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THE HEALTH BULLETIN

Editor
CLAY WILLIAMS

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On the Cover
Humanitarian Award
The inscription reads in part “Presented to Walter Radcliff, Jr., who saved the life of Martha Mitchell December 11, 1968 by applying knowledge gained through Medical Self Help. Presented on December 9, 1969, by Robert W. Scott, Governor of North Carolina.”

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An hallucinogenic drug believed to be more powerful than LSD or mescaline was added to the Narcotic Drug Act of North Carolina at the regular quarterly meeting of the N. C. State Board of Health in December.

The addition of Methylene-dioxyamphetamine (MDA) to the act (as provided by state statute) now enables the State Bureau of Investigation, at whose request the action was taken, to move against illegal manufacturers — known to be in operation in North Carolina.

The enabling decision by the N. C. State Board of Health conforms to the statute (90-87) described as follows: Any drug found by the State Board of Health, after reasonable notice and opportunity for hearing to have an addictive-forming or addictive-sustaining liability or possesses hallucinogenic properties similar to LSD, morphine or cocaine, may be added to the list.

Dr. Peter N. Witt, director of Research, State Department of Mental Health, pointed out at the board meeting that, according to a preliminary investigation, MDA would belong in the group of hallucinogens with LDS and mescaline, and should be treated legally in the same manner.

Charles Dunn, Director of the State Bureau of Investigation, told the board that MDA is becoming a problem in North Carolina. "We have already had several cases in our lab," he said.

Regulations Adopted For Intermediate Care Facilities

In other actions the board authorized licensing of Intermediate Care Facilities and adopted rules and regulations for patient care for both Type A and Type B facilities.

(Continued on next page)
An intermediate care facility was conceived by the federal government as being a separate and distinct part of a building for patients in need of greater care than normally provided in a Home for the Aged and less care than provided in a skilled nursing home. With the implementation of Medicaid in North Carolina on January 1, 1970, greater effort will be made for proper placement with reference to Patients' needs and in the interest of saving money. Intermediate Care Facility Type A is to be staffed with either a registered nurse or a licensed practical nurse on the day shift only. Intermediate Care Facility Type B does not require a nurse; however, a staff for both types of facilities is much greater than in a Home for the Aged.

Rules and regulations were also adopted for Home for the Aged units of a combination home. Existing rules and regulations for licensing of Nursing Homes were extensively revised. A new section was added which provided for full disclosing of ownership of 10% or more of the facility. This is a requirement established by federal law for Medicaid participation.

Major amendments were made with reference to the position of administrator. The administrator will be required: (1) to have a written agreement stating his authority and responsibilities whenever he is not the sole owner of the home; (2) to be licensed according to Chapter 90, Article 20 of the General Statutes of the State, pursuant to federal law; (3) to notify the Board of Health in the event his office becomes vacant for a specified period of time.

A section dealing with reportable accidents was included in the requirements.

A reportable accident is defined as any accident or mishap of unusual nature which results in immediate or potential injury to a person, which injury does or could require professional attention. The original report of any incident or mishap shall be placed in the permanent record of the person and a copy in the General Accident file of the facility and shall be available for inspection.

ladies . . .

Beware The Maxicoat

Just when the minies were getting minier and minier along came the maxicoat to spoil it all. We join with safety experts in casting scorn on the flapping, sari-like garment—though for different reasons.

Anyway, Marjorie May of the New York Safety Council refers to this fashion as dangerous and unsanitary. Elevators, stairs and curbs lurk as potential hazards, Mrs. May points out—along with high heels catching on the hem and people stepping on the flowing pattern from behind. So, ladies beware—wear the maxicoat at your own risk—for there is danger from within and without.
The North Carolina State Board of Examiners for Nursing Home Administrators, recently appointed by Governor Scott, held its first meeting Wednesday, December 10, in the Board Room of the State Board of Health in Raleigh.

The Board of Examiners elected Oscar Keller, a nursing home administrator from Sanford, as its chairman and G. Wesley Allen, M.D., Fayetteville, as vice-chairman.

W. Gordon Poole, Chief of the Nursing Home Section of the State Board of Health, was appointed non-voting secretary by the Governor on the recommendation of Dr. Jacob Koomen, State Health Director.

The Board was created by the 1969 General Assembly to comply with provisions of the Federal Social Security Laws relating to Title XIX (Medicaid) which require that administrators of nursing homes be licensed by the State.

The duties of the Board are to develop and enforce rules and regulations setting out standards which must be met by licensed administrators, develop methods for determining whether individuals meet such standards and to license qualified individuals.

Also, a continuing study of nursing homes and nursing home administrators will be conducted in order to improve the quality of nursing home administration. Courses of instruction and training will be conducted by or approved by the Board for assisting administrators in meeting the new standards.

In addition to the officers, other members present were the Reverend Joseph Coble, Durham, James Johnson, Ahoskie, and R. A. Short, High Point.
Tarheel Gets Humanitarian Award

It was bitterly cold in Asheville on the evening of December 11, 1968. Walter Radcliff, Jr. was having his evening meal—along with his wife, Frances and daughter, Debra. The contentment of the hour was sharply broken by the piercing screams of a woman coming from the direction of a nearby fish pond.
Radcliff snatched a length of ski tow rope from a boat as he passed through his garage and sprinted for the pond which was some 400 feet from his house.

Three year old Martha Mitchell had apparently attempted to walk across the thin layer of ice and had fallen through an opening about 25 feet from the shore of the three quarter acre pond. Mrs. Clayton E. Mitchell had reached her child by breaking a path through the ice and was struggling to get her ashore.

Radcliff stepped into the icy pond and shouted for the exhausted mother to push her child toward him. Having delivered the limp tike ashore, Radcliff tossed a rope to the mother who was pleading that the child's life be saved without regard for her own.

The commotion at the pond quickly caught the attention of Mrs. William Tennant—who was arriving home. Mrs. Tennant, who owned the pond, immediately drove to the water's edge, wrapped the child in her coat and along with Mrs. Mitchell and Radcliff, set out for the hospital which was about four miles away.

Meanwhile, Radcliff knelt beside the girl in the back seat of the car and began mouth to mouth resuscitation. The child exhibited no signs of life. "It was at this time," says Radcliff, "that many of the things the medical self-help instructor had taught came back to me—when giving resuscitation to a small child, be careful not to overfill its lungs with air."

Radcliff continued the procedure throughout the seemingly endless trip to the hospital—through the snarled rush-hour traffic of Asheville.

The child began to move her legs weakly and emit faint moans by the time the anxious group arrived at the hospital. Martha's lung was completely filled with water, according to the attending Doctor—who reminded Mrs. Mitchell that her daughter's recovery was still very much in doubt. The mite made a remarkable recovery, however, and stayed in the hospital only four days.

For saving the life of young Martha Mitchell, Radcliff has been awarded the second Self-Help Humanitarian Award ever won by a North Carolinian. Pre-

(Continued on page 15)
The dental profession and the Dental Health Division of the N. C. State Board of Health are preparing for the 22nd annual Dental Health Week February 1-7.

During the week local dental professional societies throughout the state will concentrate their efforts on dental education in their respective communities.

Displays have been strategically placed, contests are in the making, classroom lectures will be given and—what might be a first, a "brush-in" at Odell School in Cabarrus County is being staged. All local efforts will be fully supported by the Dental Health Division.

**DENTAL HEALTH WEEK SLATED**

During the years Dental Health Week has emphasized "prevention through education." "The concept that losing teeth is inevitable is still very much a part of our society today," says Dr. George G. Dudney, asst. director of the Dental Health Division of the N. C. State Board of Health. "The dental profession is trying to correct this attitude by emphasizing preventive dentistry."

Dr. Dudney listed the following...
procedures as preventive measures:
—The promotion of water fluoridation through a program of community education and research.
—A fluoride tablet program for rural school children is being jointly conducted by the University of North Carolina School of Public Health and the division.
—During the past fiscal year, fluoridators have been installed in five rural schools in North Carolina.
—Funds were appropriated by the 1968 Legislature which will enable the division to assist small communities, on a matching funds basis, to fluoridate their municipal water supplies.

Educational activities include:
—Twenty-four Field dentists presenting classroom lectures to public school children.
—The staff of the division has developed and is distributing visual aids and educational materials to teachers, students, and other groups.
—Consultation, speakers, and education materials will be provided by the division to community groups.
—The division will assist in developing and conducting inservice and preservice education, orientation programs, and special conferences and workshops to aid in the continuing education of both private and public professional workers.

Other facets of the program include providing corrective services to dentally indigent children and referring other children needing care to private dentist.
Dr. Ron Levine, director of the Community Health Division, represented Governor Scott at a White House Conference on Food, Nutrition and Health in early December.

In his report to the Governor Dr. Levine pointed out that the conference was an occasion for representatives of different backgrounds and interests, to come together and share experiences and recommendations.

According to Dr. Levine panels of experts had been discussing the problems of Food, Nutrition and Health for months. Preliminary recommendations were turned over to the conferees for review and reactions.

Members of the voluntary task forces were chosen to represent various interest groups; Voluntary Action by Community Or-
ganizations, Women, Religious Groups, Labor, Consumers, Agricultural Organizations and State and Local Governments.

Dr. Levine stated that “considerable pressure was brought to bear by vocal well-organized militant groups, such as the National Welfare Rights Organization and the Southern Christian Leadership Conference.”

A summary of deliberations are as follows:

A. We support in principle the President’s call for welfare reform. The issue of what should be the floor for personal and family income was not discussed.

B. We recommend liberalization of the Food Stamp Program.

C. We support expansion of the School Lunch Program.

D. We recommend intensified research at the federal and state level involving the nutritive value of human foods, as well as in the field of agricultural economics.

E. We recommend that educational opportunities related to food, nutrition and health be expanded through local, state and national organizations.

F. We recommend against the establishment of a Federal Office of Nutrition, calling instead for better coordination among agencies already involved in this field.

G. We recommend that the Governor of each state review the present organizational structure of the action programs providing for the distribution of food, nutrition education, and control of deception and fraud and where necessary reorganize or provide a coordinating device to assure that all of these related programs are administered on a total system within the total concept of human needs.

H. We urge that State and Local Government retain the authority and opportunity to plan and implement programs within broad federal objectives. We recommended that provision be made for the voice of the consumer to be heard.

Attending the conference with Dr. Levine was Miss Elizabeth Jukes of the Nutrition Section—who also reflected on the group’s inability to employ proper parliamentary procedure. “The activists groups made it impossible to maintain any degree of continuity in the discussions,” she said. She was pleased, however, that the conference revealed a better insight into the problems of hunger and malnutrition in the United States.
Award Winner

(Russell Carroll is Purchasing Officer for the Laboratory Division, N. C. State Board of Health. He is the 1969 recipient of the Academy of Public Health's Distinguished Service Award).

There are very few persons in the State Board of Health who have not personally benefited from knowing Russell Carroll.

To say that Russell is dependable, cooperative, and supportive is true but insufficient. Perishable reagents, live tissues, test animals, and unstable pathological specimens demand a specific care, which Russell appreciates and gives to them. He willingly meets busses or planes in the middle of the night or on weekends to accomplish this.

To say that Russell has initiative, skill and talent is an understatement. Though it is not a requirement of his job, he and his staff enjoy building things. Under his leadership, and at a cost of not more than one-tenth of the commercial price, they have built incubators, safety hoods, glassware washers, animal cages, staining sinks, storage cabinets, and work benches. There is no area of the Laboratory which he has not moved, rearranged, renovated, or rewired. Instead of having to wait for professional help, he can repair everything from complex electrical equipment and

microscopes to simple mechanical apparatus. The list is endless and has saved the state a sizable sum of money, and has made these things available months before they could have been obtained otherwise.

Russell's versatility is appreciated by other divisions. The Immunization Program asked him to locate a source for purchasing needles for its jet injector guns, since the manufacturing firm charged $20.00 per replacement needle. Russell made the needles at a cost of $5.00. Unknown to Russell, the National Communicable Disease Center was also seeking another source for needles and upon learning of our experience, considered offering Russell a contract to manufacture these needles for them.
Dr. Jacob Koomen, State Health Director, has announced the retirement of J. M. Jarrett as director of Sanitary Engineering Division of the N. C. State Board of Health.

Jarrett has been succeeded by Marshall Staton, assistant director since 1963.

"The development of attitudes toward problems of sanitation as related to public health have been brought to the fore during the years J. M. Jarrett has served the state and nation as a sanitary engineer," Dr. Koomen remarked.

"His dedication to purer food, cleaner streams and a more wholesome environment, reflects many accomplishments spanning a long and highly effective career of service to mankind."

Jarrett’s retirement will mark the end of a career in public health work that started 43 years ago. The Asheville native graduated from N. C. State College in 1926 with a degree in Civil Engineering. Since then he has held positions as Sanitary Engineer (Continued on page 15)
Smallpox Vaccination Defended

Two officials of the National Communicable Disease Center of the Public Health Service in Atlanta, Georgia, have spoken out against continued widespread use of smallpox vaccine. Drs. Michael Lane and J. D. Millar say that the United States can expect 210 deaths caused by smallpox vaccination between now and the end of the century if present policies, emphasizing routine childhood vaccination, persist.

The two doctors claim the risk of importation of smallpox is extremely low. They pointed out that the benefits of routine childhood smallpox vaccination no longer outweigh its risks.

Dr. J. N. MacCormack, chief of the Communicable Disease Control Section of the N. C. State Board of Health, does not agree. "Those who argue for discontinuing widespread vaccination," he stated, "contend that the absence of smallpox in the U. S. over the past 20 years is not a product of a solidly immune population but rather more likely the result of an efficient Foreign Quarantine Program. Based on a 1967 survey, approximately 88 percent of the United States population have been vaccinated at some time in their life. If a person has a vaccination and does not receive a booster, he will have essentially no protection against smallpox 20 years later. Nevertheless, such a level of vaccination provides a significant level of protection to the population.

"Permitting the immunity of our population to fall off by discontinuing vaccination would place a great deal of responsibility upon the Foreign Quarantine Program. With increasing travel to South America, Africa, and Asia—lands where smallpox still has a stronghold—the danger increases that an infected person in the incubation period may bring the disease back into this country.

"While it is true that vaccination is required for travel to countries where smallpox still exists, the vaccine (like most others) is not 100 percent effective and this factor continues to pose a threat to our Foreign Quarantine Program. The introduction of a case of smallpox into an unvaccinated population can reap disaster. As recently as 1962 a Canadian passed through the Foreign Quarantine station in New York City on his way from Brazil to Canada. He had an apparently valid vaccination certificate and seemed to be in good health. He was permitted to travel on to Canada and, within twenty-four hours, developed smallpox.

"If protection through vaccination is desirable, what then of the complications of vaccination. First, one-half to two-thirds of the
Complications occurring in this country could be prevented if proper attention were paid to excluding persons in the following categories from vaccination: (1) all infants under one year of age; (2) all pregnant women; (3) all persons with eczema or a past history of eczema and those who have close contact with persons having eczema; (4) all persons with an active skin disorder of any type; (5) all persons with an antibody-deficiency disease; (6) all persons with leukemia, lymphoma, Hodgkin's disease, or other disorders associated with a low resistance to infection; and (7) all persons being treated with immunosuppressive drugs, steroids, or radiation therapy. These conditions have been shown to predispose a person to one or more of the complications of smallpox vaccination.

"Secondly, the possibility of developing a less potent vaccine is good. Such a vaccine would no doubt also reduce complication rates.

"The World Health Organization is currently engaged in a promising wide-scale control program. However, until such time as smallpox is conquered in other lands, it remains a threat to the U.S.,” Dr. MacCormack concluded.

Staton Named

(Continued from page 13)

with the Georgia Department of Health and on three Indian Reservations in New Mexico with the U. S. Public Health Service. Jarrett was selected to head the State health agency's Sanitary Engineering Division in 1943.

Staton, a 1951 civil engineering graduate from Clemson, received his master's degree in Sanitary Engineering from UNC-Chapel Hill in 1954. A Wadesboro native, Staton is married to the former Martha Stegall of Morven, N. C. They have one son.

Dr. Koomen also announced the retirement of Mrs. Bertha Bunn—an 18 year employee of Public Health Statistics.

Scott Presents Award

(Continued from page 7)

presentation was made in December by Governor Bob Scott in his office in Raleigh.

The national award is given by the U. S. Public Health Service and Office of Civil Defense to an individual who saves a life using knowledge gained from Medical Self-Help training. Radcliff had earlier completed the course at the Veterans Administration Hospital at Oteen—where he is employed as chief of purchasing and contracting.

"Taking a course like that is sort of like taking a chance on a big prize,” Radcliff admitted. "You think you'll never be a winner—that it always happens to someone else. Now, I am a happy man—I've had my Christmas—a life saved.”

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Editor
Clay Williams

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On the Cover
Hands that hold "the pill" will not rock the cradle — that is, unless they stop taking them. And that's the decision many women are facing — whether to take "the pill." Is this birth control device hazardous, or do benefits outweigh perils? Some medical scientists say yes, others say no. As our accompanying story suggests —it's a decision for a woman and her Doctor.
It is a distinct pleasure to have the opportunity to inaugurate a new series of editorials for the Health Bulletin. For one thing, my comments can symbolize the initiation of changes that will result in an improved bulletin. It is to this that I wish to address my remarks.

For many years, the Health Bulletin has served as a vehicle of communication about public health affairs in North Carolina. Matters of public interest requiring dissemination, such as the adoption of new rules or regulations, are announced through this publication. Matters of general information about developments in the health sciences, improvements in public health practice, and the like, have found wide readership in the Bulletin.

We are now tending to employ more of our own talents in authorship of articles. Public health workers here in North Carolina will increasingly contribute original, topical articles. In addition, we wish the Bulletin to become more of a forum to discuss topics of timely interest, to alert our readers to public health needs, to project future directions for public health practice, even to debate issues.

It is our plan to include, starting with the March Bulletin, a series of columns dealing with activities of our district offices. We feel this feature will be interesting and stimulating.

I think the Health Bulletin can become an even more interesting and relevant communication than it has been in the past. I look forward to its continued progress.
Health Courses Catching On

The first Operating Room Assistant program was begun last September (1969) at Holding Technical Institute in Raleigh—emphasizing the increase in number and scope of Health Occupation courses available within the Community College System in North Carolina.

At Holding Tech, for example, five Health Occupation courses are offered—including a three month certificate program for Nurses’ Assistants, a six month certificate program for Operating Room Assistants, one year diploma programs for Practical Nurse Education and Medical Laboratory Assistants and a two year Associate in Applied Science degree for Medical Secretaries.

The need for technician assistance in hospital operating rooms has become increasingly apparent due to the shortage of professional nurses. The course, therefore, fills a gap in the field of Health Occupations by preparing a person to become a member of a Surgical team.

The program for training Operating Room Assistants at Holding is the only course of its type taught at the present time in the Community College System. Stu-

Mrs. Jackie Murdock (right), demonstrates the correct procedure for putting on rubber gloves—while maintaining a sterile condition. Betsy Weaver, who appears to be having trouble getting her hand through the sleeve of her surgical gown, is characterized by Mrs. Murdock as a good student.

Photos by Clay Williams
Mrs. Barbara Spann, (right) mother of four from Wake Forest, N. C. fulfills a lifelong ambition to work in an operating room. One of the Operating Room Assistant program's most enthusiastic students, Mrs. Spann is well qualified at this point in her training to assist the surgeon in such areas as passing instruments and operating the suction apparatus.

Students receive practical experience in the operating rooms of Wake Memorial Hospital in Raleigh—as well as classroom instructions.

The Operating Room Assistant, working under the supervision of a qualified nurse, aids in the treatment of patients in the hospital operating and emergency rooms, and performs tasks associated with maintaining maximum antiseptic conditions. If an aid shows exceptional ability she may be allowed to help set up the operating room, hand instruments to the surgeon and assist with postoperative dressing.

There are, according to Mrs. Jackie Murdock, instructor in Holding's Operating Room Assistant program, certain basic qualities a person must have in order to be successful in health occupation programs. She pointed out that a cheerful disposition, a sense of responsibility and a willingness to learn, are attributes sought in all applicants.

In order that applicants for the Health Occupation program courses have a clear understanding of the probability of success, the counseling staff and program heads have adopted a procedure of thorough interviewing and testing. If a person is not suited for a particular field an attempt is made to guide him into another type of program. Individual coun-

(Continued on page 6)
counseling is carried on throughout the training program.

The Community College System is becoming more involved in training qualified people in health occupations. Nearly all the 52 member institutions have some programs, and the range is wide. Practical Nurse Education and a two year course in Medical Secretary Science are perhaps the most popular—and are offered by most of the institutions. Others include:

Nurses' Assistant, Dental Hygiene Technology, Dental Laboratory Technology, Medical Officer Assistant, Mental Health Associate, Physical Therapy Assistant, Dental Laboratory Assistant, Medical Laboratory Assistant and Child Care Work. Programs are generally made available in a community when there is a proven need for personnel in various areas of medical technology.

Persons interested in entering the health occupation field should contact the Community College System school in their area for information on the program of their choice.

An important part of the Operating Room Assistant program training deals with learning the proper technique of "scrubbing-up". Mrs. Jackie Murdock (second from left), instructor for the course, inspects the hands of Connie Barbour (second from right). Other students are Betsy Weaver (far left) and Jessie Williams (right).
Less decay — Brighter smiles

More than 50 percent of the population of North Carolina live in areas of the state which cannot receive the benefits of fluoridation through community water supplies. In an effort to reduce the incidence of dental decay among school children in rural areas of the state, the Dental Health Division of the N. C. State Board of Health has begun a demonstration project involving the fluoridation of individual school water supplies.

Since a school year consists of only 180 days and a seven-hour-per-day schedule, the level of fluoridation necessary to produce a maximum reduction in the incidence of dental decay must be greater than the normal amount in a community water supply. Studies have shown that school water fluoridation at levels of from three to 4.5 times the normal amount in a community water supply has proved to be safe and to produce a reduction in the incidence of dental decay by 32 to 40 percent.

During the 1968-69 school year, the N. C. State Board of Health initiated the fluoridation of the water supplies in seven rural schools, at a level of four parts of fluoride to one million parts of water. Included in the demonstration project are Happy Valley, Caldwell County; Bethel, Cabarrus; Seagrove, Randolph; Hobton, Halls and Hargrove, Sampson and Booker T. Washington, Bladen.

At the present time, approximately 3,500 children, ages six through 18, are receiving the benefits of fluoridation through the school fluoridation project.
In discussing the "pros" and "cons" of the pill it is necessary to consider the total problem for which the pill was devised. Basically, the problem is one of population control and family planning.

It is estimated that the world’s population will double during the next 30 years—and double again in the 15 years following that.

Ecologists warn that this is obviously the greatest problem the world faces today. It is fairly easy then to surmise that the population growth will eventually outstrip our ability to provide the basic essentials to sustain life on earth.

What are the possibilities for controlling the world’s population? Traditional methods of family planning have proven unsatisfactory over the years. They are effective when used in the right manner; however, their effectiveness is reduced due primarily to lack of understanding and the inability of many to follow directions.

The pill is a relatively simple mechanism that has proven to be effective. When related to prevention of pregnancies it is probably the ideal form of contraception—compared to other available contraceptive mechanisms. However, the rebirth of the intrauterine device, as another tool, has added an extra dimension to the scope of contraceptive effectiveness.

It is estimated that approximately 85 percent of women can effectively use the pill and a corollary figure of about 85 percent of women can use intrauterine devices. So, who is to choose which

"the Pill"
animals. It was stated also that materials within the pill have produced cancer in animals, but there is no evidence yet that they have produced cancer in a human being. It should be noted that there are many substances which produce cancer in animals that have never produced cancer in human beings. Too, there are many cancers in animals that have never been reproduced in a human being.

Thalidamide produced malformation in human beings, but did not produce such malformations in most test animals. It must be argued, therefore, that the only

way to determine the true effects of a drug on the human population is to use that drug on the human population. It cannot be assumed that a drug's action on animals is directly or indirectly related to humans.

The estimated mortality rate of the pill is said to be three per 100,000 women. Yet the mortality from pregnancy is approximately three per 10,000 women. Therefore the mortality rate of pregnancy is about 10 times that of the pill.

The pill has a potential for producing blood clotting abnormalities in women. It must be noted that aspirin will do the opposite. Yet aspirin has never been termed unusually dangerous. Nevertheless, it is a fact that aspirin kills more people in the United States per year, especially children, than any other known drug. Should we therefore abolish aspirin?

Many drugs have side effects; however, therapeutic advantages under knowledgeable management outweigh potential disadvantages. It is appropriate then to state that the advantages of the pill far outweigh disadvantages.

One additional point is important.

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State Has 50...

Package Disaster Hospitals

In the event of a disaster the United States would probably be faced with an acute shortage of hospital beds and medical supplies, according to Herbert Bateman, chief of the Health Mobilization Section, Community Health Division, N. C. State Board of Health. Bateman estimates that up to 80 percent of all hospital beds would be destroyed, or their use temporarily impaired, in the event of an all out nuclear attack.

With the strategic deployment of 50 Packaged Disaster Hospitals throughout the state, Bateman contends that it is unlikely that North Carolina would be rendered incapable of caring for masses of seriously injured people in the event of a major calamity. A large quantity of vital medical supplies and equipment are contained in the PDH units to help communities meet emergency health requirements.

The Packaged Disaster Hospital program was administered by the Office of Civil Defense until 1960 when it was turned over to Health, Education and Welfare. During most of the period the equipment was stored at 36 federal depots throughout the country. At the urging of medical authorities, a program of decentralization was started during the late 1950s. The argument was that the equipment could best be utilized by placing it adjacent to hospital facilities which serve large segments of population—a determination closely allied to North Carolina’s survival plan.

The PDH’s are provided communities by the Federal Government on an indefinite loan basis. Once the PDH has been received, community leaders are responsible for providing proper storage and custodial care—as well as for conducting predisaster planning and training activities. These conditions are designed to insure adequate utilization under any disaster contingency.

Based upon the severity of a disaster and the planning effected by community leaders, a PDH may be used to expand the operational capability of the community hospital to which it is assigned, or it can be set up as a separate 200-bed hospital in a pre-selected building.

When established as a separate hospital the PDH can provide practically the same general services as a 200-bed acute-type hospital. In which case, a building should be selected that provides: (1) more than one entrance for
proper flow of traffic; (2) adequate toilet facilities; (3) water supply and counter space for laboratory; (4) feeding facilities; (5) laundry facilities; (6) room for wards; (7) X-ray and operating rooms; (8) a large room such as gymnasium for sorting patients; (9) ground floor access for receiving patients and adequate outside space for vehicular traffic.

In the event a disaster occurs requiring the activation of the PDH, other community groups and agencies will be called upon by the local Civil Defense director to provide supporting services necessary for the community hospital to function on an expanded basis—utilizing the PDH facilities.

One of the responsibilities of the Health Mobilization Section of the N. C. State Board of Health, is to coordinate program activities involving the 50 PDH’s now deployed throughout the state. This involves guidelines and assistance regarding storage - maintenance and inspection of PDH equipment, development of utilization plans commensurate with existing community and hospital disaster plans, and implementation of training programs to insure effective use when and if a PDH is activated.

(The water and power section of the Package Disaster Hospital is shown on the back cover).
Statistical Microfilm System Installed

After intensive planning, the Office of Vital Statistics, N. C. State Board of Health, has completed installation of a microfilm system for verifying and issuing certified copies of birth, death and marriage records.

These records are filmed in duplicate by a rotary camera. The operator can film 22 books (500 records per book) per day in contrast to the planetary camera used heretofore on which only four books of records could be microfilmed.

After the records are microfilmed they are sent to a commercial processor who forwards one copy to the Office of Vital Statistics. Upon receipt, each roll of film is placed on the Reader-Filler—used to insert the film into microfilm jackets.

The microfilm jackets make it possible to store about 100,000 records in a 12-inch file drawer. The same amount of records filed in books require more than 54 feet of shelf space.

Certified photocopies are made by inserting the film jacket containing the desired record into a Reader-Printer. This machine enables the operator to view and verify that the record is the one requested and that it is complete.

Four film viewers with large screens have also been purchased, enabling clerks in the Certification, Registration and Marriage and Divorce Units to verify records by telephone quickly and efficiently. Previously books containing these records were subject to be in use by another unit when needed.

Three years of birth records and two years of marriage records have been filed in film jackets. It is expected that a one year accumulation of records will be added each calendar month until all are filed in film jackets.

Advantages of using the microfilm system are obvious—it saves labor and time. The issuance of certificates, using the original record once required from four to
six days after receipt of the request in the mail. The microfilm system records are forwarded in two days.

There is an accelerated demand at the beginning of each school year for certified copies of birth records by first graders, athletes and students who are transferring to another school. Staff members of the Office of Vital Statistics have been hard pressed to meet the demand. Now, the microfilm system of reproducing certified copies of records, will enable the staff to take care of the ever increasing number of requests — efficiently and quickly.

The decision to use the microfilm jacket system was two-fold. First, a corrective record can now be marked or punched out on the film jacket and second, a particular record can be located quickly for reproduction — at much less expense.

The work load of the Office of Vital Statistics has increased nearly 10 percent annually during the past 10 years. It, therefore, became obvious that a system had to be initiated without substantially expanding the present work force or space. The microfilm reproduction system has accomplished this for at least the next 10 years, and it has markedly increased the section's efficiency.

The first CERTIFICATION BOARD OF WATER TREATMENT FACILITY OPERATORS was sworn in last month in Raleigh. The oath was administered by former Governor Dan K. Moore. Members of the board were appointed by Dr. Jacob Koomen, State Health Director. Pictured above are (left) Dr. Koomen, Governor Moore, and W. J. Stevenson (chairman), chief, Engineering Section, Sanitary Engineering Division, N. C. State Board of Health. (back row, left) Harold Falls, water treatment chemist, Concord; Lee S. Dukes, asst. superintendent of water, Charlotte; John L. Brown, Jr., sanitary engineer, Cannon Mills, Kannapolis and John F. Pagett, city manager, Forest City.
State Begins Food Study

Nutritionists from the Community Health Division of N. C. State Board of Health began comprehensive statewide nutrition survey in January to determine the extent of malnutrition in North Carolina.

Disturbed by evidences of malnutrition that came to light during his campaign, Governor Scott requested that the National Nutrition Survey (a current nationwide nutrition sampling by the U. S. Public Health Service) be expanded to include North Carolina. Informed in late summer (1969) by HEW Secretary Finch that no additional states could be added, Scott turned to the N. C. State Board of Health. Thus, North Carolina became the first state in the nation to undertake an extensive nutrition survey on its own.

Some 15 Nutrition staff members are working on the survey. About 2,000 families from all economic categories—both rural and urban—will be selected at random across the state. The selection of households will be made by the Public Health Statistics Section of the State Board of Health and the Division of Statistics of the Research Triangle Institute.

Main objectives of the survey will be to determine the percentage of the state's population with adequate and inadequate diets and factors which influence diets—such as economic status and nutrition knowledge. Using laboratory determinations, the surveyors will carefully probe for nutritionally related anemia and growth retardation among preschool children.

Findings of the survey will be made available to guide interested groups in strengthening existing services, as well as developing new action programs for the purpose of stabilizing the hunger problem in North Carolina.

the Pill

(Continued from page 9)

Tant. Most problems associated with any drug are usually associated with negligence in use. The pill can certainly be considered one such drug. People take the pill indiscriminately without adequate medical counseling and, in many instances, the pill is prescribed by physicians without adequately counseling the patients. This, to be sure, is not the problem of the pill. To the contrary, the problem is in the way the pill is used.

Our attention must also be focused on the problem of criminal abortion sometimes resorted to by women with unwanted pregnancies. The mortality associated with criminal abortion is legend.
A second allotment of funds has been made by the U. S. Public Health Services to purchase enough rubella (German measles) vaccine to immunize over 200,000 North Carolina children in the lower income bracket during the next two years, according to Henry Woodard, project coordinator for the N. C. State Board of Health Immunization Activity Control Program.

The State Medical Society’s Committee on Control of Infectious Diseases, in concurrence with recommendations of the U. S. Public Health Service Advisory Committee on Immunization Practices, has recommended that the rubella vaccine be withheld from pregnant women and that caution be exercised in immunizing all women of childbearing age. Specialists advanced the precautions since the vaccine contains a live virus which can produce the congenital rubella syndrome (birth defects) in babies.

In 1964 rubella as it is commonly called, swept the United States. An estimated four percent of all pregnant women in the United States at the time fell victim to rubella — causing about 20,000 children to be born with birth defects. An equal number resulted in fetal deaths.

Nationwide priority is being given to the five to nine age group. Woodard estimated that there are over 500,000 children of all economic levels in the State that should be immunized against rubella. He revealed that immunization for children age one to puberty would be made available as soon as the vaccine is received by the State.

In recent years, rubella was thought to be a relatively mild childhood disease. In 1941 an Australian eye specialist, Dr. Norman Gregg, related a very high incidence of cataracts to children born of women who had experienced rubella during the 1940 epidemic in that country. Dr. Gregg’s findings prompted a reassessment by specialists of children born at that time with other birth defects to determine whether a relationship existed.

The rubella virus was isolated in 1962. The breakthrough came in the development of an experimental vaccine by Drs. Paul Parkman and Harry Meyer. This strain has been widely tested in the United States. Since 1969 three pharmaceutical firms have been licensed to manufacture it. The licensing of the rubella vaccine can be instrumental in the medical community’s effort to prevent or alter future epidemics.
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On the Cover

Dead men do tell tales. Dr. R. Page Hudson, North Carolina's chief Medical Examiner, checks a human skull for indications which can reveal age, race, and sex. Expert medical skill can also determine how long a person has been dead and whether there are clues as to the cause of death. In many cases, such findings are invaluable in identifying a body.
Events during the past few years have brought about renewed emphasis on planning in the field of public health.

Modern methods of administration, management, and system analysis are but a few of the innovations being incorporated into planning activities. The opportunity of telling the public health story in a new, dynamic way, is an important consideration—competition for means to carry out such programs notwithstanding.

The development of community health councils, area-wide health planning bodies, and related groups, is focusing attention on the necessity to take an overall look at our health needs. Integration of now-fragmented health services, more accurate identification of problems, the evolution of a regional approach to health care, are all important aspects of health planning.

Established agencies and organizations, such as local health departments, will be challenged to present their programs in a manner that describes their effectiveness and impact on the tenor of community health.

To many, planning will no doubt be just another chore. To most, however, health planning will present an opportunity to improve both the extent and quality of health services. To such an end, health workers and their supporters must make a commitment to learn the discipline of health planning and apply it to the solution of community health problems.
Alcohol causes more deaths in North Carolina than all homicides and suicides. Medical authorities say one fifth of 100 proof whiskey (50 percent alcohol) can kill the average individual—if consumed within a three hour period. A lesser amount can cause coma. The trick is whether a person's body can push off excess alcohol consumed before unconsciousness occurred.

Dr. Hudson

The Medical Examiner System: Science Prevails

The office of the State Medical Examiner is a division of the N. C. State Board of Health. It functions in cooperation with the Pathology Department of the UNC Medical School. Offices are located on the UNC campus in Chapel Hill.

(Photos by Bill Brinkhous, Chapel Hill)
"It appears we have reached the point in our civilization when the office of coroner must either be severely altered or completely replaced." The notion was expressed recently by Dr. Page Hudson, Jr., North Carolina's first Chief Medical Examiner.

Dr. Hudson pointed out that the coroner's office is on its way out in many states—along with midwifery, the lay bonesetter, justice of the peace and granny's herb patch.

"It has been encouraging to find among supporters of the medical examiner system dedicated coroners who have been doing the best job possible under handicaps inherent to that office. Many have told me that they are asking their legislative representatives to initiate action which would remove the Office of Coroner from the statutes at the next legislature," Dr. Hudson disclosed.

The act establishing the medical examiner system in North Carolina was passed by the 1967 General Assembly. The law gives the medical examiner broad and potent authority in determining the causes of deaths which occur under questionable circumstances. Over 11,000 of North Carolina's anticipated 45,000 deaths during 1970 are expected to fall into this category.

According to Dr. Hudson, an investigation is usually ordered when death occurs under violent, unnatural, suspicious or unwitnessed conditions. Possible homicides, suicides, as well as unattended deaths, are also given close scrutiny. The aforementioned categories of death cannot be likened to death that occurs from some disease process being treated by a physician—a disease known to be the cause of death.

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The medical examiner and the police often work together in the investigation of a death. Many deaths do not appear to be "police cases" at first glance. Sometimes it is the medical examiner who is in a position to alert the police and solicitor that a possible criminal situation exists.

Fulltime medical examiners have facilities and laboratories for autopsy, toxicological examinations and criminalistics. They are, therefore, in a position to examine trace-evidence (finger prints, bits of tissue, hair, etc.) and make other studies which may be necessary.

There are approximately 225 medical examiners in the 50 counties now participating in the medical examiner system. Last year nearly 3,000 reports (including autopsy reports) were forwarded to the Chief Medical Examiner's office—located at the UNC medical school (Chapel Hill). When all 100 counties come under the medical examiner system (probably during 1970), it is estimated that reports will increase to 12,000 a year. The reports are made available to solicitors, police officials, families, insurance companies, and others having responsible concern in a particular case.

Total operating expenses to the state and all participating counties for 1969 was slightly over $300,000. Occasionally, the money in a single case, in which a medical examiner is involved, equals the entire budget.

A case in point: The coroner concluded that the deceased died of natural causes. The family contended it was an accident. The office of the Chief Medical Examiner opined that it was suicide. At stake were proceeds of an insurance policy amount-
Dr. Arthur McBay, toxicologist attached to the Chief Medical Examiner's office, checks a container of blood for possible alcohol content. Autopsy is not always revealing as to circumstances which might have caused death. In which case a toxicological workup becomes paramount.

A man is found dead

ing to $250,000. The result was that the family received only the amount of the premiums paid—not the $250,000 face value of the policy—not $500,000 double indemnity that might have been collected had the decedent’s death been adjudged an accident—as per the family’s contention.

Other cases of record poignantly point up the value of expert medical evaluation in questionable deaths:

A man is found dead on his porch. Rumors abound that a bullet hole had been found in his head. The medical examiner's investigation revealed no such wound—further that the man died of a heart attack.

Nearly all jail deaths (about 30 each year in N. C.) bring anguished cries of police brutality. “Nearly all such claims are unjustified.” Dr. Hudson counters. “On the other hand, in cases where such claims are valid, we want to be in a position

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to reveal the facts as they exist.

"In several instances in which a burned body was found after a house fire, an expert examination of the body revealed that the person was dead before the fire. In some instances, it was possible to show that the person died of natural causes, in others it was possible to show that the victim had been murdered before the fire," Dr. Hudson explained. "In three separate instances, investigations of sudden unexpected, but otherwise routine deaths of children, it was discovered that they had a highly contagious form of meningitis. The discovery made it possible to treat those with whom the children had come in contact and, possibly, avert epidemics."

Dr. Hudson called attention to the fact that many criminal and civil trials have been avoided, or made shorter, because a medical examiner was able to give an expert opinion. "This service has resulted in tremendous savings for individuals, counties and insurance companies," he noted.

"In the most expert and professional hands the determination of the ‘cause and manner’ of death is often very difficult," Dr. Hudson said. "It is logical that the decisions of ‘cause and manner’ of death be made by persons having medical and scientific knowledge, as well as specific training and experience in those areas surrounding sudden, unexpected, unusual or violent deaths.

"The medical examiner system takes superstition, politics and ignorance out of the area of determining the ‘cause and manner’ of death and allows modern techniques and scientific knowledge to prevail."
Radiation . . .
A Domestic Problem?

Recently there has been considerable public concern over possible X-ray hazards from color television sets and radiation leakage from microwave ovens. According to Dayne Brown, chief of the Radiological Health Section, Sanitary Engineering Division, N.C. State Board of Health, authorities share this concern. Brown pointed out, however, that the problem has been magnified in some cases by misinterpretation of the problem as reported in the news media.

At the present time the Sanitary Engineering Division's Radiological Health Section has responsibility and regulatory authority for X-ray and radioactive material in North Carolina. No state agency, however, is charged with responsibility for public health as it pertains to microwave radiation.

In order to make an accurate determination of possible microwave oven problems in North Carolina, the Radiological Health Section is taking steps to perform a radiation survey of ovens in various areas of the state. The results of this survey should indicate the true scope of the problem and what measures, if any, should be taken to resolve it.

What are the dangers from color television and microwave ovens? "Color television sets can produce X-rays if the picture tube voltage is set higher than the manufacturer's recommended setting (25,000 volts), or if the high
voltage shunt-regulator tube (the tube that maintains constant high voltage) becomes defective," Brown revealed. "The problem is peculiar to color sets because they must have a shunt regulator tube which is much like an X-ray tube in design. Black and white sets do not use this tube and are not considered a hazard.

"The nature and location of the radiation in a defective set is such that, under normal viewing conditions, a child would have to view the set at close range (about three feet) for many years before receiving significant radiation exposure. However, this radiation is unnecessary and undesirable. No radiation exposure is good unless there are benefits to be gained—as in the case of medical X-ray. Too, there is no reason why a color set should emit X-ray in the first place.

"Microwave ovens are different," Brown explained. "The objective here is to generate enough radiation to cause heating in food. Unlike X-rays, microwaves are high frequency radiowaves. Exposure of the eyes to relatively low levels of microwave radiation can produce cataracts. There may even be more serious effects. Very little is known at present about the biological effects of this radiation.

"Since the microwave oven is designed in a manner to prevent the escape of radiation—even if the door is opened," Brown continued. The attractive feature is that these ovens cook food exceptionally fast (a hamburger can be cooked in only 30 seconds).

"Recent surveys have shown that a large number of microwave ovens have radiation leakage in excess of proposed acceptable levels. Switches designed to turn the oven off when the door is opened can fail or get out of adjustment. Door seals can become defective due to grease build-up and cause radiation leakage. Poor oven design and quality control can also result in radiation leakage."

The radiation expert recommends that color television set owners have a serviceman check and adjust high voltage to the manufacturer’s recommended setting—do not allow children to play under or directly beside the color set—maintain a viewing distance of at least three feet.

Brown suggests also that children not be allowed to look into the microwave oven at close range while cooking (stay about two feet from the oven door)—do not insert any object through the viewing window or the door seal—do not open the door while the oven is on—keep the oven and door seal clean and free of grease—have all mechanical and visual defects checked and repaired.
Judi Warren, secretary in the Radiological Section of the N. C. State Board of Health, checks the seal in a microwave oven. Radiological experts say it is important to keep the oven seal clean and smooth. They point out that an accumulation of grease will prevent the door from closing properly—sometimes resulting in pitting the surface of the seal. It is possible for such a condition to lead to a radiation leak.

The U. S. Public Health Service has established limits for X-ray from color television. Manufacturers must design and build sets which will meet these limits. Performance standards for microwave ovens are also being developed—standards which should minimize or eliminate associated radiation hazards. Ovens will be required to meet these standards.

March 1970
Lab Tests Quash Water Borne Diseases

There has not been a case of typhoid fever traced to a public water supply in North Carolina in over 30 years. Prior to that time typhoid and similar water borne diseases were prevalent health hazards, according to Dr. Lynn C. Maddry, director of the Laboratory Division of the N. C. State Board of Health.

Dr. Maddry attributes the almost total extinction of these diseases to better sanitation and proper survey of public water supplies. "Urban dwellers are very much aware of the quality of municipal water supplies," Dr. Maddry noted. "Rural water supplies have also come in for much closer scrutiny during recent years. The State Water Laboratory averages over 2,500 analyses of home and municipal water supplies each month."

The Water Laboratory was established in 1905 by an Act of the General Assembly. The Laboratory was granted a meager appropriation of $500. Owing to the limited allotment of funds, arrangements were made with the N. C. Department of Agriculture to do the chemical analysis. A UNC professor was hired to make the bacteriological examinations.

At that time only 25 cities and towns had public water supplies. In 1907 the State Legislature increased the Laboratory's appropriation to $2,000 and initiated a $5. fee in order to pay the professor for his work. The fee was supposed to make the Laboratory self-supporting. The same $5. fee is still charged today. Towns and cities, on the other hand, are charged from $15 to $64 per year—depending upon the quantity of water sold.

At the present time there are over 1,800 public water supplies in North Carolina. Each sends a sample to the Water Laboratory in Raleigh each month for a bacteriological analysis. Two samples are sent each year for a partial mineral analysis. All water supplies that add fluoride submit a sample once a month to determine whether the fluoride content is at a desired level.

How does a private citizen go about maintaining a wholesome water supply? First, the supply should be constructed in a manner to prevent pollution from surface water. Pollution is usually caused by surface water or insects and small animals getting into the well or spring. Very seldom is ground
water in North Carolina polluted.

An economical and wise course of action is to contact your County Health Department and have a sanitarian make an environmental survey of your supply. Then, have the supply checked occasionally to make sure it is safe. Always follow the sanitarian's recommendations.

An individual may elect to have his private physician collect the sample for examination by the N. C. State Board of Health's Water Laboratory. There is no charge for an analysis collected in this manner. Of course, the physician probably will charge for a house call. This procedure enables the owner to obtain an interpretation of the report from the physician.

The owner may, if he wishes, collect and submit his own sample. The report will be mailed to him—and he will be charged the routine $5 fee. However, physicians and sanitarians are trained to collect water samples in a manner that will enable the Laboratory to make a representative analysis.
Regional News

Asheville Office
The staff of the Western Regional Office has made a complete study of Yancey County to gather data which, hopefully, will show indices of the population, health resources and manpower, existing health programs and needs of the county. The information is in the process of being analyzed. Seven members of the staff met with staff members of the Yancey-Mitchell Health Departments to review the data collected.

Fayetteville Office
Joseph N. Moore has been promoted to district epidemiologist by the U. S. Public Health Service and stationed in the Southeastern Regional Office in Fayetteville. Larry Zyla was also promoted and transferred to Houston, Texas.

The team was briefed on planning by Dr. Burns Jones, Gene Barrett and Howard Ellis last month. Other orientation meetings will be held in April preparatory to implementing the planning exercise throughout the region.

Mrs. Gail Matthews and Mrs. Madge Pittman are to be commended for their diligence in re-organizing the office's filing system and library. Correspondence and reference material are now readily available.

Asheboro Office
David Y. McBrayer reports progress toward providing approved sewerage facilities for Lake Lure and Chimney Rock. Construction is underway on the Lake Lure part of the project. McBrayer, on special assignment, has been promoting local funding for the undertaking.

M. O. Caton participated in the Utilities Management School recently sponsored by the Institute of Government, UNC-Chapel Hill. He spoke on ‘Water Treatment Emergencies — Accidents and Natural Causes.”

Keith N. Oates, (center), N. C. State Board of Health, has received a Commendation from the Naval Medical Field Research Laboratory, Camp Lejeune, N. C., for contributions in a survey of areas which produce enormous populations of mosquitoes and gnats. The Commendation was presented by Captain Jesse F. Adams, (left), MC USN, commanding officer of the Research Laboratory. Shown also is Captain John M. Hirst, MSC USN.
Some 300 health workers gathered in Raleigh recently for the unveiling of an oil painting of J. M. Jarrett, who retired as director of the Sanitary Engineering Division, N. C. State Board of Health, in December. The painting was presented to Dr. Jacob Koomen, State Health Director, by Dr. H. G. Baity, world-renowned sanitary engineer whose home is in Chapel Hill. It was determined that the painting would hang in the Sanitary Engineering Division at the N. C. State Board of Health headquarters in Raleigh.

An endowment fund was also established in Jarrett's name. The fund will support the purchase of a plaque to be awarded each year to any person in the state who, in the opinion of a committee representing sanitary engineers and allied professions, has performed exemplary work in the field of environmental health.

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On the Cover

Tina and Gina Faircloth, daughters of Mr. and Mrs. Carl H. Faircloth of Fayetteville, are the United Cerebral Palsy fund raising campaign's poster children for 1970. The seven year old twins are now in the second grade—receiving special schooling for handicapped children. The program is part of the Fayetteville Public School system. The girls were diagnosed about four years ago. Since then they have received surgery and other therapy at the Cerebral Palsy Hospital in Durham.
Mr. Eaton

With the development of community and urban life has evolved the concept of public health rights and responsibilities.

The implementation of public health was not self-executing. The concept has been accepted for many years as fundamental. Its progress, however, has been gradual as patterns of environmental living, scientific advances, new ideas and philosophies have taken hold.

First the need for health programs had to be defined, and administrative procedures established. From emerging demands, have come public health laws, rules and regulations, county and municipal ordinances governing health problems. Grounded in either statutory or common law, health programs became effective realities.

Only on rare occasions is the arm of the law exercised in health matters. In so doing, constitutional and moral rights of the individual are closely adhered to. Education and persuasion are our major tools in achieving public support. Only as a last resort is forcible enforcement employed—and always for the public good.

Dynamic inquiries and studies are under way which have aroused public interest and concern in “Public Health and Related Laws”—such as pollution of water, air, and other environmental resources. This may necessitate more specific public health laws in the areas of investigation and enforcement to accommodate needs of the future.
The complexity and inclusiveness of modern medical equipment was never more manifest than in the 12 channel Sequential Multiple Autoanalyzer.

In only two minutes the instrument can analyze the chemistry of a patient's blood. Findings may indicate the presence of any one (or combination) of 40 different diseases.

The N. C. State Board of Health has two Autoanalyzers at its headquarters in Raleigh. They cost a total of $70,000 three years ago. According to Mrs. Maxine Matheson, head of the Biochemistry Section, "they have proven invaluable—especially in our multiphasic screening program."

The apparatus can accomplish in six hours a battery of tests that would take a laboratory technician about two months to perform manually—at a cost of about $120 per patient if each test was done separately. During an eight hour day the instrument can analyze the blood chemistry of 150 people, measuring accurately in each the concentrations of 12 chemicals normally present in blood serum. At the same time results are recorded on a separate graph sheet for each person.

Serum samples, which come almost entirely from clinics, county health departments and state institutions, are analyzed on the day of arrival. Gross abnormalities are telephoned immediately to the sender. Total cost per specimen—about $2.20. "The cost will drop as the number of specimens increase," Mrs. Matheson ventured.

When a doctor checks a chemistry graph, (only a doctor can interpret the sophisticated information), he can quickly see what tests are abnormal. When two or more are abnormal, they sometimes form a pattern which may provide clues that indicate what further information he should seek. Clues may indicate heart, kidney or liver diseases, diabetes, blood disorders, gout, anemia, malnutrition, allergies, bone diseases and other physical malfunctions.

Due to the types of tests the Autoanalyzer is set up to do, blood serum is required. A centrifuge process is used by the sender to separate red blood cells from the serum. At least five cubic centimeters of serum (one teaspoonful) is needed for the 12 tests.

Forty specimens are placed in small cups on a rotating rack at one end of the Autoanalyzer. A tiny metal tube dips automatically

Blood Chemistry Profiles ... early aid to diagnosis
THE SEQUENTIAL MULTIPLE AUTOANALYZER, with its maze of glass and plastic tubing and coils pulsating with colored fluids, has a futuristic appearance appropriate to such an advance piece of medical machinery. The only hand operation in the whole procedure is the placing of the serum in a vial and setting the vial in a slot in a rotating wheel. Test results come from the analyzer consecutively, recorded by a stylus on one prepared chart. The chart is printed with shaded areas to show the normal range for each chemical being tested.
into each cup and draws the serum into a tube for its trip through the analyzer. Each specimen is pumped through a maze of plastic tubing of varying diameters and volumes—ultimately through four proportioning pumps where it is divided into 12 streams.

Each portion of a specimen is separated by an air bubble as it winds its way through the instrument. The air bubble is injected into the tubing before and after each specimen is taken from the cup. A measure of distilled water follows between the air bubbles to wash out the tubes.

The portions of each specimen in the 12 streams are mixed with various chemicals which react with certain chemicals in the serum. A total of 32 chemicals are used in analyzing each portion of serum. Nine of these chemicals are unstable and must be prepared fresh each day. Some of them must be refrigerated as they are being used. Addition of the chemicals to the portions of serum as they move through the instrument’s pumps, tubes and coils produce a variety of colors in the serum.

The intensity of the color is directly proportional to the concentration of a given chemical in the serum. When specimens pass through “flow cells” in the final stages of the test (one every two minutes), phototlectric eyes measure the intensity of light of various wave lengths passing through the specimens and translates readings into figures showing the amount of each blood chemical present.

Every 10th specimen passing through the instrument is a “standard” specimen with known values for its chemical readings. Any variation in the readings is instantly detected and the instrument is checked and adjusted.

Coupled with the Multiphasic Screening program, the Sequential Multiple Autoanalyzer can serve as a vital link in detecting abnormalities in blood chemistry. Tests have become instrumental in providing information on organs and organ systems considered to be affected by degenerative diseases in later life.

State Health Board Meets

The N. C. State Board of Health, meeting in Raleigh March 18, 1970, took the following actions:

- Approved a resolution from the city of Greensboro to permit recreational activities on Lake Townsend—a municipal water supply reservoir.
- Approved a resolution from Lake Orange, Inc. to permit recreational activities on Lake Orange—the municipal water supply for the town of Hillsborough.

Information concerning these resolutions may be obtained from the Sanitary Engineering Division, N. C. State Board of Health, Raleigh, N. C.

- Approved a regulation concerning the purchase, storage and ingestion of alcohol for research purposes.

Copies of this regulation may be obtained from the Epidemiology Division, N. C. State Board of Health, Raleigh, N. C.
The spirometer test (above) measures the forced expiration of air exhaled from the lungs in a given amount of time. Results indicate whether additional lung studies are necessary for complete diagnosis.

**Multiphasic Screening...**

**A Stitch In Time**

By

Isa C. Grant, M.D., M.P.H.
Chief, Chronic Disease Section

Dr. Jacob Koomen, State Health Director, recently said, "Our greatest public health problem today is the prevention and control of chronic diseases. Information obtained of occurrence of these diseases results in early identification. This, followed by proper treatment, can bring many cures and prevent total disability in most individuals."

cont. on next page
A program that is being tried in several North Carolina communities is multiphasic screening. It refers to a screening of various groups with several standard tests. The tests identify characteristics about individuals that may be out of normal range. A physician makes the judgment as to whether those with abnormalities are referred for further diagnosis and treatment.

The present measurements include height, weight, blood pressure, chest x-ray, forced vital capacity (expiration) in one second (lung function test), urinalysis, pap smear for females, and serum chemistry profile. The latter procedure utilizes the Sequential Multiple Autoanalyzer. Twelve blood chemistries are measured by this machine simultaneously.

Other tests done at some of the centers are for vision, hearing, intraocular tension (for glaucoma), hematocrit (hemoglobin test) and E.K.G. In each community the decision on who will come to clinics is made locally. Also, after screening the patient is referred to the physician of his choice or a community service clinic.

The tests are conducted by well trained individuals, not physicians. Advantages are that conditions that do not have symptoms may be detected early enough to prevent late complications and thereby, offer a better chance for cure. Also the use of non-medical personnel effectively frees the physician so that he may spend more time with those individuals who are affected—not primarily with a neurosis, but with chronic disease in its early stages.

Also it gives each individual opportunity to learn more about his own physical body and the special precautions that he must observe to stay well. The chief danger is that an individual will assume a screening test is as good as an examination and not have a follow-up if indicated.

It should be made clear that screening is only a part of a physical examination. But if the physician has this information before he examines the person it can be of invaluable assistance to him in determining diagnosis and treatment.

The most frequent confirmed diagnoses have been diabetes and hypercholesteremia—both chemical tests. Other diagnoses made during follow-up include several type cancers, heart disease and high blood pressure, emphysema, alcoholism and many others. The program has now been in operation two years and over twelve thousand patients have been screened.

Multiphasic clinics are conducted in a number of states and facts vary from those mentioned above in many ways.

Your local health department can tell you whether or not there is one near you and what patients are eligible for the service in your locality.
"Mad dog! Mad dog!" — words that once struck terror in the citizenry of nearly all cities, towns and rural areas of the state. Today, rabid dogs are "scarce as hens' teeth" in North Carolina. Yet, only 15 years ago rabies was rampant from the mountains to the sea.

Why the drastic decline in this scourge—from which there is no recovery for man? Certainly, there are more dogs in North Carolina than there were 15 years ago. Dr. John I. Freeman, chief of the Veterinary Public Health Section, Epidemiology Division, N. C. State Board of Health, points out that the number of laboratory-confirmed cases of rabies has dropped from 200 per year to a mere two or three.

"Rabies is transmitted from animal to animal and to man through a bite wound," Dr. Freeman explained. "The virus, which is in the saliva, must be carried through the skin and deposited into the underlying tissues. Though the rabies virus can only survive in living tissue, the infection is always fatal to both animal and man. The virus is usually passed to another animal or to man during the period when an animal shows clinical signs of rabies."

The public health approach to rabies control, according to Dr. Freeman, has been directed toward protecting man from the most probable source of rabies virus, to wit—his dog. "Realistically, man cannot be protected against dog bites, but the biting dog can be protected against infection with rabies virus."

There are 72 county rabies control programs in North Carolina whose primary objective is to immunize dogs against rabies. Another part of the program is to remove from the community stray or unwanted dogs. "It is this systematic approach to rabies control that has reduced the risk of human exposure to the rabies virus in the state." Dr. Freeman disclosed.

"The key to rabies control is immunization of dogs. This program must continue on a day-to-day and year-to-year basis." Dr. Freeman said.
Each year, some 25,000 infants are born with multiple handicaps of cerebral palsy throughout the United States—about one in every 170 live births. Nearly three-quarters of a million children and adults are afflicted with cerebral palsy—250,000 under 21 years of age. Although cerebral palsy is not a condition reported to public health authorities, it is estimated that there are 16,000 cases in North Carolina at present.

Cerebral palsy is a leading crippler of children, according to Eric Ritzen, representative of the United Cerebral Palsy Association for North Carolina. "It is a life-long disorder—the result of injury or damage to the brain's muscle control center," Ritzen stated. "It happens most frequently before or during birth. Many times it takes several years before a positive diagnosis can be made.

"Premature birth, insufficient oxygen reaching the fetal brain, blood type incompatibility, lead paint poisoning, and viral infection such as German measles are some of the known causes of cerebral palsy. But many causes remain unknown," Ritzen revealed. "In 40 percent of the cases, doctors are at a loss to pinpoint the reason for its occurrence."

What can be done about cerebral palsy? United Cerebral Palsy Associations—a national network of 45 state and 259 local affiliates, emphasize two approaches—local services, and research and training programs. For those already afflicted, local cerebral palsy groups provide a concentration of special services and programs designed to lessen the impact of the disorder on the individual and his family.

Throughout the state, the United Cerebral Palsy Association provides "home services" for people with cerebral palsy and their families. In cooperation with local health departments they assist in caring for the long-range, time consuming needs of these people. The program consists of therapy and teaching the family treatment techniques, social work guidance, special education, providing transportation to treatment centers, assistance in the selection of adaptive toys, clothing and equipment of a non-medical nature and helping families through periods of emotional stress.

Another approach focuses on cerebral palsy prevention through research into unknown causes of
the disorder, and improving current treatment methods. These activities are the responsibility of the United Cerebral Palsy Association Research and Educational Foundation, which supports medical scientists in studies related to cerebral palsy. The Foundation, separately incorporated, is supported mostly through allocation of income by affiliates.

During the past 10 years the National office has made research and training grants in the amount of $136,436 to the Duke Medical School, UNC School of Medicine, N. C. Cerebral Palsy Hospital located in Durham, and N. C. State University.

"With the licensing of a vaccine against German measles, the Association has undertaken an intensive education effort to alert the public to the importance of thwarting an epidemic of German measles — expected in 1970-71. While German measles is virtually harmless to children, it is, nevertheless, a major cause of cerebral palsy and other serious birth defects," Ritzen explained.

The youngster (left) is enrolled in a Cerebral Palsy Day Care Center. The teacher is specially trained to help handicapped children reach their maximum potential in dexterous competency.
Our most serious and widespread chronic disabling disease is arthritis or rheumatism. These names are used to refer to any ailment marked by pain in the joints or muscles. About one out of every 15 North Carolinians over 14 years of age are affected.

Of every 100 patients complaining of this disease and seeking medical help about 40 may have rheumatoid arthritis. Thirty may have osteoarthritis and 15 may have muscular rheumatism, neuritis, and sciatica. The rest may have arthritis due to injury, gout, or rheumatic fever or a variety of less common forms.

The younger person more frequently has rheumatoid arthritis though it may affect any age. More women are affected than men. From 10 to 25 percent become progressively disabled and invalided.

Osteoarthritis comes to many people at or past middle life. It contributes to the aches and pains that come with passing years. Traumatic arthritis may be caused by injury to a joint at any age. Gout, perhaps the most painful, is due to metabolism changes. This is a form of the disease for which there is a specific drug that offers cure. There are other rare types that a physician can identify after careful study of the patient.

Probably the most frequent question asked is—do we have any hope for helping the arthritic? Research has recently found a protein substance in the blood of rheumatoid arthritics which has been called the rheumatoid factor. The exact role is currently under intensive investigation. As a research tool it has opened a new area of study which could shed light on the mechanism of the disease, its cause and development. It has made possible a number of diagnostic tests. The research it engenders may ultimately lead to a specific cure for this still incurable disease. Intensive research programs continue.

There is reason for hope, too, from the N.C. Chapter of Arthritis, Inc., located in Chapel Hill. They participate in a national program of research and education. Their support comes from all citizens who are interested in conquering this disease. They offer to all who

Pain In The Joint

By
Dr. Isa C. Grant
Chief, Chronic Disease Section

THE HEALTH BULLETIN
April 1970
These are hands of a patient with rheumatoid arthritis. Note the nodules (enlarged knuckles) and abnormal positions of fingers due to fixed joints. The fingers are drawn because of calcification of tendons and joint capsules.

want to know more about arthritis pamphlets on any phase or on newer methods of treatment. You may obtain these by writing to the N. C. Chapter of Arthritis, Drawer 311, Chapel Hill, N. C.

Hope lies also in newer methods of physical therapy, surgery, and drugs now available. Since there are so many different kinds of arthritis and different kinds of people, only study in a physician’s office can tell which would benefit any particular patient most.

Generally, even though “it hurts,” it is better to move the affected joint. Danger lies in using drugs of secret composition and high price frequently distributed by quacks.
ASHEBORO REGIONAL

Through the efforts of Dorothy Hays and Etra Wood, the Asheboro Regional staff and representatives of several local health departments participated in a conference on health aspects of the Model Cities Program. The promotion, planning, and application of the program in Charlotte was explained by state and local people involved in this project.

GREENVILLE REGIONAL

The staff of the Greenville Regional Office has completed the Planning Exercise with the Exercise Team from the Planning Office. A team of three volunteers began teaching planning methodology to the staff of the Craven County Health Department in April. Technical assistance is available from the Planning Exercise Team.

WESTERN REGIONAL

The new high rate water filtration plant at Mt. Airy was placed in service recently.

A modern addition to the Memorial Hospital of Southwestern North Carolina at Andrews (Cherokee County), was formally inspected recently by representatives of the State Board of Health and other interested organizations and individuals.

William A. Broadway attended the Spring Executive Committee meeting of the National Environmental Health Association in April. The meeting was held in Denver.

The new Buncombe County Health Department building is expected to be ready for occupancy by August.

“Enough Said”

The newspaper headline read:

“Coffee Stress to Pancreas Cells Possibly Exacerbates Diabetes.”

Further:

“There is considerable scientific evidence to support each of the following views:

- Smoking is conducive to bronchogenic carcinoma.
- Alcohol in any form, i.e., wine, whiskey, liquor, etc., produces a hepatic stress reaction which may lead to hepatic cirrhosis.
- Foods rich in saturated fatty acids predispose one to cholesterolemia and, possibly, atherosclerosis.
- Foods rich in purines predispose one to gouty arthritis.
- Foods rich in carbohydrate predispose one to obesity and hypertension.
- Persistent emotional stress predisposes one to ulcers and coronary artery disease.
- Women tend to drive men into neuroses and, occasionally, major psychoses.
- Men tend to drive women into neuroses and, occasionally, major psychoses.
- Dairy products predispose one to early arteriosclerosis.
- Sex is leading inexorably to world overpopulation and eventual chaos.

“Accordingly, in order to promote better community health, each of the above named disease-producing agents must be ruthlessly stamped out.” Anyone for the bomb?

Medical Tribune.
# State Of North Carolina Vital Statistics Summary

<table>
<thead>
<tr>
<th></th>
<th>1970 January</th>
<th>1969 January</th>
</tr>
</thead>
<tbody>
<tr>
<td>Births</td>
<td>8,067</td>
<td>8,025</td>
</tr>
<tr>
<td>Deaths</td>
<td>4,213</td>
<td>4,583</td>
</tr>
<tr>
<td>Infant Deaths (under 1 year)</td>
<td>220</td>
<td>261</td>
</tr>
<tr>
<td>Fetal Deaths (stillbirths)</td>
<td>134</td>
<td>115</td>
</tr>
<tr>
<td>Marriages</td>
<td>2,918</td>
<td>3,108</td>
</tr>
<tr>
<td>Divorces and Annulments</td>
<td>926</td>
<td>764</td>
</tr>
</tbody>
</table>

### Deaths from Selected Causes

#### Diseases of the heart (all forms)
- 1970: 1,542
- 1969: 1,585

#### Cancer (total)
- 1970: 576
- 1969: 557

#### Cancer of trachea, bronchus and lung
- 1970: 115
- 1969: 97

#### Cerebrovascular disease (includes stroke)
- 1970: 541
- 1969: 507

#### Accidents
- Motor vehicle
  - 1970: 146
  - 1969: 105
- All other
  - 1970: 138
  - 1969: 127

#### Diseases of early infancy
- 1970: 99
- 1969: 87

#### Influenza and pneumonia
- 1970: 205
- 1969: 509

#### Bronchitis, emphysema and asthma
- 1970: 83
- 1969: 68

#### Arteriosclerosis (hardening of arteries)
- 1970: 57
- 1969: 67

#### Hypertension (high blood pressure)
- 1970: 28
- 1969: 26

#### Diabetes
- 1970: 73
- 1969: 92

#### Suicide
- 1970: 34
- 1969: 47

#### Homicide
- 1970: 47
- 1969: 39

#### Cirrhosis of liver
- 1970: 52
- 1969: 52

#### Tuberculosis, all forms
- 1970: 13
- 1969: 24

#### Nephritis and nephrosis (certain kidney diseases)
- 1970: 23
- 1969: 30

#### Infections of kidney
- 1970: 26
- 1969: 33

#### Enteritis and other diarrheal diseases (stomach and bowel inflammation)
- 1970: 16
- 1969: 12

#### Ulcer of stomach and duodenum
- 1970: 10
- 1969: 15

#### Complications of pregnancy and childbirth
- 1970: 2
- 1969: 2

#### Congenital malformations
- 1970: 38
- 1969: 44

#### Infectious hepatitis
- 1970: 1
- 1969: 2

#### All other causes
- 1970: 463
- 1969: 553

Marriages, divorces and annulments are by place of occurrence, all other data are by place of residence.
Mr. A. M. Cunningham, Exec. Sec.
N.C. Dental Soc.
Bx. 11065
Mordecai Sta
Raleigh, N.C.

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CLOSED SHELLFISH AREA

SHELLFISH FROM THIS AREA MAY CAUSE SERIOUS ILLNESS IF EATEN

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On the Cover  
Clusters of oysters are shown attached to rocks at low tide near the mouth of a river—a favorite growing place because of the warmth of the water and its low salinity. The area has been closed to harvesting because of upstream pollution. It will remain closed and patrolled until the bacteria content is acceptable.
The doomsday crowd has already begun to toll the bells for organized public health as an important factor in the critical health issues of our day. Are we as public health professionals going to accept these prophecies as inevitable?

The emergence of a host of new health and health-related bodies is cited. Here, we are advised, is where the “action” is, not the Public Health Department. The fact that the attention of the public and some governmental and voluntary agencies seems heavily focused on Model Cities, Neighborhood Health Centers, Community Action Programs, Head Start, etc., while the Health Department suffers from (or enjoys) a period of “benign neglect” is not, in my estimation, a cause for celebration.

In no other body is there concentrated so diverse and talented a cast of professionals as in our local Health Departments. Additionally, the department is responsible for “—the health interests of (the) city, county or district” (G.S. 130-17). Dr. Edward McGavran, former Dean of the School of Public Health (UNC-CH) has said that the local Health Department is, or should be, the community’s physician. This role is not automatic, it must be actively assumed. Local government is in many instances lacking the counsel and guidance of “the community physician” as it makes vital decisions concerning health issues in the community.

The Local Health Director should speak out on emergency medical services, medical care systems, inadequate housing, solid waste disposal and other health issues. Only then will government turn to its officially designated health consultant, the “community physician.”
About 1,200 people come down with tuberculosis (TB) each year in North Carolina, according to Dr. Roy Berry, chief of the Tuberculosis Control Section, N. C. State Board of Health.

"The biggest single clue as to whether you harbor the TB germ depends upon whether you have a positive tuberculin skin test," Dr. Berry revealed. "If so, the germ can become active at any time. If you do not have a positive skin test, you are safe—unless you have prolonged contact with someone who has the disease in active form and is contaminating the air with germs from his lungs—air which you repeatedly breathe over a period of time.

"So you have a positive skin test! — how scared should you be? Assuming an X-ray of your chest is negative and there is no other evidence of disease to be found, your chances of remaining free of TB are good — provided you live a well ordered life. They may be even better if your doctor thinks you should take an anti-TB drug for a year."

Who along the scale of our society are most prone to get this ancient scourge of mankind—what can be done to prevent it—when will it no longer ravage the susceptible?

Historically, though not always, factors which favor development of TB are social in nature—poverty, malnutrition, addiction to alcohol or drugs, a lowering of resistance from other diseases, or "burning the candle at both ends." While these conditions are not confined to the socially disadvantaged, social scientists have long grouped persons with peculiar susceptibility to TB as "marginal"—people living on the "edge" of society.

"The advent of modern drugs has made it possible to practically guarantee cure for over 95 percent of all patients with TB—provided the patient cooperates. Treatment requires that drugs be taken for at least two years during
Chest X-ray appearance of advanced pulmonary tuberculosis before treatment. The light areas beneath the rib cage represent disease—especially on the right side.

and after hospitalization. The average TB patient stays in the hospital about five months today, compared to a year only 20 years ago.”

Dr. Berry pointed out that the future looks bright for eventual eradication. “Many areas of the country may be quite close to this stage already,” he said. Several localized areas seem destined to lag behind because young children are still getting infected. A small number of these children will break down with TB when they get older and may infect their children. That puts complete eradication two more generations away.

“How do you interrupt the cycle? Find out if you are tuberculin positive and, if so, read this article again. Then act!”

Statistics reveal that barely half the patients admitted to tuberculosis hospitals for a suspected chest disorder, have TB. A diagnostic examination eventually proves he has some other disease.

Progress in the care, treatment and prevention of TB in North Carolina is pointed up by the fact that less than 25 years ago there was a long waiting list for patients to get into a tuberculosis hospital. Today, a patient is admitted immediately.

TB hospitals are located in Hoke County (McCain), Wilson, Chapel Hill and Black Mountain.
Regional Offices—
A Link to Better Health Services

By Dr. Burns Jones
Asst. State Health Officer

On January 1, 1968, the first region of the N.C. State Board of Health was created, serving the southeastern sector of the State and headquartered in Fayetteville. Since then, five additional regions have been established in Asheville, Hickory, Asheboro, Raleigh, and Greenville.

Prior to the creation of the six present regions, the State Board of Health had regionalized many of its activities. The advantage of such a practice was that consultant services were decentralized and the State staff was more accessible to communities. Over the years these "regions" had developed individually but, haphazardly. This is to say, the geographical area for which any consultant was responsible was not necessarily the same for any other consultant.

The problem was recognized both by the consultant staff and by officials of the State Board of Health. It was seen that more effective consultation services could be given if a uniform pattern of regionalization was adopted by the state health agency. This would allow staff to approach the area for which they were responsible on a team basis.

The purposes of regionalization can be identified as follows:

- To improve coordination between consultants, making the team approach to solving regional health problems possible.
- To provide a base of operation and supportive services for the regional team.
- To bring the planning and consultative process closer to local health departments.
- To allow State Board of Health consultants to operate regionally with other state agencies.
- To improve communications between consultants assigned to the regions.

It should be noted that regions are not administrative in nature. They are not "Little State Boards of Health," with responsibilities for budgeting, reporting, and all of the other details that would distract the staff from their primary function of bringing State people closer to the communities.

One comment ought to be made about the new, multi-purpose, inter-agency regional pattern that is being developed by the N. C. State Planning Office. This will have a significant effect on the geographical configuration of the State Board of Health's regions. In the near future, the Board of Health will rearrange its own regions to conform to the State's overall system. However, the functions, or purposes, as stated above, remain valid.

The attempt of the entire State to develop a sound, effective regional system is entirely consonant with the Board of Health's efforts, and, if mutually supportive, can be mutually successful.
Dr. J. N. MacCormack, N. C. State Board of Health, lectures migrant crewleaders on infectious disease control.

**Migrant Labor Recruiters Learn Health Care**

For two weeks each year the Community Health Division of the N. C. State Board of Health, through its Migrant Health Project, teaches health care to crewleaders of migrant workers as part of the Employment Security Commission's 10-week annual training program. North Carolina is the only state to conduct such a program.

A big part of the multi-faceted program is training in health and sanitation. Before the program starts, personnel from the Migrant Health Project meet with crewleaders (labor recruiters) in an effort to determine areas of interest. The health program is built around their findings.

This year one week was devoted to training in environmental health. Discussions in family planning, venereal diseases, mental health, care of teeth, eyes, and feet, home safety, tuberculosis, infectious diseases, chronic diseases, personal hygiene and nutrition are offered the second week. Crewleaders are charged with the responsibility of conveying to laborers under contract to them basic knowledge of these health topics.

Amin Khalil, director of the Migrant Health Project, pointed out that multiphasic screening is performed not only on crewleaders enrolled in the school but also on their families. The crewleader's wife (or husband, as the case may be) is invited to attend because of their involvement in the camp's operation. This year 20 crewleaders and 19 spouses were exposed to the training program.

Training programs were held in Wilson and Bladen counties.
Jogging...

What does jogging do for joggers? Does it decrease the risk of coronary heart disease? Can it save them from premature death? Even before Dr. Paul Dudley White came upon the scene, sedentary professions were said to have a high risk of the disease. This still seems to be true. Consequently, exercise is often recommended. Many people—President Eisenhower for instance—were advised to play golf moderately but steadily. It seemed to work. He survived four heart attacks in a period of 15 years.

But does exercise really protect everybody, or at least the majority of so-called high-risk persons? After exercise one feels good—fresh, strong, satisfied and perhaps temporarily rid of tension. This is probably all exercise does for some people. Therefore, exercise may or may not be helpful.

The anxious, fearful, tense, overweight individual with a family history of heart disease, feels a compulsion to do something to save himself from the alleged doom—early coronary death. He may load himself with scrambled eggs, bacon, sausage, milk, butter, ice cream, hamburgers, and fatty steaks, (all high cholesterol products) then go jogging to "burn it up."

It is suspected that this practice is harmful, even dangerous, because it actually may increase the risk of a heart attack. Reliable studies are lacking in this respect but we do know that cholesterol deposits are laid down
precisely in portions of arterial walls subjected to forceful blood flow—around the curve or juncture of a smaller artery.

We also know that cholesterol deposited in the arterial wall comes most probably, not from vessel wall cells, but is dumped, impregnated, or impacted there by the blood stream.

High cholesterol blood content along with some other lipids (fatty substances) is strikingly associated with increased incidence of heart disease.

It has been observed that tense individuals who over-react to stress—and there are many daily stresses—have high lipid blood levels. A study of medical students in California before and during examinations showed a tremendous lipid elevation in spite of a low cholesterol diet. After examinations, cholesterol blood levels fell to normal. It is the activation from body fat-stores that mainly causes this feature—in addition to so-called endogenous cholesterol (made by the body itself) that is produced, but not necessarily discharged into the blood stream by almost every cell in the body.

Conversely, there is a study of an Italian community in Pennsylvania where enormous quantities of high cholesterol diets are consumed, where obesity is commonplace and heart attacks are disproportionately low. Why? It was found these people live non-competitive, non-combatant, relaxed lives with long sleeping hours. They indulge in a happy communicative extrovert living style. This would indicate that even obesity, a proven factor in heart disease, is not basically the culprit.

Why do people overeat?—There are essentially two types of people who eat too much. Those who just plain enjoy food (the happy people), and the frustrated. The food fanciers reach advanced age—taking all problems in stride. It is noted, however, that frustrated, tense individuals never take life serenely. Many times a smile is only a cover for hidden disorders.

For frustrated individuals food is a substitute for deprivations—lack cont. on next page

Bane or Blessing

May 1970

THE HEALTH BULLETIN
of communication with others, lack of real friends, and lack of job satisfaction. These are tense, fearful people—
their bodies are in turmoil most of the time. I say bodies purposely because every cell participates in internal tension variations. These people not only may increase food intake, but they also produce high blood levels of endogenous lipids (fatty substances made by the body) by the mechanism of lipid mobilization under stress. Quite a few such people are found among the “joggers” and “exercisers.” They run out of anxiety to achieve some personal satisfaction through exercise.

But is their exercise beneficial? It could certainly be harmful. It may be that the high velocity blood stream deposits more cholesterol in the vessel walls of the jogger than it does in somebody sitting quietly in an armchair. It was found that athletes don’t differ significantly from the general population in heart attack rates.

The Framingham study of 5,000 people for the past 20 years indicates there is no statistical difference between those who exercise and those who do not. The only reliable index of increased risk is the level of cholesterol 10 years before the heart attack comes. Anything that elevates blood lipids and cholesterol is guilty—diabetes, with its complex metabolic disturbance, dietary excess and nervous tension make people prospects for heart attacks.

The study also showed that blood pressure is directly related to the increased risk of heart disease—even within the so-called “normal range.” Here again everybody is aware of how the blood pressure is related to nervous tension and excitement.

A conclusion, then, would tend to indicate that the very basic thing is the state of our internal emotional balance. People who “act out” their tensions and get rid of them (for a time at least)—people who let their anger out, bang the table, yell, seldom get ulcers or have heart attacks. This type is generally quiet natured, but quick-tempered.

The nervous individual, harassed by general noise, competition, indifference from others and lack of recreation, is a prime candidate for heart disease. The only present medical solution is the tranquilizer. Prayer, singing, work, conversation with friends are excellent ways of relaxing. The idea is to slow down the pace of life. A yearly vacation of forced relaxation does not compensate for 50 weeks of “the rat-race.” As long as the environmental onslaught continues, tranquilizers will continue to be relied upon. There is, however, the possibility of dependency upon drugs. But, alas, jogging will not save the so-called “sensitive” person.
State’s Shellfish Sanitation Program Ranks High

Recently, a pert young actress, appearing on a talk show (a TV spectacle where everybody talks and nobody listens), dramatically exclaimed—“I'll never eat oysters again! What, eat those things and get hepatitis?—never.”

Unfortunately, no one was present to defend the shellfish industry against the flighty siren's unwarranted tirade. For the industry's efforts to supply the present day market with a wholesome, clean product, has gone all but un-noticed—save for professional sanitarians and the fishermen directly involved.

Today, as a result of rigidly enforced sanitation regulations by the Sanitary Engineering Division of the N. C. State Board of Health, the enforcement of fisheries' regulations by the Division of Commercial and Sports Fisheries of the N. C. Board of Conservation and Development along with the N. C. Department of Agriculture's cooperation, the state's shellfish program is rated among the most successful in the country—yielding an estimated $1.5 million annually for the seasonal industry.

There was a time, however, when skepticism as to the safety of the

Fishermen harvest oysters with long handled tongs. Water is about three feet deep.
Oysters are washed just enough to remove foreign particles. If they are left in water for any length of time too much is absorbed. The buyer, therefore, does not get honest weight. Too, there is an indication that oysters tend to lose flavor when allowed to absorb water.

savory bivalves might have given rise for concern. To be sure, an outbreak of typhoid fever in several large cities in 1925 almost paralyzed the oyster industry and threatened the economy of shellfish producing states. An epidemiological investigation indicated that sewage-polluted oysters were the cause of the illness.

Because of the typhoid fever epidemics and the fact that there was little effective sanitary control over the gathering and handling of shellfish throughout the United States, immediate action was necessary to protect the public health. The industry appealed to health authorities for help in order to re-establish public confidence in the use of raw fresh shellfish. Public Health and State Health Department officials, after a series of meetings, developed and recommended regulations governing the sanitary production and handling of shellfish.

A joint inter-agency enforcement program was established in North Carolina with the State Board of Health assigned certain duties and responsibilities and the Department of Conservation and Development assigned others. During subsequent years, the program has continued as a cooperative venture between the two agencies—along with the U. S. Public Health Service at the federal level. The program has come to be known as the "Cooperative State-Federal Shellfish Sanitation Program." Its effectiveness has been pronounced.

There are about 1.4 million acres along the North Carolina coast suitable for the production of oysters. At the present time over 45,000 acres are closed because of pollution—"more than ever before," according to N. McK. Caldwell, Supervisor of Shellfish Sanitation for the N. C. State Board of Health in Morehead City. Oysters produced in water polluted by human waste can cause viral hepatitis (liver inflammation), Salmonella infections (typhoid and
paratyphoid) and bacillary dysentery (infection of the intestinal tract), according to medical authorities.

Oysters mature by pumping several quarts of water per hour through their bodies—"straining out" the small marine organisms which serve as food. In the process, bacteria from the water concentrate in their bodies. Too, oysters grow best in water of moderate salinity. They, therefore, thrive at the mouths of rivers—a likely place for pollution occurring upstream. An oft repeated bromide—"happy as an oyster in a sewer outlet"—projects the worsening problem into clear focus.

River pollution is a source of constant concern, Caldwell pointed out. He also called attention to another source of pollution that has the shellfish industry worried—the dumping of raw sewage by an ever increasing number of pleasure boats plying intercoastal waterways. "Surface runoff and faulty septic tank systems add to the problem," he said.

Surveillance of actual and potential shellfish growing areas comprises a very important part of the pollution-prevention program. Periodic samples of water are taken from these areas and examined for pollution. If a production area is found to be polluted signs are posted and the area policed against illegal taking of shellfish.

Inspection of boats, docks, trucks, shellstock handling and storage, and shucking and packing plants is made frequently to determine compliance with State Board of Health sanitation regulations. Permits are issued plants found in compliance. Non-compliance is cause for revocation of permit.

The state's shellfish program has received excellent ratings for several years. The most recent evaluation (1968-69) propelled the overall rating to 97 percent.

No small part of the success can be attributed to the dedicated men who administer the State's Shellfish program and to John Andrews, who is charged with the broad scope of its supervision.

MRS. MILDRED KERBAUGH has been appointed assistant director of the Laboratory Division, N. C. State Board of Health. In making the announcement, Dr. Jacob Koomen, State Health Director, cited Mrs. Kerbaugh's ingenuity and qualifications for the position. Mrs. Kerbaugh has been with the Laboratory Division for 21 years—the last four as chief of the Infectious Disease Section. She is married to Lynn C. Kerbaugh—principal of a Raleigh school. They have two children.
ASHEBORO REGION

Members of the Asheboro Regional Staff are continuing study and exercises in program planning. Dr. Burns Jones, assistant State Health Director and Howard Ellis, assistant planning officer, conducted sessions on methods and techniques in Planning at a recent meeting. Miss Dorothy Hays, coordinator, is making plans for other meetings on the subject.

SOUTHEASTERN REGION

Dr. Jones, Howard Ellis and Gene Barrett conducted an orientation meeting on the planning process in April.

Potpourri

Perhaps relevant is the following paragraph from a report of the 22nd annual Conference of the Indian Psychiatric Society:

"Inaugurating the conference, the Governor of Andhra Pradesh, Mr. Khanubhai Desai, said that 'with the advancing civilization, semi-lunatics are everywhere because all sorts of mental aberrations are developing in this very complicated, civilized society.'"

Health of mind and body is so fundamental to the good life that if we believe men have any personal rights at all as human beings, then they have an absolute moral right to such a measure of good health as society and society alone is able to give them.

Dr. Suzanne Black, a graduate student in Maternal and Child Health from the UNC-CH School of Public Health, will be assigned to the Southeastern Region for one month (June) for experience.

Dr. Harry McLean participated in a panel on health problems sponsored by the Laurinburg Chamber of Commerce and Jaycees last month.

Several consultants are working with the Regional Stroke Program. A similar program is being implemented in Cumberland County and is being well received.


We learn from a trade magazine for druggists that pet owners are expected to spend $3 billion in 1970 to wrap their furry, feathered, or scaled little friends in luxury and to amuse and protect them. In the course of urging druggists to try to get a piece of the action, the article lists, among others, the following "exotic" products for pets recently loosed on the market:

"Bikinis for dogs . . . imported candy treats . . . a privacy screen for cats . . . gourmet dog biscuits . . . hatchability preparations for expectant birds . . . pajamas for dogs . . . berets and sport caps for canine boulevardiers . . . disposable paper raincoats, overcoats and dresses . . . fake eyelashes for Fifi . . ."
# State Of North Carolina Vital Statistics Summary

<table>
<thead>
<tr>
<th>Category</th>
<th>1970 February</th>
<th>1970 Year to Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Births</strong></td>
<td>7,635</td>
<td>15,702</td>
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<tr>
<td><strong>Deaths</strong></td>
<td>3,980</td>
<td>8,193</td>
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<tr>
<td>Infant Deaths (under 1 year)</td>
<td>184</td>
<td>404</td>
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<tr>
<td>Fetal Deaths (stillbirths)</td>
<td>132</td>
<td>266</td>
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<tr>
<td><strong>Marriages</strong></td>
<td>2,969</td>
<td>5,887</td>
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<tr>
<td>Divorces and Annulments</td>
<td>813</td>
<td>1,739</td>
</tr>
</tbody>
</table>

**Deaths from Selected Causes**

- Diseases of the heart (all forms): 1,367, 2,909
- Cancer (total): 544, 1,120
- Cancer of trachea, bronchus and lung: 91, 206
- Cerebrovascular disease (includes stroke): 460, 1,001
- Accidents: 231, 515
  - Motor vehicle: 102, 248
  - All other: 129, 267
- Diseases of early infancy: 90, 189
- Influenza and pneumonia: 319, 524
- Bronchitis, emphysema and asthma: 77, 160
- Arteriosclerosis (hardening of arteries): 52, 109
- Hypertension (high blood pressure): 25, 53
- Diabetes: 87, 160
- Suicide: 44, 78
- Homicide: 57, 104
- Cirrhosis of liver: 54, 106
- Tuberculosis, all forms: 13, 26
- Nephritis and nephrosis (certain kidney diseases): 18, 41
- Infections of kidney: 17, 43
- Enteritis and other diarrheal diseases (stomach and bowel inflamations): 11, 27
- Ulcer of stomach and duodenum: 13, 23
- Complications of pregnancy and childbirth: 3, 5
- Congenital malformations: 32, 70
- Infectious hepatitis: 1, 2
- All other causes: 465, 928

Marriages, divorces and annulments are by place of occurrence, all other data are by place of residence.

May 1970
"You look rather young for a doctor. Some of my symptoms are probably older than you are."
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THE HEALTH BULLETIN

Editor
Clay Williams

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On the Cover
Sometimes a child appears mentally retarded when actually deafness proves to be the primary problem. Many times, however, deafness may complicate the speech and learning process of children known to be mentally retarded. The "audiometer test" pinpoints the degree of deafness. The name of the object is recorded on a tape. As it is played, at varying intensities, the child is directed to identify to pictures. The nurse monitors the directions and the child's reaction to the commands.
OUT of every 1,000 children born in North Carolina 36 are born dead or die in the newborn period. This compares with the national average. However, when one analyzes this in depth a large percentage of this mortality is related to the fact that out of every 1,000 births among our impoverished groups, 51 children die either at birth or soon after birth. This fact alone indicates a need for action.

Studies at both local and national levels show that infants born to mothers under the age of seventeen, to mothers with limited education and to mothers who have experienced poverty and deprivation, are subject to a threefold greater risk of mortality than infants born to affluent citizens.

We have not given this problem the attention it needs and we have not implemented the programs that are necessary. A great deal of emphasis must be placed on high risk groups with innovative approaches that will identify high risk mothers, direct them to services and provide the care that is necessary.

North Carolina has a tradition of being first—first in family planning, first in services to the retarded and first in many other areas. Is there any reason why we cannot be first in giving infant health the attention it deserves?
North Carolina Tops Nation...

Mentally Retarded Evaluation Program Successful

CHANCES for North Carolina’s mentally retarded children leading productive lives have been greatly enhanced during the past decade.

A recent report from the Department of Health, Education and Welfare revealed that North Carolina ranks first in the evaluation and training of the mentally retarded. Only New York and Pennsylvania came close to evaluating as many children in 1969. Over 3,600 children were evaluated last year by 11 Developmental Evaluation Clinics—bringing the total to 7,000 evaluations since the program started in 1961.

The success of the program can be attributed mostly to long range planning in locating clinics throughout the state. According to Dr. T. D. Scurletis, director of the N. C. State Board of Health Personal Health Division, no other state has more complete geographical coverage in the placement of clinics.

As a result of pressure brought to bear by the National Association for the Mentally Retarded in 1959, interest was aroused in bringing more services to mentally handicapped children. Emphasis was accelerated in 1961 with the inauguration of President Kennedy—who had witnessed the handicap in a member of his own family.

In 1959 the State Board of Health operated four small, part time evaluation clinics in Charlotte, Morganton, Washington and Oxford on a one-day per month basis—using local personnel. Prior to 1961 the state health agency received a federal grant enabling it to establish a full time, completely staffed clinic at the Bowman Gray School of Medicine in Winston-Salem. Another was started at the UNC-CH School of Medicine in 1962.

From the beginning the plan of the State Board of Health envisioned clinics throughout the state in order that they might be readily accessible to the people. It was obvious the original clinics could not serve the large number of mentally retarded needing help. An increase in federal funds, plus supplemental state funds, hurriedly brought about the formation of
A social worker administers the "Denver Development Screening Test." The test will indicate retardation in children up to six years old. Here he coaxes a little girl to stack blocks. A child should be able to stack eight blocks at two years of age.

full time clinics at Western Carolina University, Asheville, Charlotte, High Point, Duke University School of Medicine, Oxford, Fayetteville, Wilmington, and East Carolina University.

A Developmental Evaluation Clinic is a highly specialized, outpatient medical facility providing comprehensive evaluation, treatment, and follow-up services primarily to children suspected of having a developmental handicap—a condition which could potentially result in retarded development.

Each clinic team consists of a pediatrician, psychologist, social worker, and a nurse. Neurologists, speech pathologists and other consultants are called upon when needed. These specialists make recommendations for the future of the individual child. Treatment consists primarily of family counseling, special education, counseling teachers in procedures for handling the child and supervised workshops.

In 1969 Dr. Robert Neely, who has been working with the program since 1966, was appointed chief of the Mental Retardation Section, created to intensify the evaluation program. "About 90,000 of North Carolina's two million children are mentally retarded," Dr. Neely said. "We need funds to add four new clinics in order to better serve these children."
Food poisoning, like the ant, is all too often an unwelcome guest at warm weather church dinners and family picnics. Summer weather makes caution against spoiled food more important than ever.

Just what is “food poisoning?” A general definition might be that it is a group of illnesses (not just one illness) caused by eating contaminated food or drinking contaminated water or milk. It usually comes on quickly and clears up in a short period of time and commonly involves a “G.I. upset.” The contamination of the foodstuff may occur at any of several points between the growth of the animal or vegetable and its being served at the table.

One of the most common types of food poisoning and one that has special meaning for the warm summer months is the staphylococcal variety. Taking in the toxin or poison that the “staph” organism produces is what causes the unpleasant effects of vomiting, cramps, and diarrhea that usually come on within two to four hours after the food is eaten.

This type of food poisoning gives no warning, for the food has no change in appearance, taste, or odor. Commonly affected foods are such picnic items as pastries, salads, salad dressing, and sandwich meats.

The food is usually contaminated by the skin of a food handler, perhaps from a sore on his or her hand. Then, as often occurs, the food is placed in a large container and stored until ready for eating. Even under refrigeration a large mass of food such as potato salad will not get cool enough in the center to prevent the “staph” germs from producing their poison. Then an outbreak of food poisoning occurs.
An infected sore on the hand of a person engaged in the preparation of food is often responsible for an outbreak of "staph" food poisoning. The "staph" germ can contaminate any food. Certain foods, however, provide a better environment for its growth under ideal temperature conditions.

Another common type of food poisoning is caused by the salmonella germs. If large batches of chickens, pork, or beef are prepared for an outing without thorough cooking, the door is open for this intruder.

What then can be done to prevent food poisoning? First, cooked foods should be cooled quickly and kept refrigerated until ready for consumption. Large batches of foods should not be placed in one large bowl but should be broken down into small shallow containers. Some foods should not be prepared too far in advance of the outing—this includes such items as meat loaf, salads, and pastries. Food that spoils easily should be eliminated from picnic menus. Finally, if it cannot be kept hot or cold, don't keep it.
MOSQUITO, the winged disease carrying pest, has been the scourge of man and beast in counties along North Carolina’s coast for generations. From Brunswick to Currituck, the aquatic blood sucking insect with appropriate instrument-like organs protruding from the proboscis has harassed residents of the area, thwarted economic growth in many instances, and sent vacationers scurrying to higher ground.

There are signs now that many coastal counties are bringing the mosquito problem under control through a well conceived, systematically conducted water management program. Of the 416,000 acres considered to be breeding grounds, over 100,000 acres in six counties boast a 1,500 mile system of canals which have been highly effective in lowering the mosquito population.

The great salt marshes of Eastern North Carolina are majestic upon first sight. Seas of waist-high marsh grass wave—sometimes gently, sometimes violently in the wind—depending upon fickle weather patterns of the almost foreboding area. It is when the wind blows inland that sanitary engineers become concerned. Forceful gales blow water from estuaries into the marsh land creating an ideal environment for the breeding of mosquitoes. Over half of the problem mosquito breeding areas are irregularly flooded in this manner.

The salt marsh mosquito (Aedes sollicitans) is a little bigger than the fresh water mosquito (anopheles). It is primarily a pest, but can carry encephalitis (inflammation of the brain). The salt marsh female mosquito prefers to deposit her eggs in moist mud—usually in depressed areas. These potholes serve the incubation period ideally with only about three inches of water of suitable salinity and temperature. Under favorable conditions a horde of mosquitoes can get off about every seven to 10 days. Mosquito eggs, however, have been known to lie dormant for three years.

Hurricanes that ravaged the eastern part of the state in the mid 50’s emphasized the mosquito problem. Water became trapped behind natural dikes which separate bay areas from the marsh land. As a result, thousands of acres were flooded. In many instances outlets were clogged. Although the flooding consisted of only inches of water, it was enough to cause a drastic increase in the mosquito population. It was clear that something had to be done.
A DRAGLINE AT WORK IN PAMLICO COUNTY. After construction, ebb and flow of tides provide natural maintenance of the canals.

The 1955 General Assembly established the Salt Marsh Study Commission for the purpose of making a study of the mosquito problem in the eastern part of the state. Based on the commission's report, the 1957 General Assembly created the Mosquito Control Program. A fund was appropriated and the Sanitary Engineering Division of the N. C. State Board of Health was given the responsibility of implementing the recommendations. Cooperating with the Pamlico County Board of Health, two experimental water management projects were started to determine their effectiveness on mosquito control. Results proved effective in controlling the breeding of salt marsh mosquitoes.

Aided by state funds, six coastal counties have accelerated mosquito control programs during the past 11 years through water management. Other counties are expected to adopt the program as quickly as local funds can be appropriated.

There are two methods of water management being used to control mosquitoes in eastern North Carolina. Canals are constructed to remove water from marsh land within five days after flooding in order to destroy the mosquito egg while in the aquatic stage. Canals are about six feet wide and deep enough to support marine life at low tide and are tied together to achieve a circulating action of water throughout the system. The outfall canals are tied into deep water and creeks wherever possible.
Although positive results have been achieved marine and wildlife biologists have roundly rejected the notion that water management serves to reduce the mosquito population. They theorize that any measure that disturbs marsh land ecology threatens the natural habitat of marine and wildlife—further, that water management does not effect mosquito control.

Residents of counties participating in the water management program, as well as sanitary engineers, know differently. A continuing drop in mosquito population has been observed. In addition, canals extend the nursery area for fish, shrimp, crabs and other marine life. They point out that nutrients which were trapped in the occasionally flooded marshes by natural shoreline dikes are released when the canals are constructed. It has been noted also that mosquito larvae, which may be taken into the canals, are eaten by fish.

The impoundment method of mosquito control water management was started at the request of wildlife officials. By constructing a dike around a marsh, installing flood gates and a pumping station, the water level can be controlled. The salt marsh mosquito will not deposit eggs on water. The impoundment, therefore, serves to further enhance mosquito control.

The salt marsh impoundment serves as an excellent waterfowl habitat—

A TYPICAL SALT MARSH AFTER CANAL CONSTRUCTION. Tidal waters remain in the canals at all times providing additional nursery areas for marine life.
STREAM RESTORATION IN ONSLOW COUNTY. Removal of silt and debris provides a channel for drainage and eliminates flooded conditions favorable for fresh water mosquito development.

refuting speculation that water management alters the environment of marine and wildlife native to the area. To be sure, studies are being conducted to determine the feasibility of aquaculture. At present, results look very favorable for shrimp and fish farming.

Counties to the south of Beaufort are making strides toward more effective mosquito control by re-opening creeks and streams in problem areas. The result sought here is to drain areas flooded by fresh water pushed inland by the action of lunar tides and heavy rainfall. At times many square miles of the low-lying land are inundated. The condition affords the anopheles mosquito, who deposits her eggs only on fresh water, an ideal breeding ground.

It has been noted that hordes of salt marsh mosquitoes can be carried up to 25 miles on a 15 to 20 miles an hour wind immediately upon being hatched. North Carolina’s Mosquito Control Program is designed to kill them before they take to the wing. Those who work tirelessly toward that goal can take pride in their accomplishments.
Dr. Jacob Koomen, State Health Director, told a joint meeting of the State Medical Society and the N. C. State Board of Health in Pinehurst recently, that "the scope of identification and solution of health problems of people and their environment cut across boundaries of many agencies and organizations, both public, private and voluntary."

Departing from his usual progress report, the state's chief medical officer outlined current public health problems and projected solutions.

Dr. Koomen noted that local health departments are partners with the State Board of Health in the provision of public health services and represent the front line for most public health activities.

"Early detection and treatment for chronic disease is not sufficiently available to the adult population in terms of availability and promotion," Dr. Koomen reminded the physicians. "Our goal must be to provide adequate adult health screening—including the newer multiphasic techniques for chronic diseases by a coordinated, comprehensive, preventive services system.

"In the area of family planning, 80 percent of an estimated 260,000 medically indigent women in the childbearing age have not been reached by present services. Less than one percent of males receive medically-oriented birth control services. We must strive to provide family planning and birth control services to all men and women wanting and needing the services and promote acceptance."

The State Health Director revealed that 62 percent of 361,644 medically indigent infants have yet to receive nurse screening and pediatric clinic services. He emphasized that child health screening and evaluation services must be coupled with early treatment and follow-up care in order to prevent illness and maintain a healthy child population.

Dr. Koomen issued a warning concerning the growing drug abuse problem. "There must be perceptive and enlightened awareness of the situation," he said. "The problem must be handled in a mature, humane manner. Our efforts should be directed toward restoration and recovery, rather than repressive, harsh measures that lead to further dissociation and despair."

The public health physician also
called for a concerted effort to gain new knowledge of the relationship between the worker's health, his working environment and the materials he handles. He pointed out that improved surveillance and investigative techniques must be employed—along with appropriate engineering to eliminate health hazards in industry.

In addition to maintaining programs to protect North Carolinians from communicable diseases, including tuberculosis and venereal diseases, Dr. Roomen disclosed that a special effort will be made to control red measles and German measles. He warned that measles may affect the nervous system and even cause death. "The effect of German measles on the developing embryo and the resultant causation of serious birth defects is well known. Vaccines are available for both of these diseases and intensive efforts can result in their being brought under control," he ventured.

The report called attention to the growing problem of controlling solid waste. Under authority of an act of the 1969 General Assembly, the State Board of Health is moving rapidly to develop a plan to establish standards for disposal facilities, according to Dr. Roomen. He disclosed that technical assistance will continue to be provided to local government units in planning and establishing approved facilities that usually require close cooperation of municipal and county governments. "Local governments must make special efforts of their own to provide needed services to their people," he urged.

Dr. Roomen focused attention on the establishment of large nuclear facilities located within the state. "It is vital that programs be designed for each facility to insure that the environment is adequately protected in accordance with present regulations and other accepted standards. We will not relax our efforts to protect the public from radiation hazards," he assured.

The sweeping report also focused on North Carolina's Medical Examiner System. "This resource must grow with demand in order to continue to aid the state in the discharge of its medico-legal responsibilities," Dr. Roomen concluded.

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**Health... a vital gift**

"It is bad enough that a man should be ignorant, for this cuts him off from the commerce of other men's minds. It is perhaps worse that a man should be poor, for this condemns him to a life of stint and scheming and there is no time for dreams and no respite for weariness. But what surely is worse is that a man should be unhappy, for this prevents his doing anything much about either his property or his ignorance."

G. H. T. Kimball

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**State Board of Health Action**

The N. C. State Board of Health, meeting in a joint session with the State Medical Society in Pinehurst May 20, 1970, took the following actions:

- Approved a resolution to extend the boundaries of the Kannapolis Sanitary District.
- Approved a resolution creating the Lyon's Station (Granville County) Sanitary District.

Additional information concerning these resolutions may be obtained from the Sanitary Engineering Division, N. C. State Board of Health, Raleigh, N. C.
Regional News

HICKORY REGION

Several staff members were elected officers of the Western North Carolina Public Health Association which met in Statesville last month. They include Miss Jenece Hopkins, chairman, Special Services Section; Miss Sylvia Saxon, vice chairman, Special Services Section and Mrs. Elizabeth Sigmon, secretary-treasurer, Secretarial and Statistical Section. The meeting was attended by more members than any time in the history of the association.

WESTERN REGION

Miss Claudine Monteith was elected president of the Western Public Health Association; J. N. Fulp, president-elect and Mrs. Willie Sue Taylor, secretary-treasurer.

The State of Franklin and Central Highlands Health Councils held several meetings to consider cooperative efforts in areawide comprehensive health planning. Health planning opinions at the state and federal levels indicate small health planning bodies must join in a larger umbrella-type organization if they are to be considered for federal funding in the future.

GREENVILLE REGION

Miss Jackie Norris, records consultant, recently resigned. She has been appointed program director of the Eastern Tuberculosis and Respiratory Disease Association headquartered in Greenville.

The Craven Health Department volunteered to be the first county in the state to avail itself of the health planning exercise utilizing techniques of POME and PERT (planning methods). The staff is in the process of a practice exercise on a problem of their selection. The regional staff hopes to be able to offer this service to other counties in the region in the near future.

SOUTHERN REGION

The hustling regional team was instrumental in helping the Hoke County Health Department obtain funds from Advancement, Inc. to start a building program. The grant will amount to $20,000. The county will add about $10,000. Floor space will eventually double that of the existing facility.

M. R. Mills, Hoke County sanitarian, attended a meeting of the National Environmental Health Association in Las Vegas.

Miss Judy Smith has been transferred to the Raleigh Regional Office. Miss Frances Sellers assumed her duties as nursing consultant for the region.

Dr. Harry McLean gave a two hour lecture recently to student nurses at Highsmith Rainey Hospital on the subject—"overview of epidemiology."

Dr. Vala Honored

Dr. Sylvester Vala, physician consultant in the Chronic Disease Section, N. C. State Board of Health, was recently presented the "Gaston Award" by the State Medical Society at its annual meeting in Pinehurst. Dr. Vala received the award for a paper examining the first year's experience in multiphasic screening in North Carolina. Dr. Simmons Patterson of Chapel Hill, chairman of the State Medical Society's Awards Committee, presented Dr. Vala a certificate symbolic of the honor.
The Boy Who Didn’t Pass

A sad-faced little fellow sits alone in deep disgrace,
There’s a lump arising in his throat, tears streaming down his face;
He wandered from his playmates, for he doesn’t want to hear
Their shouts of merry laughter, since the world has lost its cheer;
He has sipped the cup of sorrow; he has drained the bitter glass,
And his heart is fairly breaking; he’s the boy who didn’t pass.

In the apple tree the robin sings a cheery little song,
But he doesn’t seem to hear it, showing plainly something’s wrong:
Comes his faithful little Spaniel for a romp and bit of play.
But the troubled little fellow sternly bids him go away.
All alone he sits in sorrow, with his hair a tangled mass,
And his eyes are red with weeping; he’s the boy who didn’t pass.

How he hates himself for failing, he can’t bear his playmates’ jeer,
For they’ve left him with the dullards—gone ahead a half a year;
And he tried so hard to conquer, oh, he tried to do his best,
But now he knows he’s weaker, yes and duller than the rest.
He’s ashamed to tell his mother, for he thinks she’ll hate him, too—
The little boy who didn’t pass, who failed getting through.
Oh, you who boast a laughing son, and speak of him as bright,
And you who love a little girl who comes to you at night
With smiling eyes, with dancing feet, and honors from her school,
Turn to that lonely little boy who thinks he is a fool,
And take him kindly by the hand, the dullest in his class,
He’s the one who most needs love, the boy who didn’t pass.

(Author Unknown)

NURSE OF THE YEAR . . . Mrs. Carolyn Greene, supervising nurse for the Developmental Evaluation Clinic, Guilford County Health Department, has been named North Carolina’s “Nurse of the Year” by the State Medical Society. Mrs. Greene was cited for creativity, keen insight and leadership qualities throughout her nursing career. She has played a major role in making the Guilford clinic one of the most outstanding in the state in evaluating suspected mentally retarded children. Mrs. Greene has been a public health nurse since 1958.
It is evident that the media has penetrated the byways of the country, and lifted the curse of drudgery from monotonous chores. The subject above appears to have carried the national addiction too far, however. In such an instance it is well to pity the position of the equus asinus (Jackass).
THE HEALTH BULLETIN

Editor
Clay Williams

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On the Cover
In addition to the obvious dangers of injecting potent drugs directly into the blood stream, there are other extremely valid reasons why the act should be viewed with fear. Sharing equipment can cause serum hepatitis. Dirty equipment can cause bacterial infection. Repeated punctures at the same location can cause the development of a blood clot which can break loose and do extensive damage to internal organs.
Far too many people assume they will lose their teeth during the middle and latter years of their lives. There are many reasons for this attitude, one being that we have not previously had a preventive method for eliminating tooth decay and periodontal disease. Thousands of teeth are lost each year because of decay and pyorrhea (gum disease).

A person should attach the same importance to caring for his teeth as he does to other parts of his body. Unfortunately, many people do not become concerned until disease is evident. Saving a diseased tooth thus becomes a challenging problem. If a tooth is not filled at the right time it will abscess and chances for saving it are practically non-existent.

Drinking fluoridated water will reduce tooth decay by 65 percent. In addition, proper eating habits and selection of food will help. Dental diseases (tooth decay and gum disease) can also be prevented by following recommendations outlined in a new dental technique called plaque control (preventive dentistry). Instructions for the use of this new approach can be provided by dentists, dental hygienists, or dental assistants.

The new concept of dental care consists of a combination of things—mainly the use of dental floss and a special type of toothbrush. Your dentist will be glad to explain this special method of cleaning teeth and demonstrate the proper way to use the materials. This dental control program works—there’s no doubt about it.

Everyone should expect to keep his natural teeth for as long as he lives. Chances for achieving this goal increase by the day as fluoridation is made available on a large scale and new teeth-cleaning techniques are employed.

July 1970

THE HEALTH BULLETIN
SCARIFICATOR... The innocent-looking instrument was used to bleed a patient—an early form of medical therapy. The brass case houses 21 tiny razor-sharp blades. The blades are retracted by a strong spring. When released the blades revolve and make 21 lacerations in a split second.

COUNTRY DOCTOR MUSEUM...

AN 18th CENTURY LEECH JAR... Leech-bleeding was an early form of medical therapy. The carnivorous annelids were allowed to attach themselves to a patient in the desired area.

A visit to the Country Doctor Museum at Bailey, N. C. is an unforgettable experience. Hundreds of years of medical history fairly leaps to the fore as one studies 18th and 19th century medical memorabilia.

A vast assortment of strange-looking medical instruments—tools of pharmacy—a library of rustically bound medical books—an apothecary lined with fancy-shaped jars and bottles—are vivid reminders of our physician forebears whose resourcefulness and courage pioneered the practice of medicine.

Dr. Josephine Newell, president of the nonprofit corporation, conceived the idea of the museum. Dr. Newell extends herself beyond her practice in Bailey to add to the museum's collection at every opportunity. The
BIAURAL STETHOSCOPE... Believed to be among the first of its type, the instrument has swivel ear pieces made of wood. It belonged to Dr. Robert Hollingsworth of Mt. Airy, N. C., and was used in the care of the Siamese Twins.

**a medical rarity**

Only memorial in the United States dedicated exclusively to commemorating the family doctor, her efforts have been decided rewarded.

The museum is housed in a mustard-colored building which is a composite of the offices of two nineteenth-century doctors. The front portion was the office of Dr. Howard F. Freeman of Wilson County and was built in 1857. The back portion was the office of Dr. Cornelius H. Brantley, who began the practice of medicine in Nash County in 1884.

The museum is open to the public from 2 p.m. until 4 p.m. on Sundays and from 10 a.m. until 5 p.m. on Wednesdays. Special tours may be arranged at other times by calling Bailey 235-5601 or Spring Hope 478-5716.

AMPUTATION INSTRUMENTS...
A knife and bone saw used to amputate the left arm of Stonewall Jackson. It is interesting to note that Jackson did not die from the operation but from infection.
Within American industry people are working with almost every chemical known to man, according to Howard Ayer, an engineer with the Bureau of Occupational Safety and Health, U. S. Public Health Service, Cincinnati, Ohio.

Ayer contends that many of the chemicals can contaminate the air in the form of gases, vapors, mists, dust, fumes and smoke and can cause health damage when breathed.

"Almost any organ of the body can be affected by one or another of these contaminants," Ayer revealed. "Commonly affected are the lungs (silica and asbestos), liver (carbon tetrachloride), kidney (benzene), nervous system (mercury vapor) and blood-forming organs (radioactive materials). Effects may be acute (lead poisoning and carbon monoxide), causing immediate or chronic illness (silica, asbestos or coal dust), resulting in damage after many years of exposure.

"To prevent health damage it is necessary to set limits for air contaminants below which workers will be safe. The largest list of contaminants is that prepared by the Threshold Limit Value Committee of the American Conference of Governmental Industrial Hygienists. The committee includes toxicologists, chemists, physicians (from the U. S. Public Health Service) and specialists from State Departments and Local Health in the U. S. and Canada."

The committee establishes threshold limit values (actual or potential hazards) for any material used in industry. Members of the committee rely on their judgement and experience along with whatever information is available, to set limits they believe safe for people.

"Air contaminants in the form of gases and vapors freely follow air streams in the work place," Ayer pointed out. "To keep people from being exposed to dangerous amounts of contaminated air it is necessary to use industrial exhaust ventilation to direct the air away from people into hoods and exhaust ducts. Special training is necessary in order to design
ventilation systems which will provide adequate protection.

"Gases and vapors which cause most complaints are those which irritate the eyes and nose and emit obnoxious odors—not necessarily those subject to cause acute or chronic poisoning. Evaluation by an industrial hygienist is required to find those situations which are potentially damaging to health.

"Industrial dust has been known to cause health damage for hundreds of years. It is the small dust particles that cause lung damage. Such particles are invisible to the naked eye. A tiny particle will settle in the air only one foot during a minute. The more common, most toxic dust particles, settle only one-eighth of an inch during a minute.

Environmentalists are in accord that the behavior of some airborne contaminants such as cotton dust will require further investigation. Only during the past few years, following competent health studies, have adverse health effects previously seen in England and other foreign countries, appeared in America. It is not known what concentrations of contaminants are safe in U. S. cotton mills, but health authorities agree that long term exposure leads to respiratory problems.

Prolonged exposure to silica dust can result in a fibrous lung condition.

Many industrial work places have air velocities which move along at least 25 feet per minute. The health damaging dust particles follow these air currents just as do gases and vapors."

DR. JAMES J. PALMERSHEIM has been appointed chief of the Public Health Statistics Section, N. C. State Board of Health. A native of Los Angeles, Dr. Palmersheim holds B.S., M.S. and Ph.D. degrees from UCLA. He has worked as biostatistician at Medical Systems Corporation in Downey, California, and statistician for the UCLA Medical Systems Project and Health Sciences Computer Facility.
"The most powerful weapon in combating drug addiction is a good home." This opinion was expressed recently by Charles Dunn, director of the State Bureau of Investigation.

"Parents must make every effort to insure that homes are stable, offer security and instill confidence. Parents must be willing to give of themselves, to live as a family, to encourage and guide," Dunn said.

The state's chief law enforcement officer also listed churches and schools as potential bulwarks against the use of illegal drugs. "Churches and schools must be willing and able to step in where the family unit fails or is nonexistent," Dunn urged. "The church, particularly with an out-reach program, can help give strength and direction to searching young people. The school can help give purpose to its students.

"Recognition of young people's needs and their involvement in meaningful and productive projects may be as important to them as learning math or Spanish. The purpose of the public school, in my opinion, is to meet the needs of the individual child in extracurricular activities as well as in educational pursuits."

Dunn pointed out that every school should have an adequate educational program on drugs. "I do not think
enough attention is given to dangerous drugs in most schools. In some cases, inadequate or incorrect information can stimulate a young person's desire to try a drug. Teachers need special training in this area—not just another project added to an already heavy workload. An adequate drug program in the school may be a community's best educational investment."

Given equal emphasis by Dunn is the important role an individual citizen can play in combating the drug problem. "There is need for citizens to support the work of law enforcement agencies in detection and apprehension of drug-law violators," Dunn declared. "Any indication of illegal drug use or possession should be reported. The child saved may well be your own."

"It is also incumbent on the individual citizen to see that opportunity for recreation and decent involvement is available for all young people within a community." Dunn advanced the notion that we have a responsibility
toward our fellowman, and the illegal use of drugs is an area where that responsibility can be put to good use immediately.

Dunn noted that the State Bureau of Investigation is flooded with drug cases. "The possession and use of illegal drugs is evident particularly around military installations and college and university campuses. It is also recognized as a problem in some schools, and is a problem in others even though officials have not recognized it yet," Dunn said. He revealed further that dangerous drugs are being sold and used in smaller communities and counties throughout the state.

"I have been amazed at the variety of illegal drugs and paraphernalia that come to our lab," Dunn remarked. "We have seen pipes and water pipes for smoking marijuana—home-made chocolate cookies with marijuana mixed in—LSD and STP (hallucinogenics) in sugar cubes and on blotter paper."

Dunn agreed that it is the responsibility of the State Bureau of Investigation and other law enforcement agencies to enforce drug laws. "The SBI intends to do just that, with emphasis on those who sell and profit from illegal use and distribution of dangerous drugs. The illegal drug business in North Carolina is not a 'good time' venture. It is a money-making operation, and no community and no school is immune."
"zealots slobber a bibfull"

By Dr. David A. Fraser
Professor of Industrial Hygiene
School of Public Health
UNC—Chapel Hill

It may be fortunate that concern for our environment has awakened during this particular period of time. Fortunate because, without the present emotional climate, the faint voices of professionals in public health who have devoted their careers to the prevention of pollution of our environment and to understanding its consequences to health probably would have gone unheard as they have for the past 50 years.

In our society little can be accomplished without public awareness, the public blessing and often the public demand for action. At the present time much is being demanded, attempted and promised.

Professionals in the health field have seen the phenomenon before. To the clinician, emotionalism and hysteria are easily recognizable as symptoms of an underlying disorder. They are, however, only symptoms and are not thought of as a cure for the illness. This would appear to be true in the body politic as well as the human body. There is, however, one important difference.

In the case of human illness, diagnosis of the disease and the prescription of treatment is restricted to professionals who are duly licensed by the state and who have met certain criteria attesting to their competence in dealing with the problems at hand.

In the body politic, judgements and actions are often taken on a basis which may involve emotional appeal, political bias or economic necessity. In this field, too, there are many questions for which even the experts do not have answers.

Most of the important questions being raised today concerning the environment do not have easy answers. The simplest problems require not only great technical skill but also involve highly sophisticated economic, political and even social considerations.

No one can be in favor of increased or continued pollution of our environment based on economic reasons alone. It is most important that the actions taken be carefully considered and economically sound. This cont. on next page
is just as true in the "in plant" environment as it is in the community environment.

For over 50 years industrial medical directors and industrial hygienists have concerned themselves with factors that could affect the health of the working man. Since 1935 the Occupational Health Section of the N. C. State Board of Health has had an active program of investigation and study of employees workroom conditions, along with assistance for employers. They have tackled many major health problems of workers in the dusty trades (silicosis, asbestosis, mercurialism, exposure to ionizing and non-ionizing radiation). Now they are investigating noise problems and byssinosis—a respiratory ailment of cotton textile workers. In all cases their aim has been to protect the health of the working man.

When people are being injured remedial decisions are not difficult to reach. There is nothing complicated about a cease and desist order if even one person has been seriously incapacitated. The difficult decisions are those in which the diagnosis of disease may be highly questionable or the potential for disability extremely small. The choice of immediate loss of an employee's earning power which would result from closing of a plant and the potential loss which may or may not develop 10 years later is not always easily made.

Some plants are faced with the immediate problem of financing alterations of facilities in order to comply with new environmental regulations. Part of the cost will obviously be passed on to the consumer.

It is important that measures taken to protect our environment, whether in the community or the work place, be chosen carefully and with full consideration given to the total impact on and cost to society as a whole. We have within our community experts who have devoted their lives to the cold and dispassionate analysis of environmental problems. These elders can provide valuable advice and guidance for our new found enthusiasm.

ONSLOW COUNTY GETS NEW HEALTH CENTER . . . Open house was held recently for residents of the county to view the striking $168,000 facility. The new medical quarters boasts almost three times more floor space than the old county health building, according to Dr. Eleanor Williams, county health director.
Problems of use, overuse and misapplication of some pesticide chemicals and the disposal of containers have reached the point where contamination of the environment is reaching significant proportions, according to Dr. G. T. Weekman.

The N. C. State University entomology extension specialist pointed out that a host of new synthetic pesticides have been discovered since the 1940's and a major new industry created to supply agriculture and the public. "Unfortunately the growth in public awareness of pesticides and their use has not kept pace with the rapid development," Dr. Weekman declared. "As a result, an information gap has developed around new pesticides.

"Dusting and spraying operations are still being conducted with the purpose of assuring against potential loss or product contamination by pests. In many cases a more reasonable assessment of potential infestation and more realistic food quality standards would have required lesser amounts of pesticides," Dr. Weekman contended.

"Residues of some pesticide chemicals have been, and are still being acquired from various foods and a variety of other environmental sources," Dr. Weekman warned. "On the basis of present knowledge, the only actual consequences of long-term exposure to pesticides at levels encountered by the general population, is the acquisition of residues in tissues and body fluids."

The possibility of illness caused by the use of pesticides was explored in a report of a recent survey conducted in a single county in North
Carolina by the N. C. State Board of Health. While the survey indicated that a more critical investigation should be made from the standpoint of diagnosing and reporting, conversations with a number of farmers disclosed that an illness problem does exist.

Dr. Weekman suggested that pesticides from air, water and soil are concentrated in the bodies of animals. He cautioned that the concentrating effect is frequently enhanced as one species of animal feeds on another and passes the pesticide from one link to another in the food chain.

"Air is the medium through which pesticides move to their intended target," Dr. Weekman related. "Information at hand indicates that pesticides persist in the atmosphere at extremely low levels. Persistence in pesticides," he said, "may be both beneficial and harmful. Lasting residues provide control of target organisms over a long period of time. On the other hand, residues may adversely affect nontarget animals and plants and contribute to food contamination."

Dr. Weekman said that the major pathway of pesticides into water occurs through direct application to surface waters and from surface run off in both rural and urban situations. "Fish kills have resulted from normal agricultural use, misuse, industrial wastes and from negligence," he concluded.

The N. C. State Board of Health survey indicated that about half the farmers questioned obtained information on application of pesticides from the dealer. A negligible percentage bothered to check at all with their County Agent on the rate and manner of application.

State Excels In Child Health Care

A recent report from the Department of Health, Education and Welfare reveals that North Carolina ranks high among all states in maternal and child health services provided by local health departments during 1969.

In maternity care North Carolina is 3rd, 5th in nursing services for children, 4th in immunizations for children and 5th in family planning services.

The main reason North Carolina has advanced far beyond most states in comprehensive health care for children, according to Dr. Robert M. Fink, mental retardation consultant for the N. C. State Board of Health, is the emphasis placed on maternal and child health programs by local health departments.

North Carolina established its first County Health Department May 23, 1877—second only to Massachusetts which first offered local health care in 1869.

Dr. Fink pointed out that maternal and child health services have developed at a rapid pace in North Carolina over the years, but in an orderly manner.
# State Of North Carolina Vital Statistics Summary

<table>
<thead>
<tr>
<th></th>
<th>April 1970</th>
<th>Year to Date 1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Births</td>
<td>7,445</td>
<td>31,095</td>
</tr>
<tr>
<td>Deaths</td>
<td>3,510</td>
<td>15,605</td>
</tr>
<tr>
<td>Infant Deaths (under 1 year)</td>
<td>178</td>
<td>790</td>
</tr>
<tr>
<td>Fetal Deaths (stillbirths)</td>
<td>135</td>
<td>532</td>
</tr>
<tr>
<td>Marriages</td>
<td>3,141</td>
<td>12,606</td>
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<tr>
<td>Divorces and Annulments</td>
<td>1,096</td>
<td>3,989</td>
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## Deaths from Selected Causes

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<thead>
<tr>
<th></th>
<th>1,267</th>
<th>5,599</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diseases of the heart (all forms)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cancer (total)</td>
<td>544</td>
<td>2,225</td>
</tr>
<tr>
<td>Cancer of trachea, bronchus and lung</td>
<td>96</td>
<td>404</td>
</tr>
<tr>
<td>Cerebrovascular disease (includes stroke)</td>
<td>434</td>
<td>1,875</td>
</tr>
<tr>
<td>Accidents</td>
<td>247</td>
<td>1,009</td>
</tr>
<tr>
<td>Motor vehicle</td>
<td>119</td>
<td>489</td>
</tr>
<tr>
<td>All other</td>
<td>128</td>
<td>520</td>
</tr>
<tr>
<td>Diseases of early infancy</td>
<td>113</td>
<td>412</td>
</tr>
<tr>
<td>Influenza and pneumonia</td>
<td>101</td>
<td>871</td>
</tr>
<tr>
<td>Bronchitis, emphysema and asthma</td>
<td>50</td>
<td>282</td>
</tr>
<tr>
<td>Arteriosclerosis (hardening of arteries)</td>
<td>45</td>
<td>219</td>
</tr>
<tr>
<td>Hypertension (high blood pressure)</td>
<td>15</td>
<td>95</td>
</tr>
<tr>
<td>Diabetes</td>
<td>64</td>
<td>286</td>
</tr>
<tr>
<td>Suicide</td>
<td>44</td>
<td>176</td>
</tr>
<tr>
<td>Homicide</td>
<td>47</td>
<td>198</td>
</tr>
<tr>
<td>Cirrhosis of liver</td>
<td>64</td>
<td>221</td>
</tr>
<tr>
<td>Tuberculosis, all forms</td>
<td>11</td>
<td>50</td>
</tr>
<tr>
<td>Nephritis and nephrosis (certain kidney diseases)</td>
<td>18</td>
<td>76</td>
</tr>
<tr>
<td>Infections of kidney</td>
<td>19</td>
<td>79</td>
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<tr>
<td>Enteritis and other diarrheal diseases</td>
<td>5</td>
<td>40</td>
</tr>
<tr>
<td>(stomach and bowel inflammations)</td>
<td></td>
<td></td>
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<tr>
<td>Ulcer of stomach and duodenum</td>
<td>15</td>
<td>47</td>
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<tr>
<td>Complications of pregnancy and childbirth</td>
<td>1</td>
<td>10</td>
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<tr>
<td>Congenital malformations</td>
<td>33</td>
<td>137</td>
</tr>
<tr>
<td>Infectious hepatitis</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>All other causes</td>
<td>373</td>
<td>1,695</td>
</tr>
</tbody>
</table>

Marriages, divorces and annulments are by place of occurrence, all other data are by place of residence.

July 1970

THE HEALTH BULLETIN 15
If you do NOT wish to continue receiving The Health Bulletin, please check here □ and return this page to the address above.

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"I have to keep reminding myself"
THE HEALTH BULLETIN

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On the Cover
Dr. Arthur McBay injects a blood sample into a Gas Chromatograph. The instrument, which performs on a highly specific basis, can identify either of three types of alcohol (methyl, ethyl, isopropyl) in a blood specimen in six minutes. The Gas Chromatograph, part of the Medical Examiner Division's modern-equipped laboratory, has eliminated lengthy side tests for determining alcohol types.

Photo by Bill Brinkhous
In my opinion, one of the greatest needs of the 80 local health departments throughout the state is properly staffed and equipped laboratories. The need is reflected in many areas of public health. Sanitarians need a local laboratory in their efforts to control environmental health problems. The facility would enable sanitarians to examine water samples taken from individual homes within hours, rather than ship them long distances to the central laboratory in Raleigh.

Further, rheumatic fever and subsequent heart damage can be prevented if group A streptococcal infections are treated within nine days after onset. To realize the greatest advantage from rapid identification of group A streptococci, a laboratory must be in close proximity to the physician and the patient.

A laboratory could materially strengthen local health departments in the control of venereal diseases—especially gonorrhea. Specimens cannot be shipped to the central laboratory due to special preparations required in culturing. A local laboratory can inoculate the culture media as specimens are collected. Culturing gonorrhea specimens is especially helpful in identifying chronic gonorrhea in female patients.

Cost is usually the reason given for the lack of progress in establishing local health department laboratories. Alas, how long can we delay this vital health need?
A breakthrough has been achieved in the cure of two types of cancer considered incurable only a few years ago. Doctors at medical centers throughout the country are now using a combination of drugs, x-ray and surgery with remarkable success in the treatment of Hodgkin's disease and Wilms' tumor.

Hodgkin's disease is an illness affecting the lymph glands and occurs mostly in children and young adults. It is suspected that the disease is caused by a virus. Males are affected more frequently than females. Symptoms vary depending on which lymph glands are infected. Usually those in the neck become enlarged and are noted first. Severe symptoms are produced by an enlargement of lymph glands in the chest and abdomen.

When Hodgkin's disease is diagnosed, an evaluation of the stage of the disease is made as soon as possible. This is accomplished by a new x-ray technique (lymphangiography) which reveals the degree of involvement of the lymph gland system. Surgical exploration is also used if necessary.

The patient who has a localized form of Hodgkin's disease is now...
almost always assured of being cured due to recent advances in radiation therapy. Advanced Hodgkin's disease is now being successfully treated with drugs in addition to x-ray.

Wilms' tumor is a malignancy of the kidney. About two thirds of the cases occur before the age of three. The most obvious symptom is a non-tender abdominal mass confined to one side of the abdomen. Without treatment it grows and destroys normal kidney tissue and may damage other abdominal structures. Advances in the treatment of this disease have greatly enhanced chances for complete recovery.

According to Dr. Gerald Hanks of Memorial Hospital in Chapel Hill, the cure of Wilms' tumor is effected by a combination of surgery, radiation and chemotherapy. Even patients who suffer recurrences can be cured by appropriate combined therapy.

It is rewarding to public health officials to know that these two types of cancer may be completely cured when found early. More importantly, it means many children and young adults in North Carolina will have an opportunity to live longer. It also provides greater hope for eventual cure of all cancer.

* (According to Easson, "cure of a disease is taken to connote that in time—probably a decade or two after treatment—there remains a group of disease-free survivors whose annual death rate from all causes is similar to that of a normal population group of the same sex and age distribution.")
Cancer Deaths Concern Health Officials

Each year over 6,000 persons die of cancer in North Carolina. Early detection and appropriate treatment could save many lives. Early detection is the goal of the cancer program of the Chronic Disease Section, N. C. State Board of Health.

A case in point—a woman in her early 50's routinely visited a cancer detection center. The examining physician discovered enlarged lymph glands in several areas, and advised her to have a complete examination. Early treatment for lymphoma was begun and six years later she was free of observable symptoms of the disease.

In 1948, three years after an act was passed by the General Assembly assigning cancer control activities to the State Board of Health, three cancer screening clinics began functioning in Wilmington, Asheville and Winston-Salem. Completely supported by the state, these clinics have increased to a current total of 27 and are located throughout North Carolina.

During 1969, approximately 11,000 patients were examined—1.8 percent had cancer and suspected cancerous symptoms were noted.

An important part of a cancer detection center's function is taking the patient's medical history. A complete history is vital in the diagnostic and treatment process.
in another 0.3 percent.

All the clinics offer a "Pap" smear test for women. The slides are sent to the laboratory of the State Board of Health for examination. Some clinics, depending on the availability of physicians and facilities, offer such additional screening procedures as examination of the large bowel and rectum, chest x-ray, blood chemistries and patient education in self-breast examination and the seven danger signals identified by the American Cancer Society.

Funds are available under the second phase of the cancer program (diagnosis and treatment) for medically indigent residents of the state for diagnostic study when cancer is strongly suspected and for treatment of known cancer cases. In fiscal 1969, there were 808 admissions for diagnosis—22 percent proved to be cancer cases. During the same period, 599 known cases of cancer were treated under the treatment program.

The N. C. State Board of Health is concerned with the large percentage of the population who die of cancer. Justification, morally and financially, for the cancer screening program is pointed up in the number of cancer cases detected early and cured.

WILLIAM A. BROADWAY, N. C. State Board of Health (Asheville), was elected president of the National Environmental Health Association at the 34th annual educational conference held in Las Vegas. Broadway is the first president of the association to be elected from a southern state. In addition, he has been honored several times for accomplishments during his 31 years in public health work.

DR. ABDULLAH V. FATTEH has been appointed associate Chief Medical Examiner. A native of Bombay, India, Dr. Fatteh received his medical degree in Bombay in 1960. He was awarded degrees in B.M.J. (clinical and pathology) in 1964-65 in London and a Ph.D. in Forensic Medicine at the University of Belfast—also in 1965. Dr. Fatteh graduated from the Blackstone School of Law in Chicago in 1967. Among many ranking positions, he was a Fellow in legal medicine at the Medical College of Virginia and assistant pathologist with the Armed Forces Institute of Pathology prior to coming to North Carolina.
ALCOHOL causes more trouble, more deaths, than all other drugs and manufactured chemicals combined. Nevertheless, wide popular approval sustains its increasing use. Although laws regulating the use of alcohol are not nearly as restrictive as those relating to drugs such as narcotics, there are specific sanctions imposed. But the problem of whether the alcoholic with his deviant behavior is sick or criminal (or both or neither) is still to be resolved.

The popular but erroneous belief that alcohol is a stimulant arises from its effect on the brain. Alcohol decreases inhibitions and dulls judgment. In automobile accidents, the drinking driver is more commonly an alcoholic than an occasional or “social” drinker.

People vary greatly in their reactions to alcohol. Novice drinkers and the near-terminal alcoholics are those most affected by small amounts of liquor. Concentrated drinks and those taken when the stomach is empty have greater effect than diluted drinks or those consumed with food or on a full stomach.

Alcohol has a “filling” effect on most people. Appetite for most foods other than carbohydrates is greatly diminished. This is one of the stranger and more important characteristics of this drug and one that warrants much further study. Diminished resistance to infection in chronic alcoholics is another.

Impaired judgment usually begins following about four drinks (four ounces of 100 proof liquor or four standard size beers) within an hour. Although most drinkers will not ex-
Normal liver.

The fatty liver (above) weighs nearly three times as much as a normal liver. Its rich, brown color has given way to a yellowish brown. Enlargement is often an intermediate step in the development of cirrhosis, a liver condition frequently found in alcoholics.

The following stages are generally observed when a person weighing approximately 175 pounds consumes 100 proof alcohol:

- He appears normal after consuming one to four ounces. But, measurable changes can be demonstrated in his reflexes and reaction time.
- After consuming from four to eight ounces, he exhibits impaired judgment, decreased inhibitions, and poor coordination. Driving is unsafe at this stage.
- Should he consume more than eight ounces, he becomes confused, his speech is slurred, his walk staggered, his eyes glassy, and his face usually flushed.
- Continued consumption of alcohol results in marked incoordination, stupor, and paralysis.
- The final stage is coma and death. Consumption of one “fifth” of 100 proof alcohol within one to two hours will kill at least half those people foolish enough to drink this amount.

Most of us, considering ourselves “temperate” or “social drinkers,” feel...

Cont. on Page 14
Many men, women and children have suffered from and tried to live with venereal diseases since the days of antiquity. As can be imagined, the afflicted have been and are mostly young at the time of contracting these diseases. Many have died prematurely as a result of the long term effects of syphilis and others have suffered varying degrees of permanent disability, for long periods.

An understanding of the method of spread can and has provided the key to the control of many communicable diseases such as cholera, yellow fever, malaria and tuberculosis. The development of vaccines for these diseases has had tremendous impact in many cases as has the production of antibiotic agents. There is reason to hope that a vaccine will be developed for gonorrhea in the near future. The development of a vaccine for syphilis, however, will be more difficult because of the nature of the organism.

In spite of considerable success in controlling and eradicating many communicable diseases, the incidence of venereal diseases taken together is rising and rather alarmingly so when figures over the last ten years are looked at. What possible reasons are there for this? Firstly, there seems little doubt the opportunities for spread have increased. This means increased sexual permissiveness—promiscuity or "free sex." Secondly, a lack of knowledge (or care perhaps in some cases) regarding the inherent risks this type of behavior involves for those who indulge in it is evident.

Much has been said and written recently about the risk-taking behavior of youth. Actually, it is far from confined to youth. Whatever the type of behavior, society should not shun or abdicate its responsibility which it accepted long ago to educate in a constantly enlightened way even though it may find some of the subject matter less appealing. Society is risk-taking if it does not
Dr. Jerome Melton (center), assistant superintendent of Public Instruction for North Carolina, accepts a check amounting to $3,270 from Pfizer Laboratories. The fund will be used to finance a two day workshop on venereal diseases for 30 grade school teachers throughout the state this fall. Dr. Jacob Koomen (left), State Health Director, announced that specialists from his agency will attempt to acquaint the teachers with details concerning venereal diseases, as well as the severity of the problem in the state and nation.

educate its youth to the dangers of such things as venereal diseases or for that matter drug abuse or alcoholism or smoking. To continue to condemn those who, perhaps without guidance, acquire venereal disease on the grounds that principles of acceptable behavior have been violated and leave it at that will not do. To continue to sweep venereal diseases, education about them and their relation to sexuality under the mat will only compound the problem.

This type of education requires community acceptance for it to take place outside the home. For it not to take place either at home or through the community is tantamount to inviting venereal diseases to stay with us for another indeterminate period of time.

Venereal diseases are preventable. They respond well to treatment if diagnosed early. A populace alert to an understanding of method of spread, early signs and symptoms and dangers of these diseases is an absolute prerequisite to improved control and reduction of suffering. A knowledge of venereal disease is hard to come by unless it is taught, preferably in school, along with other important health matters by trained and understanding personnel.
A variety of effective contraceptive devices are available to those who want to practice family planning. Both husband and wife should discuss a mutually satisfactory method with a physician.

EDUCATION...key to family planning

By
Dr. T. D. Scurletis
Director
Personal Health Division
N. C. State Board of Health

Progress in effective population control, of which family planning is an essential component, is being slowed somewhat today by a constant increase in the lifespan of the total population. This conclusion is in contrast to the heralded notion that the birth rate is behind the population surge. To the contrary, the birth rate in North Carolina has actually decreased during the past few years.

North Carolina has traditionally led the nation in the development of family planning programs. The first State health department-centered family planning service program was established in North Carolina nearly 40 years ago.

The question of whether an attempt should be made to control the number of births takes on significance when it is noted that 25 per-
cent of the infants are born to young women 18 years of age and under. Further, many infants are unwanted by their parents and far too many are born to unwed—especially teenage mothers. These births jeopardize our ability to improve the quality of life. Particularly affected is that portion of our citizenry desiring family planning assistance—namely, the poor and medically indigent.

Dull attitudes and ignorance often surround the area of family planning and sometimes impede progress in this important sociological effort. A large part of the population has little (often incorrect) information regarding contraceptive methods and how assistance in family limitation may be obtained.

Professionals, whose work is related to conception control, also lack sufficient knowledge concerning comprehensive family planning to implement needed services. The problem is compounded by a lack of mobilized manpower and adequate funding necessary to provide attractive quality service.

Vital to effective family planning among young people is the accessibility of good family life education. This approach has yet to be developed. Target family planning programs should be directed toward those groups who are in need of services, but incapable of obtaining them for whatever reason. To wit: eight out of 10 women in the lower economic group have their first child before the age of 18.

The reduction of unplanned and unwanted births could ease economic and cultural barriers and at the same time meet public objectives for a comprehensive family planning program. Such a program must be planned for total services and must be developed by involving all concerned agencies and institutions. To be sure, social customs are involved and affected by family planning programs. It is, therefore, necessary to achieve a broad commitment of society in order to bring about a reduction of births.

A pressing fact of considerable importance is that a comprehensive family planning program should include a total medical care approach. It must include a maternity care program as well as extensive family life education program. All components must function concurrently, else the entire program will fail.

Alternative programs are generally ones which we talk about but seldom implement. A case in point would be the question of abortions of unwanted conceptions on a scale such as has been practiced in Japan. However, this approach requires changing many attitudes and is generally unacceptable at this point in time. It seems, however, that attitudes are rapidly changing — especially since implementation of repeal of abortion laws in a number of states.

The immediate problem is to provide services in a manner that they will be acceptable. Marked emphasis must be placed on case finding and include males as well as females. In order to accomplish this task, it will be necessary to develop and utilize the services of non-professional workers for personal contact activities.
Potpourri

An old gentleman of 75 or so went to a physician and requested a general checking-up as to the state of his health.

After looking him over thoroughly, the doctor smilingly reported that everything was fine and shipshape. "Tell me," he asked as the old chap paid his fee, "have you followed any regular regimen which would account for your excellent physical condition?"

"Well, it's this way," his patient replied. "When I was married some 50 years ago, I entered into an agreement with my wife to the effect that whenever I lost my temper and began to blow off steam, she was to remain silent. When she, on the other hand, lost her temper I agreed to leave the house. Well, for over 50 years I have enjoyed a fine outdoor life, which no doubt accounts for my present condition."

Returning from a trip to Europe, Mark Twain became annoyed as a customs official rummaged through his baggage. "My good friend," the author exclaimed, "you don't have to mix up all my things. There are only clothes in there—nothing but clothes."

But the suspicious fellow kept rooting around until he hit upon something hard. He pulled out a quart of the finest-quality bourbon. "You call this 'just clothes'?", cried the official.

"Sure thing," Twain replied calmly. "That is my nightcap."

Alcohol—Deadly Drug

we have nothing to fear from occasional indulgence. Recent well documented research indicates otherwise.

It now appears that "moderate" levels of alcohol may cause sludging of the blood cells—diminishing oxygen transportation that deprives cells of normal oxygen supply. The more sensitive ones are those neurons or ganglion cells in the cortex or gray matter of the brain. These cells do not regenerate and are not replaced as opposed to restitution typical of some other organs and tissues. The study correlates well with the long recognized cerebral cortex degeneration in heavy drinkers.

Recent studies have also demonstrated that alcohol has a direct toxic and damaging effect on the cells of the liver. Previously, it had been believed that all the damage to the liver in alcoholics was due to nutritional deficiencies.

To be sure, a wide variety of tissue and organ degenerative changes have long been recognized in the chronic alcoholic. The brain, heart, liver and pancreas are the most obviously affected organs.

We do not feel that it is the purpose of this paper to attack the use of alcohol. We are, however, concerned over the increased use and abuse of this substance among all segments of society—along with the unfortunate results.
## State of North Carolina Vital Statistics Summary

<table>
<thead>
<tr>
<th>Event</th>
<th>May 1970</th>
<th>Year to Date 1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Births</td>
<td>7,680</td>
<td>38,775</td>
</tr>
<tr>
<td>Deaths</td>
<td>3,739</td>
<td>19,344</td>
</tr>
<tr>
<td>Infant Deaths (under 1 year)</td>
<td>189</td>
<td>979</td>
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<tr>
<td>Fetal Deaths (stillbirths)</td>
<td>143</td>
<td>675</td>
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<tr>
<td>Marriages</td>
<td>4,186</td>
<td>16,792</td>
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<tr>
<td>Divorces and Annulments</td>
<td>1,156</td>
<td>5,145</td>
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</tbody>
</table>

### Deaths from Selected Causes

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>May 1970</th>
<th>Year to Date 1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diseases of the heart (all forms)</td>
<td>1,354</td>
<td>6,953</td>
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<tr>
<td>Cancer (total)</td>
<td>575</td>
<td>2,800</td>
</tr>
<tr>
<td>Cancer of trachea, bronchus and lung</td>
<td>102</td>
<td>506</td>
</tr>
<tr>
<td>Cerebrovascular disease (includes stroke)</td>
<td>443</td>
<td>2,318</td>
</tr>
<tr>
<td>Accidents</td>
<td>309</td>
<td>1,318</td>
</tr>
<tr>
<td>Motor vehicle</td>
<td>177</td>
<td>666</td>
</tr>
<tr>
<td>All other</td>
<td>132</td>
<td>652</td>
</tr>
<tr>
<td>Diseases of early infancy</td>
<td>114</td>
<td>526</td>
</tr>
<tr>
<td>Influenza and pneumonia</td>
<td>92</td>
<td>963</td>
</tr>
<tr>
<td>Bronchitis, emphysema and asthma</td>
<td>39</td>
<td>321</td>
</tr>
<tr>
<td>Arteriosclerosis (hardening of arteries)</td>
<td>49</td>
<td>268</td>
</tr>
<tr>
<td>Hypertension (high blood pressure)</td>
<td>22</td>
<td>117</td>
</tr>
<tr>
<td>Diabetes</td>
<td>74</td>
<td>360</td>
</tr>
<tr>
<td>Suicide</td>
<td>49</td>
<td>225</td>
</tr>
<tr>
<td>Homicide</td>
<td>49</td>
<td>247</td>
</tr>
<tr>
<td>Cirrhosis of liver</td>
<td>42</td>
<td>263</td>
</tr>
<tr>
<td>Tuberculosis, all forms</td>
<td>17</td>
<td>67</td>
</tr>
<tr>
<td>Nephritis and nephrosis (certain kidney diseases)</td>
<td>23</td>
<td>99</td>
</tr>
<tr>
<td>Infections of kidney</td>
<td>32</td>
<td>111</td>
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<tr>
<td>Enteritis and other diarrheal diseases</td>
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<td></td>
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<tr>
<td>(stomach and bowel inflammations)</td>
<td>5</td>
<td>45</td>
</tr>
<tr>
<td>Ulcer of stomach and duodenum</td>
<td>9</td>
<td>56</td>
</tr>
<tr>
<td>Complications of pregnancy and childbirth</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Congenital malformations</td>
<td>43</td>
<td>180</td>
</tr>
<tr>
<td>Infectious hepatitis</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>All other causes</td>
<td>395</td>
<td>2,090</td>
</tr>
</tbody>
</table>

Marriages, divorces and annulments are by place of occurrence, all other data are by place of residence.
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"a Texas ear of corn"
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Editor
Clay Williams

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On the Cover
Modern fluoroscopic equipment featuring an electronic image intensifier. The image produced by radiation is electronically amplified and reproduced on a TV-type monitor. Most radiologists agree that only fluoroscopic equipment with an image intensifier should be used on women of childbearing age and children. The image intensifier permits an examination with substantially less radiation than old fluoroscopic equipment.

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The Sanitary Engineering Division has been assigned the responsibility of controlling certain aspects of the environment in order to protect the health of the people of the State. It is encouraging to health professionals that there is greater public awareness of the environment today than at any previous time.

Recently there have been prophesies that mankind will be destroyed by environmental pollution. It is conceivable that this could happen. However, it appears more likely that progress will be made in environmental control, which will maintain and improve it. Problems caused by industrial and municipal growth which result from a demand for consumer products are large and complex. If these problems were permitted to go uncontrolled, they would have a serious adverse effect on the quality of life that each of us is entitled to enjoy. Such problems include land, air and water pollution, inadequate programs of water hygiene, radiation hazards, sub-standard housing, and many others.

There is no easy solution to all our environmental problems, but much can be accomplished to improve conditions in North Carolina by the implementation of planning for land utilization, providing systems of regional water supplies, sewerage and solid waste disposal.

Due to the broad nature of the term environment a multiplicity of ideas have emerged as to its meaning. In order that we do not become mis-directed in our work to prevent environmental pollution, it should be remembered that our efforts should be directed toward improving the physical and mental well-being of man.
MEDICARE...
Complaints Get Quick Action

By
Ernest Phillips, Chief
Medicare Program
State Board of Health

Any program, such as Medicare, which deals with institutional care of the sick and aged is going to receive complaints and criticisms relative to the adequacy of care being given to individuals in particular facilities. While the experience of Medicare has shown that many such complaints are not valid, each complaint is investigated quickly and intensively. Fairness to the patient and to the facility demands this.

Complaints, however, are comparatively rare when the number of patients and institutions involved are taken into account. More concern is centered around nursing home care than hospital care. Hospital care of a patient is generally of short duration. The opposite is true for a nursing home patient. Too, the nursing home patient is usually older and more dependent upon the staff for help.

Adequate nursing coverage is a frequent problem in facilities due to the shortages of registered nurses. Many people tend to think of nursing as being synonymous with private duty nursing. While nursing homes and hospitals are required to furnish 24-hour nursing service, this does not mean a bedside private nurse for each patient. Where nursing service complaints have been valid, the facility has been required to hire additional nurses or more appropriately schedule existing nurses.

Interestingly enough, complaints are seldom received from the patient himself. Typically, it is a relative or guardian who initiates the complaint. Some patients feel that to complain is to risk being asked to leave the facility. Seldom is this true, but it is a factor.

The relative complains because of a sincere desire to protect the patient. What he often fails to recognize, or is willing to admit, is that the patient is sometimes confused and disoriented and does not fully understand the circumstances encompassing his care. Upon being interviewed, the patient will express satisfaction as to the care he is receiving, while a son or daughter complains bitterly.

Significantly, the most frequent complaint has to do with food serv-
Complaints are seldom received from patients, themselves. Typically, it is the relative or guardian who initiates complaints.

These complaints fall into two categories—quantity and variety. Investigations have revealed only two instances where food was inadequate. Both facilities were terminated from the Medicare Program and steps were taken to correct the discrepancy.

The complaint of unattractive or unappetizing food is more difficult to investigate. Many patients are on special diets prescribed by the physician which by their nature are neither attractive to the eye or taste. Yet, the facility has no choice but to follow the physician's orders.

A program director should look upon complaints not as a task, but as an opportunity to improve the monitoring of health care facilities. Staff shortages make it impossible to visit institutions as often as would be desirable. Complaints, therefore, can serve as warning signals that a particular institution needs special attention.
Diabetes is a chronic metabolic disease affecting a number of body organs. A person's glandular, immunologic and chemical makeup go a long way toward determining whether he will become a diabetic. Diabetes usually occurs among those who have inherited a tendency toward the disorder.

The concept that a lack of insulin causes an onset of diabetes is no longer accepted. A person may become a diabetic in spite of the fact that his body produces a sufficient quantity of insulin. There are modern, accurate methods for measuring insulin levels in the blood. As a result it has been determined that many diabetics produce enough insulin, but because it does not work properly, they have to depend upon injected insulin.

It is a widely known fact that the most obvious complexity in diabetes is the inability of the body to use sugar in an efficient manner. Since the body can produce glucose (sugar) from proteins and even from fats, it must be reckoned that diabetics cannot be managed by the control of sugar alone.

How does a person go about controlling metabolic disturbances in diabetes? Mainly by diet and by reducing excessive emotional response to stress. Emotional stress increases the glucose blood level through action of adrenal glands. It is reasonable to assume that many cases of diabetes have been provoked, accelerated or maintained by excessive emotional response to stress.

Metabolic control often can be achieved by diet because what counts is the amount of food consumed and not as much the type. It will not help to eliminate starches and sugar and, at the same time, indulge in proteins (meat, eggs, etc.). Dietary fat itself actually decreases new glucose formation and even decreases formation of new fatty tissue. This is particularly true of poly-unsaturated fats such as safflower oil.

Indeed, safflower oil is able to displace saturated fats in the body and is highly beneficial in the prevention of atherosclerosis (hardening of the arteries), which is four times as common in diabetics as in the general population. Effort should be made to replace at least half of all ingested fats by safflower oil, corn oil, or corn oil margarine and to replace red meats with fowl and fish.

Starvation on the other hand is dangerous because it leads to increased destruction of body fat tissues, with consequent flooding of the blood stream with soluble fats and cholesterol. Such a course may ac-
celerate hardening of the arteries with subsequent heart attacks, strokes and blockage of limb arteries.

A person has to determine when and how much to eat in establishing a diet. Select a reasonable number of calories according to body weight (1400 or less calories for overweight people). Observe the effect of the diet on the body weight for a month or two and revise the caloric intake up or down. A good beginning is to allow 10 calories per pound of desirable body weight. Then plan the diet accordingly — 40 percent carbohydrates, 20 percent protein and 40 percent fat.

In stable (adult) diabetes weight loss is the principal goal. Therefore, tight control over the amount of food consumed is more important than its composition.

Before any medication is started, it pays off to try diet only for one to three months to see whether this measure can control symptoms of diabetes. There is reason to believe that at least half or more of all diabetics can be controlled by diet before resorting to drugs and insulin injections.

There is a correlation between diabetes and obesity. Weight control is basic to treating the disease. In some instances, controlling weight may eliminate the clinical picture of diabetes and improve the glucose tolerance test.
It is possible to be subjected to too much x-ray, but the likelihood of receiving observable damage is small. Studies of biological effects of x-radiation have shown that radiation exposure is basically undesirable and can produce genetic mutations. Massive x-ray exposures can cause serious complications such as skin cancer, leukemia and a shortening of life. The public tends to be more concerned with direct x-ray damage to the body. However, they should be equally concerned with the subtle genetic mutations which may be induced and passed on to future generations.

The doctor's decision to use diagnostic and therapeutic x-ray must be made within the framework of the "benefits versus risk" concept. X-ray is one of the most powerful and useful tools available to a doctor.
and in most cases the information obtained from its use far outweighs the risk involved. X-ray should not, however, be used indiscriminately without regard for both the benefit to be derived and the risk which is presented to the patient.

The Radiological Health Section of the N. C. State Board of Health does not and should not interfere with a doctor's decision to use x-ray. Its function is to ensure that a minimum amount of radiation is delivered to the area of clinical interest. This minimizes the area of the body which is exposed to radiation.

- Removing unwanted "soft" components of the radiation beam. This radiation does not contribute to the radiograph and results in unnecessary exposure.
- Providing proper equipment shielding to eliminate stray radiation leakage.
- Providing accurate timers and switches to begin and terminate exposures.

Examples of eliminating "unnecessary radiation exposure" include:
- Restricting the useful radiation beam to the area of clinical interest.
- Using what is termed "unnecessary radiation exposure." These items are required by our regulations. However, in addition to the required items, we strongly recommend the use of other techniques which will further reduce patient exposure. Examples of these are as follows:

By Dayne H. Brown
and
John W. Shaver
Radiological Health Section
State Board of Health

September 1970
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cone on a dental x-ray machine instead of the plastic pointer cone has been shown to substantially reduce unnecessary radiation exposure to other parts of the patient's body.

- The use of the fastest x-ray films available which would be consistent with the examination needed. The speed of the film relates to the length of time the x-ray machine must be activated. Thus, the faster the film the shorter the time the machine is on.
- The use of protective shields to protect other parts of the body from stray radiation.
- Proper sealing of dark rooms to prevent light leaks which might fog film and diminish its quality. The use of thermometers and timers in the darkroom to ensure that the film is properly
developed. Improper darkroom procedures can result in unnecessary retakes of films.

In addition to these types of requirements and recommendations, there is still another very important factor which can reduce unnecessary radiation exposure. In most cases, the doctor decides when an x-ray is needed but does not actually position the patient, operate the machine, or develop the film. These activities are usually performed by technicians. Since most of the patient's protection is concerned with techniques and procedures, it is most important that x-ray technicians receive thorough training in radiation safety. With this training, technicians will be able to understand the importance of following procedures established to minimize the patient's exposure.

Consequently, the answer to the question, "How Much X-Ray is Too Much?"—is that any unnecessary radiation exposure is too much.

An early model dental x-ray machine. Note the exposed high voltage coiled wires attached to the cylindrical x-ray tube. Although such equipment can be brought into compliance with state regulations, a number of mechanical adjustments must be made in many cases. It may require additional restrictions in the size of the radiation beam in order to limit exposure to the area of clinical interest.
A mother with a new born baby in her arms is wheeled from the hospital entrance to the curb where an automobile is waiting to take her home. Wraps are removed for nurses and attendants to take one last peek at the delicate features of the infant.

Now, 18 years later, the once chubby, pink mite has grown into a beautiful young lady. Returning from school, she bounces into the house—inevitably, as children do, calling her mother. Her disappointment is apparent as she reads a note saying her mother will not be home until late evening. Her father is frequently away on business trips.

Lonely and feeling insecure, the girl experiments with the family's liberal liquor supply. A few calls to friends and a party soon develops. Among the group is a so-called friend who happens to be a drug pusher. The lass is introduced to marijuana and during the course of the evening takes a few puffs—her first step on a road that will eventually totally engulf her life.

These scenes are portrayed in a film on narcotic abuse distributed by the Film Library of the N. C. State Board of Health and seen during 1969-70 by nearly 60,000 persons throughout North Carolina.

The Film Library is one of the fastest growing sections of the State health agency. It presently has an inventory of about 3,450 films on practically every subject pertaining to public health. Eleven employees work feverishly complying with requests for films from schools, local health departments, churches, colleges, hospitals, technical institutes, police departments, Boy and Girl Scout organizations—just about any person, group or agency with an audience and a projector and a need for a film.

The Film Library had its rather meager beginning in 1942. Listing 20
films in its inventory, only four were distributed during the first two months. The age of visual aids caught on fast, however, and the library grew during the following years to the point that it is now the largest distributor of films of any state health department in the United States.

Appropriations for the purchase of films increased from $15,000 for the 1957-59 biennium to $76,000 for the 1969-71 biennium. Films used extensively will last about six years. Because of accelerated use a substantial increase in funds will be requested for 1971-73 biennium in order to replace films over 10 years old (about half of the total inventory).

Many films are booked months in advance. The most requested films deal with the topics of drugs, alcohol, safety and venereal diseases. The 130 films available on drugs were booked to capacity through the end of the 1969-70 school year. Streamlined distribution procedures worked out by section chief Roger Whitley and his staff made it possible for one drug film to be shown in six different locations within a period of 19 days. Almost all films are booked at least four times per month.

Letters of commendation on the subject matter of films and the dispatch with which they are distributed have poured into the State Board of Health and to ranking state officials. Certainly, the Film Library of the State Board of Health has earned an enviable reputation for outstanding service to the people of North Carolina. That service is bound to expand as the state's citizenry becomes attuned to the necessity for more knowledge on public health problems.
Diabetes... The Tricky Disease

Two million Americans have diabetes and don't know it according to Dr. Glen McDonald of the National Center for Chronic Diseases. It is estimated that there are 4.4 million known cases of diabetes in the country.

In 1969, diabetes was directly responsible for 35,000 deaths in the United States and a contributing factor toward 50,000 more. It continues to rank third as the leading cause of blindness. Diabetes ranked seventh as the leading cause of death in North Carolina last year. Early detection could have prevented blindness and enabled these victims to live longer more useful lives despite diabetes.

Of 535 people examined recently at a diabetes screening clinic in an eastern North Carolina community 39 were found to have elevated blood sugar—a primary symptom of diabetes. All were scheduled for retest.

Studies indicate that undiagnosed diabetes is found mostly among persons over 40, the obese, relatives of diabetic and mothers of large babies (over 9 lbs. at birth). These people comprise the so-called "high risk" group. By 1985 it is estimated that the diabetic population will increase by 75 percent in the United States as a result of longer life expectancy. Faced with this likelihood, a comprehensive diabetes screening program has been implemented in North Carolina.

Diabetes screening is now available in every county in North Carolina. Over 36,000 persons were screened for diabetes last year and 1,700 were found to have elevated blood sugar. It is expected that 45,000 will be screened during 1970.

Even before symptoms appear diabetes can be discovered by analyzing a drop of blood for sugar content. The sample is taken by technicians at local health departments and forwarded to the State Laboratory in Raleigh for examination. If the possibility of diabetes exist, the person is scheduled for a retest by the county health department. If positive results are again observed, the individual is referred to his physician for diagnosis and treatment. As a follow-up measure, contact is maintained with the suspected diabetic to determine whether or not he sees a physician for proper evaluation.

Screening is an invaluable tool for identifying the two million "hidden diabetics" in the United States. It is especially important for those in the high risk group to be checked annually. For it is among this group that new cases of diabetes are most likely to develop.

Diabetes cannot be cured, but with early diagnosis and proper treatment it can be controlled. The diabetic, thusly, can expect to live a longer, active life.
## State Of North Carolina Vital Statistics Summary

<table>
<thead>
<tr>
<th>Event</th>
<th>June 1970</th>
<th>Year to Date 1970</th>
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<tbody>
<tr>
<td>Births</td>
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<td>Deaths</td>
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<tr>
<td>Infant Deaths (under 1 year)</td>
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### Deaths from Selected Causes

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<thead>
<tr>
<th>Cause</th>
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<tbody>
<tr>
<td>Diseases of the heart (all forms)</td>
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<td>Cancer (total)</td>
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<td>Cancer of trachea, bronchus and lung</td>
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<tr>
<td>Cerebrovascular disease (includes stroke)</td>
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<td>Accidents</td>
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<tr>
<td>Motor vehicle</td>
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<tr>
<td>All other</td>
<td>133</td>
<td>785</td>
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<tr>
<td>Diseases of early infancy</td>
<td>124</td>
<td>650</td>
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<tr>
<td>Influenza and pneumonia</td>
<td>79</td>
<td>1,042</td>
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<tr>
<td>Bronchitis, emphysema and asthma</td>
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<td>375</td>
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<tr>
<td>Arteriosclerosis (hardening of arteries)</td>
<td>40</td>
<td>308</td>
</tr>
<tr>
<td>Hypertension (high blood pressure)</td>
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<tr>
<td>Diabetes</td>
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<td>427</td>
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<tr>
<td>Suicide</td>
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<tr>
<td>Homicide</td>
<td>58</td>
<td>305</td>
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<tr>
<td>Cirrhosis of liver</td>
<td>35</td>
<td>298</td>
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<tr>
<td>Tuberculosis, all forms</td>
<td>12</td>
<td>79</td>
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<tr>
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<td>69</td>
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<td>Ulcer of stomach and duodenum</td>
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<tr>
<td>Complications of pregnancy and childbirth</td>
<td>42</td>
<td>222</td>
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<tr>
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<td>6</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>All other causes</td>
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<td>2,455</td>
</tr>
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</table>

Marriages, divorces and annulments are by place of occurrence, all other data are by place of residence.
"And remember, voluntary controls should help curb that inflation."

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THE HEALTH BULLETIN

Editor
Clay Williams

Volume 85  Oct. 1970  Number 10

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On the Cover
Twisted hands of many rheumatoid arthritis sufferers are being restored to usefulness due to a piece of silicone rubber shaped in the form of a hinge, and the skill of a group of orthopedic surgeons at Duke University Medical Center. Most such operations improve functional motion up to 75 percent of their original efficiency.
What level of cancer-producing additives are you willing to eat in your food? If you have public health responsibilities, to what level of carcinogen (a cancer-producing substance) will you give your signed consent?

Statutory safeguards provided by Congress (Delaney clause) have been largely ignored by many food suppliers and the Food and Drug Administration (FDA). Indeed, there have been active attempts to make "weak tea" of the protection Congress intended.

Despite the law, the FDA was almost successful in keeping the artificial sweetener, cyclamate, on the market. Not until a House subcommittee, headed by 2nd district congressman L. H. Fountain, registered vigorous opposition did FDA retreat from its stand.

A recognized carcinogen in animals and man has been given to food animals for years to enhance their growth and weight. It was prohibited from use in poultry 10 years ago. It is still used in the beef industry and is still demonstrable in appropriate samples. The FDA has no plans for prohibiting its use.

In another area, neither FDA nor the Department of Agriculture have investigated the fact that mineral oil is absorbed by humans and beef cattle. It has been determined that certain tissues in both contain mineral oil, and can cause cancer—at least in injected form. Five million gallons of mineral oil are used by food industries each year.

An FDA official has expressed the opinion that the proposed changes are "designed to anticipate and counteract criticism and that the Department is merely trying to weaken existing safeguards against harmful substances in foods."

The National Cancer Institute and others contend that there are no permissible "safe levels" of cancer-producing additives for food.
Today’s Pharmacist …

More Than a Pill Vendor

The kindly white-jacketed man behind the drug store counter filling a prescription is a valued part of the American scene. Doc, as he is usually called, has stayed quite apart from direct patient care. His knowledge of the action and reaction of drugs in the human body was seldom asked for nor often volunteered.

But things are changing, according to Leonard Berlow, Assistant Professor at the UNC-CH School of Pharmacy. “New generations of highly trained professional pharmacists are no longer content with their traditional role,” Berlow revealed. “They are seeking out and demonstrating that there are numerous ways to contribute to health care. Medical specialists and the public have been quick to recognize their potential in helping provide health care.

“Pharmacists are actually our best distributed health resources,” Berlow said. “They are often found in areas where there are no physicians or nurses and are frequently called upon to assist in the initial care of those in need. This by no means indicates an infringement on the medical profession. To the contrary, pharmacists often refer patients to physicians.”

Berlow noted that changes in health customs and traditions take place every day. “There’s drug abuse, birth control, weight reduction, and TV headache remedies—to name a few. Questions on health care are complicated and numerous. But the pharmacist is ready, willing, and able to lend his knowledge and assistance whenever called upon.”

The training of pharmacists is undergoing dramatic changes, Berlow disclosed. “School is now generally a five year period. No longer is the student confined to the school and laboratory to learn mixtures and dosages. Today they are working with other health specialists as a team to assure better patient care.”

The School of Pharmacy of the University of North Carolina has pioneered in this training pro-
A new concept has been added in the training of today’s pharmacy student. The student prepares, administers and records patient medications. For the first time they actually see how drugs affect various medical conditions. The modern pharmacist can become a vital link in reaching people in need of public health care.

The curriculum for fifth year pharmacy students includes study as “medication assistants” at the N. C. Memorial Hospital. They learn to become patient rather than product oriented by taking and recording patients’ vital signs including temperature, pulse, respiration, and blood pressure.

The student prepares, administers, and records patient medications. They actually see for the first time how drugs affect various medical conditions. One “medication assistant” viewed the new concept in this manner—“I had a chance to see drugs in action, see the symptoms, the results of drug therapy, and understand the reasons why and how doctors choose a particular drug and how the dosage is decided.”

Berlow ventured that medicine has made rapid progress in the past few decades. “But this would not have been possible,” he said, “without the outstanding contributions of pharmacists.” The future will add many medical discoveries and bring about progressive changes in the pharmacy specialty. The white-jacketed man (or woman) behind the drug store counter will become an integral force in providing broader health care services.
"Hepatitis" is the "itis" word meaning inflammation of the liver, just as "appendicitis" means inflammation of the appendix and "tonsilitis" means inflammation of the tonsils. A liver can become inflamed by a variety of things including certain drugs, poisons, and even alcohol. However, the most common cause of hepatitis is thought to be a virus—viral hepatitis.

Viral hepatitis is really two diseases. Infectious hepatitis, the more common of the two, is characterized by a short incubation period (15-40 days) and is usually spread person-to-person, although contaminated food and water frequently cause outbreaks. The infectious hepatitis virus is passed along by human waste products.

Serum hepatitis has a longer incubation period (60-160 days) than infectious hepatitis, is usually more severe, and is associated with blood transfusions or other situations in which a person's skin is punctured by an instrument (usually a hypodermic needle) contaminated with blood or serum from a person carrying the virus. This sort of spread was reduced when the use of disposable syringes and needles became common, but is becoming more of a problem because of the increasing practice of "mainlining" among drug addicts.

Until quite recently medical scientists were handicapped in their study of viral hepatitis by not being able to actually prove that a virus is involved. Repeated efforts to isolate a virus were frustrating, even though the disease behaves like a viral infection. In 1965, Dr. Barry Blumberg and his associates at the Institute for Cancer Research in Philadelphia published a report on a new antigen (any substance capable of stimulating the body to produce antibodies) they had discovered in 1963 in the serum of an Australian aborigine with leukemia; this was appropriately named the Australia antigen. The importance of this discovery was not immediately appreciated.

In 1967 the association of the
Australia antigen and viral hepatitis became apparent, and subsequent studies, in the main, indicate that antigen is the cause of serum hepatitis and not infectious hepatitis. Now called the hepatitis-associated antigen (HAA), it is rapidly opening new avenues of research in viral hepatitis and is also forcing reconsideration of some old ideas about the disease. For example, the time-}

honored belief that serum hepatitis is spread only by blood transfusions or contaminated needles is giving way to evidence that it, like infectious hepatitis, can be spread directly from person-to-person.

What does all this mean in terms of better control of viral hepatitis? Of perhaps greatest importance at present is that special blood tests have been developed which, although they lack certain refinements, show great promise in screening potential blood donors for the HAA. Perhaps some day—when and if a separate virus is discovered for infectious hepatitis—a vaccine can be developed to prevent viral hepatitis.

What can be done in the meantime? A return to the basic principles of personal hygiene is basic. Thorough washing of the hands with soap after using the bathroom and before meals and protection of water supplies from sewage contamination are important steps. Persons who have had hepatitis should not donate blood.

Gamma globulin will help lessen the severity of illness in persons intimately exposed to a case of infectious hepatitis although it does not actually prevent infection.
It has been written that arthritis is a “mean” disease. Thousands of sufferers of rheumatoid arthritis will attest to the author’s dogged attention to understatement.

Rheumatoid arthritis involves many tissues and organs of the body, but it always concentrates on the synovia (the lining of the joints). As the disease progresses in the lining of the joints it destroys structures about the joints — such as the ligaments and tendons. In many cases it leads to loss of motion or dislocation of the joints as is often apparent in the knuckle joints of the hands. Rheumatoid arthritic hands can become severely deformed to the extent that the patient is unable to open or close the fingers and to perform the daily chores of living. Pain in the twisted hands is nearly always present and may be severe at times.

Physicians at Duke University Medical Center are reconstructing hands deformed at the knuckle joints by implanting a two inch piece of silicone rubber.

According to Dr. James R. Urbaniak, the operation is a relatively simple procedure for someone trained in hand surgery. “We make an incision across the back of the hand, then remove part of the knuckle joint and some of the soft tissue. The artificial knuckle, which has been molded in the form of a hinge, is then inserted down to the stems of the bone. The implantation brings about realignment and provides improvement in range of motion and function,” he explained.

The primary purpose of the operation is to relieve pain and restore function. Results achieved from this reconstruction have been gratifying. Dr. Urbaniak hastened to add that “we cannot return the severely deformed hand to normal, but we can lessen the pain and improve its function.” Most such operations improve functional motion up to 75 percent of original efficiency. In addition, the surgery improves the appearance of the hand.

Silicone rubber, Dr. Urbaniak noted, is a surgically inert material. It is nontoxic, is durable and produces no unfavorable reaction from the body’s rejection mechanism which normally accompanies implantation of many foreign substances.

Dr. Urbaniak said the durability of the silicone rubber also has been
SILICONE RUBBER IMPLANT—before and after. Artistically constructed of more than 90 sets of muscles and bones combined and more than a million sensory receptors, hands are delicate instruments of touch and a source of agony to millions of people suffering from rheumatoid arthritis. An innovative surgical implantation can now restore function and relieve pain to many victims of the disease.

proved. The material has been flexed over 110 million times without breakage. This far exceeds the number of times the average person would flex his knuckle joints during a lifetime. For example, a secretary typing 60 words per minute for five hours a day would flex her knuckle joints 30 degrees only 25 million times in 25 years.

Can most sufferers of rheumatoid arthritis be helped by this operation? “Rheumatoid arthritis,” Dr. Urbaniak said, “can affect a person in various ways. Whether or not a patient can be helped involves a thorough evaluation of his total arthritic process, medical condition and an evaluation of the entire extremity—not just the hands or the knuckle joints. By far most of the patients we see with rheumatoid arthritis do not need the operation. We can do other procedures, but in some cases the disease has progressed beyond the point where the hand can be helped.”

The orthopedic surgery staff at Duke Medical Center has operated on 50 hands and 200 knuckles at this writing. In addition to rheumatoid arthritis sufferers, patients who have benefited from the unique operation include accident victims and casualties of the Vietnam war.

October 1970

THE HEALTH BULLETIN
In light of the growing drug abuse in North Carolina, an increased burden has been placed on our courts to deal with drug violations. At the same time, doctors, psychologists, and social workers are becoming increasingly insistent that drug cases be treated from a medical, rather than punitive, standpoint. One result has been the exposure of the inability of the court system to insure a speedy trial or to compel medical treatment and re-

... this is not the time to look for scapegoats. It is the time to look for answers. The trial process must be accelerated in order to assure justice and to maintain respect for the courts.
habilitation for the defendant.

The total number of cases now on
the dockets of North Carolina's
courts has reached staggering num-
bers. In a single county the number
of cases pending in the Superior
Court stands at over one thousand.
A six-county survey reports more
than three thousand Superior Court
cases pending (300 are narcotic viola-
tions)—many of which are over two
years old.

The paperwork and administration
of such vast numbers of cases as
well as repeated procedural delays
have ground our court system almost
to a standstill. Until swiftness of
trial can be returned to the courts
and respect for justice restored,
there can be little hope for progress
in the expeditious handling of drug
cases.

In addition, the lack of flexibility
in sentencing makes it all but im-
possible to deal with the drug prob-
lem from a medical standpoint. In
order for a judge to consider and to
provide for the medical needs of an
offender, he must have enough dis-
cretion to be able to consider the
merits of that individual case and to
ascertain an appropriate sentence. But
existing narcotics laws rigidly define
the sentences for each offense, often
making medical considerations im-
practicable.

It has been suggested that judges
have the discretion to commit a drug
offender for medical treatment in-
stead of sentencing him to an active
sentence in a penal institution. In
addition, the judge should have the
power to give a "split sentence,"
allowing him to sentence the offend-
er to a short active sentence, and
then a period of closely supervised
probation.

However, North Carolinians should
ask themselves whether our facilities
for drug treatment are adequate.
Aside from mental hospitals, there
are no public facilities where an ad-
dict can go for help. And drug off-
fenders in our state hospitals, as
well as in our prisons, unfortunat-
ely can receive only a minimum of
constructive treatment and rehabil-
itative services.

It is clear that our courts are en-
countering difficulty in dealing ef-
ciently with narcotics violations,
and it will demand a combined effort
of law enforcement agencies, correc-
tional institutions, and specialized
treatment facilities, as well as the
more rapid administration of justice
through the court system, to control
the drug problem effectively.
Atomic Instrument To Be Used -

Water Chemical Survey Slated

The chemical and mineral content of North Carolina's public water supplies is being appraised with increased intensity today by a concerned society.

At the request of the medical profession, industry and sanitary engineers, the Environmental Sciences Section of the Laboratory Division, N. C. State Board of Health, recently began a survey involving 18 chemicals and minerals found in the state's public supplies. A recently acquired Atomic Absorption spectrophotometer will be used to make the study.

The survey is expected to take a year to complete. During the period 8,000 water samples from throughout the state will be subject to 18 different tests. Although results of the survey will be beneficial to industry, the project was implemented primarily to determine whether toxic and/or nuisance levels meet U. S. Public Health Service standards.

The Atomic Absorption Spectrophotometer is a sensitive instrument that measures the amount of a given element at a specific wavelength. Other critical adjustment must be attained with each element in order to achieve absolute accuracy.

The State Laboratory has been making bacteriological examinations of public water supplies for years —as required by law. The spectrophotometer now makes it possible to determine the chemical and mineral content of water at a savings in cost and manpower than was previously possible. Methods used prior to purchase of the instrument cost about $2 per determination. The spectrophotometer has reduced the cost to fifty cents. At the present volume of testing a savings of $30,000 per year is realized.

The atomic absorption spectrophotometer analyzes only the elements in water supplies—including iron, manganese, copper, lead, zinc, cadmium, toxic chromium, sodium and potassium. However, a number of elements are expected to be added in the near future—among them a study to determine mercury levels in the state's municipal water sup-
plies, and in fish and shellfish. An official of the Department of Water and Air Resources has indicated that as many as eight North Carolina streams may be contaminated by dangerous concentrations of mercury.

Clinical evidence indicates irreversible effects to the liver and kidneys, as well as to the central nervous system from ingestion of mercury in small amounts. Among other documented effects noted is damage to the central nervous system of a developing fetus.

As concern mounts regarding the pollution of North Carolina’s public water supply, health officials will be called upon to provide a variety of scientific information relative to the usability of this important resource. The atomic absorption spectrophotometer will figure prominently in supplying such information quickly and accurately—and at less expense.
Dr. David K. Wiecking has been named associate Chief Medical Examiner for North Carolina. Dr. Wiecking, a Washington, D. C. native, received his M.D. from Johns Hopkins University in 1960 and his law degree from the University of Virginia in 1969. He is a specialist in medicolegal medicine. The Chief Medical Examiner's office now consists of two such specialists. There are less than 300 forensic pathologist-lawyers in the United States. Dr. Wiecking is certified by the American Board of Pathology in forensic and anatomic pathology. He taught at the University of Virginia Medical School before coming to North Carolina.

John D. Faulkner has been appointed assistant director of the Sanitary Engineering Division, N. C. State Board of Health. Faulkner holds a B. S. degree in Mechanical Engineering from N. C. State University and an M. S. degree in Public Health Engineering from the University of Michigan. He has served in various capacities with the Institute of Inter-American Affairs, the Public Health Service and was employed by the N. C. State Board of Health from 1935 to 1942. Faulkner is a native of New Bern.
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<thead>
<tr>
<th>Event</th>
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<td>Births</td>
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<td>Deaths</td>
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<td>Fetal Deaths (stillbirths)</td>
<td>145</td>
<td>956</td>
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<td>4,663</td>
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<td>49</td>
<td>271</td>
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<tr>
<td>Infectious hepatitis</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
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October 1970
THE HEALTH BULLETIN 15
"The spider bite isn't serious, but you're going to have to cut down on the curds and whey."

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THE HEALTH BULLETIN

Editor
Clay Williams

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On the Cover
A nurse demonstrates isolation techniques to the mother of a child recovering from meningitis. It is important that highly infectious diseases be confined to restricted areas. The child's mother (right) has broken good isolation technique by sitting on the bed. Certainly, protection should be provided for the patient with an infectious disease, but it is also important to protect other patients from the isolated patients.
Attacks against medications now being used in "behavioral modification programs" for hyperactive, disruptive and unproductive school students are occurring in the news media. This group of medicines consists primarily of Ritalin, Dexadrine (Amphetamines), and Mellaril (Phenothiazines). They are also used in other areas of medical treatment in addition to behavioral control.

The main area of concern by critics of these drugs falls into three categories: (1) Doctors do not know what effect they have on the minds and bodies of children. (2) Doctors are "turning on" children just as adults are being turned on by stimulant drugs. (3) Their use predisposes the child to the possibility of being a drug addict because he has been conditioned to mood alteration.

Ritalin and Dexadrine do not "turn on" the special type of hyperactive child for which they are prescribed. His mind is like a scrambled telephone switchboard or computer with wires getting crossed. After the proper medication is used he settles down and his impulses are channeled properly—the opposite of being "turned on."

I have treated well over a hundred patients with these medications as have many Developmental Evaluation Clinic Directors and Child Psychiatrists. I have not witnessed a single example of a child becoming addicted to drugs as a result.

A person needs only to see a classroom that has been demolished by a hyperactive child to appreciate the value of behavior control medications. Given medically supervised treatment of this nature the hyperactive child can become a productive student.
Artificial Kidney Saves Lives

Of the eight million Americans who suffer from some form of kidney disease, 50,000 die each year according to the National Kidney Foundation. The Foundation estimates that 10,000 of these lives could be saved each year by hemodialysis (cleansing of the blood by an artificial kidney instrument) or by kidney transplants.

A recently completed study by a Kidney Planning Board indicated that more than 1,000 North Carolinians die each year from kidney or renal related diseases. In an effort to save lives the Board proposed the development of a statewide kidney dialysis and transplantation program. It also recommended that the State Board of Health accept the responsibility for developing the program.

The study was the result of a kidney planning grant proposal submitted by the N. C. State Board of Health to the U. S. Public Health Service in 1967. The proposal was funded in 1968 with the study being subcontracted to Duke University shortly thereafter.

The goal of the statewide kidney program is to reduce the number of deaths occurring in the state due to kidney or renal related diseases, according to Richard House, administrator, Chronic Disease Section. “The primary aim of the program is eventual transplantation of diseased kidneys that have ceased to perform their vital function of cleansing the blood,” House said.

The dialysis program will be used to maintain patients until a suitable donor can be found and the transplant performed. Unfortunately, not all kidney patients are suitable candidates for chronic dialysis or transplantation.

Dr. Jacob Koomen, State Health Director, recently appointed an Advisory Committee to assist in the development of a statewide kidney dialysis and transplantation program. The Committee, headed by Dr. Louis Welt of the UNC School of Medicine, is currently preparing a grant proposal to be submitted to the N. C. Regional Medical Program for funding. The fund will enable the State Board of Health to begin the initial phase of the program July 1, 1971. The Board will act
A patient is attached to the kidney machine from five to six hours twice, sometimes, three times a week. A skilled technician or doctor inserts a needle into an artery in the arm and another into a vein. Blood is pumped from the artery through the machine and back into the body via the vein. During the process the machine functions as kidneys cleansing blood of its impurities. Should the machine malfunction a warning light flashes and a bell rings alerting technicians to possible trouble.

as the coordinating agency and will sub-contract with medical institutions in the state to establish manpower training programs in renal dialysis and transplantation.

The State Board of Health recently hired Charles Lee of Charlotte to assist the Advisory Committee in documenting potential financial resources in the state for kidney patients and in identifying unmet needs which could be financed with state funds. The Advisory Committee will meet shortly to consider the advisability of special legislation for the comprehensive statewide kidney program and to provide a beginning in patient service.

Much work remains to be done in order to implement the statewide kidney dialysis and transplantation program, but the State Board of Health and medical institutions of the state are taking positive steps toward establishing a workable program.
It seems city folks have suddenly become aware of the noise generated by their over-heated environment and are revolting against the whines ... whirrs and shrills emitted by a conglomerate of gadgetry.

Many of today's ear-splitting, nerve-shattering disturbances have been with us for years—so, why the hullabaloo all of a sudden? Is it that people are becoming more sensitive to nuisances because of the stress and confusion of everyday life. Are noises louder—more numerous than ever before? Could be fashionable—everybody's talking about pollution, of course, and expressions of concern about preservation of the environment are noble.

All of these reasons undoubtedly provide impetus to the present efforts to abate community noise. People are becoming aware of all forms of environmental pollution, including noise pollution, and are reacting accordingly.

Noise sources are becoming so numerous that intermittent noises that may have once been intolerable have melded into an uninterrupted background. In-town traffic is virtually continuous as are air conditioners, computers, and many types of office equipment. In residential areas power mowers, chain saws, air conditioners, and even motorcycles assault our ears and nervous systems. Television commercials are delivered to you several decibels above that of the program you are watching. Consider, too, the concert created in today's kitchens.
by the exhaust fan, garbage dis­
posal, and dishwasher, with occa­
sional monotonous solos from the
blender or mixer!

The bombardment is beyond hu­
man endurance—plants, too, for
that matter—as pointed up by a
controlled experiment in a western
state. A variety of plants were sub­
jected to soothing symphonic music
in a glass enclosure. They thrived
in the environment. At the same
time rock music was piped to
another group of plants. Time-lapsed
photography showed them drooping
and leaning away from the music's
(?) point of origin.

Noise Pollution ...

strange things are happening

By

John C. Lumsden

Chief

Occupational Health Section

The effects of occupational noise
exposures have been studied for
many years in considerable detail.
Findings have resulted in the estab­
lishment of acceptable standards
for the work-place. Even hearing
loss experienced by members of
rock combos using electronically
augmented instruments has been
measured. In the industrial environ­
ment it has been determined what
levels of noise will likely produce
temporary (or permanent) hearing
loss in individuals exposed for 40
hours per week throughout a work­

ing lifetime. One can measure the
very high level of impact noise ex­
perienced by a worker hammering
on steel drums and determine with
reasonable assurance whether the
noise will be harmful. Considerable
effort is being made by industry and
regulatory agencies to reduce injuri­
ous noise exposure in the working
environment using the presently ac­
cepted standards.

Unfortunately, such precise stand­
ards are not available for applica­
tion in urbana. Usually, noise levels
are believed to be below the hear­
ing loss threshold and those occa­
sional noises at high levels that we

November 1970 THE HEALTH BULLETIN
Hospital Acquired Infections... "the sick get sicker"

By
Arthur E. Davis, Jr., M.D.
Pathologist
Rex Hospital
Raleigh, N. C.

EACH year about eight percent of all patients admitted to hospitals in the United States acquired a "hospital-associated" infection. The cost of these infections to the patient amounts to over $6 billion.

The hospital is obviously a collecting point in the community for disease-producing bacteria. Lung and urinary infections, abscesses, ruptured appendices and ear, nose and throat infections are concentrated in hospitals. The danger of these infections spreading from one patient to another is an ever present possibility.

Nearly all patients leave the hospital in better shape than when they came, of course. It must be noted, however, that most patients enter the hospital in a weakened condition and are, therefore, more susceptible to infections. An infection may be due to the fundamental nature of an illness or perhaps to some therapeutic procedure. Tubes placed within the urinary tract and other body openings, surgical procedures and injections all tend to bypass normal body defenses. Many medications such as steroids, certain types of antibiotics and drugs that suppress the immune defense mechanisms

Mrs. Mabel Cashwell, surveillance nurse at Rex Hospital, and Dr. Davis examine a surgical tray covered with polyethylene plastic. The plastic acts as a reservoir for a germ-killing chemical. The chemical slowly fuses out and covers the surface of the plastic. Handling the plastic is the same as washing one's hands.
may make the patient more susceptible to infections.

During the past 10 years an intensive infection control program has been carried out at Rex Hospital in Raleigh. The value of techniques employed in the program is still being assessed. However, facts indicate that the hospital's infection rate is considerably below the national average.

An infection control program should include the teaching of preventive techniques to all categories of employees. The employee should be instructed specifically in the basic principles of good personal hygiene—emphasizing frequent hand washing. Nose and throat cultures should be taken often of persons working in critical areas (newborn nursery, burn unit, operating room, etc.) to determine if they are carriers of dangerous bacteria. It is also vital that good isolation techniques be taught—along with proper cleaning. It cannot be emphasized too strongly that all services (pediatrics, obstetrics, general medicine, etc.) be included in the surveillance routine.

An environmental health nurse is important in an infection control program. Her duties should include the tabulation of hazards and potential hazards on each nursing floor every day. A disease outbreak can be readily controlled through the use of patient census infection statistics. If a "hospital acquired" infection rate on a particular service suddenly spurs, prompt investigative action can usually trace the origin of contamination. An invaluable source of statistical information concerning the types of infec-

Dr. Davis notes the grill of a high efficiency air filter prior to installation in a remodeled "clean room." The unit is capable of filtering out almost 100 percent of all bacteria and viruses. A "clean room" serves a vital function in the modern hospital's efforts to care for patients with burns, respiratory problems, organ transplant recipients and cancer therapy.

Continued on next page
One of the most critical areas of a hospital from the standpoint of effectively controlling infections, is the operating room. Walls and all fixtures are thoroughly scrubbed with a disinfectant after each operation.

The mere presence of an environmental health nurse making her daily rounds throughout the hospital serves as a reminder to all personnel to maintain good control measures.

A bacterial survey of critical areas should be kept. Each month various inanimate objects (door knobs, light switches, table tops, floors, walls, faucets, etc.) should be cultured on each service in order to determine what kind of bacteria is growing there. In time routine culturing in this manner reveals a pattern of the type and amount of contamination and how it can best be controlled. If the recovery of a specific disease-producing bacteria from a given station increases dramatically, the source should immediately be sought.

Antibacterial plastics and the laminar air filter are special innovations which offer considerable hope in solving the problem of "hospital acquired" infections.

The plastics actually incorporate an additive (hexachlorophene) which diffuses out at a constant rate over a specific period of time and, under proper conditions, will actually kill bacteria in the environment. Another important factor is that persons handling objects wrapped in these plastics unwittingly wash their hands. The additive also penetrates bed covers and serves as a disinfectant.

The introduction of the "clean room" in hospitals may yield gratifying results in the treatment of burns, leukemia and other high risk conditions. The air passes through high efficiency filters which remove almost 100 percent of the bacteria and dust particles in the air. Consequently, the "clean room" is constantly being swept by a laminar air flow such as a vacuum cleaner sweeps a carpet.

Innovative techniques and advances in immunology are encouraging developments in the fight against "hospital acquired" infections. Hospitalized people, however, will continue to be more susceptible to infections. With diligence, perseverance and the conscientious realization that the problem does exist, the rate of infection can be reduced.

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FOUR STATE BOARD OF HEALTH OFFICIALS ... were honored at the 59th annual meeting of the N. C. Public Health Association held last month in Durham. John Lumsden (left), chief of the Occupational Health Section, received the Carl V. Reynolds award for work in the control of byssinosis and other respiratory diseases. Receiving merit awards were Dr. Lynn Maddry, director of the Laboratory Division; Jesse Canady, district sanitarian stationed in Fayetteville, and Roger Whitley, supervisor of the State Board of Health Film Library. The theme of this year's meeting was "Public Health in the Seventies." Featured speakers were Dr. Kenneth Aycock, director of the South Carolina State Board of Health; Dr. Edward McGavran, UNC School of Public Health; Dr. Paul Kotin, director of Environmental Health Services, National Health Institute, and Dr. Jacob Koomen, director of the N. C. State Board of Health.

N. C. PUBLIC HEALTH ASSOCIATION OFFICERS 1970-71 ... (left) Lydia Holley, president-elect, UNC School of Public Health, Chapel Hill; Henry Woodard, vice president, Immunization Activity Program, State Board of Health; Jean Lassiter, president, nursing consultant, Greererville Regional Office, State Board of Health; Maxine Matheson, treasurer, Biochemistry Section, State Board of Health, and Barbara Kahn, health education consultant, Asheboro Regional Office, State Board of Health.

November 1970
Cystic Fibrosis Sufferers Now Live Longer

By
Dr. Ruth Burroughs
Chief
Crippled Children Section
State Board of Health

The disease was not recognized until the 1930's and at that time caused death in early life. Now with better understanding of the disease and improved treatment, life expectancy has been greatly extended.

One out of approximately every 40 people carry cystic fibrosis as a recessive trait. If two people with this trait marry, it is possible for the disease to show up in their children. One in every 2,000 to 4,000 children has the disease. It occurs in various forms from very mild to very serious.

In 1963 the North Carolina legislature appropriated $25,000 to the Crippled Children Program for the care of children with cystic fibrosis. Since that time the amount spent for the care of these children has increased to $100,000 a year.

The Crippled Children Section of the North Carolina State Board of Health supports two clinics for the...
diagnosis and treatment of this condition. One is located at Duke University in Durham and the other at North Carolina Memorial Hospital in Chapel Hill. In addition the Crippled Children Section also buys needed equipment and drugs for children of low income families and pays for hospitalization when necessary. The average cost of care in North Carolina is about $500 a year. There were 201 patients cared for in 1969-70.

Only seven states in the United States spend more than North Carolina for the care of their patients with cystic fibrosis. These are California, Connecticut, Illinois, New York, Ohio, Pennsylvania and Texas. Ten states have no special program at all.

For further information about this disease, contact the National Cystic Fibrosis Research Foundation through its North Carolina Chapter at 106 North Jackson Street, Wilson, North Carolina. Information may also be obtained through private physicians, local health departments or the Crippled Children Section of the North Carolina State Board of Health.

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Loan Closet — Help Where It’s Needed Most

A volunteer group of citizens in Brunswick County is demonstrating how to perform a needed service when professional health resources are scarce.

Organized in 1963 to support chronic disease services of the Brunswick County Health Department, the committee soon recognized the need for a tangible activity. A “Loan Closet” (lending service) for sick room and rehabilitation supplies was the answer.

Area committees were formed throughout the county to raise funds to buy needed articles. Church and civic groups were given the opportunity to make donations. Before long, crutches, walkers, hospital beds, foot boards, bed boards, canes, and other special equipment were available. The committee worked directly with public health nurses who saw that the supplies were loaned to those in need.

Partial paralysis of both legs...
Mrs. Mary Beaver of Southport is one of more than 100 Brunswick County people who have benefited from rehabilitation articles supplied by the Brunswick County “Loan Closet.” The voluntary lending service has meant successful rehabilitation for many who otherwise would be confined to total inactivity.

made walking impossible for Mrs. Mary Beaver, (76) of Southport. When her doctor referred her to Home Health Services in the County Health Department, public health nurse, Mrs. Ruth Harrington, with the help of the consulting physical therapist from the State Board of Health, Mrs. Gladys Hart, started Mrs. Beaver on a diet and exercise program. A walker was borrowed from the “Loan Closet,” which she quickly learned to use. Holding on with one hand, she can now use the other to perform simple household chores.

Consider the case of Robert Walton of Shallotte Point, who, at 81, had been bedridden for over a year following a stroke. He was totally unable to care for himself when first visited by public health nurse, Stella Adams. Mrs. Adams replaced a sagging bed with box springs. FFA students made a bed board and the “Loan Closet” supplied a wheel chair. A physical therapist assisted Walton in carrying out a routine of exercises. Within a few weeks he was feeding himself, turning in bed, and maneuvering about the house in a wheel chair. He will soon attempt a few steps with the aid of a walker furnished by the “Loan Closet.”

Thanks to the volunteers who donated their time and money to keep the “Loan Closet” stocked and functioning, a number of seemingly hopeless incapacitated people are being rehabilitated.
## State Of North Carolina Vital Statistics Summary

<table>
<thead>
<tr>
<th>Category</th>
<th>August 1970</th>
<th>Year to Date 1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Births</td>
<td>9,088</td>
<td>64,060</td>
</tr>
<tr>
<td>Deaths</td>
<td>3,702</td>
<td>29,977</td>
</tr>
<tr>
<td>Infant Deaths (under 1 year)</td>
<td>196</td>
<td>1,569</td>
</tr>
<tr>
<td>Fetal Deaths (stillbirths)</td>
<td>132</td>
<td>1,088</td>
</tr>
<tr>
<td>Marriages</td>
<td>5,094</td>
<td>32,818</td>
</tr>
<tr>
<td>Divorces and Annulments</td>
<td>1,207</td>
<td>8,690</td>
</tr>
</tbody>
</table>

**Deaths from Selected Causes**

<table>
<thead>
<tr>
<th>Cause</th>
<th>August 1970</th>
<th>Year to Date 1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diseases of the heart (all forms)</td>
<td>1,309</td>
<td>10,772</td>
</tr>
<tr>
<td>Cancer (total)</td>
<td>565</td>
<td>4,435</td>
</tr>
<tr>
<td>Cancer of trachea, bronchus and lung</td>
<td>127</td>
<td>851</td>
</tr>
<tr>
<td>Cerebrovascular disease (includes stroke)</td>
<td>456</td>
<td>3,615</td>
</tr>
<tr>
<td>Accidents</td>
<td>319</td>
<td>2,158</td>
</tr>
<tr>
<td>Motor vehicle</td>
<td>169</td>
<td>1,074</td>
</tr>
<tr>
<td>All other</td>
<td>150</td>
<td>1,084</td>
</tr>
<tr>
<td>Diseases of early infancy</td>
<td>143</td>
<td>924</td>
</tr>
<tr>
<td>Influenza and pneumonia</td>
<td>85</td>
<td>1,195</td>
</tr>
<tr>
<td>Bronchitis, emphysema and asthma</td>
<td>59</td>
<td>474</td>
</tr>
<tr>
<td>Arteriosclerosis (hardening of arteries)</td>
<td>51</td>
<td>411</td>
</tr>
<tr>
<td>Hypertension (high blood pressure)</td>
<td>10</td>
<td>156</td>
</tr>
<tr>
<td>Diabetes</td>
<td>64</td>
<td>557</td>
</tr>
<tr>
<td>Suicide</td>
<td>49</td>
<td>356</td>
</tr>
<tr>
<td>Homicide</td>
<td>58</td>
<td>403</td>
</tr>
<tr>
<td>Cirrhosis of liver</td>
<td>39</td>
<td>388</td>
</tr>
<tr>
<td>Tuberculosis, all forms</td>
<td>6</td>
<td>99</td>
</tr>
<tr>
<td>Nephritis and nephrosis (certain kidney diseases)</td>
<td>29</td>
<td>164</td>
</tr>
<tr>
<td>Infections of kidney</td>
<td>21</td>
<td>182</td>
</tr>
<tr>
<td>Enteritis and other diarrheal diseases</td>
<td>8</td>
<td>64</td>
</tr>
<tr>
<td>(stomach and bowel inflammations)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ulcer of stomach and duodenum</td>
<td>13</td>
<td>91</td>
</tr>
<tr>
<td>Complications of pregnancy and childbirth</td>
<td>4</td>
<td>19</td>
</tr>
<tr>
<td>Congenital malformations</td>
<td>28</td>
<td>299</td>
</tr>
<tr>
<td>Infectious hepatitis</td>
<td>—</td>
<td>7</td>
</tr>
<tr>
<td>All other causes</td>
<td>386</td>
<td>3,203</td>
</tr>
</tbody>
</table>

Marriages, divorces and annulments are by place of occurrence, all other data are by place of residence.
... anxious vigil
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On the Cover
Man-made fibers arrive at factories in North Carolina in the form of a substance resembling coarse flour and rice-looking pellets. It is ultimately converted into fabrics or other synthetic objects. Our cover picture shows some of the material being unloaded at the landfill. It will not deteriorate and yields a heavy, dark smoke if burned.
COMMENT

Mass Syphilis Screening Necessary?

By Mildred Kerbaugh
Asst. Dir.
Laboratory Division

We know that mass screening for syphilis is not the highest yielding case-finding method. Is it, then, the most advantageous expenditure of funds for control of this disease? Does the technique contribute significantly to the reduction or eradication of syphilis?

North Carolina requires that the test be performed on every person applying for a marriage license and on all pregnant women. Most colleges in the state require it for entrance; some require it each year. Many hospitals require it routinely on all patients. Until recently it was a state-wide requirement for annual renewal of barbers' and beauticians' licenses; some counties still require it. Many local health departments require it on all food handlers.

It is hard to figure why the latter three groups were singled out for mandatory annual testing. Considering the mode of transmission, it was not for the protection of the customers. Actually, the practice resulted in testing of the same people each year.

With soaring hospital costs, patients are justified in questioning laboratory tests not related to the reason for their hospitalization.

The requirement that pregnant women be tested is valid for the protection of the unborn child, but shouldn't we question the impact which requiring the test for marriage has on the control of syphilis? Would the funds be better spent on:

- More effective follow-up of the contacts of known cases.
- More thorough laboratory study of those which are suspect.
- Venereal disease education and other efforts to remove the social stigma attached to the disease, thereby encouraging patients to voluntarily seek testing and treatment.

December 1970
THE HEALTH BULLETIN

3
"Mothering" Obsolete?

Can group infant care take the place of "mothering" during the first two years of a child's life? Not according to Dr. Mary Elizabeth Keister, director of a demonstration project in group infant care at UNC-Greensboro.

"Babies may not be expected to thrive in a group situation unless very special provision is made for individualizing the care they are given," Dr. Keister stated. "Still," she continued, "babies may do very well in group care but only if care-giving of a certain quality is provided."

Twenty years ago a paper was published on Maternal Care and Mental Health (Bowlby report) by the World Health Organization (WHO)—and the shock effects are still being felt, Dr. Robert Neely, chief of the Mental Retardation Section of the State Board of Health, pointed out recently. "No report in recent history has had a more profound effect on social work practice, on practice in health professions (especially mental health) and perhaps even on legislation as has the Bowlby work," Dr. Neely ventured.

Maternal deprivation, early emotional frustration, hospitalism, multiple mothering and institutionalization are words used in the Bowlby report to describe damage resulting from depriving babies of "mothering." "Laymen would have a hard time understanding those concepts, but the professionals know what they mean," said Dr. Neely.

"nothing like a good nap after chow"
and professionals alike have gone through a long period of rejection of group day care for children under the age of two years," Dr. Neely disclosed. "This has produced another crisis situation in the nation because we are now a dual parent working society and, whether we like it or not, there are ever increasing numbers of infants as young as six weeks of age being placed in all types of day care situations."

Several pilot demonstration projects on group infant care were established throughout the nation to challenge the Bowlby report. The project at UNC-G, headed by Dr. Keister, has received national acclaim for its work. It is now supported by the university and grants from the Children's Bureau of HEW.

Dr. Keister recently summarized findings of her program for the first three years of operation. Of an enrollment of 31 children during the 1969-70 school year, 10 were under one year of age and 10 between one and three years. Eight children were from low income families. Fifteen were paired with a similar child who stayed at home with its mother. Evaluations were made periodically.

"I was encouraged to find that Center infants do not resemble those described in the WHO report," Dr. Keister revealed. "Also, no significant differences existed between the paired children in mental, physical or social development. Illness-caused absences averaged only five days for the year. The Center group tended to be taller and more muscular, while the Home group was shorter and heavier."

Day care for infants?—"perhaps," says Dr. Keister. "But we still need more time to study and train a staff capable of rendering quality care. We certainly have not proved that group experience is not detrimental to infants and toddlers. We can only say that for our sample of babies we found no important differences between groups cared for in the center and those reared in their own homes."
INCREASED recognition is being given to the value of food habits in maintaining health and effectively treating disease. The right kinds and amounts of food can significantly influence a person’s food habits, plus the quality and length of life.

When a patient’s food habits are good prior to illness, recovery can be quickened. When a patient’s food needs are met during illness it can shorten convalescence and prevent complications. An adequate diet is essential to a hospitalized patient both for maintenance and repair of body tissue—regardless of his diagnosis. It is just as essential to pay attention to food needs during convalescence at home. Proper diet can speed recovery from an illness. A modified diet may be a vital part of treatment for weeks, months, or a lifetime.

When a modified diet is prescribed by a physician, it should meet the body’s nutritional needs as generously as the disease condition permits. Foods offered the patient should vary as little as possible from those to which he is accustomed. The physician may prescribe a modified diet to correct nutritional deficiencies, change body weight, provide rest for certain organs or the whole body and to adjust the food intake to the body’s ability to utilize the nutrients.

A correctly planned diet for a sick person is successful only if it is eaten. Food acceptance is governed by physiological, psychological and emotional factors. Food acceptance may be affected by illness as well as the anxieties and fears of the individual patient. Frank answers to the patient’s questions will help him to understand why food is served unsalted, or why his greens are not seasoned with fat meat.

Food has many meanings (other than satisfying hunger) that are not primarily associated
A correctly planned diet is essential to the convalescing hospitalized patient both for maintenance and repair of body tissue—regardless of the diagnosis.

with illness. A patient may accept a distasteful medication or a painful treatment without question, but frequently will not accept the food served him. When a patient understands that diet is an important part of treatment of his disease or condition, he is usually more willing to accept it.

Good food is important throughout life. The importance of food to children is well accepted, but continued good food habits will prolong the productive years.

Childhood years are usually accompanied by stress. During the third and fourth decades of life family responsibilities and work provide the stress. Good food can protect the body.

A person may not realize the damage being done through poor food habits until it is too late. When desirable weight is maintained, a person is less likely to develop diabetes, hypertension, and degenerative heart disease than when overweight. That is why it is essential to practice good food habits daily. Why kid ourselves? Whether young or old, rich or poor, healthy or sick, it is risky to eat unwisely.
LITTER, litter everywhere, and where do we go from here. We are reminded of it in the newspaper, on radio and television. We are told to “Put that gum wrapper in the litter bag and not out the car window,” to “Put the beer can in the trash can, not in the lake or stream,” but no one is told where to empty the garbage can.

Many people are not even sure what is meant by solid waste or why all of a sudden it has become a problem. Solid waste, as defined by those in the know, is the “stuff” that man throws away other than liquids and sewage, and even with this definition some people feel that some liquids should be considered as solid waste.

Trouble With Trash

Poor nations throw away very little, but the more affluent the society, the more thrown away. We, in the United States, are said to be blessed with more of everything, even trash.

We have been trained to demand perfection, and industry has tried to give us what we want. We buy a box of crackers; the crackers are stacked in two or three neat stacks, wrapped in a heavy waxed paper, and packed in a cardboard box which is wrap-

A completed sanitary landfill can serve a useful purpose as a playground, athletic field or parking area. It is important to consider an area's ultimate use when selecting a site for a sanitary landfill.
ped with a decorated plastic cover. We eat the crackers and throw away the containers, and the store throws away the box in which it received the crackers. Thus, the amount of discardable material builds up.

Did you know that the average person—man, woman and child in North Carolina—discards about 2½ pounds of household waste a day and that industry in preparing our food, clothing, shelter and luxuries generates another three pounds of waste. Five and one-half pounds of solid waste per person, or five million tons a year in North Carolina and 250 million tons in the United States, are discarded.

A solid waste survey completed in 1968 covering all of our counties and municipalities revealed that there were 479 authorized land disposal sites. The great majority of these sites are nothing more than open dumps, with the environmental problems of air pollution, water pollution, and with large populations of flies, rats, cockroaches and mosquitoes. Many of the elected officials were aware of the fact that improvements in refuse disposal were needed but the general apathy of most officials and the public was apparent. This indifference is rapidly changing.

It is generally agreed that the most economical method for the disposal of solid waste in North Carolina is by sanitary landfill. This method requires the use of heavy equipment to crush and compact the refuse and then to cover it at the close of each day’s operation with six inches of compacted earth. There is no burning, and since material is compacted and covered each day, the production of flies, rats, cockroaches and mosquitoes is prevented. A properly operated sanitary landfill may at times present some inconveniences for the neighbors, but when strategically located, it can transform waste land into desirable property such as, playgrounds, parking lots, and parks.

To economically operate a sanitary landfill, a large population must be served. It is, therefore, desirable in most of our counties that all of the solid waste be taken to one central landfill. The cooperation of municipalities and the county is essential.

The 1969 General Assembly enacted legislation that established the North Carolina State Board of Health as the agency responsible for the solid waste disposal program for North Carolina. Under this authority, this agency is now preparing a State Plan in addition to Standards for an effective solid waste disposal program. The Solid Waste and Vector Control Section is now in the process of preparing solid waste disposal plans for counties that request assistance. Proposed disposal sites are being inspected and, when suitable, are approved.

Sanitary disposal of solid waste can be obtained for less than $2.00 per capita per year.
PROPER disposal of human excreta is imperative in order to protect the health of individual families and the community. An appropriately designed septic tank system can serve a vital function in areas where municipal or public sewage treatment facilities are not available.

The septic tank, however, was never designed as a permanent sewage disposal system. The system is adapted primarily to rural areas where needed space is available, but even here the system requires periodic maintenance if it is to function properly. In densely populated areas, such as subdivisions and mobile home parks, municipal or community sewerage systems are recommended.

The constant flow of people from the inner city has brought many face to face with sewage disposal problems. Accustomed to dependable, trouble-free municipal sewer service, they are shocked and surprised when confronted with the failure of their septic tank system.

A septic tank system consists of (1) the tank, in which solid material settles, and (2) the nitrification bed, which receives the liquid effluent from the tank. The nitrification line is merely an underground tile line with open joints, surrounded by crushed stone, from which the liquid is absorbed by the surrounding soil.

Plugged nitrification lines can cause sewage to seep to the ground surface and onto a neighbor’s yard. The amount of sludge in the tank should be checked each year after the first two years. Sludge and scum must be pumped out of the tank about every five years.

Other reasons for failure is the installation of septic tanks in areas too small for the system and where the soil has a low capacity for absorption of liquid. In some locations absorption capacity has been used up after only one or two years of operation. With a 20,000 square foot lot and very poor soil, the nitrification field, which can consist of several individual lines, may occupy more than half of the area available for use. Obviously, there is little space left to install a new system. Often, sanitarians and contractors
can work out ingenious solutions to problems created by the installation of a septic tank on a small site, but, still, they are only temporary.

Many county health departments have regulations requiring a permit before construction of a septic tank system begins. A sanitarian makes a pre-construction home site visit to advise

It is important that recommendations of the sanitarian be obtained in advance of construction. Experience has taught that a lot should contain at least 40,000 square feet in order to be reasonably sure that septic tank system failures can be repaired. High soil absorption capacity could, of course, reduce the possibility of failures.

RESIDENTIAL SEWAGE DISPOSAL SYSTEM

HOUSE SEWER TO BE CAST IRON SOIL PIPE TO 5'-0 OUTSIDE OF HOUSE WALL.

CLEANOUTS

TIGHT JOINTS

MAXIMUM LENGTH OF EACH TRENCH 100'

SEPTIC TANK

DISTRIBUTION BOX

CRUSHED STONES

HEALTH AUTHORITIES RECOMMEND THAT DISPOSAL SYSTEM INSTALLATIONS BE PLACED SAFE DISTANCES FROM WATER SUPPLY INSTALLATIONS. NO PART OF THE SEPTIC TANK OR DRAIN FIELD SHOULD BE LOCATED WITHIN 50 FEET OF WATER WELL OR CISTERN.

as to the best layout for the system. After a house has been built, it may be too late to deal effectively with soil that does not have a high absorption capacity, a high ground water table, solid rock a few inches below the soil, or topography requiring radical changes in the placement of nitrification lines.

To be certain of dependable, trouble-free sewer service—free of periodic maintenance and probable replacement or repair—consider a home in an area that features a municipal or community sewerage system. After all, it makes more sense to have one system for 100 houses than 100 systems for 100 houses.

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THE HEALTH BULLETIN
A new approach...

Care For The Aged

At the Cherry State Hospital in Goldsboro a somewhat different approach is being applied to reclaim elderly persons who have withdrawn from society because of mental health and social problems.

The geriatric demonstration project is supervised by Dr. Lionel Cosin of Oxford, England, who has established similar programs for the rehabilitation of the aged in Israel, Morocco and Canada.

Dr. Frank James, superintendent of the Goldsboro mental institution, noted that one third of all patients at Cherry in 1968 were 65, and that no approach existed either in the hospital or community for the purpose of rehabilitating elderly patients. Subsequently, Dr. Cosin was invited to come to North Carolina to start a geriatric rehabilitation demonstration project.

Dr. Cosin contends that the number of admissions to mental hospitals, either voluntary or under certification, provides inadequate evidence of major mental health disturbances in the elderly. "Often a family situation develops and then progresses to social collapse," he explained. "Such a situation involving an elderly person occurs frequently because slow intellectual deterioration and decreasing ability to adjust have been complicated or worsened by other factors, some of which are reversible. All too often a patient who displays evidence of mental illness is placed in a mental hospital for permanent or custodial care."

The innovative British physician pointed out that many chronically ill persons adjust to their disabilities, and lead full and productive lives. "It is also true," he says, "that others find it difficult to adjust unless consideration is given to accurate assessment of and solution to their problems. Treatment then may be initiated that will modify or reverse disease processes. Similarly, treatment of mental problems may prevent or reduce damage to the patient's personality and adjustment to problems in a community setting.

Patients are admitted to Cherry State Hospital from the commu-
nity and are given physical examinations and lab tests to determine whether or not they are suitable for admission to the geriatric unit. Many patients have been totally inactive for years and must rediscover the fact that they have muscles and joints, according to Dr. Cosin. Those who achieve proficiency in basic functions are admitted to the “day care center”—a converted house near the hospital where patients go for group activities (cooking, ironing, cleaning, music, painting, games, walks, etc.). Patients are admitted in small groups (25-30) so that individual attention can be given—but always in groups in order to encourage them to work within groups and thus discourage isolation.

Miss Lynn Fox, a pretty British occupational therapist, explained that participation in activities and crafts improves the patient’s concentration and physical well-being and promotes socialization within the group. Records are kept of each patient’s work competence and behavior daily and communicated to the rest of the treatment team. “When a patient has progressed to the point where he can care for his basic needs, he can go home,” she said. “If

Patients busy themselves stitching together a patchwork quilt. The work, according to Miss Lynn Fox, occupational therapist, lends itself to group activity (each piece contributes to a larger pattern) and it is colorful.

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Men at the "day care center" find stringing pieces of chamois cloth together excellent group activity. Scraps of chamois cloth are purchased from the factory, cut into small pieces and strung together with a sturdy twine. When the ends are tied it makes a useful sponge for cleaning cars and windows. A recent sale of articles made by the patients netted a good sum.

there is a resettlement problem a patient can continue to live in the hospital and attend the 'day care center' while awaiting return to the community."

Has the geriatric rehabilitation demonstration project been successful? Dr. Cosin indicated that the rate of resettlement of patients back into the community has increased. "But our aim," he said, "is to establish a model program which will expand 'day care centers' to all areas of the state where there is a mental health center. Patients would be brought to an area's 'day care center' each day to engage in activities supervised by individuals who are genuinely interested in their well-being. The program would relieve many families from the burden of having to care for an elderly person during the day and enable the patient to live a more enjoyable life. Progress in this regard," Dr. Cosin stressed, "depends upon voluntary assistance of people within the community, as well as re-acceptance of the patient as a part of the community."
Dr. Robert J. Drye has been appointed chief of the Environmental Sciences Section, Laboratory Division, State Board of Health. Dr. Drye received his bachelor of Science and Master of Science degrees in Food Science from N. C. State University, and his Ph.D. from UNC-Chapel Hill. Dr. and Mrs. Drye, the former Roberta Hargrove of Brooklyn, N. Y., live in Cary. The Dryes are expecting their first child in January.

A group of people from across the nation has organized the Osteogenesis Imperfecta Foundation, Inc., through which they are seeking to determine how common the condition is.

Osteogenesis imperfecta is often called the “brittle bone” disease because the bones of a victim are extremely fragile. Sometimes the disease is fatal to infants. Those who survive frequent fractures may develop crooked limbs, or have arrested growth and development. Other characteristics of osteogenesis imperfecta are blue-colored sclera (white of eyes) and deafness.

The cause of the condition is unknown, and until recently, there had been no treatment except “rodding” of the fragile bones (inserting a steel rod through the marrow canal of the bone, shish ka-bob fashion). Although osteogenesis imperfecta is not a well-known disease, medical authorities now think it is fairly widespread.

The Osteogenesis Imperfecta Foundation is attempting to spread information and provide emotional support to parents with afflicted children, as well as to the victims themselves. In addition, a group of young adult sufferers meet routinely to further the objectives of the organization.

If a reader is interested in finding out more about Osteogenesis Imperfecta Foundation, they may call 919 226-3773 or address correspondence to 1231 May Court, Burlington, N. C. 27215. Correspondence will be kept in strictest confidence.