# Utilization of Local Health Centers in 25 North Carolina Counties

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HISTORICALLY, many local health departments have been poorly housed, frequently in the basements of county courthouses or city halls.

During World War II, under the provisions of the Lanham Act, modern health centers were built in various parts of the country near important military installations or defense plants. The passage of the Hospital Survey and Construction Act in 1946 made it possible for State hospital authorities to include participation in the construction of local health centers in their overall State hospital plan. Some States, among them North Carolina, have taken advantage of this opportunity and have participated in the construction of a significant number of modern local health centers. These centers have increased the stature of local health departments and have greatly improved the effectiveness and morale of the public health workers who use them.

Great care has been taken in planning and constructing these health centers. Their architectural and engineering features, with minor exceptions, reflect the high quality of architectural and engineering skills that contributed to their design and construction. It always is more difficult to modernize traditional public health programs than it is to adopt modern architectural designs in the construction of new health centers.

With this thought in mind, the authors queried a group of local health officers in North Carolina concerning certain phases of the programs that were being conducted in their local health centers. The staffs of the North Carolina State Board of Health and of the local health departments concerned cooperated in the study.

The sample selected consisted of 25 counties in which there had been erected local health centers with the aid of Federal, State, and local funds. These counties were:

| | | |
|---|---|---|
| Beaufort | Harnett | Rutherford |
| Burke | Hertford | Sampson |
| Caldwell | Martin | Scotland |
| Caswell | Moore | Stanly |
| Currituck | Northampton | Tyrrell |
| Dare | Person | Warren |
| Franklin | Robeson | Wilson |
| Edgecombe | Rockingham | |
| Halifax | Rowan | |

These 25 county health departments comprise slightly more than one-third of the local health departments in the State. The list does not include the largest or the smallest health depart-

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ments, nor does it constitute a cross section of all North Carolina county health departments.

The director of local health services of the North Carolina State Board of Health distributed a questionnaire to each of the 24 full-time local health officers and the 1 part-time health officer participating in the study. The questionnaire requested information about the community and specific data concerning clinic services, staff, and space utilization.

After ample time had passed to permit the local health officers to complete the questionnaire, a member of the staff of the Public Health Service regional office (Region III, Department of Health, Education, and Welfare) visited each of the 25 local health departments to interpret the meaning of any questions which were not clear. He also talked to various members of the local health department staffs to obtain their impression of their health center.

### Study Counties

From the data obtained it was possible to develop a composite picture of the 25 counties, their health centers, their services, their staffing patterns, and their problems. The "composite" county has a population of 38,137 persons, of whom 65 percent are white and 35 percent, nonwhite. Twenty-one percent of the population are urban, 79 percent, rural. The birth rate in these 25 counties was more than 3 times the death rate. In 1953 there were 1,071 births compared to 323 deaths. The annual per capita income was $830. The annual per capita expenditure for public health was $1.00. Slightly more than 0.1 percent of the annual per capita income was budgeted for public health purposes.

There were 18 practicing physicians and 7 dentists to serve the 38,137 persons in the composite county, a ratio of 1 physician to 2,119 persons and 1 dentist to 5,448 persons. The bed population ratio for the composite county was 2.66 beds per 1,000 population. All were general hospital beds. The utilization of beds was good, the average daily census being 72.5 percent of the total number of beds available.

Although the outpatient services offered by the 34 hospitals serving the 25 counties did not compare in quality or quantity to the services available in most metropolitan areas, they exceeded in quantity the outpatient services usually provided in predominantly rural areas. Six of the 34 hospitals maintained outpatient services. These 6 hospitals served 24 percent of the total population of the 25 counties. The remaining 28 hospitals offered only inpatient and emergency services.

The average size of the 25 health centers was 3,410 square feet. The average cost, including equipment, was $51,900, or 15.20 per square foot. The per capita cost of the health centers, including equipment was $1.36.

**Clinic services in 25 North Carolina counties, 1949**

| Type of clinic | Health centers conducting clinics | Patient visits to— | |
|---|---|---|---|
| | | All health centers | Health center clinics (percent) |
| Immunization | 25 | 58, 543 | 45. 0 |
| Food handlers | 18 | 16, 256 | 12. 5 |
| Tuberculosis | 23 | 14, 714 | 11. 3 |
| Venereal disease | 24 | 12, 676 | 9. 7 |
| Orthopedic | 13 | 10, 250 | 7. 9 |
| Maternal and child health (prenatal and well-baby) | 22 | 10. 172 | 7. 8 |
| 9th grade | 4 | 2, 324 | 1. 8 |
| Cancer | 2 | 1, 690 | 1. 3 |
| Preschool | 7 | 1, 273 | 1. 0 |
| Eye | 11 | 1, 196 | . 9 |
| Diabetes | 1 | 675 | . 5 |
| Ear | 1 | 150 | . 1 |
| Heart | 1 | 48 | . 03 |
| 12th grade | 1 | 45 | . 03 |
| Total | 153 | 130, 012 | |

The staffs of the local health departments studied, although not up to the quantitative standards recommended by the American Public Health Association, were not out of line with the staffing patterns of other rural health departments. All but 1 of the 25 county health departments had a full-time health officer. The population ratios for other staff members were: public health nurses, 1/10,834; sanitarians, 1/27,241; and clerks, 1/25,090.

The 10 leading causes of death in North Carolina—heart disease, brain hemorrhage, cancer, accidents, certain diseases of early infancy, in-

fluenza and pneumonia, tuberculosis, nephritis, congenital malformations, and general arteriosclerosis—followed the pattern that has been developing throughout the United States for decades.

The types of clinics held in the 25 counties, the number of patient visits to the clinics, and the number of health centers conducting each type of clinic are shown in the accompanying table.

The average amount of space provided for each public health nurse was 84 square feet. The space allotted to sanitarians averaged slightly more—104 square feet. The public health nurses and sanitarians, it was estimated, spent an average of 1½ hours in the office each working day.

In the health centers, 4.8 percent of the space was occupied by laboratories that were maintained in 22 of the 25 health centers. The average number of square feet of laboratory space was 168. Only 1 of the 25 local health departments employed a full-time laboratory technician at the time of the study.

Each of the 25 health centers had waiting rooms that were used as meeting places. The average seating capacity was 55. All of the health officers reported that the waiting rooms were used in the evenings by various community groups. Typical of these groups were local boards of health, voluntary health associations, local Red Cross chapters, PTA groups, medical societies, boards of education, and farm groups.

Nine health centers had separate conference rooms averaging 170 square feet in size, with an average seating capacity of 13. Only 5 health centers had a library, but all made some provision for placing professional books and journals at the disposal of their staffs.

## Health Services

Certain characteristics of the health services provided in these 25 rural health centers lend themselves well to discussion; some present basic challenges to present concepts of providing rural public health service.

### *Increasing Population*

The marked excess of births over deaths represents, in part at least, the success of past and present public health services, improvements in medical and hospital care, and a better economy. It also portrays rather dramatically the current upsurge in our total population. This increase in population will continue to require an expansion in local public health services and an increase in the number of practicing private physicians.

### *Financial Support*

The fact that little more than 0.1 percent of the per capita income of the population of these 25 counties is budgeted for local public health services should cause us to raise our professional eyebrows. Is this relatively small financial contribution for public health services commensurate with the public health needs of these rural people? Are we failing to dramatize to the taxpayer the value of and need for health services that still are not being provided? Or is it that we are failing to offer to people the types of health services they want and are willing to pay for?

### *Physicians and Dentists*

The physician/population ratio of 1 physician to 2,119 persons, although not meeting the recommended physician/population ratio, is not atypical of most rural communities. It does bring out the fact that if the degenerative and malignant diseases—those causing long-term illnesses—continue to increase in our aging population, the "physician hunger" of rural populations will tend to increase rather than to decrease. Some alleviation of this situation might be obtained rather quickly by the wider use of paramedical personnel to extend the services of those practicing physicians who are now available.

The dentist/population ratio of 1 dentist to 5,448 persons represents a longtime and widespread problem throughout the United States. The only optimistic factor in this picture is the growing practice of fluoridating public water supplies and the topical application of fluorides to the teeth of children who do not have access to a fluoridated water supply. A 60-percent reduction in dental caries among a large segment of the child population would permit the present number of dentists to engage in more

preventive dentistry, for which they now have little time.

### *Hospital Beds*

The hospital bed/population ratio of 1 bed per 2.66 persons is partly the result of the State and federally aided program which assists communities to build new hospitals and to expand existing ones. The average daily census of 72.5 percent indicates that the bed supply is being well used. No beds for the chronically ill were reported in these 25 counties. Although the population approached 1 million people, there were no diagnostic centers listed as such in the 25 counties.

### *Outpatient Services*

The availability of outpatient services to 24 percent of the population in the study area is noteworthy because it far exceeds the availability of such services in many rural areas in other States.

The fact that outpatient services are available to 85 percent of the residents of large metropolitan areas and to only a small percentage of rural residents should concern all rural health officers. Are these outpatient services merely a metropolitan luxury or is there a genuine but unmet need for them in rural areas? Is the existence of ample outpatient services in metropolitan areas merely coincidental with the existence in such areas of more and larger hospitals? Can methods be developed whereby outpatient services can be provided economically to rural residents who need them and can qualify for them? Answers to these and to other similar questions must be found if we are to develop a comprehensive program for detecting the chronic diseases in their early stages and minimizing their complications.

### *Health Center Cost*

The per capita cost of the 25 health centers of $1.36 was remarkably low for postwar construction. In North Carolina an upper limit has been placed on the size of all State-aided health centers, with graduated ceilings within certain population ranges. This action was deemed necessary to conserve the limited Federal and State funds available for construction of health centers in the State. It did have the desirable effect of channeling a larger percentage of available funds into rural areas that were economically less well off than metropolitan areas. The arbitrary limitation on the size of health centers, however, had a tendency to keep the per capita cost low. Other communities intending to use the per capita cost of $1.36 as a guide should take this factor into account. If there had been no ceiling on the size of the health centers, some undoubtedly would have been larger, which would have increased the per capita cost.

### *Staff/Population Ratios*

All but one of the 25 rural counties had a full-time health officer. This excellent coverage is typical of North Carolina, where local public health salaries are more realistic than those of many other States. It also reflects the policy of the State health department of placing the primary responsibility for local health protection on local health departments.

The ratio of 1 public health nurse to 10,834 persons, although short of national standards, is not low in comparison with other rural areas throughout the United States.

It does highlight the difficulty that will be encountered if local public health nurses are asked to provide bedside nursing services to the chronically ill. The public health nurses in these 25 counties are hard pressed now to maintain their daily work schedules. If bedside nursing is added to their many responsibilities, the need for additional nurses, as well as for more training for the nurses now on duty, will become demanding.

### *Leading Causes of Death*

The tabulation of the leading causes of death in North Carolina highlights the fact that undue emphasis may have been placed on the control of the infectious diseases after they had passed their peak incidence. It must be recognized, however, that maintaining the status quo will require the continuing expenditure of a significant amount of time and money. The cardiovascular diseases, cancer, brain hemorrhage, and accidents, which kill more than 75 percent of the persons who die each year, have not yet begun to be the subject of serious control efforts by the 25 local health departments

studied, although there are a few clinics for cancer, heart disease, and diabetes.

### *Clinic Services*

An analysis of the table in which the various clinic services are enumerated (page 102) shows that the five types of clinics that were conducted most frequently by county health departments—immunization, food handlers, tuberculosis, venereal disease, and maternal and child health—accounted for 112,361 of the total 130,012 patient visits, or 86.4 percent of the total. Only the tuberculosis clinics are aimed primarily at the control of diseases which are in the list of the 10 most important causes of death. Only one of the local health departments conducts a cardiac clinic. In 1953, this clinic reported 48 patient visits. Another health department conducted a diabetes clinic and maintained supervision of some 600 patients with diabetes, at the request of local private practicing physicians. Two health departments conducted cancer clinics.

### *Space Utilization*

The amount of space allotted to public health nurses and sanitarians, who, by their own estimate, spend an average of 1½ hours a day in the health center, gives food for thought. There is a definite trend toward group meetings and group education, as exemplified by weight control classes, patient education classes, and classes for expectant mothers (and even for expectant fathers). As long-term illnesses with their many complications gain in emphasis over acute infectious diseases, the multiplication of the duties of public health workers will demand more efficient methods of serving the public.

One way to permit scarce public health personnel to serve larger population groups is to bring people to health centers for group instruction rather than to send public health workers out to visit individuals in their homes. An example of this technique is the way practicing physicians have conditioned expectant mothers to go to hospitals for their deliveries rather than to have physicians waste precious time going to the home and waiting there for the infant to arrive. If this trend results in a need for more group instruction in health centers, additional room will be needed in which these groups can meet.

One way to provide for additional space needs in health centers is to plan and construct them in such a way that extensions may be added with a minimum of alterations. Another possible alternative is to design the office space for public health nurses, sanitarians, and other field workers in such a way that it may be used for purposes of group instruction when it is not in use as office space. This latter alternative will require some pioneering on the part of health officers, architects, and engineers, but could well result in the more efficient utilization of health center space without imposing any real hardship on public health workers.

### *Laboratories*

Although 22 of the 25 health centers had laboratories, only 1 of the 25 health departments employed a full-time laboratory technician. Throughout the country there is a growing awareness of the need for diagnostic centers that can serve the needs of rural physicians. When laboratory services are not readily available, physicians often must rely on their clinical judgment to make difficult diagnoses or they must resort to costly and time-consuming expediencies to have laboratory work done for their patients at some distant laboratory or medical center. As soon as public health and medical leaders in local communities are convinced of the need for adequate local laboratory services, local laboratories, now inactive, may be activated and communities without laboratories may decide to obtain them. The lack of outpatient hospital services in these areas emphasizes the urgent need for the development of these assisting laboratory services.

Research workers each year are developing new tests for the chronic degenerative and malignant diseases. These tests can be of great help to rural physicians in establishing the early diagnosis of many diseases that are characterized by long periods of latency. They can help physicians to diagnose such diseases as cancer, diabetes, blood dyscrasias, nephroses, and even rheumatoid arthritis, earlier and with greater accuracy. Certainly, the patient will benefit from such early diagnoses. It would seem logi-

cal, then, to look for the better staffing of local health center laboratories with well-trained technicians, who are masters of a wide variety of laboratory tests and are capable of operating the many laboratory instruments that are being made available for disease detection.

### *Meeting Space*

All of the health centers were provided with waiting rooms that can be used by community groups during the evening hours. This tendency to encourage community groups to use local health centers has proved to be an excellent way for health departments to provide a wider type of service and thereby earn community support for their programs. When local health departments resided in courthouse basements or attics, it was the rare individual indeed who knew where his local health department was located, the name of the local health officer, or what public health workers did to earn their money.

### *Construction Pointers*

When the Public Health Service regional representative visited each health center, he chatted with the health officer and with other members of the staff about the general "usability" of the health center and whether or not there were features about it that they would like to see changed. The uniform reply began with an expression of appreciation that they had gotten out of their antiquated quarters and into a modern health center in which they could work more efficiently and in which they could take pride. When pressed for their reaction to the design of their own health center, there were a few items they would like to see changed.

Eight health officers stated that storage space was inadequate. Eight mentioned that their health centers were not soundproof; in fact, privacy was almost completely lacking; voices carried clearly throughout the building and interfered with the conduct of interviews, conferences, and clinics. Seven said the heating system was not efficient; the ducts were placed at ceiling level, with the result that the temperature at floor level was too low. Radiant heating was not favored for southern climates. Six suggested that cement blocks, spray painted, plus waterproofing with a silicone type of spray would be just as attractive as plastered walls and the cost of maintenance would be lower. Five claimed that flat roofs often leaked and tended to intensify the summer heat. Air conditioning, or at least better insulation, was strongly recommended.

Other less repetitive suggestions included the separation of one of the three clinic rooms from the other two rooms with a solid wall; not pouring concrete floors over plumbing installations; and not having rest rooms open directly into waiting rooms.

## Summary and Conclusions

By means of a questionnaire, supplemented by a personal visit, 25 local health officers and their staffs in North Carolina were queried about their health centers, their health services, and certain of their public health problems. The health workers uniformly expressed their appreciation for the benefits derived from being located in a modern health center.

The excellent programs conducted in these health centers were found to be oriented primarily to the control of the acute infectious diseases and to the solution of maternal and child health problems. A start is now being made on programs designed to control the chronic noninfectious diseases and the accidents that are becoming the major causes of death in North Carolina.

The fact that only one full-time laboratory technician was employed by a local health department in the entire area, comprising 25 counties with a population of 953,425, is evidence of the sparsity of laboratory diagnostic services in these rural counties, which are deficient in hospital outpatient services.

This study suggests that, now that local health departments are being "disinterred" from their basement hideaways, continuing attention should be given to the planning and evaluation of the local health services provided in health centers and to their reorientation to current public health problems.