occurred more frequently than others. They included:

1. National Health Service Corps alone or with "other" federal subsidy .....111 programs (58 percent)
2. "Other" federal subsidy alone .....21 programs (10.8 percent)
3. National Health Service Corps with RHI/HURA .....14 programs (7.3 percent)
4. RHI/HURA alone .....12 programs (6.2 percent)

Initial Follow-up Surveys

Because of the rapid pace of change in the political environment toward direct service delivery programs supported by the federal government that occurred when the Reagan Administration came into office, it was decided to again survey the 193 programs in the Tier II sample during the summer of 1982. Contact was made with 184 (95 percent) of the programs. Nine of the 193 had closed during the year-and-a-half period between surveys. Four of the 184 still operating chose not to respond to the 1982 survey. The results of this follow-up were reported in the *American Journal of Public Health.*[14] The programs did face subsidy reductions during the period 1980-82 but the cuts were not applied across the board as was expected. Selected programs were de-funded or forced to merge with other programs. One-hundred-four of the responding programs suffered funding cuts, but 43 had their funding levels raised. Where there were cuts, the programs generally chose to reduce costs rather than raise charges. A significant number of programs did add income-generating services including x-ray, laboratory, and pharmacy services (N=41). Cost-reduction was achieved through staff reduction, cutbacks in ancillary services, or internal budget shifting rather than a reduction in primary care service content, although there was a net reduction in the number of programs offering evening and weekend hours, transportation, and 24-hour telephone coverage. The overall result of changes in the programs' environments produced

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[14] Ricketts TC, Guild PA, Sheps CG, Wagner EH. An Evaluation of Subsidized Rural Primary Care Programs: III. Stress and Survival, 1981-82. *American Journal of Public Health* 74(8):816-9, 1984.

general belt-tightening but the clinics proved to be resilient enough to absorb the relatively small shocks of the first years of the Reagan Presidency.

First Provider Follow-up

In the original study of providers, 426 physicians in the 192 programs employing MDs or DOs and 182 Nurse Practitioners or PAs responded to mail and telephone surveys. Those surveys gathered data describing the providers' backgrounds, training, and content of practice in the programs. A section of the survey elicited opinions concerning the practitioners' degree of satisfaction with the programs, the communities, and their practice. Finally, physicians were asked their intentions regarding practice in rural areas when they began training, began practice in the study site, and in the near future. These data were summarized in a series of variables that described, first, recruitment and retention scores for each program and tenure for each provider; and, second, a series of independent variables that described the provider's background and whether he or she was in the National Health Service Corps or obligated for rural service through another program, as well as the environments, the organization, and the level of satisfaction with components of the practice and environment.

The original study found that new health practitioners and physicians were equal in terms of their level of satisfaction with rural practice but that the non-physicians intended to stay longer in rural areas. The correlates of satisfaction among physicians were their degree of involvement in local community activities and whether they had made a long-term housing commitment in the community. The analysis of the dependent variables produced mixed results. The individual characteristics positively associated among physicians with high levels of current commitment to remain in the community to practice were found to be: being male, being married, and the absence of having had certain practice-relevant experiences—such as previous training in a rural area, membership in the National Health Service Corps, or a service-obligated practice. Expectations of retention for physicians also were associated with: (1) working in a program with more limited hours of available service and (2) a professional practice environment characterized by a supply of health resources complementary to the practice of primary care, e.g. laboratory services, hospital, emergency room, specialty consultation. The community environment characteristics promoting retention were a relatively low proportion of Hispanics in the population, low proportions of persons below poverty, and higher proportions of non-whites. The most marked individual correlate of initial career longevity expectations was National Health Service Corps status. Other individual factors correlating positively with retention plans were a housing investment index, a community commitment index, and the workload expressed in terms of patients seen per week. Because the respondents in the NHSC more often indicated a likelihood to stay at the beginning of their rural practice, and were less likely to respond that they intended to leave after a fixed period, it is suggested that physicians who are not in

the Corps are likely to choose rural practices with the intention of staying there, while Corps physicians are either initially disposed to leave or undecided.

In 1985 the smaller sample of site-visited programs was re-contacted to determine the location and practice status of the originally surveyed physicians. For those physicians who had left those sites and whose whereabouts were unknown, published registries were consulted to locate the physicians. There were 126 physicians included in the data set; 105 were located in 1985. At the time of re-contact only 9 of the physicians (5 were DOs) were not in primary care and all 9 had moved out of their 1980 communities. The overall retention in the program communities was 53%, with 48% of NHSC-obligated physicians remaining and 57% of non-Corps MDs or DOs staying. The analysis of the retention patterns found little relationship between type of medical school or residency training and retention in the communities, nor were there significant differences in the patterns of correlation with the individual characteristics of the physicians or the environmental or organizational variables.

A more detailed analysis of the provider data with a focus on the role of the National Health Service Corps in provider retention in rural primary care centers was performed in 1989 by Donald Pathman, MD, MPH, a Research Associate of the North Carolina Rural Health Research Program. That analysis found that, after controlling for the younger ages of NHSC physicians and the more sparsely populated locations of NHSC practices, rural Corps physicians are found to be no different in their initial retention plans than non-NHSC physicians. This contradicts the notion that NHSC physicians are initially less committed to rural practice because they are obligated for service. Also, after controlling for differential initial retention plans, NHSC physicians are still more likely to be planning to leave their rural practices. The theory that National Health Service Corps experience adversely affects physician retention was, therefore, supported. The data suggest the need to examine and remedy possible problems in the structure or organization of the Corps.

1989-90 FOLLOW-UP STUDY

The Health Services Research Center had requested, in 1986, additional data from the Bureau of Health Care Delivery and Assistance (BHCDA) for federally funded programs in the Tier IV (40 program) sample for analysis of their long term financial status. This analysis was unfunded and was conducted by the Policy Analysis Program of the Center. These data, reported on the Bureau Common Reporting Requirements (BCRR) forms, were to become the core of an analysis of a limited follow-up study of the programs. When the opportunity for the development of small scale studies focusing on rural health was made possible by the announcement of the funding of a group of rural health research centers, a larger follow-up study was proposed within the structure of that center.

In October 1988 the U.S. Office of Rural Health Policy (ORHP), in the Health Resources and Services Administration (HRSA), funded the North Carolina Rural Health Research Program and

approved as a high priority for the Center's research agenda an in-depth follow-up of the 40 programs and a subsequent study of the financial status of the total sample of 193.

Program staff were assigned the task of re-contacting the programs which had not been called or reached by mail since 1984-85. At the same time a survey instrument was developed for a telephone survey of the program sites to be administered in mid-1989. Within the scheduled deadline for a coordinated survey, individuals were contacted at each program at over half of the study sample of 40 programs and all of the comparison sites. However, for slightly less than half of the programs, identifying an effective contact was made difficult by changes that had occurred in the programs. The administration of the survey was delayed until the project staff were confident that they had willing informants in at least 36 of the programs. Interviews were conducted initially via telephone and mail survey forms were subsequently sent to all of the programs. By May 1990, 30 programs had completed the full mailed questionnaire. For those programs that did not respond via mail or refused a full telephone survey, additional telephone calls were made to other informants at the programs to elicit a minimum data set to allow for a basic description of the program and its progress. Five of the programs responded to a full telephone survey and provided complete or nearly complete data; five programs responded to a limited number of questions or provided partial data. Two of the latter five programs had closed since 1981 and informants who had worked with the two closed programs were located and interviewed (program administrator for duration of project for program #10786, and community leader and local hospital administrator for program #10202). Through these methods, all 40 programs provided at least a minimum uniform amount of descriptive data to the research team. The template for those data is included as Appendix II to this report.

During the data collection for program-specific information, the project staff were also collecting information concerning the providers who were identified as working at the program in 1980-81. In this stage of the follow-up of the programs the project was attempting to measure turnover and describe the provider makeup of the programs in 1989 and intervening years. Those data will be expanded in additional research currently being conducted and will be reported separately as part of the Rural Health Professions Shortage Area Physician Retention Study currently funded by the U.S. Agency for Health Care Policy and Research (AHCPR).

RESULTS OF LONGITUDINAL ANALYSIS: CENTER SERVICE AREAS AND TRENDS IN ORGANIZATION

This section describes the data collected during the follow-up survey conducted in 1989 and compares those data with information obtained from surveys conducted in 1980-81 by the University of North Carolina at Chapel Hill Health Services Research Center as part of the National Evaluation of Rural Primary Care Programs. Two of the 40 programs have closed since the 1981 survey and those are excluded from the comparative analyses. One major problem with the analysis of the 1981 and the

current data is the treatment of programs that have multiple sites; for comparative purposes we are reporting data that pertain to entire multi-site programs in the same way in which those data were originally reported in 1981, and for single sites as part of a multi-site program or as a free-standing program depending upon their form of operation in 1981.

Table 1 summarizes how data and information were obtained in the 1989 follow-up. The full questionnaire, completed by 30 out of 38 (79%) of the programs that were still operating, asked detailed questions about staffing, organization, funding sources and services that are currently being provided by programs. Equivalent data were obtained from five programs not responding to the mailed survey using telephone interviews with program administrators. The five remaining programs not responding to the full mailed survey, which included the two closed programs and three of the four programs that transformed over the timespan from public to private practices, were telephoned and informal interviews were conducted. These informal interviews were supplemented with secondary data from state agencies and related organizations and produced a nearly complete data set for most items in the mailed and telephone questionnaire. The informants for the mail and telephone surveys were most often the clinic administrator with a provider or medical director responding to some questionnaires and, in some instances, an experienced or knowledgeable employee providing answers and data.

Table 1
Means of Data Collection for 40 Clinic Follow-up Study, 1989

Information Received	N	(%)
Full Follow-up Mail Survey	30	(75.0)
Telephone Interview with Program Staff	5	(12.5)
Informal Telephone Interviews Concerning Status of Program	5	(12.5)
Total	40	(100)

Service Areas and Populations Served

Demographic and Socioeconomic Characteristics of Service Area Populations

The programs were asked several questions concerning the makeup of their service populations, and data describing the counties in which the programs were located were summarized from the Bureau of Health Professions Area Resources File (1989). Using the secondary data source, it was apparent that the communities in which the 40 rural primary care programs were located experienced changes in several socioeconomic factors between 1980 and 1989. For example, families in the programs' service areas living below the poverty line increased from 24 to 36 percent over the decade. Infant mortality rates dropped on average from 14.4 to 11.1 in the counties where these programs were located. The racial composition of the service areas for each program's principal site or for the single site programs

over the 9-year period 1980-1989 showed a slight trend toward larger proportions of minorities, with the percentage of non-Hispanic white users decreasing from 63 to 57 percent, the percentage of Hispanics increasing from 16 to 17 percent, and the percentage of medical users who were Black increasing slightly from 16 to 18 percent. American Indians and other racial and ethnic groups increased from 5 to 8 percent of site users.

The service area populations from which the programs' principal sites drew their patients were reported by the programs to have grown, on average, from 13,705 to 15,398 in the period 1980-1989. This potential increase in demand for services was not met by increased resources and health care manpower, as will be shown in subsequent sections of this report.

Other Medical Resources Available in Program Service Areas

The relationship of the clinics to hospitals was highlighted in an earlier analysis of the 1981-82 data.[15] The hospital practice of the providers in the rural clinics was found to reduce both the costs and revenues of the programs. This mixed impact had a net positive effect on the clinics due to greater cost reduction. The follow-up focused on changes in the hospital resources in the clinics' service areas and the impact of the hospital practice on the clinics. There was little overall change in the availability or proximity of a hospital to the programs; the average travel time to the hospital most used by the clinics' patients was 24.7 minutes in 1989, up from 22.9 minutes. Of the hospitals in the study site communities most used by program patients in 1981, all remained open during the decade except for one, a 30-bed hospital in a western state (program #10828). Access to hospital services does not appear to have decreased for the service population of that program, since the administration of that particular program was taken on by a hospital 15 miles away and the clinic patients now use that hospital. In addition, a 98-bed hospital just 17 miles from a sample clinic in a southwestern state (program #10865) was opened during the decade, replacing a larger hospital 45 minutes away as the facility most used by clinic patients.

The nearest hospital to the principal clinic site was not always used by the majority of clinic patients in all programs. For example, poor patients of a program located in a particularly economically depressed state where Medicaid eligibility is very restricted are required to go to one of the state charity hospitals over 50 miles away from the clinic site despite there being a small hospital located within one block of the clinic (program #10635). These patients can be admitted only by state-employed MDs from one of the state-supported medical schools. In general, however, it appears that the programs in the sample developed somewhat closer relationships with their area hospitals

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[15] McLaughlin CP, Ricketts TC, Freund DA, Sheps CG. An Evaluation of Subsidized Rural Primary Care Programs: IV. Impact of the Rural Hospital on Clinic Self-Sufficiency. *American Journal of Public Health* 75(7):749-753, 1985.

through the decade. Two programs that were independently governed in 1981 were administered by local hospitals in 1989. In 1981, in 35 reporting programs, clinic providers admitted and cared for 68 percent (median values) of their clinic's patients who required hospitalization. This increased to a median of 88 percent in 1989 for 27 programs that reported data. This increase could be a product of more program physicians receiving hospital privileges over the timespan. Thirty-four percent (13/38) of questionnaire respondents reported in 1981 that securing hospital privileges was a moderate to severe problem; this figure dropped to 13 percent (4/31) in 1989.

Other Providers in the Service Areas

On average, the number of other primary care providers in the programs' service areas had doubled from 1980 to 1989, increasing from 4.2 to 11 providers in the communities for which data were available. In 1980 there were no primary care providers apart from those working in the sample clinics in 18 program service areas; in 1989, only six of the programs reported that they employed the sole providers in the community. Considering population growth along with growth in physician and non-physician primary care provider supply, the average physician to population ratio of the counties in which the programs are located increased from 8.17 per 10,000 to 8.98 per 10,000 residents. Overall, nonmetropolitan counties in the United States had 9.47 physicians per 10,000 population in 1988.

In 1981, 12 out of 38 (32%) of the programs reported that one or more of the other health care providers in the programs' service areas refused to serve specific groups of patients. Of these 12, nine communities had providers who turned away Medicaid patients, eight refused service to the medically indigent, six denied health care to migrants, and five refused service to minorities. This situation apparently did not improve over the decade, as evidenced by 12 of the 31 programs in 1989 (39%) reporting that other providers in their communities refused service to particular groups of patients. However, while 11 of these 12 communities had providers in 1989 who refused service to the medically indigent, and seven to Medicaid patients, discrimination against migrants was found in only one service area and none of the questionnaire respondents in 1989 reported denial of health services to minorities. Opposition to the programs by local providers in the communities, as reported by questionnaire respondents, dropped slightly during the decade, with 40 percent (15/37) having either a moderate or severe problem in 1981 and 32 percent (10/31 of operating programs) experiencing this level of opposition in 1989. An example of opposition faced in 1981 by one program was the objection of a local medical society to federal intervention in health care in the community (program #22335). This situation still held in 1989, but the program is well-accepted by area residents and has managed to increase its level of productivity in delivering health services to the community during the decade despite resistance from the medical society.

Third party payors, especially federal programs including Medicare and Medicaid, remained very important to the programs as sources of income and served also to reflect the make-up of the

communities serving the programs. The percentage of clinic users with no insurance coverage increased from 33.75 to 44.12 percent and this paralleled the hard economic times facing rural communities. The proportion of users in the clinics with Medicaid coverage remained steady at 19 percent between 1981 and 1989, and the proportion of users with Medicare decreased from 19.2 to 14.4 percent. The drop in Medicare users was surprising due to the general trend toward much older rural populations across rural areas in the United States.

Program Operation

Changes in Organization

Of the 40 subsidized rural primary care programs operating in 1980, 33 continue in some form as primary health care centers, publicly supported or non-profit. Four merged into or were subsumed by other organizations and five became physicians' private practices. Only two have completely closed during the decade. Of these two, one program dissolved because there was an increase in the number of physicians in the area, and the organization was no longer considered necessary by the community organization that governed the community. That program (#10786) was based in a small hospital in an economically stable community. The administrator of the program, who had left the area, felt that the program served well as a temporary solution to a local physician shortage. The other closed program was affected by the breakup of a network of rural primary care centers organized around a large (256 bed) hospital (program #10202). One of the key physicians in the 1981 program remains in the community along with four other primary care physicians. This represents a fairly stable provider supply in the community with seven FTE primary care physicians practicing in 1981 and five FTE in 1989. All 38 other programs retained at least some form of organizational link with their 1981 form.

Four of the 38 programs merged with other similar subsidized programs. One program (#10401), in a southeastern state, was once an autonomous Community Health Center with a series of its own satellite clinics and a well-defined local, rural constituency. According to informants responding in 1981 and 1989, it lost out in an internal political struggle with an urban Community Health Center 35 miles distant when funding was reduced in 1983. The merger with the urban program was not completely welcomed by the staff and board of the rural program which was part of the sample. A similar merger was seen in another CHC (#10395) in the southeast that was absorbed into a metropolitan Community Health Center 47 miles distant. The smaller, rural program had been having difficulty with staff turnover, management problems and with keeping its board unified. These factors contributed to its merger into the more stable urban system, according to the current administrator and information supplied by community leaders interviewed in both 1981 and 1989. Two other single-site programs (#10407 and #20205) merged into larger programs that served rural areas as well as larger towns in nonmetropolitan counties. Each of the latter two programs were unable to maintain patient volume sufficient to support independent management capacity.

Five programs went through a transition from being publicly subsidized to operating as private practices. These practices remain in the same location, serve the same general service population, and retain at least some of the same personnel that were there in 1981. These five programs are in medium-sized rural communities in counties adjacent to metropolitan counties, and their transition from public funding to private operation had been predicted in subjective assessments by site visitors in 1981.

Twenty-nine of the 40 sample programs continued providing services to their communities in the same general organizational form from 1980-1989. Of these 29, 4 showed a reduction in services measured by a reduction in staff, users or encounters by greater than half, 3 increased function by over 50 percent, and 22 continued at the same level of function. A summary of the 1989 status of the programs from the original survey is included in Table 2.

Table 2
Status of Programs in 1989

Status		N	(%)
Continued Public Control		**27**	**(67.5)**
Reduced Services	4		(10.0)
Increased Services	3		(7.5)
Unchanged	20		(50.0)
Continued Private		**2**	**(5.0)**
Merged into Similar Organization		**4**	**(10.0)**
Public to Private Ownership		**5**	**(12.0)**
Closed		**2**	**(5.0)**
With Replacement	1		(2.5)
Without Replacement	1		(2.5)
Total		**40**	**(100)**

The programs have persisted in a period of rapid change in the fiscal and policy environment of rural primary care. Many of the programs appear to have struggled throughout the decade to either remain in operation or to maintain the same level of services provided in 1980. The programs have adopted several different survival strategies. Some programs have made a priority of avoiding dependence on federal funds, relying instead on subsidy from local governments, private foundation support and community fund raising. Five programs were able to make the transition to private practices but those five programs changed their organization and service population. Most of these transformed programs have survived without outside funds for over five years without significant reductions in staff and services.

For many programs, it appears that the dedication and continuity provided by program staff has been a key factor in their survival and prosperity. This also can be seen in programs where reduction in outside funds has led to reduction in staff and services. For example, there are two programs (#10279 and #10865) in the sample which have suffered losses of federal CHC funds. Those two currently operate with fewer services than in 1980. These programs were able to tighten their budgets while at the same time striving to continue to provide needed services to their service

populations. One of these two has become essentially self sufficient; liberal Medicaid reimbursement combined with a low program budget and the continuing efforts of two staff members who have been at the clinic through the decade are cited by respondents in the community as reasons for the survival of this clinic. Four programs have increased services to their service populations over the decade, adding sites, providers, and services.

In the National Evaluation of Rural Primary Care Programs undertaken by the UNC-CH HSRC over ten years ago, and described in the introduction to this report, rural primary care programs were classified and selected for study according to a typology of practice organizations. This typology has been described in depth elsewhere.[16] Table 3 presents comparisons between the original classification of programs in 1978 and their classification in 1989. There has been a decrease in the number of programs classified as comprehensive health centers (CHCs), which are defined as larger programs with extensive community involvement and providing outreach services. The loss of outreach

Table 3
Trends in Program Typology

Typology	1978 (%)	1989 (%)
Comprehensive Health Center	14 (35)	9 (24)
Organized Group Practice	14 (35)	16 (42)
Primary Care Center	12 (30)	6 (16)
Institutional Extension	0	2 (5)
Traditional Group Practice	0	1 (3)
Other	0	2 (5)
Missing Data	0	2 (5)
Total	40 (100)	38 (100)

services necessitated the reclassification of many of the organizations. The proportion of organized group practices (OGPs) increased. These programs have fewer primary care providers than CHCs, no community outreach services, and they pay providers on the basis of productivity. The percentage of primary care centers (PCCs) decreased, possibly signalling a trend away from these smaller programs and a drop in the distribution of mid-level providers in rural areas. Another potential interpretation for the change of PCCs to other forms focuses on the community structure of these programs, which were generally seen to be more closely integrated into local community infrastructures where the development and maintenance of these programs is stimulated and/or subsidized through local community involvement; that local investment may have faltered over time or been replaced by external funding. Institutional extension (IE) practices are controlled by an external organization such as a hospital; two programs evolved into this form over the decade, both being turned into ambulatory outposts of medium-sized hospitals.

[16] Sheps et al., 1983.

One important modification of program structure and operation was undertaken by a multi-site program located in the south. This program (#10310) was a comprehensive health center funded by the PHS Section 330 (Community Health Centers) and 329 (Migrant Health Centers) programs. The communities the program served were very poor and its patient population dominated by migrant and seasonal workers. The program with its four sites was constantly in need of primary care providers. National Health Service Corps scholarship recipients and foreign medical graduates provided much of the staffing. At the time of the initial site visit, the program was recruiting in much the same way as other primary care delivery systems, through advertising and direct mail contact to new medical graduates assisted by the state primary care association. In 1981 and 1982, the development of a new osteopathic medical school in a metropolitan area 80 miles to the southeast provided a unique opportunity for the program. That osteopathic school included as one of its primary missions the training of osteopathic physicians for the host state—physicians who would be well prepared to deliver care to the elderly, indigents, and rural communities. As the school's curriculum began to develop, it was decided that each undergraduate student would have a three-month rural clerkship in an underserved area. The school began recruiting sites to allow students to satisfy this requirement and the target program provided four teaching sites. This program has been in place since 1984 and the providers and administrator all agree that these clerkships have contributed to the program's quality of care and provided a recruiting advantage for the program and its sites. In 1989 the program became affiliated directly with the medical school. Staff members at the clinic sites were then able to interact with the regular faculty of the school who oversaw the clerkships, as well as making use of the skills of the students and residents who also were placed in the program sites.

This rural-based training program is a unique example of a regularized system of training in underserved areas. It is unique for three reasons: (1) because the rotating clerkships are required and emphasized, (2) because there is a linked didactic requirement in rural and minority medicine in the first two years of medical school, and (3) because the medical school is committed to the continued viability of the rural primary care programs and makes an effort to place its graduates in the underserved sites. This program may be considered a model for the linkage of training and service delivery aimed at alleviating the problem of medical underservice in rural America.

Trends in Services Offered by the Programs

Programs generally seem to have adjusted to changes in sources of funding and perhaps to decreased community involvement by cutting a number of services and by maintaining or increasing a few other selected services.

Table 4
Trends in Services Provided by the Programs

Service	Programs Providing Service in 1981* N	(%)	Programs Providing Service in 1989** N	(%)	Change (%)
Outreach Services	30	(83)	13	(36)	-47
Transportation	30	(83)	16	(44)	-39
Prenatal Care	33	(92)	23	(64)	-28
Mental Health Care	15	(42)	10	(28)	-14
Family Planning	35	(97)	30	(83)	-14
Dental Care	13	(36)	13	(36)	0
Home Care	9	(25)	11	(31)	6
Social Services	10	(28)	15	(42)	14
Well Child Care	7	(19)	28	(78)	59

*Information available for 36 programs
**Information available for 36 programs

Of the nine services listed in Table 4, it is evident that the most marked changes during the period 1981-1989 are found in the decrease in outreach services and the increase in well child care. In addition, although the number of programs offering family planning services decreased over the decade, this service category remains the most widely offered on the list. Comparing trends from 1981 to 1989, the decrease in outreach, transportation and family planning services provided by the programs apparently is not being compensated for outside the programs themselves in their communities (Table 5).

Table 5
Trends in Services Provided Elsewhere in Program Communities

Service	Communities Providing Service in 1981* N	(%)	Communities Providing Service in 1989** N	(%)	Change (%)
Social Services	28	(78)	17	(47)	-31
Well Child Care	26	(72)	17	(47)	-25
Home Care	26	(72)	19	(53)	-19
Dental Care	25	(69)	18	(50)	-19
Transportation	18	(50)	13	(36)	-14
Family Planning	25	(69)	22	(61)	-8
Mental Health Care	26	(72)	24	(67)	-5
Outreach Services	17	(47)	14	(39)	-8
Prenatal Care	25	(69)	25	(69)	0

*Information available for 36 programs
**Information available for 36 programs

While there was a decrease in social services provided elsewhere in program communities, the programs themselves collectively increased their emphasis on these services The largest increase was seen in availability of well child care in the rural primary care programs, although there was a concomitant decrease in this service in the communities.

From 1981-1989, the percentage of the programs' principal delivery sites offering on-site blood sodium and potassium testing increased, from 22 percent to 70 percent. The number of programs offering chest x-rays at the principal sites did not change appreciably, with 62 percent offering this diagnostic test in 1981 versus 61 percent in 1989. A greater percentage of the programs in 1989 had licensed pharmacies than in 1981 (47 compared to 32 percent).

Trends in Policy Decisions

The National Evaluation attempted to examine the effects of different patterns of decision-making on the stability and impacts of the programs. The key respondents were asked which of five classes of decision-makers in the program—medical director, other provider, administrator, governing board, or external agency—had the most influence on ten strategic decisions. The original evaluation was primarily concerned with the power and influence of the board on program operation; heavy board involvement in the decision-making was related to lower financial stability but was related to higher measures of access.[17] In the 1989 follow-up, program informants were asked about who had final authority concerning the six strategic decisions listed in Table 6. Based on the responses to the earlier surveys, the decision-maker options were slightly modified to eliminate the "other provider" and replace it with an explicit "joint decision" option. Table 6 indicates an apparent trend toward joint decision-making at the expense of board involvement. This trend may reflect a difference in questionnaire design rather than an actual difference in decision-making patterns, and the denominator for the 1989 programs does not include the programs that have closed since 1981; some of those have eliminated their boards and changed form.

In 1981, the administrators of the 37 programs for which data were available had final authority on an average of 42 percent of the decisions, the board members were responsible for a total of 26 percent of the policy decisions, the medical directors made 31 percent of the decisions, external institutions made five percent and five percent of decisions were made jointly. In 1989, from data available for 32 programs, the percentage of total final decisions made by administrators alone increased to 48 percent; the board's control of decisions declined to 14 percent, and the medical directors' decreased to 19 percent.

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[17] Ricketts TC. Community-Oriented Primary Care in Subsidized Rural Primary Care Centers. Chapel Hill, NC: Unpublished Ph.D. Dissertation, 1988.

Table 6
Trends in Locus of Organizational Policy Decision-Making, 1981-1989

Policy Decision		Administrator	Board	Medical Director	External Institution	Joint Decision
Adding or Deleting Services	1981	14 (%)	42 (%)	42 (%)	0 (%)	2 (%)
	1989	19	23	29	7	23
	Change (%)	5	-19	-13	7	21
Allocating Space	1981	61	17	22	0	0
	1989	63	13	13	0	10
	Change (%)	2	-4	-9	0	10
Hiring /Firing Nursing Staff	1981	44	19	50	0	0
	1989	43	10	30	0	17
	Change (%)	-1	-9	-20	0	17
Developing the Budget	1981	63	26	11	0	0
	1989	73	10	3	0	13
	Change (%)	10	-16	-8	0	13
Hiring /Firing Med. Staff	1981	25	42	33	0	0
	1989	27	27	27	0	20
	Change (%)	2	-15	-4	0	20
Setting Up a Cooperative	1981	40	14	46	0	0
Program w/ Health Dept.	1989	63	3	10	0	23
	Change (%)	23	-11	-36	0	23
Total	1981*	42	26	31	0.5	0.5
	1989**	48	14	19	1.0	15.0
	Net Change (%)	6	-12	-12	0.5	14.5

*Information available for 37 programs
**Information available for 32 programs

In 1989, fifteen percent of policy decisions were said to be made jointly by two or more of the above-mentioned decision-makers in contrast to less than one percent in 1981. This trend may indicate a move toward more cooperative relations with other organizations as the conditions in the programs' environments became tougher. It also parallels a trend toward the forming of alliances among programs and institutions in rural areas.

Governing Boards, 1981 and 1989

Questionnaires in 1981 and 1989 addressed the operation of program governing boards. All of the programs operating as primary health care centers had boards in 1989, whereas one did not in 1981. More noticeable was a trend away from boards shared with other institutions. Thirty-five percent (13/37) of programs shared boards with other institutions in 1981; this figure dropped to 12 percent (4/32) in 1989. More detailed information on program boards was obtained in 1989, and is shown in Table 7; excluded from analyses were closed programs, programs that have become private and those with missing data.

Table 7
Operation of Governing Boards of
Rural Primary Care Programs, 1989

Follow-Up Questionnaire Item		N	(%)
Board Members are:			
Elected		12	(39)
Selected		11	(34)
Both Elected and Selected		9	(29)
Total		32	(100)
Are Any of the Board Members Health Care Providers?	(Yes response)	25	(81)
Has the Board Participated in Management Skills Training or Received Outside Consultation?	(Yes response)	22	(71)
The Relationship Between the Board and the Primary Care Providers at the Principal Site is:			
Extremely Good; Mutually Supportive		21	(70)
Fairly Good; Some Minor Conflicts		9	(30)
Fair; Fair Number of Conflicts		0	
Poor; Significant Hostilities		0	
Total		30	(100)

As perceived by questionnaire respondents (of whom most were program administrators or managers) and indicated in the Table 7, governing boards are currently working cooperatively with program staff. The programs have apparently become inclined toward establishing boards independent of other institutions. It is not known what effect this has had on the working of the boards, since comparison data are not available from 1981. However, one scenario is that as programs have matured, their governing boards have developed improved methods of problem-solving, possibly with the help of outside training programs. As noted previously, there was a trend during the decade toward joint decision-making on a number of policy issues, and decisions made by the board alone declined during this time period. Possibly this type of cooperative interaction between the board and program staff has contributed to and/or been a product of their generally good working relationships, and has been necessitated by financially harder times dictating a greater need for judicious distribution of existing resources.

Programs Developed in Comparison Communities

Eight comparison communities were surveyed in 1981. These were chosen from a universe of approximately 60 communities across the United States that, in 1980, were about to initiate a subsidized rural health clinic or had applied for support for a primary care clinic. The sample was selected to compare the impact of study programs on community access as measured by surveys of

community residents with similar measures in communities very like the target programs but where a subsidized clinic had not been established. Samples of residents from each of these communities were surveyed regarding their health status and use of health services.

Of the eight comparison communities, four have developed rural primary care programs in the period since 1981. Follow-up questionnaires, similar to the mailed survey instrument that was sent to the 40 rural sites, were sent to these four programs in 1989; complete information was obtained from three of the programs. Three communities received federal funding for their programs. Two of these three can be classified as primary care centers (PCCs) according to the typology discussed previously; each has exactly one full time MD and each has a degree of community involvement. There was not sufficient information available to classify the third funded program. The fourth center can be classified as an Institutional Extension hospital satellite. This clinic is administered by a hospital 60 miles distant, does not receive any outside funding, and serves an isolated rural population which has no other local source of primary care. In this case the distance of the people from available care appears to have been more influential than the level of poverty of the population in development of the clinic.

Finance

The financial support for these clinics comes from two major sources, patient-based income and subventions of various sorts. Patient income comes from direct payments by patients for services or through various public and private insurance plans including Medicare and Medicaid. For the programs involved in the Community or Migrant Health Centers programs of the federal government, the amount of their federal grant is dependent upon their patient income and is calculated as total costs minus total patient income with some slight variations based on adjustments for certain services. Other non-profit programs make up for the shortfall of patient income by cutting costs to match revenues. There are other sources of income for the programs including gifts from the local communities or from private foundations and individuals, gifts in-kind including volunteer work and equipment, and direct subsidy from local or state governments. In this sample of programs the most important sources of income were patient income and federal grants.

Financial reporting from the programs was not as complete as the reporting on operations, and this analysis will be based on fewer cases than the original 40 in the sample. The data are of interest in that they show some distinct trends reflecting changes in the programs and their structures. The extent of those changes in financial terms cannot accurately be determined from these data, however. The project is analyzing financial data from a larger number of programs extracted from the Tier II sample and will report those results elsewhere.

Of the twenty-nine programs that reported full financial data the total average budget was $1,480,759. This figure is over four times greater than the 1980 average budget of $341,569. The very

large difference is due to several things: (1) the 1989 reporting programs were more likely to be federally funded community health centers and CHC organizational form programs which are larger, on average, than the other forms; (2) two programs merged with larger, urban programs and the financing was reported for the combined programs; and (3) inflation and natural growth occurred over the nine-year period. The 1989 reporting programs saw the proportion of their total income derived from patient revenues decrease from 60 to 54 percent from 1980 to 1989. This indicates that the amount of subsidy increased for these clinics. At the same time, the portion of patient income from hospital revenues increased from 8 to 10 percent which may reflect a growing urban orientation for the programs. The mix of sources of patient income in 1981 and in 1989 is presented in Table 8.

Table 8
Source of Patient Income, 1981 and 1989

Payment Source	1981* %	1989** %	Percent Change
Self	36	39	3
Medicare	19	14	-5
Medicaid	17	20	3
Other third parties	28	20	-8
HMO, IPA, PPO	—	4	—

*Information available for 33 programs
**Information available for 28 programs

The proportion of billed charges actually collected by the programs rose from 68 to 81 percent. The ability of the programs to raise their total collection rates is somewhat surprising, given the fact that in 1981 reimbursement from Medicaid was reported to be a moderate to severe problem in 47 percent (18/38) of the programs, while this problem was reported in 68 percent (21/31) in 1989. Nineteen percent of clinic users were covered by Medicaid in both 1981 and 1989. Program staff may have developed more efficient means of managing their centers to deal with the decreasing ability of clinic users to pay for services. Analysis of financial data from the 1980-1981 surveys found that there is a strong relationship between smaller program size and higher collection rates.[18] However, medical encounters at the principal sites also increased by approximately 28 percent, from 12,474 to 15,987 in the programs for which data were available (n=28), while the collection rate rose, indicating increased emphasis on fiscal efficiency.

Trends in the sources of outside funding for the programs are shown in Table 9. While federal funding opportunities generally decreased, with the exception of an increased percentage of programs receiving Community Health Center funds, programs received more support from state governments.

[18] University of North Carolina Health Services Research Center, 1983, p. 140.

Also, seven programs had become completely self-supporting by 1989, whereas all had been subsidized to some extent in 1981.

Table 9
Changes in Sources of Funding of Rural Primary Care Programs, 1981-1989

FUNDING SOURCE	1981* N (%) RECEIVING	1989** N (%) RECEIVING	CHANGE IN % RECEIVING, 1981-1989
NHSC	22 (58)	6 (17)	-41
Rural Health Initiative (no longer active)	12 (32)	0	-32
CHCs (Section 330)	12 (32)	21 (58)	26
Migrant Health (Section 329)	9 (24)	6 (17)	-7
Other federal agency	9 (24)	4 (11)	-13
State Government	5 (13)	14 (39)	26
Local, Civic, Church or Community	4 (11)	5 (14)	3
RWJ foundation	3 (8)	1 (3)	-5
Other Foundation	2 (5)	3 (8)	3
100 Percent Fee for Service	0	7 (19)	19
Other	9 (24)	6 (17)	-7

*Information available for 38 programs
**Information available for 36 of the operating programs

In 1981, 30 of the 37 programs (81%) for which data were available responded that their programs used a sliding fee scale based on income. This is comparable to the 74 percent (25/34) of the 29 reporting programs that used a sliding fee scale in 1989. There was a wide range in percentage of patients accepted on a sliding fee basis, from 1 to 99 percent, averaging 49 percent of patients in 1989, compared to 46 percent in 1981.

Higher sliding fee proportions were strongly negatively associated with financial self-sufficiency in the original study. The higher proportion in the 1989 data could indicate greater financial stress on the programs or a shift to better accounting for unpaid care. The high percentage of survivors suggests that the application of the sliding fee may have been altered to reduce its effect on the fiscal position of the programs, or that programs have been able to replace revenue lost through the reduced fee arrangements.

The programs were very responsive to environmental influences and opportunities including special grant projects and changes in sponsorship, and this was reflected in their ability to adapt constructively. Each of the programs included in the sample in this study felt some degree of stress over the 10-year period in which they were studied. The two that closed were in communities which were able to replace their health care capacity through means other than a clinic, center, or program, subsidized or not. There were three programs that were able to increase their number of providers,

medical users or encounters by greater than twofold; two of these were CHCs and one was an OGP in 1989. These programs, two of which were in southern states and one in a western state, received greater amounts of federal and state funds in 1989 than in 1981, generally had higher than average percentages of their service populations living below the poverty level, had higher percentages of minorities in their service populations, and had relatively high collection rates. These programs were able to recruit a number of new providers over the time period, even though only one received NHSC funds in 1989 (#10283, #10436, #22335).

RESULTS OF LONGITUDINAL ANALYSIS: PROVIDER RECRUITMENT AND RETENTION

This section of the report examines the experience of the 40 rural primary health care programs and their communities in recruiting and retaining physicians and other primary care providers over the course of the decade 1980 through 1990. These programs were first visited in the early 1980s by the staff of the Health Services Research Center at UNC-CH as part of the National Evaluation of Rural Primary Care Programs. Mail surveys conducted in 1989 were followed up with telephone interviews to non-respondents in 1990 during which information was obtained about the recruitment, retention and staffing of these programs.

Disproportionate emphasis will be placed on the physicians, not only because they are numerically greater, but also because these programs have experienced more problems with recruiting and retaining physicians than either nurse practitioners or physician's assistants. Recognition of the organizational dominance of physicians in these settings, however, should not overshadow the clinical importance of non-physician providers nor the role that these practitioners (as well as nurses) play in maintaining the continuity and stability of these practices. This is a phenomenon that deserves more systematic scrutiny.

Vacancies

Information about vacancies was obtained from all 40 sites in 1981 and from 34 of the 40 sites in 1990. Only currently active vacancies were enumerated in response to the question: "Do you currently have any vacant positions for which you are actively recruiting a physician, a nurse practitioner (nurse clinician, or certified nurse midwife) or a physician's assistant."

Physician Vacancies

In 1981 there were 28 physician vacancies in 23 of the 40 rural medical practices in the national sample. Sixteen of these were for NHSC physicians. At the time of our more recent inquiry, exactly the same number of vacancies were present in 20 of the 34 reporting sites. In 1989, however, there were only 12 NHSC slots. Thus the proportion of physician vacancies which could be filled with NHSC

sponsored physicians declined from 57 percent to 43 percent. The distribution of specialties sought in the two different years is displayed in Table 10.

Table 10
Trends in Physician Vacancies

Specialty	1981(%)	1989 (%)
Family Practice	16 (57)	22 (79)
Internal Medicine	3 (11)	1 (4)
Obstetrics-Gynecology	1 (4)	1 (4)
Pediatrics	1 (4)	1 (4)
Non-specific or GPs	7 (25)	3 (11)
Total	28 (100)	28 (100)

A comparison of the distribution of vacancies at these two intervals suggests that programs are more likely to focus their recruitment efforts on family physicians and are less interested in generalists without family medicine training. One out of every four vacancies in 1981 was listed in a non-specific way while only slightly more than 10 percent of vacancies were for such physicians in 1989. Experience with the "general practice" or nonspecific physicians as well as the internists actually recruited in these programs suggests that they had shorter lengths of stay than family physicians.

It is likely that the continuing availability of family physicians, their comparatively favorable retention experience, and the broader acceptance of family physicians on rural hospital staffs has led program administrators to prefer hiring family physicians over those in other specialties.

Non-Physician Vacancies

Relatively few vacancies occurred for non-physician primary care providers at either time. Among the 34 sites reporting in 1989, only five indicated a need for a total of seven of these providers. Exactly the same number of sites were seeking physician extenders in 1981. In 1981 the preponderance of these vacancies was for nurse practitioners while in 1989 most sites were seeking physicians' assistants.

The relatively low numbers of these vacancies at both times are probably due to two factors: the relatively low number of these practitioners (compared to physicians) and the substantially higher retention rate of these providers when compared to physicians. In fact, in the 34 organizations reporting in 1989, all non-physician primary care providers hired since 1985 have remained employed in their work setting since then, which is a far different situation than that of the physicians who work in these settings.

Recruitment Methods

Once it has been established that these programs have needs for clinical personnel, it is important to gain an appreciation of the kind of efforts undertaken by them to fill those needs. In order

to obtain this information, programs which had openings were asked to enumerate each of them and were asked a series of questions about each vacancy identified. Information that was requested included what type of practitioner was being sought (physician, nurse practitioner, physician's assistant); what clinical specialty was being sought; whether the position was full-time or part-time; and whether or not the position was supported by the National Health Service Corps.

Administrators of centers were asked about different strategies used to facilitate recruitment. Informants were presented with four major types of recruitment strategies which included: (1) the use of National Health Service Corps placements; (2) the use of advertising; (3) the use of locally available networks and resources (e.g., state rural health offices); and (4) special financial inducements or incentives. Informants were asked whether each of these four strategies was used and to describe the specific aspects of their approach.

When responses were tabulated it was found that advertising was used by 19 of the 20 sites actively recruiting (95 percent); local resources were used by 15 (75 percent); increased incentives were used by 14 (70%); and NHSC placements by 11 (55 percent).

Advertising

Advertising was the most universal method of recruitment used, and the most popular medium of advertising appeared to be medical journals, which were identified 12 times. Both national journals (e.g., *JAMA*) and regional and state journals were mentioned by three programs, and specialty journals in family practice and obstetrics-gynecology were also mentioned by three informants. One Appalachian site reported "Christian medical journals" as having been helpful in its recruitment efforts. Five clinics advertised with residency programs. Among western programs, less traditional methods seem popular. Two used regional metropolitan newspapers (i.e., the Denver *Post* and the Los Angeles *Times*) and two others used direct mail to targeted physician listings.

Local Initiatives

Fifteen programs reported using some local or state initiatives such as an office of rural health services for assistance in recruitment. Although such resources are apparently widely used, respondents were not especially specific in describing their content or use. A state rural health office, the National Association of Community Health Centers, a state primary care association, and the placement services of the American Medical Association and the American Osteopathic Association were each named once by respondents. Only one respondent reported using a commercial placement service and sharing the cost of the firm's services with the local hospital for two relatively longstanding vacancies.

Incentives

Seventy percent (N= 14) of the programs actively recruiting reported having increased salaries or fringe benefits in an effort to make employment more attractive. One program [#10401] reported receiving a "retention and recruitment grant" from an unspecified source in order to supplement salaries. Another program [#20453] in an isolated location in the Rocky Mountains reported increasing a physician salary by 25 to 30 thousand dollars in order to fill a vacancy caused by a loss of access as an NHSC site. Several programs noted their belief in the importance of fringe benefits, including a retirement program, in a more attractive compensation package.

The National Health Service Corps

Of the 20 programs actively seeking physicians, 11 were eligible for National Health Service Corps placements, and all 11 stressed that this fact was important in their recruitment. Two clinics which were seeking physicians indicated that they had recently lost their designation as a Corps site and noted that this made it harder for them. In particular, one of these programs lost two physicians who had not yet completed their pay-back obligation shortly after the site became ineligible as a pay-back site. The two physicians left within a three-month period, and moved to nearby rural counties so that they could fulfill their pay-back service.

One way of assessing the overall effectiveness of these recruitment efforts is through administrators' assessments of their difficulty in filling vacancies. Informants were asked to describe their level of difficulty in recruiting primary care providers for their staff. They were given the choices: "not difficult"; "somewhat difficult"; and "very difficult." At the time of the 1981 survey, 42 percent of the respondents described their recruitment situation as "very difficult." When these questions were repeated in 1989, the proportion who said that it was "very difficult" to fill these positions had risen to 61 percent.

Physician Recruitment and Retention

Over the period of 1980 through 1989, 111 new physicians were reported to have been recruited to the 35 of the 38 operating organizations from which data could be obtained in 1989 and which were staffed by physicians in 1981. (Two of the original 40 sites were staffed exclusively by non-physician providers; these practice settings retained this staffing pattern over the remainder of the period during which time they actively delivered medical services.) The recruitment and retention experience for the 78 physicians who constitute the 1980 through 1982 entry cohort of physicians of these health centers can be reliably reconstructed for these organizations. Finally, observations are available from the "survivors" of previous entry cohorts remaining employed in these programs at the beginning of 1981. Information drawn from these 46 "survivors" is particularly useful in assessing the long-term career possibilities of physicians in these rural practice settings.

Reliable data on a number of the variables of interest was not available for all physicians listed. For example, the actual length of stay was missing for 10 physicians because starting or leaving dates were unavailable.

Physician names listed were arrayed according to the starting date that was reported: before 1980 (N=46), 1980 (N=31), 1981 (N=19), 1982 (N=28), 1983 (N=6), 1984 (N=10), 1985 (N=13), 1986 (N=6), 1987 (N=21), 1988 (N=14), 1989 (N=6). These annual entry cohorts were aggregated into three distinct periods spanning multiple years (A: 1980-1982, B: 1983-1986, and C: 1987-1989) to facilitate examination of trends through the decade.

Comparisons will be made between the early decade and late decade three-year cohorts of physicians because the available data are more reliable for these two time periods. Comparison of the three time periods (A,B, and C) reveals that both the number of reported new physician entrants and the number of leavers were strikingly lower during the mid 1980s than for prior and succeeding years. For example, 28 new physicians were reported to have been hired by these centers in 1982 while only six were reported hired in 1983. This is not surprising since many of the informants reporting to us in the 1989 survey had themselves joined these organizations relatively recently and may have been unable to reconstruct an accurate history of the physician staffing of the organization prior to their joining the organization. Further, personnel record data was not always available to or consistently used by informants in recalling these individuals or in making their estimates of the dates at which physicians were hired and/or left. In addition, analysis revealed that physicians reported as having first come to work during the four years 1983 through 1986 seemed to have survived longer than those starting in earlier time periods, and conversely relatively few of these individuals were reported to have left during their first two years of service. This is consistent with the hypothesis that our informants may have been more likely to forget to list those physicians who came and left these organizations during the mid 1980s, while recalling those who were still working there at the time of our inquiry or who had left only months before.

In order to validate the data provided by administrators at the program sites, rosters of physicians were reconstructed from the information provided by them. Such reconstructed rosters suggested interruptions in physician staffing in some centers during the mid 1980s which did not in fact occur. Rosters were also compared to two independent sources of information available on some of these organizations. These were Bureau Common Reporting Requirements (BCRR) annual reports provided by the Bureau of Health Care Delivery and Assistance (BCHDA), and National Health Service Corps files. Fewer discrepancies in physician staffing estimates were found between self-reported data and data from these two external federal sources for time periods A (1980-82) and C (1987-1989) than for the period during the mid 1980s. For these reasons only data from periods A and C are used in subsequent analysis.

About half of the names identified as program physicians were in the NHSC. These included volunteers, those fulfilling service obligations (both as civilians and those in the Public Health Service) and those serving in order to have their loans repaid. The significant role that NHSC physicians have played in the staffing of these centers over the last decade is obvious. Approximately half of the physicians (20/39) recruited by these programs during the period 1987-1989 were provided by the National Health Service Corps scholarship and/or loan repayment programs. This proportion is roughly comparable to the proportion (38/75) in the earlier cohort (1980-1982). However, the impact of diminishing availability of Corps physicians, evident in the pattern of vacancies reported above, had not yet become apparent in actual staffing in 1989.

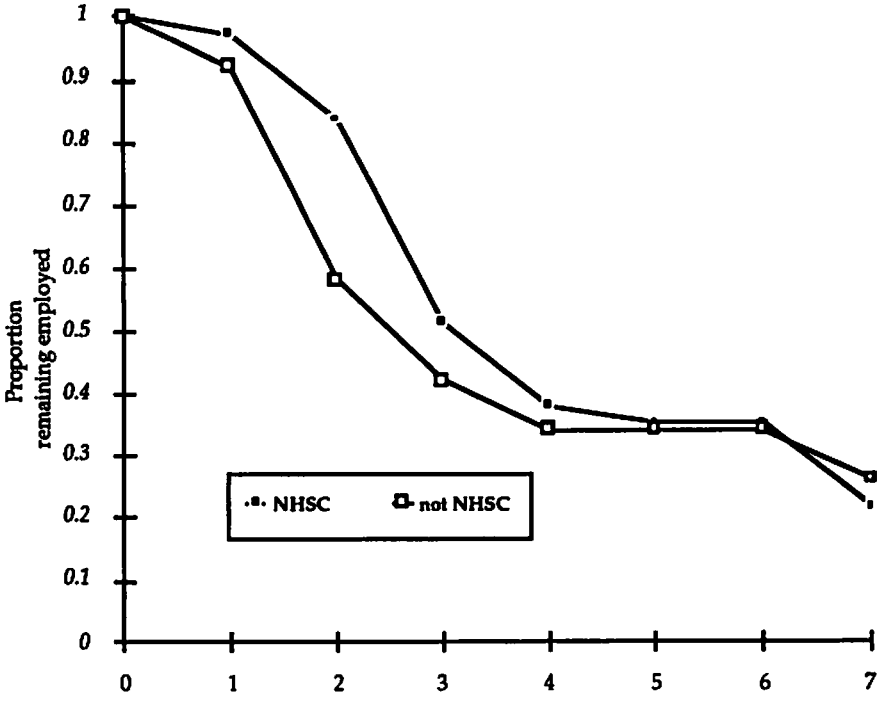
Table 11
Proportion of Physicians Remaining Employed in Programs by Year of Initial Employment and NHSC Status (N=36)

Period of initial employment:	1980 Cohort		1981 Cohort		1982 Cohort		1980-82 Cohort		1980-82 Cohort
Proportion of Physicians Remaining until end of:	NHSC	non-NHSC	NHSC	non-NHSC	NHSC	non-NHSC	NHSC	non-NHSC	All physicians
1st year	.93	1.00	1.00	1.00	1.00	.75	.97	.90	.94
2nd year	.87	.50	.67	.80	.92	.50	.83	.48	.67
3rd year	.53	.25	.22	.80	.69	.33	.49	.29	.39
4th year	.40	.19	.11	.70	.54	.25	.34	.19	.27
5th year	.33	.19	.11	.70	.54	.25	.31	.19	.26
6th year	.33	.19	.11	.70	.54	.25	.31	.19	.26
7th year	.07	.19	.11	.50	.46	.17	.17	.10	.14
8th year	.07	.13	.11	.50	NA	NA	NA	NA	NA
9th year	.07	.13	NA	NA	NA	NA	NA	NA	NA
Number of Physicians in Entry Cohort	N=15	N=16	N=9	N=10	N=13	N=12	N=36	N=31	N=66

Inspection of the data in Table 11 reveals that one third of those physicians coming to work in these programs during the period 1980 through 1982 had left before the end of the second year of their service. The retention patterns of NHSC and non-NHSC physicians in this entry cohort were quite distinctive, however. Of the 37 NHSC physicians hired during this period, 31 were still working there

at the beginning of their third year of service. On the other hand, of the 38 non-NHSC physicians hired during the same period, only 22 remained that long. Although NHSC physicians were somewhat more likely to leave than non-NHSC physicians during the fourth year of service, the cumulative probability of retention of NHSC physicians is quite comparable to others (see Figure 2). This pattern suggests that a National Health Service Corps obligation can be effective in securing the first two or three years of service compared to the retention of physicians who were recruited through other means. However, the differences between the two types of physician in their trends of staying or leaving after the first few years tend to decline after four years and then seem to converge. This suggests that NHSC physicians shift the timing of leaving the practice setting by about a year to a year and a half. The cumulative effects of this modest gain in retention can make a difference for a program administrator over the span of a decade since less time may be used in recruiting physician replacements and in orienting them to the community. Positive benefits may also accrue to patients because physicians who stay longer increase the potential for better continuity of care. Nonetheless, the overall picture in these practice settings is one of high turnover; in order to attract one physician who continued to work in the clinic for five years or longer, three physicians had to be recruited.

Figure 2
Proportion and Length of Employment in Sample Programs of Physicians Initially Employed During 1980-82 by NHSC Status



Trends in physician specialty

The specialty distribution of the new entrants into these rural practices was examined. During the period from 1980 through 1982, there were 70 physician entrants on whom information with respect to specialty was available. These included 33 family physicians, 12 internists, 12 general practitioners, 12 pediatricians, and one obstetrician/gynecologist.

In addition, eight physicians were identified, but without a specialty designation. Although center personnel records or informants' memories could identify starting and ending years, there was less certainty about the specialty of these physicians who came in the first three-year observation period and left shortly after their arrival. Further efforts were made through searching physician directories to identify the self-reported specialties and subsequent practice locations of these physicians; three were later identified as practicing in non-primary care specialties in metropolitan areas.

When the retention experience of the 1980-82 cohort was examined, it was found that family physicians were more likely to remain in these practices. By the end of the fourth year, 55 percent (17/31) of the family physicians on whom length of stay data were available remained while only 39 percent (14/36) of other physicians remained. For example, none of the 12 internists who started to work in these clinics in the years 1980-1982 remained after four years.

In the period 1987-1989, there were 41 new physicians hired. Of these, 25 were family physicians, three were obstetrician/gynecologists, six were internists, one was a pediatrician, and three were identified as general practitioners. Only three physicians in this latter period were listed without a practice specialty. Because of the selective omission of data describing a physician's specialty designation in the earlier cohort it is difficult to establish a trend. However, the preponderance of family physicians in the latter cohort is consistent with the pattern of selective recruitment of family physicians suggested by the shift in the composition of vacancies reported above.

The experiences of the more recently hired physicians suggest that specialty differences in retention are persisting. Of the six internists who began employment since January 1987 only two were still at their particular rural primary care program as of the end of 1989. Although some internists who came into these rural practices before 1980 continue to work in them, hiring internists to work in such programs during the decade of the 1980s did not seem to be an effective strategy for promoting physician retention. General practitioners did not appear to demonstrate a higher level of retention than did internists through the decade. Of the eight GPs recruited during the 1981-1983 period, only two lasted for more than four years. The small numbers of pediatricians and obstetrician/gynecologists make it difficult to establish any kind of trend in the retention of these physicians. However, three of the four obstetrician/gynecologists currently working in these centers were recruited since July 1987 (two of these work in the same center.) Further, no obstetrician was reported to have left these programs since 1982. Anecdotal evidence from conversations with program administrators suggests that this reflects a more stable situation than is the case for backup obstetricians upon whom the centers depend. Those

programs lacking these specialists on a full- or majority-time basis need to rely on such back-up specialists, especially for deliveries. Perhaps reflecting changes over the decade in the training requirements for family practitioners, there was a marked increase in the percentage of program providers performing deliveries, from 16 percent (6/37) in 1981 to 53 percent (17/32) in 1989. This situation is worth monitoring, however, since there is continuing concern about access to obstetrical services in rural areas.

Provider Gender Differences

It was found that of the 139 physicians recruited to these programs on whom data were available, 38 were female, constituting slightly over 27 percent. The proportion of this population that was female remained relatively constant over the decade. There were no detectable differences in the survivorship of male and female physicians.

SUMMARY, CONCLUSIONS, IMPLICATIONS

Primary care programs represent a persisting and effective mechanism to increase the availability of appropriate health care services to smaller rural communities. In the sample examined in this report, the centers and programs also provided needed services in larger rural communities where the existing providers were unwilling or unable to serve certain segments of the local population. The ability of these programs to survive is a testament to the original intentions of legislators, agency officials, and program leaders who initiated the many interventions that led to their opening.

The programs have changed in their commitment to community input as the nature of community governance has caused some problems. Still, the programs see their role as community-oriented if not community-responsive, despite pressures to move them into the mold of private ambulatory practice of medicine.

The programs that we studied have been able to change in ways that might not have been predicted in 1978 or earlier. The pattern of merger we observed in several programs reflected a change in the politics of Community Health Centers where more urban centers were able to dominate smaller, rural programs. This holds important and portentous promise for rural programs; they may find themselves losing their rural identity and autonomy if there is a movement toward the "rationalization" or regionalization of primary care programs driven by political or financial interests. The merger of programs into hospitals may point toward both rural- and urban-oriented systems of regionalization of services. There are rural hospitals which might well ally themselves with rural primary care centers to strengthen both organizations, the former by developing a referral base, the latter by providing continuity of care and reinforcing the professional environment for providers. On the other hand, the rural centers may become simple outposts for referrals for more urban hospitals.

Again, there is the threat that the rural communities will lose some measure of control over their clinical resources. Each of these two patterns was observed in the study.

The dominant pressures of the 1980s on these programs may have caused them to adjust their organizational structures and procedures to cope with a changing and tightening fiscal environment. They were, in a sense, learning to compete. Today, that preoccupation with income may be replaced with an overriding concern with staffing as the National Health Service Corps ceases to be an option for the relatively easy recruitment of providers. There is evidence that the pattern of turnover exhibited during the 1980s in these programs is one that can allow rural primary care organizations to continue to meet their clinical and financial needs while managing a reasonable level of personnel change. We do not know, however, if that pattern can be sustained without the Corps and if longer vacancies and more difficult recruitment pressures hold. Can these programs survive under these constraints? We were not able to predict this but certainly feel that staffing will be the issue of the 1990s.

There is another characteristic of many of the programs that may also point to future solutions for the persistent maldistribution of health care resources that rural people experience. Several of the programs studied have been able to innovate in strikingly new directions. The example of the osteopathic medical school connection with one of the comprehensive health centers supports this observation. That program has been able to improve care and stabilize its staffing through an ambitious but feasible arrangement that trades some efficiency for stability. Other programs have been able to develop new linkages as other rural organizations try to combine their resources to survive. If staffing is to be the problem of the 1990s, then organizational innovation is the potential solution to most of the other problems of rural primary care delivery.

Appendix I: Methodological Issues in the Provider Study

There are several potential sources of error that need to be taken into account in this analysis of trends in the recruitment and retention of physicians in this sample of rural primary care programs. These are as follows:

1) Selective memory of informants

There is evidence that there might have been selective omission by questionnaire respondents of physicians who began working at the rural clinics during the period 1983–1985. The 1989 questionnaire data yielded much larger numbers of physician entrants in 1981 and 1982, much smaller numbers in 1983 and 1984, gradually building up to larger numbers among the physicians who are still at the clinics. This trend suggests that the estimates of turnover of physicians, particularly during this period, may be lower than the actual experience of these centers. Although this problem will not be dealt with in this descriptive report, analyses are planned that will address this issue. In future studies, physician entry rates will be compared to the starting date of principal informants. Additionally, data on physicians located in the zip code areas of the clinics, from successive versions of the AMA master files over the period 1980 to 1989, could provide certain missing items of information which are currently unavailable from existing questionnaire data.

2) Very short-term tenure of some physicians

It is difficult to discern from the 1989 questionnaire data the status of a number of physicians who were at the clinics for a very brief period, generally less than one year. Some of these physicians were hired as locum tenens physicians, and should be considered a part of the normal personnel cycle, since they were filling in for physicians who were on some form of leave. Others were probably hired in response to gaps in staffing occurring as a result of crises, and left that employment after problems were resolved. The current analysis includes these physicians whose actual tenure in a community was less than one year; however, since it was not possible to identify in all cases whether a position was intended to be temporary or permanent, all physicians are included in the analyses of recruitment and retention.

3) Only full- or majority-time physicians who were at the programs' principal sites at some time during 1981–1989 were counted in these analyses. This presents a problem in terms of the exclusion of physicians who worked part-time at more than one program site, and the change in designation of primary sites of several of the programs. Therefore by necessity, estimates of recruitment and retention will not include physicians working less than half-time, or those who worked during the decade at a program's former principal site which is no longer designated as such.

4) This research does not address the issue of physicians within a program's service area who are not formally employed by the program, but have formal or informal contractual arrangements to provide certain services to the center's clients, who may constitute an overwhelming majority of the physician's practice. For example, Ob/Gyns in private practice in a program's service area might not be

there were it not for the primary care infrastructure set up and maintained by the center staff and the grants secured by such organizations (e.g. WIC, MCH programs). Such arrangements may be functionally equivalent to physicians in other programs who are formally employed by the program on a less than full time basis, or employed full time with an understanding that they can also moonlight for additional income. These physicians will not be included in this analysis of rural primary care program providers; however, future studies will examine these relationships in order to assess the clinical epidemiological implications of these types of arrangements.

Appendix II: Data Collection Instrument

Follow-up of 40 Rural Primary Care Programs

A. DEMOGRAPHIC INFORMATION

IF INFORMATION IS INCORRECT, PLEASE CORRECT HERE:

«pgm name»	Program Name: _____
«address1»	Address: _____
«address2»	_____
«city», «state» «zip»	City, State, Zip: _____
«phone»	Telephone: _____
«pgm BCRR»	Program BCRR #: _____

1. Name of program administrator: Adm. name: _____
2. Is program administrator full-time or part time? 1. _____ full-time 2. _____ part-time
3. Name of person filling out questionnaire: Your name: _____
4. What is your position? Your position: _____
5. When did you begin work with this program? Date: _____
6. Which of the following statements best describes your program? *(Mark only one.)*
   1. _____ there is one service delivery site
   2. _____ there is one central practice site and other satellites
   3. _____ there is more than one central practice site and no satellites
   4. _____ there is more than one central practice site, all or some of which have smaller satellites
   5. _____ other (please specify) _____

FOR PROGRAMS WITH MORE THAN ONE SITE:

During our first round of surveys we focused on one principal delivery ***site***. For certain information in this questionnaire we will ask questions about one particular ***site***. For other types of information, we will ask questions about your entire ***program***. When items are identified as ***site*** data, please respond with information for that ***site*** only.

B. SITE ROSTER

We would like to verify and update our information on the number of sites in your program. Please verify the names of the sites listed and fill in the information we request on number of staff and medical encounters. If the program has added new sites, please fill in the information for these new sites. For sites that have closed, become independent, or have other affiliations, please answer the questions in the next table on the following page).

NAMES of sites in your program (Please list any new sites added since 1982.)	*Please answer for new sites added since 1982:* Town	County	Year this site joined the program	Has this site closed? 1=yes 0=no	What is the current number of full-time equivalent: MDs	NPs	PAs	*For multi-site programs only:* How many medical encounters did you have from July 1, 1988 through June 30, 1989?*
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								

** Use the time period July 1, 1988 to June 30, 1989, OR the latest one year period, within the past 2 years, for which data are available. Please specify time period.*

	NAMES OF SITES THAT HAVE CLOSED, BECOME INDEPENDENT OR HAVE OTHER PROGRAM AFFILIATIONS	When did it close? (month/year) N= not closed	When did it become independent? (month/year) N= not independent	Does the site have any other program affiliations? If yes, provide name and place of program. 1=yes, (indicate name and place) 0= no other affiliations
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

C. PROVIDER ROSTER VERIFICATION

In the first half of this section (up to the double bar), we would like you to verify the information we obtained in 1984 on providers at the principal delivery SITE. If your program has multiple sites, we are interested only in the providers at the principal delivery SITE. These providers will be listed by name; please make corrections in the spaces provided under each entry. Please fill in new information for each provider in the columns after the double bar. Providers who have left will be addressed in Section D. New providers and those not listed already will be addressed on a separate roster in Sections E and F.

NAME OF PROVIDER:	Type 1=MD 2=NP 3=PA	Specialty	Sex 1=F 2=M	Age	Was he/she NHSC before? (in 1984) 1=yes 0=no	Year started with pro-gram:	Method of payment: 2=% fees/revenue 1=wage/salary 3=wage + % fees 4=other (specify) In 1984	Now	Currently full-time? 1=yes 0=no	Is provider in NHSC now? 0=no 1=yes, private practice 2=yes, pay-back 3=yes, straight payment 4=yes, other	For what reasons did the provider choose this type of practice? 1=rural practice obligation (NHSC, State rural project etc/) 2=other reason (pleae specify to the best of your know-ledge)
PLEASE VERIFY: 1.											
CORRECTIONS:								XXXXX	XXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXX
								XXXXX	XXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXX
2.											
CORRECTIONS:								XXXXX	XXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXX
								XXXXX	XXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXX
3.											
CORRECTIONS:								XXXXX	XXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXX
								XXXXX	XXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXX
4.											
CORRECTIONS:								XXXXX	XXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXX
								XXXXX	XXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXX
5.											
CORRECTIONS:								XXXXX	XXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXX
								XXXXX	XXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXX
6.											
CORRECTIONS:								XXXXX	XXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXX
								XXXXX	XXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXX

D. PROVIDERS WHO HAVE LEFT

For the providers listed on the previous page who have left the principal delivery SITE, please fill out the following chart. In the last column, please indicate their subsequent form of employment or primary activity. Use the following codes and give city and state of new residence, if known.

PLEASE FILL OUT USING CODES LISTED: NAME OF PROVIDER:	When did the provider leave? (month/year)	Why did the provider leave? 1=death/illness 2=retirement. 3=fired by program 4=provider initiated leaving 5=mutually agreed 6=couldn't reenlist in NHSC 7=other (specify) 8=don't know	Provider's subsequent form of employment or primary activity: 1=practices in same service area but is not part of the program 2=is part of the same program but has moved to a different site 3=practices out of the area in an urban setting *(indicate name of town)* 4=practices out of the area in a rural setting *(indicate name of town)* 5=practices out of the area *(setting unknown, indicate name of town)* 6=is continuing further education or training 7=other activity *(please specify)*
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

E. INFORMATION ON NEW PROVIDERS NOT PREVIOUSLY LISTED

In this section, please list any new providers working at the principal delivery SITE that have not been previously listed, and fill in the following information.

NAME OF PROVIDER:	Type 1=MD 2=NP 3=PA	Specialty	Sex 1=F 2=M	Age	Was he/she NHSC before? (in 1984) 1=yes 0=no	Year started with pro-gram:	Method of payment: 2=% fees/revenue 1=wage/salary 3=wage + % fees 4=other (specify)		Currently full-time? 1=yes 0=no	Is provider in NHSC now? 0=no 1=yes, private practice 2=yes, pay-back 3=yes, straight payment 4=yes, other	For what reasons did the provider choose this type of practice? 1=rural practice obligation (NHSC, State rural project etc/) 2=other reason (pleae specify to the best of your know-ledge)
							In 1984	Now			
1.											
2.											
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											
11.											
12.											

F. ADDITIONAL INFORMATION ON NEW PROVIDERS

For the providers listed in section E who have left the principal delivery SITE, please fill out the following chart. In the last column, please indicate their subsequent form of employment or primary activity. Use the following codes and give city and state of new residence, if known.

PLEASE FILL OUT USING CODES LISTED: NAME OF PROVIDER:	When did the provider leave? (month/year)	Why did the provider leave? 1=death/illness 2=retirement 3=fired by program 4=provider initiated leaving 5=mutually agreed 6=couldn't reenlist in NHSC 7=other (specify) 8=don't know	Provider's subsequent form of employment or primary activity: 1=practices in same service area but is not part of the program 2=is part of the same program but has moved to a different site 3=practices out of the area in an urban setting *(indicate name of town)* 4=practices out of the area in a rural setting *(indicate name of town)* 5=practices out of the area *(setting unknown, indicate name of town)* 6=is continuing further education or training 7=other activity *(please specify)*
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

G. VACANT POSITIONS

1. Do you currently have any vacant positions for which you are actively recruiting a physician, a nurse practitioner (NP, nurse clinician, certified nurse midwife), or a physician assistant (PA)?

   0. _____ no *1.* _____ yes *(please fill in following table)*

   If you DO have vacant positions, we would like to obtain some information about each of these positions. In the first column, please circle the type of position that is vacant, using one vacant position per line. Please fill in the remaining spaces on each line for each position.

Circle the type of position you are looking to fill for each vacancy:					If looking for an MD, what is the specialty?	Is position full-time or part-time?		Number of months position has been open:	Is it a NHSC position?	
	MD	NP/certified nurse midwife/ nurse clinician	PA	either		F-T	P-T		Yes	No
1.	1	2	3	4		1	2		1	0
2.	1	2	3	4		1	2		1	0
3.	1	2	3	4		1	2		1	0
4.	1	2	3	4		1	2		1	0
5.	1	2	3	4		1	2		1	0

2. How is the site recruiting new providers? *(Mark all that apply.)*

   a. _____ National Health Service Corps (NHSC) designation

   b. _____ Advertising (where?) _____

   c. _____ Other local/state initiative (e.g. through state rural health office)

   d. _____ Increased pay and/or benefits to make the position more attractive (specify)

   _____

3. Currently, how difficult is it for your site to fill provider needs?

   3. _____ very difficult *2.* _____ somewhat difficult *1.* _____ not difficult

4. Is this more or less difficult than in the past two years?

   3. _____ very difficult *2.* _____ same amount of difficulty *1.* _____ less difficult

H. FUNDING SOURCES

Please indicate the sources of funding currently received by the principal delivery SITE, and the amount of this funding for the time period July 1, 1988 to June 30, 1989, or the latest one year period within the last two years for which data are available. Please specify time period.

SOURCE OF FUNDS	What are the study site's current sources of financial support ? Circle the appropriate number for each of the following sources: received	not received	How much was this funding for the time period July 1, 1988 to June 30, 1989 or the latest one year time period in the last two years for which you have data? Please indicate time period.
1. Migrant Health (Section 329)	1	0	
2. Community Health Centers (Section 330)	1	0	
3. National HealthService Corps	1	0	
4. Other federal agency	1	0	
5. State government funding sources	1	0	
6. Robert Wood Johnson	1	0	
7. Kellogg Foundation	1	0	
8. Other Foundation	1	0	
9. Local , civic or community groups	1	0	
10. Church groups	1	0	
Other Sources (specify) 11.	1	0	
12.	1	0	
13.	1	0	

I. PROGRAM ORGANIZATION AND GOVERNANCE

1. Does your program have a governing board?

   0. _____ no *1.* _____ yes

2. If no, did you have a governing board in 1981?

   0. _____ no *(go to section J)* *1.* _____ yes

3. Is this governing board for this program only, that is, the board is not shared with any other institutions (e.g. hospitals, community action agencies, churches)?

   0. _____ no *1.* _____ yes

4. If no, what other institutions or programs is it shared with? Please describe the arrangement.

   _____

   _____

5. How many members are there? _____ members

6. Are the board members: *(Mark only one.)*

   1. _____ elected
   2. _____ selected
   3. _____ both elected and selected
   4. _____ other (specify)

7. How many board members live in the service area? _____ members in service area

8. Is there a formal or informal orientation for new board members?

   1. _____ formal orientation *2.* _____ informal orientation *3.* _____ no orientation

9. Are any of the members health care providers? (e.g. physician, nurse, dentist, pharmacist, licensed therapist)?

   0. _____ no *1.* _____ yes

10. Has the board participated in any type of management skills training program or received outside consultation in its role or functioning?

0. _____ no 1. _____ yes

11. If yes, please describe: _____

12. How would you describe the relationship between the board and the physicians/primary care providers employed at this site?

1. _____ on extremely good terms; mutually supportive
2. _____ on fairly good terms; some minor conflicts
3. _____ on fair terms only; fair number of conflicts
4. _____ on poor terms; significant hostilities

13. There are a number of policy decisions or actions which must be made in your program. For the following decisions or actions, please indicate who has final authority, that is, who makes the final decision. If a decision is made by someone and the board merely approves it, indicate the person who originally makes the decision.

Policy decision:	administrator	board	medical director or provider	external institution	no one makes decision
a. adding or deleting a clinical diagnostic service such as x-ray or lab work	a	b	c	d	e
b. allocating space in the site	a	b	c	d	e
c. hiring and firing the nursing staff	a	b	c	d	e
d. developing the budget	a	b	c	d	e
e. hiring and firing the medical staff	a	b	c	d	e
f. setting up a cooperative program with the health department	a	b	c	d	e
g. adding a clinical services such as aspiration of the knee	a	b	c	d	e

14. If yours is a multi-site program, is there a separate governing board for the principal delivery SITE?

0. _____ no 1. _____ yes

J. SERVICES PROVIDED BY THE SITE AND WITHIN THE COMMUNITY

Last time we surveyed you, we requested information on some selected services you might provide within the principal delivery SITE. For each of the following services, please answer the questions at the top of each column.

SERVICE	Which of these services are now being provided at the site? 1=provided 0=not provided: provided	not provided	What other facilities provide these services for residents of the site's service area? 1=hospital 2=specialist or other MD 3=health department 4=clinic 5=other (specify) (enter as many codes as apply)	Do you have a formal agreement with one or more of these facilities to provide services to your patients or clients? 1=yes 0=no: YES	NO
1. prenatal care	1	0		1	0
2. family planning	1	0		1	0
3. dental care	1	0		1	0
4. home care	1	0		1	0
5. mental health care	1	0		1	0
6. social services	1	0		1	0
7. outreach services with at least a 0.5 FTE outreach worker	1	0		1	0
8. transportation	1	0		1	0
9. well child care	1	0		1	0

K. OTHER SERVICES AND COVERAGE (SITE REFERS TO PRINCIPAL DELIVERY SITE)

1. Does the SITE do chest x-rays?

   0. _____ no *1.* _____ yes

2. Does the PROGRAM do chest x-rays?

   0. _____ no *1.* _____ yes

3. Does the SITE do blood sodium and potassiums?

   0. _____ no *1.* _____ yes

4. Does the PROGRAM do blood sodium and potassiums?

   0. _____ no *1.* _____ yes

5. Does the SITE regularly provide or contract for transportation for patients to and from your health center?

   0. _____ no *1.* _____ yes

6. Does the PROGRAM regularly provide or contract for transportation for patients to and from your health center?

   0. _____ no *1.* _____ yes

7. Does your PROGRAM have a licensed pharmacy?

   0. _____ no *1.* _____ yes

8. What are your hours of service at the SITE ?

   Weekdays _____ Weekends _____ Evenings _____

9. What type of after hours coverage do you have now at the SITE ? *(Check only one.)*

   1. _____ telephone referral to other facility
   2. _____ provider on call 24 hours
   3. _____ provider on call less than 24 hours after office hours
   4. _____ no after hours coverage
   4. _____ other (specify) _____

10. What percent of your patients who need hospitalization are admitted and cared for by site staff?

_____ percent of patients who are hospitalized

11. Do any of your providers deliver babies?

0. _____ no *1.* _____ yes

L. YOUR SITE'S SERVICE AREA

1. What is your SITE'S service area population?

_____ SITE'S service area population

2. What is your PROGRAM'S service area population?

_____ PROGRAM'S service area population

3. What is the radius of the area within which 90% of your SITE'S service population lives?

_____ miles is the radius

4. What percent of persons in your SITE'S service area are members of families with incomes below poverty guidelines?

_____ % are members of families below poverty

5. How many minutes does it take to drive from your SITE to the nearest city with a population greater than 50,000?

_____ minutes of driving

6. Is there a health department in your SITE'S service area?

0. _____ no *1.* _____ yes

7. In what town is the nearest health department facility?

_____ name of town

8. Within the SITE'S service area, excluding those providers working in your PROGRAM , how many of the following types of providers are providing primary care? *(Service area is the geographic area that the program defines as its service area.)*

   a. How many primary care physicians? (family practice, general practice, internal medicine, obstetrics/gynecology, pediatrics) _____ primary care physicians

   b. How many nurse practitioners, nurse clinicians, nurse midwives? _____ NPs/nurse clinicians/midwives

   c. How many physician assistants? _____ physician assistants

9. Do any of these providers refuse to provide services to specific groups of persons living in your service area?

   0. _____ no *1.* _____ yes

10. If yes, who do they refuse to serve? *(Mark all that apply.)*

   a. _____ migrants

   b. _____ minorities

   c. _____ Medicaid recipients

   d. _____ medically indigent but not eligible for Medicaid

   e. _____ other *(please specify)* _____

11. Within a 30 minute drive from the SITE (which may be different from the SITE'S service area) how many of the following types of providers are providing primary care?

   a. How many primary care physicians? (family practice, general practice, medicine, obstetrics/gynecology, pediatrics) _____ primary care physicians

   b. How many nurse practitioners, nurse clinicians, nurse midwives? _____ NPs/nurse clinicians/midwives

   c. How many physician assistants? _____ physician assistants

12. What is the name of the hospital most used by patients in your program? Please indicate city and distance in miles from the site.

   _____ name of hospital

   _____ name of city hospital is located in

   _____ distance in miles

13. Is this the nearest hospital to the health center?

0. _____ no *1.* _____ yes

14. If no, what is the distance of the nearest hospital from this site?

_____ distance in miles _____ minutes it takes to drive from site to nearest hospital

15. What is the name of the nearest hospital?

_____ name of nearest hospital

_____ name of city hospital is located in

16. Please indicate whether your PROGRAM has a system for clinic users and/or the entire service area for the following:

	system for clinic users 1=YES	0=NO	system for service area 1=YES	0=NO
a. identifying untreated hypertensives	1	0	1	0
b. identifying developmentally delayed children	1	0	1	0
c. providing pap smears for women	1	0	1	0
d. helping individuals to stop smoking	1	0	1	0
e. identifying physical conditions in the home environment which may contribute to health problems	1	0	1	0

M. DESCRIPTION OF THE SITE'S PATIENT POPULATION AND STAFFING*

** Use the time period July 1, 1988 to June 30, 1989, OR the latest one year period, within the past 2 years, for which data are available. Please specify time period where indicated.*

1. What percent of the site's total MEDICAL users from July 1, 1988 through June 30, 1989* were of the following racial or ethnic origins:
(A user is an unduplicated patient who had one or more encounters during this period.)

a. _____ % White

b. _____ % Black

c. _____ % American Indian

d. _____ % Asian

e. _____ % other racial/ethnic group

100 %

*time period: _____

2. What percent of the site's total MEDICAL users from July 1, 1988 through June 30, 1989* were of Spanish origin?

   _____ % of Spanish origin *time period: _____

3. How many MEDICAL users did the site have from July 1, 1988 through June 30, 1989*?

   _____ number of MEDICAL users *time period: _____

4. How many NON-MEDICAL users did the site have from July 1, 1988 through June 30, 1989*?

   _____ number of NON-MEDICAL users *time period: _____

5. What percent of the site's total MEDICAL users from July 1, 1988 through June 30, 1989* were in the following age categories?

   a. _____ % aged 14 years or younger

   b. _____ % aged 15 to 64 years old

   c. _____ % 65 years or older

   100 % *time period: _____

6. What are your current numbers of full-time equivalent staff in the following categories:

   a. _____ # of physicians

   b. _____ # of nurse practitioners, nurse clinicians, certified nurse midwives

   c. _____ # of physician assistants

   d. _____ # of nurses

   e. _____ # dental staff (including support staff)

   f. _____ # laboratory staff

   g. _____ # X-ray staff

   h. _____ # administrative and clerical staff

   i. _____ # other staff

   j. _____ TOTAL NUMBER OF FULL-TIME EQUIVALENT STAFF

N. FINANCE AND UTILIZATION*

Use the time period July 1, 1988 to June 30, 1989, OR the latest one year period, within the past 2 years, for which data are available. Please specify time period where indicated.

1. What was your **PROGRAM'S** total budget for the year July 1, 1988 through June 30, 1989*?

   _____ program's total budget *time period: _____

2. What was your **SITE'S** total budget for the year July 1, 1988 through June 30, 1989*?

   _____ site's total budget *time period: _____

3. Does your **PROGRAM** use a sliding fee scale based on income?

   0. _____ no *1.* _____ yes

4. If yes, what percent of your patients were on the scale as of July 1, 1989*?

   _____ % on sliding fee scale *time period: _____

5. What is your average charge for a routine office visit for a patient previously seen (an established patient)?

   $_____ average charge for routine office visit

6. What is your average charge for an initial comprehensive office visit?

   $_____ average charge for initial comprehensive office visit

7. Do you have a negotiated rate for a routine office visit for Medicaid patients?

   0. _____ no *1.* _____ yes

8. If yes, what is the amount? $_____ amount

9. What percentage of your charges are collected at the time of the visit?

   _____ % of charges collected at time of visit

10. What percentage of your **PROGRAM'S** total income comes from patient revenues?

    _____ % **PROGRAM'S** income from patient revenues

11. What percentage of your SITE'S total income comes from patient revenues?

_____ % SITE'S income from patient revenues

12. What percentage of the PROGRAM'S total revenues from patients and third party payers comes from care to patients in the hospital?

_____ % PROGRAM'S revenues coming from care to patients in the hospital

13. What percentage of the SITE'S total revenues from patients and third party payers comes from care to patients in the hospital?

_____ % SITE'S revenues coming from care to patients in the hospital

14. Are you involved with any type of prepayment insurance plans?

0. _____ no *1.* _____ yes

15. If yes, what type? *(Check all that apply)*

a. _____ HMO

b. _____ IPA

c. _____ PPO

d. _____ other (specify) _____

16. What percentage of your patient care income (non-grant) comes from the following sources:

a. _____ % comes from patients themselves

b. _____ % comes from Medicare

c. _____ % comes from Medicaid

d. _____ % comes from HMO, IPA or PPO

e. _____ % comes from other third parties

17. What is your current total collection rate? *(This is the rate of collection at the time of visit plus all later collections.)*

_____ % of billed charges (including adjustments)

18. What percentage of your medical users fall into the following categories?

a. _____ % with no third party coverage

b. _____ % Medicare

c. _____ % Medicaid

d. _____ % HMO, IPA or PPO

e. _____ % comes from other third parties

19. Do you currently file insurance claims for your patients?

2. _____ yes, all 1. _____ yes, some 0. _____ no

20. How do the following issues affect your program? *(Circle one number for each issue.)*

ISSUE	severe problem	moderate problem	is not a problem
a. reimbursement from Medicaid	3	2	1
b. difficulty in securing hospital staff privileges	3	2	1
c. opposition of local providers or provider groups	3	2	1