THE WARREN HEALTH INSTITUTE:

INTEGRATING SCARCE COMMUNITY RESOURCES

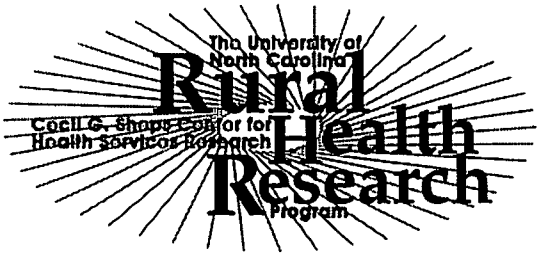
TO SERVE THE DISADVANTAGED

May 1992

Christine Kushner, MPA
NC Foundation for Alternative Health Programs

Jeanne Lambrew, MSPH
NC Rural Health Research Program

Cecil G. Sheps Center for Health Services Research, UNC-CH



WORKING PAPER NO. 21

The NC Rural Health Research Program is designated and supported by the Federal Office of Rural Health Policy, Health Resources and Services Administration, Public Health Service, U.S. Department of Health and Human Services. Grant No. CSR000002-03-0.

The Warren Health Institute:
Integrating Scarce Community Resources to Serve the Disadvantaged

Throughout Warren County, historic markers remind visitors of the county's antebellum glory, when its plantation gentry and other county residents wielded influence over the state's political and social life. Robert E. Lee's daughter lived and died in Warrenton, and the Bragg brothers—one of whom was a Confederate general and the namesake of Ft. Bragg, N.C.—called this county home. Warren County's influence ended, however, with the fall of that economic system. In recent years, when the county makes the news in North Carolina, it often is because of its high rates of poverty, its residents' poor health, or social problems—legacies of its plantation past.

Warren County is now making health care history. Using the building of its closed hospital, community leaders have created the Warren Health Institute, a unique, multi-faceted project that places in the same building the urgent and curative medical services of a local federally-funded Community Health Center (the Vance-Warren Comprehensive Health Plan), and the preventive emphasis and mission of the local health department (Warren County Health Department). Financing and construction of the new facility occurred through an innovative and successful cooperative venture between federal, state and local governments. The Institute represents a promising option for rural communities across this nation which face shrinking resources and growing needs in health care. In particular, the collaboration represents a triumph for two agencies with long-term commitments to serving the disadvantaged in a resource-poor county.

BACKGROUND

Warren County lies on the North Carolina border with Virginia, a region of the state that has historically had a high minority population. About 62 percent of the county's 17,000 residents are black, giving it one of the highest proportions of black residents in the state. The county had been losing population for decades until 1980, when it saw a slight increase. But growth has been slow; the number of county residents grew by about 2.3 percent between 1980 and 1989.[1] The proportion of aged residents, however, has grown faster and stood at about 16 percent in 1990. In addition, median family income in the county is one of the lowest in the state, an estimated $23,000 in 1991, compared to a state

[1] Office of State Budget and Management, *North Carolina Municipal Population 1989*, January 1990.

figure of $34,000.[2] The poverty rate was estimated to be 28.4 percent for the general population in 1989 and almost 40 percent for the black population.[3]

The county, formerly a hub of bright leaf tobacco production in the state, has experienced a trend common in rural North Carolina, in which manufacturing has replaced agriculture as the driver of the local economy. Manufacturing plants employ about one-third of the area's work force, predominantly in the clothing/fashion and furniture industries. Agriculture accounts for about six percent of the county's jobs.[4] Following the trend in North Carolina industry, manufacturing jobs in Warren County are non-union. North Carolina's manufacturing wage was the fourth lowest in the nation in 1989, 20 percent below the national average.[5]

Perhaps the most significant trend is that many county residents leave the county to find employment. According to the Employment Security Commission, 7,475 county residents were in the labor force in 1989, but there were only about 4,000 jobs in the county. Unemployment in Warren County stood at 5.3 percent in 1990, about the same as the rate for rural North Carolina.[6]

Health insurance is typically linked to work. Yet despite Warren County's relatively low rate of unemployment, the rate of uninsured county residents stood at about 22 percent in 1988, the highest proportion in the state according to an estimate by the Center for Health Policy Research and Education at Duke University.[7] About 16 percent of county residents are eligible for Medicaid coverage. Of the population using the Vance-Warren Comprehensive Health Plan in 1990, about 35 percent were uninsured, eight percent were on Medicaid, 20 percent were on Medicare, and the remaining 37 percent had private insurance.[8]

---

2 N.C. State Data Center Newsletter, August 1991, p. 14; taken from data from the Office of Economic Affairs, U.S. Department of Housing and Urban Development.

3 1990 Census data, obtained from the N.C. State Data Center, Raleigh, N.C.

4 Information on employment comes from the N.C. Department of Economic and Community Development.

5 *North Carolina Health Statistics Pocket Guide*, Center for Health and Environmental Statistics, N.C. Department of Environment, Health and Natural Resources, Raleigh, N.C.

6 N.C. Employment Security Commission, N.C. Department of Economic and Community Development, 1992.

7 Chris Conover and Mike McLaughlin, "Spreading the Risk and Beating the Spread: The Role of Insurance in Assuring Adequate Health Care," *N.C. Insight*, November 1991, Vol. 13, Nos. 3-4, p. 36.

8 Jeanne Lambrew, "Report to the Warren County Advisory Council for Health and Medical Affairs," Status of the Cooperative Activities between the Warren County Health Department and the Vance-Warren Comprehensive Health Plan, N.C. Rural Health Research Program, Cecil G. Sheps Center for Health Services Research, August 1991, p. 16.

Mortality statistics for Warren County rank among the highest in the state for many chronic and deadly diseases. The county had the fourth highest unadjusted death rates for heart disease and cancer, particularly breast and prostate cancers during the 1985 to 1989 period.[9] Compared to the state's other 99 counties, Warren County also had among the highest rates of nephritis/nephrosis, pneumonia/influenza, chronic liver disease/cirrhosis, and unintentional motor vehicle accidents. In the period of 1985 to 1989, the county had an infant death rate of 19.4 deaths per 1,000 live births, significantly higher than the state average of 12 deaths per 1,000 live births.[10]

HEALTH CARE IN WARREN COUNTY

In February 1985, the town of Warrenton underwent the traumatic experience of closing its county hospital's doors. Hospital closures have shaken rural communities across the nation, with 252 rural community hospitals closing between 1980 and 1989.[11] Warren General Hospital, built in 1950 with Hill-Burton funds, closed for many of the same reasons that other small rural hospitals in the nation have closed: small size, small medical staff, low occupancy rate, high dependence on Medicare, increased outmigration of its patient base, and high incidence of poverty in the service community.[12] In addition, hospital closure in rural America, as well as in Warren County, was precipitated in part by the problems of serving an increased elderly population, difficulty with physician recruitment, an aging physical plant, and a stagnant rural economy.

In its final full year of operation, only 30 percent of Warren General's 37 beds were in use on average, and 75 percent of all hospital discharges for county residents were from other hospitals. The hospital building also was in disrepair. Its storage facility was filled with unused equipment, much of it for services that had never been offered by the hospital. At one point, it maintained a full kitchen staff

---

[9] Data comes from the Center for Health and Environmental Statistics, N.C. Department of Environment, Health and Natural Resources, "Leading Causes of Mortality: North Carolina Vital Statistics 1989-Volume 2." Unadjusted rates for the county for heart disease, cancer, pneumonia/influenza, nephrosis/nephritis, and chronic liver diseases were much higher than their adjusted rates for the same time period (1985-1989), signifying that the high rates are attributable to race, gender, and age factors of the population.

[10] Center for Health and Environmental Statistics, N.C. Department of Environment, Health and Natural Resources, Raleigh, N.C.

[11] Emily Friedman, "Analysts Differ Over Implications of More Hospital Closings than Openings Since 1987," JAMA, July 18, 1990, Vol. 264, Nos. 3, pp. 310-314.

[12] For details, see General Accounting Office, "Rural Hospitals: Federal Leadership and Targeted Programs Needed," Report to the Chairman, Committee on Appropriations, House of Representatives, June 1990; Richard E. McDermott, Gary C. Cornia, and Robert J. Parsons, "The Economic Impact of Hospitals in Rural Communities," *The Journal of Rural Health*, Volume 7, Number 2, Spring 1991, pp. 117-133.

although there were only three patients in the hospital, two of whom were receiving intravenous feedings. The hospital's finances had eroded over time, in part a reflection of declining admissions rates at the hospital. The hospital was hemorrhaging financially, losing about $40,000 every month. This occurred despite the growth in the county subsidy from about 5 percent of general property tax revenue in previous years to almost 23 percent in 1985.[13] At the time of its closure, the hospital was bracing for cuts in Medicare payments based on the Prospective Payment System, which went into effect in 1984. A direct request for emergency funding was rejected by the N.C. Council of State. The community and its leaders were forced to decide what level of health care was appropriate for and could be sustained by the county's population, according to Denise Runde, Warren General's final administrator, who now works on hospital issues in California.

The County Commissioners, the Hospital Board of Trustees, and the Office of Rural Health investigated numerous different models for preserving the hospital. Countywide meetings were held in the courthouse, which were attended by hundreds of residents. Until the end, county leaders focused on ways to keep the hospital open as a downsized facility or limited service hospital, similar to the ideas discussed in the current Essential Access Community Hospital program.[14] At that time, however, there were few tested models for leaders to follow. Strategies considered included developing varied services such as a birthing center, outpatient care services, geriatric specialty care, expanded physical therapy, or forming a network with a small hospital chain located across the Virginia border in South Hills. According to Eva Clayton, chair of the County Commissioners in 1984, the initial discussions revolved around salvaging the hospital; they did not include closing the hospital as an option.

The County Commissioners, working with the N.C. Office of Rural Health and Resource Development, worked through options and were forced into making painful decisions about the future of the facility. The staff of the N.C. Office of Rural Health and Resource Development completed a thorough 114-page report that examined the hospital's inpatient and emergency services and outlined its various options, including long-term care, respite care , continued acute care , ambulatory care, and specialty

---

[13] Community Hospital Technical Assistance Program, North Carolina Office of Rural Health Services. "Study of the Health Care Needs of Warren County," report presented to the Board of Directors of Warren General Hospital and the Board of Commissioners of Warren County, May 29, 1985, p. 23.

[14] The EACH program, a federally funded initiative that began in the fall of 1991, provides grants and preferential Medicare reimbursement to small rural hospitals that reduce the number of their acute care beds to six and form linkages with larger hospitals to form Rural Health Networks. Small rural hospitals participating in North Carolina's EACH program have planned strategies that include expanded skilled nursing care and expanded primary care services. County Commissioner Eva Clayton laments that it appears Warren County, whose hospital would have fit into the parameters of the current EACH program, was ahead of its time for planning an alternative to traditional acute care services. Because the hospital closed before 1989, it is not eligible for the program.

services for the elderly. Upon completion of this exhaustive study, the Office recommended to the Commissioners that the county consolidate its scarce resources and convert the hospital building into a comprehensive primary care center, along the lines of the more than 40 rural health centers that the Office had helped to organize. In addition, the Office report recommended development of expanded services for the aged, the primary users of the hospital during its final months of operation; emergency protocols and on-call arrangements to insure access to Emergency Medical Services for county residents; a wellness program; and a Community Alternatives Program (CAP) to allow frail elderly patients to receive care in their homes instead of a nursing home.[15]

The finances of the county and hospital forced the hospital to close as an inpatient facility in 1985, limiting the county's options. The Warren County Commissioners immediately focused their efforts on seeking ways to secure urgent and emergency care services for the county residents. The county had a strong resource to draw upon: the Vance-Warren Comprehensive Health Plan site called HealthCo. HealthCo, a community health center that began as part of an Office of Economic Opportunity's "new town" project in the early 1970s, is about nine miles from the county seat in Soul City. Though the health center provided primary care, the Vance-Warren Comprehensive Health Plan opened an urgent care practice in the former hospital's building the day after the hospital closed as a means of retaining a source of emergency medicine for the county. The urgent care practice, called the Warren Health Plan, received federal funding assistance and National Health Service Corps physicians after the N.C. Office of Rural Health pushed for the Warren program to receive top priority from the federal Health Resources and Services Administration. The Warren Health Plan evolved into a regular physician practice with three physicians and other medical staff and became the second site of the Vance-Warren practice. (Please refer to Appendix B for details on services and structure of the Vance-Warren Comprehensive Health Plan.)

During the next few years, however, the two Vance-Warren Comprehensive Health Plan practice sites lost several physicians, many of whom had obligations through the National Health Service Corps. At its low point, three doctors left the practice in one year, while patient demand was growing, leaving the practice with three remaining physicians. The loss of federal Corps physicians in part reflects national trends. The number of Corps physicians funded through the scholarship program had been reduced to a trickle, because of drastic federal budget cuts during the early 1980s. The Vance-Warren practice had been dependent on the services of Corps physicians, so when the supply of Corps physicians ended, the program's consumer-run Board of Directors was caught unprepared, according to Gladstone Sellers, M.D., the practice's current medical director. Sellers came to the Vance-Warren

---

[15] For details, see "Study of the Health Care Needs of Warren County," *op. cit.* p. 10.

program through the Corps in 1988.[16] The poverty and isolation of the rural community created enormous barriers to the recruitment of physicians to the county. However, all physicians who left were replaced by other physicians who were recruited with the assistance of the Office of Rural Health. In 1989, the practice slowly built up to its current staff, which includes eight physicians, only two of whom have obligations through the National Health Service Corps. The current 35-member staff also includes two dentists, a pharmacist, nurses and technicians.

At the time of the hospital's closure, the County Commissioners were faced with another health facilities-related problem. The Warren County Health Department had been working out of trailers too small for its services and the growing demand of county residents. This problem entered into the planning for the county's health services once the hospital closed. At the suggestion of the state Office of Rural Health, consideration was given to housing both primary care services and public health services in the closed hospital building. There had been no formal linkages between the Health Department's staff and providers at HealthCo prior to the hospital closing.

THE FORMATION OF THE WARREN HEALTH INSTITUTE

Eva Clayton likes to tell rural office holders that she's proof of political life after the closure of a hospital. As chair of the County Commission, Clayton initiated discussions between representatives from the County Health Department, Vance-Warren Comprehensive Health Plan, state officials and other local representatives. "The aim was to bring some utility, some life into a failed institution," Clayton said. The concept for the Warren Health Institute evolved slowly during those discussions.

From initial to current discussions of the Institute's mission, the purpose that drives the cooperation of the two agencies is the potential benefit from joining the preventive medicine and health education aspects of the County Health Department and the curative medical services of the Warren Health Plan. "We both came to this collaboration out of economic need," according to Deborah Carter Davis, executive director of the Vance-Warren Comprehensive Health Plan. The CHC had long desired to provide greater outreach, immunization services and health education, but budget constraints prevented them from offering these services to their patients. At the same time the Health

---

[16] Unfortunately, Sellers also exemplifies the problems of physician recruitment in impoverished rural communities. After four years in the community, he left Warren County in May 1992, when his Corps obligation expired, to join an internal medicine group practice in north Atlanta, Georgia. His reasons for leaving mirror many given by many physicians who leave rural practice: he desires a less remote practice with greater specialization. He and his spouse also desire to be closer to their extended family in Georgia. He had entered the Corps in order to finance his medical school training.

Department, charged with insuring public health, sought to reach greater numbers of Health Plan and other patients who were not using its preventive medical services.

Lengthy negotiations began in 1986 to formulate a cooperative agreement that would outline the shared responsibilities and joint relationships required for the success of a joint venture. James D. Bernstein, director of the Office of Rural Health, pledged to provide state financing given certain conditions, which included devising an innovative design that required the integration of both agencies' services and increased efficiency in the use of county resources.

The duration of joint discussions came from both the realization that there were costs as well as benefits to collaboration, and that such relationships may spark territorial instincts. For example, there was great concern at first over the idea of a shared medical record for the two agencies. Some were concerned over the loss of privacy for the patients, other were worried that one or the other agencies would take notes differently and cause confusion in the record. Although the shared record remained in the Cooperative Agreement, it has been slow in evolving. (Please see "Challenges for the Future.")

A more general problem has been in overcoming community and board resistance. There is a great sense of stewardship expressed by the residents and leaders of this county toward their health organizations. As a result, residents are acutely aware of the boundaries, both physical and service-related. The allocation of space in the renovated hospital building was a carefully negotiated process, since it was quite vulnerable to allegations of "take-over" by one or the other organization. Even a year after the two organizations have been sharing the building, concerns remain about the "fairness" and balance of the relationship.

Finally, in early 1990, an agreement was reached, and renovation of the 18,000-square-foot former hospital building began. The $1.3 million renovation was funded in part by a $300,000 grant from the N.C. Office of Rural Health. Other financial support was made possible through a $500,000 low-interest loan from the federal Farmers Home Administration, county bond revenues, rental fees paid by the Warren Health Plan, and county general funds.

The Office of Rural Health was a central force in the development of the Institute. Since its founding in 1973, the Office of Rural Health has had great success establishing community-based rural health centers in medically underserved communities. The Office became involved in the hospital project in 1984, when the Commissioners requested assistance in stabilizing the future of its hospital. "We were able for the first time to get involved in hospital issues in a very intensive manner," according to Bernstein, who had first worked in Warren County in 1970, when the Vance-Warren Community

Health Center was developed. As expected in many hospital closures, resistance to the idea of closing Warren General was initially quite strong. Some residents accused the state Office of Rural Health of experimenting with a new "socialized medicine" model.[17]

An oversight committee was formed in the cooperative agreement for the Warren Health Institute. Cecil Sheps, M.D., professor emeritus in the School of Medicine at the University of North Carolina at Chapel Hill, had been involved in the original creation of the community health center, and was asked to chair the Warren County Advisory Council on Health and Medical Affairs. The Advisory Council, formed in June 1990, meets quarterly and is comprised of representatives from the Vance-Warren Comprehensive Health Plan, the County Health Department, the County Commissioners, the N.C. Office of Rural Health, the N.C. Primary Health Care Association, and state government's Health Divisions, which currently are located in the N.C. Department of Environment, Health and Natural Resources. The Council is the only formal organization with representatives from both agencies and will continue to provide guidance for the program for the near future.

The name Warren Health Institute was developed as a means of connoting a place to learn that can be fun and interesting, according to Clayton. Organizers of the Institute view it as a catalyst for community change that will help residents learn more about health issues and develop ways to change poor health habits. Health status reflects income status, Clayton said, and poorer people like many of the residents of Warren County do not have the luxury of devoting significant time to issues of nutrition or fitness. For instance, the priority of poorer people is to obtain adequate amounts of food at low prices, although many lower priced foods tend to be higher in fats and lower in nutritional value. Without accessible nutrition counseling, poorer residents have limited resources to obtain information on improved dietary information.

SERVICES OFFERED THROUGH THE INSTITUTE

The Institute serves as a centralized system of obtaining dependable health information and health services for all residents of the County. Health Department and Warren Health Plan staff members both occupy the building and share their services and responsibilities.

---

[17] The residents exhibited great distrust for government, some of which could be traced to an environmental problem from a few years earlier. In the summer of 1978, the state discovered that soil along 248 miles of secondary roads in 14 North Carolina counties, including Warren, had been tainted by Polychlorinated Biphenyl, or PCB, a carcinogen. In June 1978, Warren County was chosen as the site for a landfill created specifically to store the PCB-tainted soil. A lengthy legal battle to fight the landfill's location in the county ended unsuccessfully in May 1982.

The Health Department carries out the many responsibilities prescribed of it by state statutes and obtains about 80 percent of its funding from federal and state sources. Its mandates range from preventive medicine to environmental and pollution controls. Services offered by the Health Department include prenatal care for pregnant women; screening for diabetes, hypertension and other chronic conditions; family planning; prevention and treatment of communicable diseases; health education; and vision screening. The Department also provides health and nutrition counseling, including the federal Women, Infants, Children (WIC) nutrition program. The Health Department services are actively used by residents. In 1989, about 90 percent of the county's children received at least one service from the Health Department. (Please see Appendix C for details on the Health Department's services and structure.)

The Vance-Warren Comprehensive Health Plan has the only full-time physicians in the county and provides a range of primary care services, including dental care, prenatal care, and child health services. The annual number of users was slightly higher than 5,000 in 1990 (about 29,000 medical and dental encounters for the sites combined). The administration for both practices is located at the Soul City site.

The following collaborative services are offered at the Warren Health Institute through the cooperation of both agencies. (Please refer to Appendix A for chart.)

Medical Treatment

A staff of four physicians, nurses, and support staff provide comprehensive primary care services through the Warren Health Plan. Physicians provide back-up for Health Department mid-levels, receive some referrals from Health Department workers and also are available to patients on Saturdays at the HealthCo site in Soul City. Collaborative efforts include:

Medical Director—The two agencies share a medical director, who is appointed from within the staff of the Warren Health Plan and meets regularly with the Health Department Director. The Medical Director spends about 10 hours each month on Health Department work, which includes reviewing department medical protocols and providing consultation on other medical services.

Obstetrical and Prenatal Services—Maternal health services have provided the two agencies with an ideal opportunity for collaboration in which the traditional services of one agency complements those of the other. Physicians with the Health Plan and nurses in the Health Department have developed a coordinated program that retains each agency's role. Appropriately, high-risk pregnant women will

continue to be seen as part of the Duke University School of Medicine's Outrider Program, a relationship that had been established through the Health Department. Through this program, an obstetric resident and medical students from the University conduct Health Department clinics each week at the Institute, and high-risk pregnant women deliver their babies at Duke University Hospital, one of the most sophisticated hospitals in the nation. Low-risk patients will receive care from one of four physicians with the Health Plan who deliver babies at Maria Parham Hospital. The two tracks will be maintained to ensure choice for residents.

Physician Services—A pediatric clinic, staffed by Vance-Warren physicians, is held each week at the Institute as part of its continuum of medical services for children. The two agencies also jointly sponsored a Children's Special Health Fair in the fall of 1991 and another in the spring of 1992. The Fair provides an opportunity for health screening and outreach to further publicize joint services available for children at the Institute.

Hospital Care—The physicians maintain hospital practices at Maria Parham Hospital in Henderson, an 86-bed hospital about 30 minutes from Warrenton. In 1990, about half of all hospital discharges from Warren County residents were from the Henderson hospital. About 22 percent of all discharges were from Duke University Hospital in Durham.

Health Promotion

The consolidated location of the medical practice and health department allow for greater follow-up on changing health behaviors. Patients who have visited their physician can walk down the hall to begin a plan for improved health habits. The Institute offers programs in smoking cessation, nutrition counseling and general health education.

The Wellness Center—The Wellness Center, complete with exercise-bicycles and other aerobic equipment, is a unique facet of the Institute that was developed as a direct result of the collaboration between the two agencies. A full-time nurse supervises use of the Center, whose participants are referred there through their personal physician with a prescription for exercise. Physicians are only a few steps away, and the Center is open to residents who otherwise would not have access to health club-type equipment. There are plans to develop integrated programs for special populations such as diabetics and those at risk of heart disease.

Health Maintenance

Joint programs through the Institute offer screening for diabetes, hypertension, high cholesterol, vision impairments and other health problems. Family planning services and well-child care also are available.

Health Education Services—To provide more in-depth counseling and education, Warren Health Plan physicians have increased referrals to the Health Department of patients with several high-risk health behaviors. Nurses from the Health Department perform risk assessments for many Vance-Warren Plan patients. This exchange allows physicians at the CHC to concentrate on providing more care to greater numbers of people in the county and allows the Health Department to provide the quality health education that is their mandate.

Other Collaborative Efforts

Home Health Services—The Medical Director has lent valuable assistance to the County's home health program, in part by providing referrals and promoting the program more broadly in the community. Demand for home health services, which is run by the Health Department, has greatly increased during the Institute's first year, 1991.

Laboratory and X-Ray Services—Lab staff has been shared through contracts based upon the workload and demand for services. Cooperation in this area in particular has worked well and efficiently for the two agencies, despite initial resistance to joining lab efforts. For example, the Health Department lost its lab technician and was able to contract with the Health Plan for services. A few months later, the Health Department was able to hire a new technician, who was expected to complete some lab work under contract for the Health Plan, which had seen an increase in its lab workload.

Administration—The Institute is managed jointly by the Health Department, which is governed by a board appointed by the County Commissioners, and the Warren Health Plan, whose parent group, the Vance-Warren Comprehensive Health Plan, is governed by a community board. There has been no formal "meshing" of the community boards, which remain separate. A combined staff of 45 people work in the Institute.

The design of the renovated building was intended to encourage cooperation. In the cross-shaped building, the Health Department and Health Plan each have a separate wing, and the building's intersection houses some of the shared space—reception area, waiting room, laboratory, medical records storage, and the employee lounge. Other shared space includes the Wellness Center, patient

education rooms, and a conference room. Directional signs for all rooms are coded in three colors, one for each agency and a third for the shared space.

Challenges For the Future

Medical Records—Both agencies have maintained their separate medical records systems, although they share storage space. Charts are shared between the groups but are kept separate out of a concern for confidentiality of patients, such as those who come to the Health Department for treatment of sexually transmitted diseases. Thus a single patient could have three different charts: one with the Health Department, another with the Warren Health Plan and a third at the HealthCo site in Soul City. However, Davis of the Health Plan believes the medical records are evolving into a shared system. Providers from each agency are currently writing in each other's charts, which she views as a sign of developing a unified system. "It's going to have to move to being a shared system out of convenience," she said.

Physician Recruitment—Recruiting and retaining rural physicians has become exceedingly difficult, in large part because of the increased rate of specialization among younger physicians. Only 12 percent of all medical school graduates are electing to enter family practice, the specialty rural communities depend on the most for broad-based medical care. In addition, inadequate rural school systems, the professional isolation of rural practice, lower pay and longer work hours are other factors that make it difficult to attract younger physicians to rural practice. The Vance-Warren practice currently employs an impressive and dedicated group of physicians, one of the strongest in rural North Carolina, according to rural health consultant Gail Kelley of the N.C. Office of Rural Health and Resource Development. In the past, the practice has suffered high turnover rates, mainly among physicians from the National Health Service Corps, who like Sellers, elect to leave the community when their obligations expire. However, today, only two of the eight physicians have Corps obligations, and the remainder appear to have made a long-term commitment to the community. Kelley believes the Institute's collaborative nature has become a selling point when recruiting future physicians.

Greater Utilization of the Wellness Center—One year after its opening, utilization of the Institute's Wellness Center has been low. Health Director Dennis Retzlaff hopes more patients who have high-risk behaviors that may lead to chronic conditions will make use of the facility's exercise machines. Original plans for the Wellness Center had called for the inclusion of wellness counseling, not only exercise. Future plans call for the development of an automatic referral system for physicians to connect patients to the center.

PROGRAM OUTCOMES

Utilization of both the Health Plan and the Health Department appears to have increased, although no firm data are yet available. Traditionally, both sites of the Vance-Warren Comprehensive Health Plan served a disproportionate share of the county's poor and black residents. However, the Institute is attracting more and more residents from Warrenton, whose population is wealthier and more likely to be white than the rest of the county, according to Davis. The HealthCo site also has seen an increase in patients, including more white patients.

Several reasons help to explain the increased utilization of the CHC sites. The updated building has brought many new patients who may have viewed the older facility as substandard. The opening of the Institute coincided with the retirement of two physicians in neighboring Vance County, who had provided care to many Warren County residents. In addition, Davis says Warrenton residents using the CHC for the first time are discovering the quality of its physicians and the relatively low cost of its services.

Both CHC sites have experienced increased utilization from third-party insured patients. Sellers believes the future success of federal community health centers rests with learning some lessons from the private practice model, such as maintaining modern and up-to-date facilities and tending to the comfort of patients. CHCs must promote a one-on-one relationship with physicians, he said. Such changes will help CHCs attract third-party insured patients, whose higher reimbursement rates can help stabilize CHC finances which disproportionately rely on Medicare and Medicaid dollars. Residents also are learning the quality of the services provided by the Health Department, whose work is supported by their tax dollars.

Despite increased utilization by the residents, the community appears to view the Institute as a single building holding two distinct agencies, according to many observers of the process and many Institute organizers. The community boards governing each agency remain separate and are a source of friction at times. Steve Shore, executive director of the N.C. Primary Health Care Association, the umbrella group for community and migrant health centers in the state, hopes the two boards will work together more closely and provide greater guidance, in a unified manner, to the Institute. By becoming more involved in the direction of the program, the community will gain a greater understanding of the value of the Institute and its unique qualities.

FUTURE PROSPECTS FOR THE INSTITUTE

Many leaders in the Institute's formation believe the potential benefits of the collaborative effort have yet to be fully realized. "The Institute is in its infancy," said previous Medical Director Sellers. "We're just beginning to see all of the possibilities." He compared the collaboration to two infants in a crib: each baby's first reaction is to throw the other one out of its space, but eventually the two learn to work together and help each other. The nascent life of the Institute has begun the same way: "We haven't thrown each other out yet," he said.

The Institute gives the two agencies a tremendous opportunity to make a difference in an impoverished community, according to Health Department Director Retzlaff. But frustration has arisen throughout the transition process. "Whenever you do anything this dramatic, it is going to hurt," Retzlaff recently told a state conference of health directors. "You have to do what you can to make it work, but sometimes you have to take a stand on your [agency's] behalf."

One potential source of growth for the future lies along the shores of Lake Gaston, which is about 18 miles north of Warrenton. With its scenic and peaceful settings, the lake has attracted increasing numbers of retirees. County Commissioner Clayton hopes the Institute, with its comprehensive approach and services, will be able to capitalize on the county's new pocket of growth and develop a program of health care services for the aged, targeted toward retirees and other older residents of the community.

State leaders view the model as a prototype for the nation, particularly for poor, rural communities with limited health resources. Across the nation, hundreds of rural counties have hospitals financially strained by federal reimbursement trends, spiraling health care costs, and declining rural economies. The Warren County model of cooperation provides a model of hope. "No other community in the state has accomplished what Warren County has," according to Shore of the N.C. Primary Health Care Association. "The whole will be greater than the sum of the parts. This is the wave of the future."

While many concede that the Institute cannot replace a hospital, in some ways, Warren County has been left with a stronger, more stable health care system that in the end will serve residents more effectively. "Warren County is better off than many of the other small rural communities that we work with who are struggling to save their hospitals," according to N.C. Office of Rural Health Director Bernstein. The county has a health care system in line with its needs, and the Institute has attracted a

strong group of dedicated physicians. "Warren County deserves the first-class Institute they have developed," Bernstein says.

SOURCES

Bernstein, James D. Chief, Office of Health Resources Development (formerly N.C. Office of Rural Health Services). Testimony before the Subcommittee on Health, Committee on Ways and Means, U.S. House of Representatives, May 15, 1989.

_____. Director, N.C. Office of Rural Health and Resource Development (formerly N.C. Office of Rural Health Services), interview. February 1992.

Clayton, Eva. County Commissioner, Warren County, interview. January 1992.

Community Hospital Technical Assistance Program, North Carolina Office of Rural Health Services. "Study of the Health Care Needs of Warren County," report presented to the Board of Directors of Warren General Hospital and the Board of Commissioners of Warren County, May 29, 1985.

"Cooperative Proposal: Vance-Warren Comprehensive Health Plan and Warren County Health Department." Approved March 1990.

Davis, Deborah Carter. Executive Director, Vance-Warren Comprehensive Health Plan, interview. January 1992.

Harmon, Robert G. M.D., and Ronald H. Carlson. "HRSA's Role in Primary Care and Public Health in the 1990s," *Public Health Reports*, January-February 1991, Vol. 106, No. 1, pp. 6-14.

Kelley, Gail. N.C. Office of Rural Health and Resource Development, interviews. January-February 1992.

Lambrew, Jeanne M. "Report to the Warren County Advisory Council for Health and Medical Affairs," Status of the Cooperative Activities between the Warren County Health Department and the Vance-Warren Comprehensive Health Plan, N.C. Rural Health Research Program, Cecil G. Sheps Center for Health Services Research, August 1991.

_____. "The Case of Interorganizational Relationships Between a Rural Health Department and Community Health Center," unpublished paper, September, 29, 1991.

Lefler, Hugh Talmage, and Albert Ray Newsome. *The History of a Southern State: North Carolina.* Chapel Hill, N.C.: University of North Carolina Press, 1973.

National Association of County Health Officials. "Primary Care Project: Report on the Nature and Level of Linkages Between Local Health Departments and Community and Migrant Health Centers," December 1990.

Retzlaff, Dennis. Director, Warren County Health Department, interview. January 1992.

Retzlaff, Dennis and Deborah Davis. "Progress Report," to the Warren County Advisory Council on Health and Medical Care, October 1, 1991.

Runde, Denise. Former administrator, Warren County General Hospital, interview. January 1992.

Sellers, Gladstone, M.D. Medical director, Vance-Warren Comprehensive Health Plan, interview. January 1992.

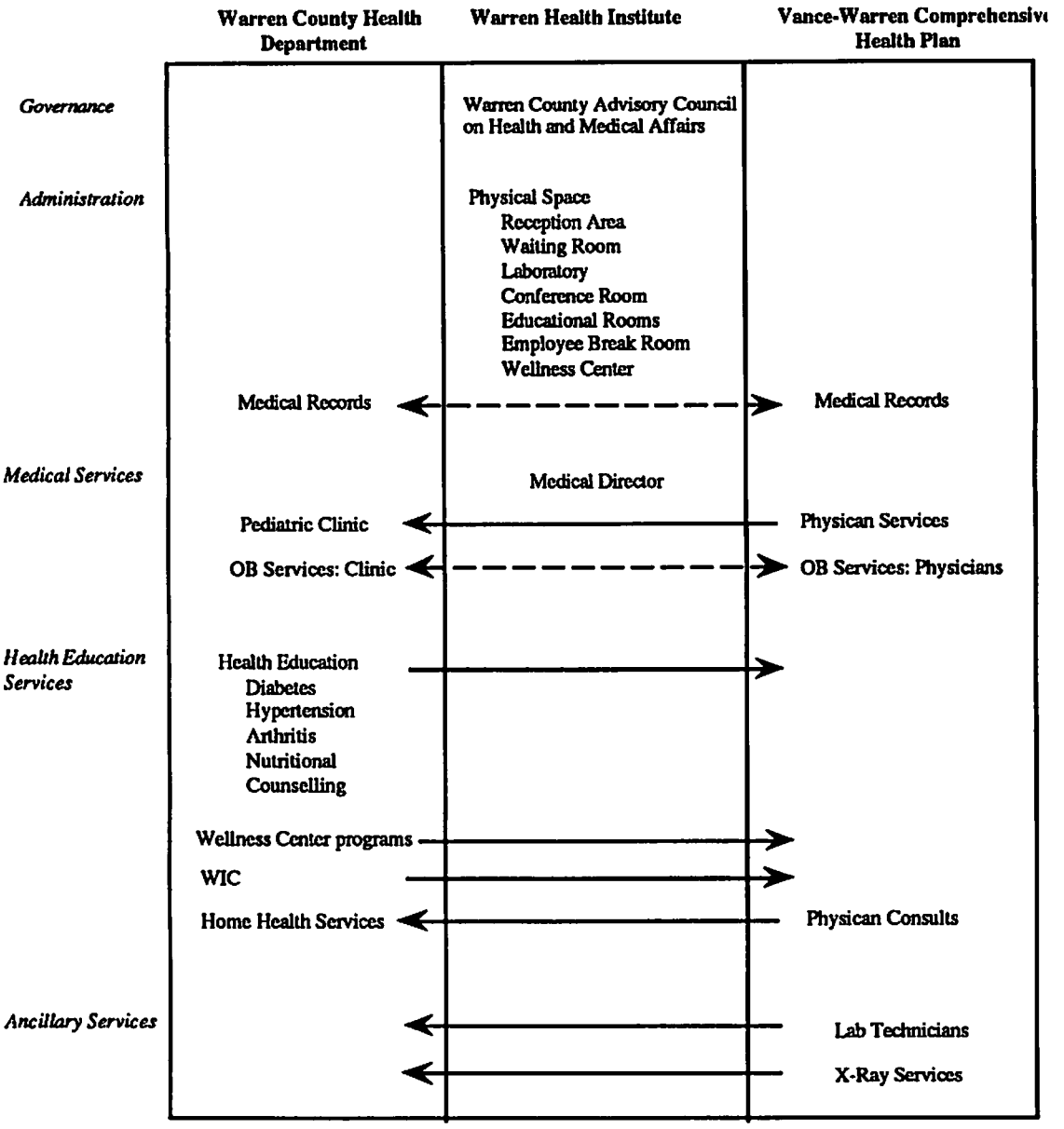
Shore, Steve. Executive Director, N.C. Primary Health Care Association, interview. January 1992.

Sundwall, David N., M.D., and Cleonice Tavani, M.S.W. "The Role of Public Health in Providing Primary Care for the Medically Underserved," *Public Health Reports*, January-February 1991, Vol. 106, No. 1, pp. 2-5.

Virginia Primary Care Association, Inc. "Promoting Interorganizational Linkages between Local Health Departments and Community Health Centers in Virginia," May 1990.

APPENDIX A

The Warren Health Institute: Shared Activities



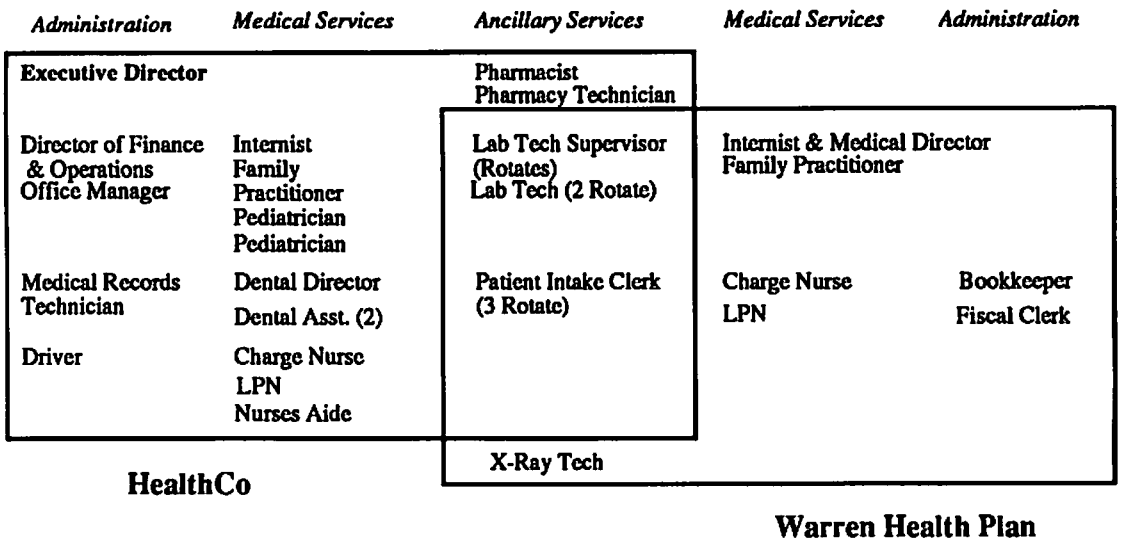
Dashed lines indicate potential relationships.

N.C. Rural Health Research Program, 7/91.

APPENDIX B

Vance-Warren Comprehensive Health Plan

Structure



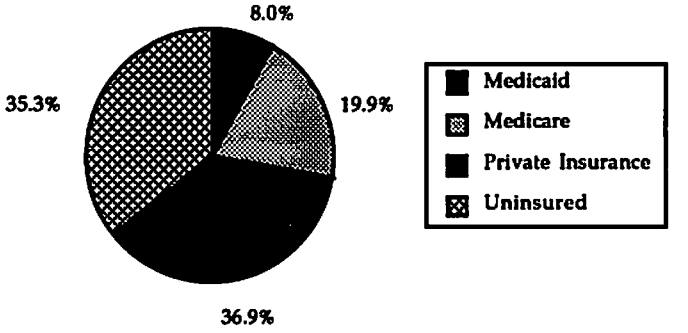
Services (from the Continuation Grant Application for Federal Section 330 funding)

Primary Care Services
Diagnostic Lab & X-Ray Services
Preventive Health Care
Pharmacy
Case Management for Prenatal Care Services
Transportation
Disease Screening and Control
Restorative Dental Services

Reporting Requirements

Bureau of Common Reporting Requirements (Federal)
Financial Status Report (Federal)
Annual Application for Section 330 Funding (Regional)
Medicaid Costs Reports (State)
Board of Trustees: Monthly report on : encounters per provider; user population; and economic breakdown of population. (Local)

Vance-Warren Comprehensive Health Plan Service Population, 1990



N.C. Rural Health Research Program, 7/91.

APPENDIX C

Warren County Health Department

Structure

Administration	*Medical Services*	*Health Education Services*	*Environmental Health Services*
Director	Nurse Supervisor		
Clerical Supervisor	Family Planning Nurse	Health Education Coordinator	Environmental Health Coordinator
Clerical Staff (8)	Pediatric Nurse	Health Educator	Sanitarians (2)
	Adult Health Nurse		
Accounting Clerk	Maternity Nurse	WIC Supervisor	Community Health Technicians (2)
Receptionist	Immunizations Nurse		Community Health Assistants (2)
	Home Health Coordinator		
	Home Health Nurse		

Services (from the Consolidated Contract between the State of North Carolina and the Warren County Health Department)

Arthritis Control
Child Health Service
Environmental Health Services
Family Planning Services
Health Promotion
HIV/Sexually Transmitted Disease Control
Home Health Services
Hypertension Screening and Treatment
Maternal Health Services; Maternal Care Coordination
School Health Program
Tuberculosis Control
Women, Infant and Children nutrition program

Reporting Requirements

Consolidated Contract between the State of North Carolina and the Warren County Health Department (State)
Community Needs Assessment (State)
Budget & Justification: Warren County Commissioners (Local)

N.C. Rural Health Research Program, 7/91.

APPENDIX D

Map of North Carolina