

public health pioneering

A Southern Heritage

APHA SOUTHERN BRANCH CONFERENCE REPORT

To commemorate a pioneering heritage and a history of progress, the Southern Branch of the American Public Health Association chose for its 23d annual meeting in New Orleans on May 11, 1955, the occasion of the 100th anniversary of the establishment of the Louisiana State Board of Health.

Several hundred delegates attended from Alabama, Arkansas, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and nations to the south.

In a review of the southern heritage, Dr. Ben Freedman, director of the public health training center, Louisiana State Department of Health, pointed out that many health regulations were applied in the early Spanish settlements and that the

Virginia, Maryland, and Carolina provinces pioneered with health measures under the British Crown. In the history of the United States, the people of the States now comprising the APHA Southern Branch appointed the first health officer, the first local board of health, and the first State board of health.

Other speakers pointed out that southern economic progress, handicapped for years not so much by climate itself as by diseases peculiar to a warm, humid climate, has been accelerated by control of such diseases. By such means, public health services have released southern energy and enterprise to break the vicious circle of illness that begets poverty that begets illness.

Seventeen of the papers read at the meeting are briefed here. Several others will be published in full at later dates.

The Past is Prologue— Theme of Address

brief My title comes naturally to one from a State facetiously referred to by us natives as “a vale of humility between two mountains of conceit.” Our past achievements serve well only as they spur us to build even more soundly, never when they lull us into complacency.

Edwin A. Alderman, 50 years ago, set the goal of the south when he said that its supreme need is for trained men, men with prevision to see things before they happen, men who think with their brains and not their emotions, men who find out about things before settling them instead of settling them first and finding out about them afterward, men eager to build for the future rather than to chant the requiem of a past age.

It is definitely not disrespectful or ungrateful but actually necessary to orientation and alertness when we take frequent looks all around, including a quick glance backward, as we move forward. It is unfortunate that even a few health workers assume that the really important services in public health began the day he or she was hired. Since an appreciation of history tends to dispel such arrogance, we need more of such appreciation, and only then can we safely admit that we are doing more and better work than the early pioneers.

The Southern Branch of the American Public Health Association is entirely dependent on volunteer and drafted service for its activities and growth, and all have come through magnificently in spite of the many handicaps of heavy responsibilities in various types of jobs. In our large organization no one per-

son could ruin it, but it takes devoted service from many to succeed day by day.

Our Southern Branch area has pioneered in environmental sanitation, control of intestinal parasites, State and local—and particularly rural—health department organization, immunizations, school health services, oral hygiene, control of insect pests in a subtropical area. All of these achievements have been under medical leadership. Some we did because we had to.

Our pleasantly warm climate, heavy rainfall, and soil types encourage outdoor living and certain disease hazards. The relative backwardness in and near the tropics has been due more to insect enemies than to climate. In the Tennessee Valley it was demonstrated that the former heavy morbidity and mortality from malaria around tropical and subtropical impoundments is controllable. The growth of tribes or towns and cities has been limited sharply to their ability and willingness safely to dispose of human wastes. As we in our lovely area bring insects and environmental pollution under effective control, progress will become limitless—agriculturally, industrially, and in human health and efficiency.

Private medical practitioners in our area have stimulated and promoted the development of sound local health departments. They have given of their time to serve on State and local health boards and to cooperate in case finding and other services. Private practice and public health have jointly brought communicable diseases under relative control.

We now have the organization, the experience in medical leadership, and cooperative teamwork to pioneer in the field of chronic disorders and accidents, and to prepare for providing public health services to our aging population.

To develop the ideal child, Socrates is said to have advised starting with the grandparents. For better control of chronic degenerative disorders, we should at least begin with sound parenthood, careful prenatal guidance, and early infant and pre-

school health protection and development.

As we set our sights on the future we can learn much from, and can deservedly be proud of, our pioneering past. Louisiana led the way with the first State board of health; Maryland with the Baltimore City Health Department; Virginia with her smaller type city health department, at Petersburg; Kentucky and North Carolina with early county health departments, in Jefferson and Guilford Counties; and North Carolina with the first strictly rural county health department, in Robeson. Alabama and South Carolina were among the first to attain full State coverage by local health departments—and we might go on. May we do our utmost to become worthy successors to our pioneer predecessors.

An Era of Responsibility Typifies Public Health

brief The era into which we are moving is still too confused to have a single adequate label. Depending on one's point of view, it can be described as the chemical era or the social era or the era of physics or radiological energy.

If we classify the present era as social or an era of social medicine, there is much to substantiate our case. The great variety of names dealing with mental health, the whole person, holistic medicine, and so on merely reflect the scope of the expanded interests which public health has developed.

Louisiana created early a unit of social work in its State health department. New York State now has an anthropologist on the staff of its health department. Departments of preventive medicine in the medical

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schools have anthropologists, sociologists, and medical and psychiatric social workers on their staffs doing research in social medicine.

The traditional separation of preventive and therapeutic services is slowly disappearing. Public health is concerning itself increasingly with both secondary and primary prevention of the chronic diseases. The State health department in Idaho has full responsibility for mental health. Public health nurses in Georgia have demonstrated their skill in helping families with post mental hospital experience. On the other hand there has been a further fractionation of many mental health services in many States.

In New York City 11 union-operated health centers provide high-grade diagnostic and ambulant therapy services and are quite successful in getting people to take advantage of periodic physical examinations. In Windsor, Ontario, the Ford Company and the union have negotiated a contract whereby all employees and their dependents will get prepaid hospitalization and complete medical care in the hospital, office, or home. The same care is assured after retirement.

The time has come when public health nursing care of the sick at home must be considered a normal part of the public health program. Visiting nurse associations and health department nursing staffs are uniting to form a single comprehensive nursing service. Certainly, a combined nursing agency can be a means to a better family service.

Family Health Center

The 3-year project now being conducted in Washington County and Hagerstown, Md., by Community Research Associates will give us a better perspective of the intricate complexities of family problems in this era of public health. The project combines research, demonstration, and direct service with the prevention and control of the heavy community burden presented by indigent disability.

During January 1954 about 13 percent of the families in Washington County received service from one of

the community-supported agencies which deal with health, dependency, and maladjustment. About 6 percent of this group were designated "multiproblem" in that they were families with recognized problems, receiving care from agencies working in 2 or more of these 3 fields.

Studies elsewhere have shown a remarkable consistency of this 6 percent of multiproblem families—in getting service as they do from many agencies, in absorbing an enormous and disproportionate amount of community funds and professional staff time. In Washington County these multiproblem families comprise 88 percent of the public assistance caseload, 63 percent of the organized indigent medical care caseload, and 43 percent of the caseload of the agencies dealing with maladjustment.

To a high degree these community agencies—13 local voluntary, 18 local tax-supported, and 24 State—are treating the same families and individuals.

Washington County is in the process of attacking the basic behavioral, social, mental, and environmental problems presented by its problem families through a family health center and a unit of chronic disease control in which rehabilitation will have major emphasis. The center will unite the skills of medicine, public health, rehabilitation, public health nursing, family case work, and will integrate its mental hygiene service with that of the health department.

Ingenuity, Courage, Vision

A 5-year project with similar objectives is under way in Lafayette Parish, Louisiana. It is a remarkable project, stemming from the work of a State interdepartmental committee, which all agencies are pledged to work through. Each agency is to support its part of the plan within the framework of its responsibility to prevent the waste of human resources occurring from the social breakdown of families.

It should be clear to all of us that every health unit is carrying many of these multiproblem families. The children all too frequently repeat much of the pattern of asocial behavior and chronic illness of their

parents. Even superficial reflection will impress us with the great amount of advice, pressure, needling, and direct action which these families receive from many workers, many agencies. Undoubtedly they get conflicting specific directions and counsel.

Few of us will have the opportunity to participate in trials such as those in Maryland and Louisiana, but everybody can take a crack at this tough basic problem. The logical approaches, in actual practice, are simple: recognition of multiproblem families as such, a comprehensive family diagnosis, comprehensive treatment based on this diagnosis, and the kind of leadership and machinery of synthesis necessary to make this treatment possible by a single plan. The difficulties lie in actually working out a way for functioning together to benefit our communities. When we have solved this problem by combining ingenuity, courage, and vision with hard work, we will have realized the most significant of the changing aspects of public health.

Local Agency Programs For Accident Prevention

brief Home and farm accidents have emerged as a leading threat to health and personal welfare in the United States in the second half of the 20th century. Home and farm accident deaths outrank all communicable disease deaths in most States. As a killer and crippler of children, home accidents outnumber the next five leading causes of death including motor vehicle accidents. The other large

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group experiencing unusual incidence of home accidents are the aged, and United States figures for 1953 show that 1 out of every 2 persons killed in home accidents was over 50 years of age.

Resistance to Program

In introducing the idea of home accident prevention to the local health departments of North Carolina, the State board of health's accident prevention section staff has found that the misgivings expressed by the local public health personnel fall into two general classes.

The first is the feeling that home accidents and other types of accidents do not actually constitute as real a health problem as do those conditions which can be related more closely to the traditional areas of medical and public health endeavor.

Accidents are, and should be, widely recognized as the concern of those engaged in the manufacture, maintenance, and operation of motor vehicles, the construction and use of highways and public roads, the operation of industrial plants, the conducting of occupational health and safety services, and those with interest in water safety, fire-arm safety, and the host of other safety specialty interests. The public health worker in some instances appears to feel that accidents to the individual in his home environment are not as worthy of the worker's time and attention as are the health problems related directly to bacterial etiology, degenerative conditions, clearly unhealthy physical and mental environment, and other conditions for which it is easier to demonstrate a cause and effect relationship.

The second area of misgiving is perhaps not so easily encompassed. It is expressed in the concern displayed by a number of health department staff members who believe that home accident prevention activities, to be effectually conducted, must be defined in concrete terms within the comprehension of all the staff.

This dubiety seemingly pertains not only to the etiology of accidents where terms such as "accident prone," "accident susceptible," and

"accident liable," are hard to reduce to day-to-day fundamentals, but also to the methods of prevention. In the latter area, one frequently hears much about "education," "motivation," and "integration," and in some instances these terms seem peculiarly nebulous in the light of everyday health department operations.

The conceptions of accident prevention also are colored in many instances by the mass educational and promotional programs which have characterized the focus of over 90 percent of all safety programs in the United States in recent years. That home accident prevention involves more than the mobilization of press, radio, television, and other mass educational media has been hard for some public health administrators to grasp.

Health department reluctance to undertake home safety activities has stemmed from a failure to recognize the rising importance of accidents as a threat to health, a hesitancy to redraft program content to meet these new needs, and the difficulty public health safety leaders have experienced in demonstrating down-to-earth easily assimilated accident prevention techniques which can be adapted to existing health department programs.

Causes of Accidents

Home and farm accidents can be shown to result from a combination of two factors: human failing, such as physical, mental, or emotional conditions, and environmental hazards, either "built-in" the dwellings or "imported" by way of appliances and furnishings.

Physical conditions such as defective vision, loss of auditory acuity, dizziness, immaturity, feebleness, or other physical incapacity resulting from acute or chronic diseases or conditions easily can be pictured as causing many accidents, particularly among the elderly. That accidents can be ascribed to transient physical conditions such as fatigue, overindulgence, hunger, and sleepiness has been established.

The mental and emotional states which can be related to accidents are perhaps less well understood than

the physical, but again certain examples can be elicited which can be applied readily to accidents or near-accidents within the experience of most health agency employees. These encompass the accidents which result from failure to exercise usually observed precautions due to anger, frustration, anxiety, depression, and preoccupation. These mental and emotional circumstances, existing almost wholly on the conscious level, can only serve to suggest the significance of less clearly defined influences operating within the subconscious. The etiological relationships concerned in accident proneness or susceptibility are within this less well-defined area. However, the existence of such individuals has been demonstrated in a variety of accident research studies.

It seems obvious, however, that home accident prevention programs need not be delayed until all facts pertaining to the so-called prone individual have been established fully.

Face-to-Face Education

Successful home accident prevention activities must combat both human failings and environmental hazards. The approach to the individual and to his home must progress simultaneously on a communitywide front and an individual basis. Health department opportunities for a combination of the face-to-face teaching of safety in association with the mobilization of community resources offer an approach to safety in the home unique in the history of the safety movement in the United States.

In attempting to gain the interest and cooperation of the family members to conduct effective education on home accident prevention, several channels are open to the health department. Certainly, the utilization of mass media, audiovisual aids, displays, posters, exhibits, contests, and other educational enterprises should not be overlooked for whatever value they may have. However, through public health nurses, sanitarians, and other field workers who daily enter hundreds of homes in the community, public health agencies are in a position to mobilize perhaps the most potent educational force yet

brought to bear upon the accident problem.

The public health worker has entered into the home where he or she is received as a family friend who can speak with authority on health matters. With each entry into the home, a situation for learning is created, and in no other setting could the teaching of home safety be more effective. Far-sighted public health authorities have been quick to recognize the implications for safety in almost all of the program areas where health departments are now active.

Maternal and infant supervision, geriatrics, nutrition, environmental sanitation, the hygiene of housing, mental health, insect and rodent control, radiological health, chronic disease control and many other activities have real concern for safety in one or more aspects.

Health workers sensitized to safety objectives and techniques have stated that usually it is not necessary to seek the opportunity to integrate home safety teaching into the home visit. Such opportunities frequently present themselves, and the worker need only be alert to develop the opportunities to their fullest potential.

In some areas, home visits by all disciplines have been used as an opportunity to gain valuable statistical information on family accident experience and to record hazards existing in the home. Such activities not only add to the epidemiological knowledge of home accidents, but also afford another opening for family education.

Group teaching has been demonstrated as a type of interpersonal relationship wherein valuable information may be imparted to all participants. Meetings of public health workers with mothers, parents, and other organized community groups afford an additional chance for home safety teaching to be achieved at its most receptive level.

Cooperating Groups

The health department launching safety activities will find a host of other official agencies and volunteer organizations and individuals with a related safety interest or activity.

The department of motor vehicles, the public schools, the agriculture extension service, industrial commissions and labor groups, welfare departments, city planning and development organizations, housing authorities, and police and fire departments all have a vested interest in some phase of accident prevention. Coordinated planning and action with these official groups and the volunteer agencies can result in economy not only in funds but also in effort.

The precise depth and direction of the community centered safety program will depend in large measure upon the individual community's needs and resources. One single plan effective in all localities is beyond the realm of reasonable expectation. Important, however, is the thought that some organized plan must be formulated to involve actively all those concerned with the solution to this serious health problem.

Educating for Home Accident Prevention

brief The National Safety Council's "Accident Facts" informs us that the majority of persons over 65 who die as a result of home accidents are victims of falls. This information seemingly provides the key to the problem of preventing home accidents among the aged, for if we eliminate the causes of falls, it follows that we can cut the home accident death toll in half at one stroke.

A brief look at some of the causes of falls among the aged soon dispels any hope of easy victory, however, for these causes are both physical and environmental in nature. With advancing age, persons are less able

to foresee and protect themselves from accident hazards, and accidents which may cause slight injury to the young very often result in serious injury and death when occurring in later life.

We know, too, that among the aged, feebleness, chronic disease, senility, or acute physical disorders are major contributors to accident incidence. Elderly people, especially those suffering chronic diseases, are affected by errors of judgment and personality changes. Coupled with malfunctioning joints, susceptibility to accidental injury is greatly magnified. Visual and auditory activity is also often diminished, increasing vulnerability to accidental injury.

In a 1954 survey of fatal home accidents in Maryland counties, senility and chronic disease or disability were listed as the most frequent physical factors contributing to accidental injury. Miscalculation, poor or faulty judgment, loss of balance, inability to avoid obstructions, stumbling over objects, unsteadiness, fainting, or just seeming to fall without reason were listed as primary causes of these accidents.

These findings take on new significance when we see that out of a total of 119 fatalities in the 65 and over age group, 91 fatal accidents occurred to persons more than 75 years old. The need for close and continued supervision is obvious.

Emphasis on Education

The most realistic approach to the problem of preventing home accidents among the aged is to determine ways of reducing exposure to unsafe conditions in their environment. Education, with emphasis on educating persons responsible for the care of elderly folk, is the best method. Engineering and enforcement are important to a lesser degree.

Prospective operators of facilities for the care of the aged often consult the health department before beginning to build or remodel. By offering suggestions which take legal standards into account and also reflect understanding of the needs and problems of both operator and patients, we can eliminate many hazards. A similar service to prospec-

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tive builders of private residences might also be productive of goodwill and increased safety.

In these contacts and in our work with individual families we can suggest adapting home surroundings to the needs of elderly members of the family. Such relatively simple changes as arranging living quarters on one floor, providing a central place for personal belongings, keeping passageways clear and lighted at night will reduce exposure to falls hazards.

More difficult is interpretation to family and community of the emotional needs of the elderly. The older individual needs to feel that he is valued and loved and that he makes a useful contribution to family and community life.

In addition, there is urgent need for codes and regulations which assure the "building out" of safety hazards in the individual home or the institution.

In Maryland, the State board of health has vested responsibility for the licensing of hospitals, nursing, convalescent and care homes in the bureau of medical services and hospitals. The hospital licensing law establishes basic principles of hospital and nursing home construction and operation so as to assure safe and adequate care of patients in places other than their own homes or those of relatives.

The contribution of the health department sanitarian in promulgating and carrying out these regulations is of real value. The Maryland sanitarian inspects the hospital or home before the issuance of a license and annually thereafter on renewal.

Health Department Sanitarian

Much thought is being given to the part sanitarians might take in helping prevent home accidents aside from their institutional activities and general sanitation inspections.

Seagle has pointed out in the *South Carolina Sanitarian* that the sanitarian has good opportunity to observe hazardous conditions or unsafe actions on his daily rounds and that a program of inservice training and a checklist of home hazards would help prepare him to discuss unsafe conditions on the spot and make rec-

ommendations for practical means of correction.

What are some of the points which the sanitarian might keep in mind as he inspects private residences and nursing or care homes?

In connection with construction, he should determine whether electrical, plumbing, and heating installations have been inspected for compliance with local codes, manufacturers' specifications, and the minimum standards set by national boards.

He might call attention of the homeowner or nursing home operator to the need for elimination of dangerous changes in floor level, the need for sufficient electrical outlets to avoid overloading circuits and to eliminate long extension cords.

He might check switches and outlets to see that they are located at sufficient distance from sinks, showers, bath and laundry tubs and yet are accessible to the bedside, doors of entry and exit, and at the head and foot of stairs.

He might look for such booby traps in the environment as doors opening into stairwells, inadequate lighting of stairways and hallways, insecure or missing handrails, loose stair treads, risers that are not of uniform width or height.

He might recommend that scatter rugs be backed with a nonslip material or substance, that they not be placed at the head of stairs, and that flooring have a nonskid finish. He might recommend grab bars for tubs or showers. He might suggest a traffic plan to rid passages or walkways of obstruction.

In the handling and storage of medicine, the sanitarian might ascertain whether containers are clearly and properly labeled and whether medicine cabinets are located near running water to facilitate preparation of prescribed medicine. Are narcotics, sedatives, and other dangerous or habit-forming drugs in a safe place? Are medications no longer in use being promptly discarded?

In connection with fires, which next to falls lead in causing accidental death and extended morbidity, the health department sanitarian

can augment the safety precautions required by the local fire authority or the State insurance commission. In many areas stoves and individual room heaters or space heaters are not acceptable and are a fire hazard. The sanitarian can work with county fire marshals who share our interest in saving lives.

Preventing accidents to the aged is not a task for one agency alone. Its solution will require the contribution of many—every member of the health department, engineers, architects, builders, teachers, individuals responsible for care of the aged, communities responding to the need for providing care facilities for their older citizens. Through such an approach it is reasonable to expect a steady reduction in the accidental injury and death rate among persons in the older age groups.

The Relation of Housing To Accident Incidence

brief In Augusta, Ga., a housing study was correlated with an accidental injury study to determine if the accident rate increases as housing standards become poorer.

The housing survey, made by the Richmond County Health Department in 1952 and 1953, classified the housing in two census tracts in the southeastern part of Augusta into five groups—A through E. Class A indicated the best housing and class E, the poorest. This section was selected for the survey because of the varied types of housing it contained. The class of housing was determined by inspection of the structure, dwellings within the structure, and the premises. The dwellings were graded by the penalty point method.

Also available was an up-to-date file the University Hospital of Au-

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gusta keeps on all accidents treated in the emergency room. Ninety-five percent of the emergency cases in the area are treated by this hospital.

For its analysis, the home safety unit of the Georgia Department of Health selected from the hospital data the accidents occurring in 1953 to the residents of the two surveyed census tracts, V and VI.

The total estimated population of the census tracts was 8,283—6,204 white and 2,079 nonwhite residents. An extremely high percentage of the nonwhite population lived in the lowest class of housing. Eighty-eight percent of all the persons living in class E housing were nonwhite; in class A housing, only 3 percent were nonwhite.

General Rate Upward

Home injuries treated in the hospital's emergency room were the leading type of injury. They almost doubled the rate for motor vehicle injuries—20.9 to 11.8 per 1,000 population.

Although the study found no clear-cut rise in injury rates as the housing, maintenance, occupancy, and dwelling scores decreased, the general rate trend was upward as the housing conditions became poorer.

The total treatment rate for all types of accidents increased steadily through the first four classes of housing—from 43.4 for class A to 76.1 for class D. But for class E housing the total rate showed a sudden drop to 55.5 per 1,000 population.

For home injuries, the rates by class of housing were: A—17.7; B—21.2; C—17.9; D—31; E—25.8. Thus, home accident rates dropped slightly for class C housing, turned back up sharply in class D, and dropped again in class E housing.

Two factors possibly responsible for the differences in injury rates, such as the drop in the rates for class E housing, are the large proportion of nonwhite persons living in class E housing and the lower socioeconomic status of residents in this class of housing. Possibly, they made less use of hospital facilities.

The rates by manner of injury showed the same general trend as in

other comparisons, except for the categories "hit by person or objects" and "animals." These were considerably higher for class E housing. The category "falls," generally associated with poor housing, also showed a definite rise—from 8.4 per 1,000 for class A housing up to 17.2 per 1,000 for class E housing. This finding is another indication that there is possibly a relationship between housing and incidence of accidents.

Effect of Housekeeping

In another study, a sample survey of home injuries was conducted in Ware County, Ga. Data were collected on nonfatal injuries occurring in the 12 months preceding August 1954 according to: major causes of the injuries, by age, race, and sex; nature and manner of injury; and environmental and human factors associated with the accidents.

To discover if the type of housekeeping influences the home injury rate, the interviewers were asked to observe the condition of the housekeeping both on the inside and the outside of the house and to classify each according to one of five classifications: (1) very well kept, (2) well kept, (3) so-so, (4) carelessly kept, and (5) very carelessly kept. Although the recorded observations were strictly the opinions of the interviewers, the tabulated results did indicate a relationship between condition of housekeeping and home accident incidence.

For estimated major injuries outside the home, the rate per 1,000 population was lowest (26) for premises very well kept and highest (47.7) for premises classified as carelessly kept.

The rates for major injuries occurring inside homes rose in almost a straight line from 28.6 for very well kept homes to 40 for those carelessly kept.

The relationship was similar for minor injuries, although the estimated rates were somewhat higher. The inside and outside rates of 62.3 for homes very well kept rose to 100 for homes very carelessly kept inside and 87.7 for those very carelessly kept outside.

Aborigine Influence On the Southern Diet

brief Diet is an integral part of the culture of any people, and thus in the southern United States the dietary pattern is a part of our cultural heritage.

Generally, the southern diet is characterized by an excess of starchy foods; an ample supply of meat; a near absence of green, leafy vegetables; overcooking of all vegetables; frying in fats; and a general unvarying fare in season and out.

The food list is dominated largely by an Indian heritage. The diet of the indigenous Indians in the 16th century varied locally throughout the south but predominated in meat, corn dishes, beans, and perhaps squash.

The food preparation habits of the southerners are of mixed origin. The southern Indians were boilers and broilers, rarely bakers and never fryers. Long, slow boiling typified the preparation of plant foods other than maize. In fact, most tribes customarily kept a fairly large pot brewing and stewing at all times, and one dipped food from the pot when hungry. Only rarely were green, leafy vegetables used as salads.

On the other hand, frying is common throughout Africa, especially on the Guinea Coast and in the Congo Basin that contributed most of the American Negro slaves. In Colonial and pre-Civil War days, cooking was largely a function of the slave, and it is possible that various frying techniques would thus enter the cooking complex of the southerner. In addition, such cooking would soon attain a cultural value that would make it desirable to those who could not afford slaves.

Also in the Gulf Coast area large populations of West Mediterranean peoples, such as the French and

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Spanish, have introduced many dishes that involve frying in fats and oils. The American Indian had no domesticated animal comparable to the pig in the Mediterranean area and thus had no surplus fats to use as a food preparation agent.

No "Natural" Diet

There is nothing "natural" about the diet of man, and in the course of his development he has changed from a wholly herbivorous animal to an omnivorous one. He has developed various patterns of food habits that run from extremes of all meat to all vegetable. Like the American Indian, what he eats has been largely dictated by available foods and has often consisted of anything he could obtain. Only incidentally have man's dietary habits coincided with his basic needs.

Diet is often thought to be a matter of conscious selection, although certainly Lewin and Dickins have well supported the contention that "people like what they eat rather than eat what they like." Likewise, people often cannot eat what they do not like, and it is illusionary to think than man rationally selects his likes. The diet of several primitive peoples support this.

For example, nutritionists formerly thought that a balanced diet was virtually essential to existence, yet often Eskimos subsist their entire lives with not one item of vegetable food ever entering their diet. In fact, many Eskimos never eat anything in their lifetime that may be even remotely construed as vegetable food. Occasionally, a lucky hunter may be allowed to eat the stomach contents of a slaughtered whale or seal. In this "stomach spinach," as it has been called, he may get some partially digested vegetables. Certainly, there is nothing to suggest that a craving for vegetable food ever enters his head. On the other hand, it is certainly true that the Eskimo has a rather monotonous diet consisting of frozen fish, seal, walrus, or whale. This is seldom varied, and when something new enters the diet it is meat. It is not surprising that the Eskimo searches through the meat box in the house for a piece

that is somewhat on the "high" side to vary this bland diet.

When an economic status supports the luxury of eating what one likes, man may be fairly selective, but at the subsistence level maintained by most primitives, one eats what is available. Australian natives eat vast quantities of the larvae of a certain moth that they eagerly seek each year. Several California tribes collect and store hundreds of bushels of acorns, and some inhabitants of Nevada and Utah spend nearly all of their waking hours collecting roots and tubers. Their habitat offers little else.

Some Asiatics exist almost wholly on a single plant—rice. In several spectacular instances, men have learned to use plants that are very poisonous in the unprepared state; yet these become a staple food. Manioc, or cassava, is such a plant—the most frequent food used by millions of Amazon peoples. In the fresh state, it is so charged with prussic acid that an unsuspecting bite into a tuber will puff up and blister the whole mouth, and to swallow a small portion usually is fatal.

Approach to Nutrition

Since diet is part of the culture of a people and one cannot change an aspect of culture very readily, a nutritionist should approach changes in the diet of a locality in a spirit of compromise.

Millions of people in China look upon milk with abhorrence, and most West Africans are horrified at the thought of eating fresh eggs. Many a northern visitor to the south finds eating grits incomprehensible as well as unpalatable, and simple lessons in home economics do not remove these taboos. Man rarely behaves in a rational manner, and the simple truth that one food is better for him than another is hardly sufficient. Deliberate educational approaches, such as inviting people to a prepared feast of nutria dishes, may have only slight success; perhaps nutria gumbo has a chance, whereas baked nutria may not—the former being more closely allied to existing practices.

In the Louisiana State University cafeterias, the nutritionists

are constantly accused by the incoming students of failure to cook the vegetables. Hence, they now cook the vegetables to a cellulose pulp early in the academic year and gradually adjust the cooking time so that by spring the vegetables are properly prepared. This gradualism in vegetable cooking certainly pays bigger dividends than if the student is confronted with strange, but properly cooked, vegetables from the start.

Finally, a wholly humanistic approach is demanded. If the nutritionist presents a too-professional, oversophisticated front, the recipient of the instruction is likely to be repelled. A home economics teacher or a county demonstrator does not have the status that the local physician may have. A physician may accomplish some things simply by prestige. Dickins has shown that most new recipes were introduced to southerners by their friends, and this entree should be exploited by cultural participation on the part of the home economists.

Perhaps an anthropologist, untutored in the culinary skills and lost in the sea of nutritional data, is presumptuous in offering suggestions to the professional food preparer. Nonetheless, this paper is a success if it offers only "food for thought."

Leptospirosis Diagnosis In North Carolina

brief In order to carry out epidemiological investigations of leptospirosis, it is our conviction that the State public health laboratory must provide a reliable diagnostic test for this disease. This

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service was initiated in the North Carolina State Laboratory of Hygiene in January 1954.

The need for the service was brought to a focus in North Carolina in late 1953. At that time, blood specimens were being sent to the Public Health Service Communicable Disease Center in Chamblee, Ga., and reports were often delayed from 1 to 3 months because of the great demand from all sections of the country for the service. For example, the report on a specimen found to be positive in a high titer was not received, it was learned on investigation of the case, until several weeks after the patient had been discharged. The patient had been seriously ill with a jaundicelike disease believed to be infectious hepatitis, although leptospirosis had been considered in the differential diagnosis. A visit to the patient's home after receipt of the laboratory report elicited the information that he had cared for several bird dog puppies when they were ill with leptospirosis.

The response from physicians and veterinarians to the initiation of the diagnostic service has been gratifying, although many physicians do not yet recognize leptospirosis as a disease entity prevalent in North Carolina. The most important reasons for this are: (1) the limitation of instruction on leptospirosis in medical schools to the classical Weil's disease; (2) the widespread publicity given to the viral type of infectious hepatitis; (3) the so-called catarrhal jaundice known for generations to be associated with mild colds and influenza; and (4) inadequate diagnostic service before 1954.

Two points should be kept in mind in dealing with leptospirosis: (1) There are specific laboratory tests for this disease (although a real need for improvement exists), and (2) the reservoir for *Leptospira* organisms is in the lower animal kingdom. Therefore, control of leptospirosis requires the combined efforts of the physician, laboratorian, veterinarian, and health officer. Any member of this team may find the first clue. The others complete and confirm the diagnosis, treat the patient,

and carry out epidemiological studies directed toward finding the source of infection and initiating control measures.

Diagnostic Tests

The most specific test for leptospirosis is isolation of the organism, but most laboratories are not equipped to carry out this procedure routinely. The detection of specific antibodies in the serum of ill or convalescent patients, however, is a procedure that can be done by public health laboratories. Because the complement fixation test is not yet standardized, the agglutination-lysis test or the agglutination test with killed antigen is used.

For the agglutination test, two specimens of clotted blood, collected about 10 days apart, are required. A rise in titer of agglutinins is considered a reliable basis for a diagnosis of leptospirosis. However, with samples taken late in the disease, when the patient is finally jaundiced or is making a slow recovery from an illness thought to be infectious hepatitis without jaundice, the titer will not rise and may even come down. Since native antibodies do not appear in the normal person, the presence of antibodies indicates present or previous infection with leptospirae.

The difficulties encountered in providing a diagnostic test for leptospirosis make it a task for experienced bacteriologists only. Temperature requirements for growing the organisms are strict. The organisms may disintegrate spontaneously and without warning. Since maximum growth takes place in 5 days, multiple cultures must be maintained if a source of supply for antigens is to be available, the choice of cultures depending on the types of infection in the locality. Antigens must be prepared regularly, and the tests must be carefully controlled to insure good results.

Examples of Cases Diagnosed

A high percentage of the human and animal serum specimens examined in North Carolina since January 1954 were positive. Many specimens

were positive with more than one strain of *Leptospira*, indicating cross-agglutination between strains. A few examples follow:

Specimens from several herds of cattle which were experiencing breeding difficulties, including abortion, and which were negative to *Brucella* tests were positive in high titers to *Leptospira pomona*.

A few mule blood specimens have been found positive to *Lept. pomona*. One specimen that reacted in a very high titer was taken from a mule suffering from periodic iridocyclitis, a condition recently recognized as a delayed and uncommon sequela of leptospiral infection in men and horses.

Among the specimens from humans was one which showed a titer of 1:2,048 for *Lept. pomona*. It was taken from an 8-year-old Negro boy with an illness diagnosed by his family physician as leptospirosis. An epidemiological investigation revealed that the boy had had no contact with animals suspected of having the disease. However, a goat was kept on the farm premises where the boy lived, and rats were prevalent. Drinking water was obtained from a shallow well that could easily be contaminated with goat urine. A blood specimen from the goat showed a titer of 1:2,560 for *Lept. pomona*. Later, the goat was killed and *Lept. pomona* organisms were isolated.

Rabies Control Plan For South Carolina

brief In September 1950, a statewide survey was made in South Carolina in an attempt to determine the extent of rabies within the State. Between September 1950

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and March 1951, after numerous consultations with veterinarians, county health officers, and county health sanitarians, the South Carolina State Board of Health drew up a master rabies control plan.

The first step in the plan was a statewide publicity campaign, which was conducted for 30 days prior to a designated period of animal vaccination and stray dog control. The radio, daily and weekly news releases, and pamphlets distributed through schools, churches, and civic organizations were used in the campaign.

The second step was the operation of vaccination clinics for a 6-day period, in April 1951. The clinics, a total of 1,042 of them, were manned by county health department personnel and members of civic groups, the boy and girl scouts, and similar organizations. Practicing veterinarians performed the vaccinations. Vaccine and tags were furnished by the local veterinarians, who collected \$1.00 per animal. State rabies certificates were furnished each veterinarian by the State board of health. During this period, 57,739 dogs were vaccinated.

The third step was a followup publicity campaign to further educate the public regarding rabies and its control. Stray dog control and the reporting of rabies cases were stressed. The public was kept rabies conscious throughout the year and was continually requested to take pets to the local veterinarian for vaccination.

The rabies control plan, with a few minor changes, was carried out again in 1952, 1953, and 1954. The results of the program from 1950

through 1954 are shown in the accompanying table.

Morbidity Reporting

In August 1951, a morbidity reporting system for rabies was initiated by the State board of health, the reports originating with the practicing veterinarians and routed direct to the vital statistics section of the State board of health. The percentages of cards returned were as follows: 1951, 98.7 percent; 1952, 83 percent; 1953, 78.3 percent; 1954, 67.4 percent.

In 1953, the State board of health received complete investigation reports on 631 persons who were given rabies treatment. Of the 373 animals involved, 319 of them were dogs, showing definitely that dogs constitute the major rabies problem as far as human beings are concerned. Of the 631 persons, 539 were white and 37 were Negro, a finding which suggests that Negroes in the State do not report possible exposure to rabies unless the exposure is a severe bite.

The investigation reports revealed, further, that puncture wounds caused by teeth was the method of exposure for 281 of the persons treated. Wounds caused by scratches was reported for 125; and handling of animals, for 162. For 56 of the persons treated, there was no exposure, and for 7 the method of exposure was not stated. From these data, it would seem that 350 persons were treated for rabies when exposure to the disease was doubtful. We believe that a more extensive history of the case should be obtained before humans are given rabies treatment.

Matched Data on Births And Neonatal Deaths

brief With the introduction of the birth weight item on the birth certificates of all but one State by 1950, it became possible to obtain much needed information on the incidence of prematurity and mortality among prematures for the general birth population. Data on incidence of births by weight are now being tabulated regularly by the National Office of Vital Statistics and by many States. A special NOVS study covering births in the first 3 months of 1950 will provide detailed national and regional data on mortality by birth weight. The NOVS can make studies of this type only occasionally and will require the assistance of the States in the matching phase of the operation.

Many States match births and infant deaths routinely, and data on mortality by weight can be obtained as a byproduct. Information for individual States is of interest to many people because public health programs for the special care of prematurely born infants are now operating in several States. To make State data available in one source, the Public Health Conference on Records and Statistics—a permanent organization providing for coordination among Federal, State, and city registration executives and vital statisticians—sponsored a cooperative program to send data on matched births and neonatal deaths to the NOVS for processing and publication. This program was initiated with the collection of data for 1950.

Specifications for the tabulations to be collected from the States were worked out jointly by the NOVS and the States through the mechanism of the conference. Table forms prepared by the national office are sent to the participating States. In the

Rabies control data for South Carolina, 1950-54

Year	Vaccinated, all species	Clinical cases	Positive heads	Human treatments
1950	55,629	885	324	3,362
1951	126,447	686	350	2,973
1952	108,939	372	298	2,213
1953	100,622	279	246	1,946
1954	98,418	188	293	1,917

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first 2 years of the program detailed data were collected on birth weight by race, sex, attendant at birth, period of gestation, plurality of birth, cause of death, and age at death. At the last conference meeting, it was agreed to continue collecting data on an annual basis but to schedule detailed tabulations only cyclically. Thus, for 1952-54 the data have been or will be requested by race, period of gestation, and birth weight; for 1955-57, it is planned again to obtain tabulations by cause of death and age at death.

Participation in the program has increased markedly. In 1950, 11 areas (including 1 city and a Territory) and in 1951, 19 areas (including 2 cities, 1 Territory, 1 possession) submitted tabulations; and about 25 areas are expected to participate in 1952 and 1953 (see table).

In formulating the program, only general principles for tabulating the data were set down. These principles were:

1. Neonatal death records included in the tabulations for an area should relate to all infants born in that area.

2. Tabulations on neonatal deaths prepared on the basis of year of birth are preferable to those based on year of death. However, this is not an important issue and tabulations prepared on either basis should be accepted.

3. Unmatched neonatal deaths should be tabulated along with matched neonatal deaths.

Answers to inquiries on the data submitted for 1950 and 1951 indicated in what ways the States departed from these principles. The only significant difference was the omission of unmatched neonatal deaths.

Information was not requested of the States on other procedures related to the coding and tabulating of the data. The consequent inability to evaluate the comparability of the data creates one of the main problems in the use of pretabulated data. In 1950 and 1951, birth data tabulated by the NOVS were used in conjunction with mortality data prepared in the States for computing mortality rates. The decision not to request the birth data from the

Participants in the collection of data on matched births and neonatal deaths

Area	1950	1951	Tentative	
			1952	1953
Total.....	11	19	24	28
Arkansas.....			x	x
Connecticut.....		x	x	x
Delaware.....	x			
Florida.....		x		x
Georgia.....			x	x
Illinois.....	x	x	x	x
Iowa.....			x	x
Kansas.....				x
Kentucky.....	x	x	x	x
Maryland.....			x	x
Michigan.....		x		x
Minnesota.....		x	x	x
Mississippi.....	x	x	x	
Montana.....			x	x
New Hampshire.....	x	x	x	x
New Mexico.....	x		x	x
New York State (excl. New York City).....	x	x	x	x
North Carolina.....			x	x
Ohio.....		x		
Oklahoma.....		x		
Oregon.....		x	x	x
Rhode Island.....			x	x
Tennessee.....	x	x	x	x
Utah.....			x	x
Vermont.....		x		x
Virginia.....				x
Wisconsin.....	x	x	x	x
Baltimore.....	x	x	x	x
New York City.....		x	x	x
Alaska.....			x	x
Hawaii.....	x	x	x	x
Virgin Islands.....		x	x	x

States in these years was made in the belief that the burden of tabulating might act as a deterrent to the participation of some States. Experience with the use of data from the States and the NOVS for 1950 showed inconsistencies in the coding of certain items. Another problem which arose in 1951 was related to the 50-percent sampling of birth data for that year. This was of significance at the very low weights. Beginning with 1952, the States have been requested to supply birth data if available, as well as mortality data. Most States have indicated this could be done.

A report on data collected for 1950 and 1951 will be published later this

year. This report will contain birth weight statistics for births by race, sex, and plurality and for neonatal deaths by race, sex, cause of death, and age at death. Data on a few additional items on which statistics were collected were not included because of the apparent lack of comparability of the birth and death data for some areas. Subsidiary information for each area on completeness of birth registration and mortality based on data tabulated wholly by the NOVS is to be shown. Because of the biases in the reporting of weight for very small infants who die soon after birth, special procedures, utilizing available data on gestation age, were set up for the

distribution of births and deaths with weight not reported for each area. Only these adjusted data are shown in the report.

The punchcard program started a few years ago has some significance for the collection of pretabulated data on matched births and deaths. Under this program, States are now furnishing the NOVS with punchcards used in national tabulations. This method of collecting data has been limited principally to birth statistics. Through copies of birth certificates received from these States and sample verification of the punchcards, the consistency of these data is checked continuously. Several States are now participating in the punchcard program. Pretabulated birth weight data received from these States should generally have good comparability. However, until now, some of the States in the punchcard program have not been able to supply data on matched births and neonatal deaths. In the future development of the program, it would be of especial value to obtain the participation of these States because of the assurance of greater consistency in their data.

At regular intervals in the future—perhaps every 5 years—the NOVS hopes to carry out special studies to make available statistics on weight-specific mortality. Data should be available for each State.

Progress in Prevention Of Diarrheal Diseases

brief Although acute diarrheal diseases have been brought under control in the United States, Canada, and a limited number of other economically favored countries, available mortality data

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clearly indicate that the prevention of these diseases must be acknowledged as a major current public health problem in most of the countries of Latin America.

It is of historic significance that these diseases are at last to receive concentrated specific attention from organized international public health. Within one decade there may be attained in the countries of the Americas that progress in the control of diarrheal diseases which in the United States came slowly over a period of 50 years.

Multiple Factors in Prevention

There is no clear evidence as to what preventive measures were effective in the United States. There was no vaccine, no new medication. There was no biologic vector to be eradicated by an intensive program.

Multiple factors apparently were involved. Perhaps of chief importance were the safer disposal of human feces, better personal cleanliness, the control of flies, and marked improvement of infant hygiene in the home.

These changes were brought about by community, social and industrial development, as much as by direct public health activities. The introduction of the motor car, for example, with the disappearance of stables in urban centers and the elimination of this prolific source of fly breeding presumably contributed to the control of diarrheal diseases.

Data now available indicate that the serious diarrheal diseases of infants and children are chiefly specific enteric infections. Shigellae are the major etiological agents. Salmonellae are of lesser importance, though the infections caused by these organisms have been reported to be prevalent in some rural areas where animals and humans live in close proximity. Other infectious agents such as *Entamoeba histolytica* and specific types of *Escherichia coli* are probably of limited quantitative importance as a leading cause of death.

The role of viruses has not been established. The important role of predisposing causes, and particularly of deficiencies in nutrition, is generally acknowledged even though the

specific factors responsible for diarrhea have not been fully defined.

Epidemiological studies have led to the conclusion that the dissemination of shigellosis commonly involves a more or less direct transfer from one person to another of human feces containing shigella, and the role of flies in this transfer has been securely established. In salmonellosis most of the infections have their origin in lower animals and fowl, and dissemination occurs predominantly through the medium of foods.

New Advances in Control

Present techniques have markedly increased the sensitivity of bacteriological tests for shigella and salmonella and have made it practicable to handle relatively large numbers of these diagnostic examinations. Bacteriological tests on representative samples of the normal population have established the common occurrence of carriers of shigella. They have served also to reveal the broad range of clinical manifestations of shigellosis and the frequent occurrence of clinically mild cases in adults. These observations must be considered in planning for effective control.

Therapeutic knowledge is now adequate for the prevention of deaths in almost all cases of diarrheal disease. Regardless of etiology, prompt and adequate fluid and electrolyte replacement therapy commonly is successful.

In antibacterial treatment, the sulfonamides and many of the antibiotics have been found to be rapidly effective in shigellosis although specific therapy has little or no value in salmonellosis. These advances in treatment provide a means for the successful therapeutic management of a very high percentage of all cases of diarrheal disease provided treatment is begun without delay.

International Focus

The chief responsibility for the prevention of diarrheal diseases must rest with organized public health. There is the evidence of history that the severe diarrheal diseases are almost totally preventable. There is no single point of attack. For their prevention, mul-

tiple procedures are indicated, and a well-balanced program is necessary.

The nature of the problem must be accurately diagnosed—this requires the participation of the public health laboratory, epidemiology, and vital statistics.

Environmental preventive measures must be applied through programs of community sanitation, with emphasis on the availability of water, the safe disposal of human feces, garbage disposal, and fly control—this calls for the services of sanitary engineers and sanitarians.

Knowledge must also be applied directly to individuals—this is the responsibility of public health physicians, public health nurses, and health educators.

All these broad control measures must be organized and coordinated by the public health administrator. These goals will not be attained easily, but it has been adequately established that difficult public health programs can be carried out when they are given due emphasis.

Heretofore, major attention by international health agencies has been directed toward such diseases as yellow fever, malaria, typhus, and yaws, and only scant attention has been given to the diarrheal diseases, recognized as an even greater cause of death than malaria, for instance.

In view of this history the recent activities of the 14th Pan American Sanitary Conference at Santiago in October 1954 are highly significant. During 5 half-day sessions representatives from all of the countries of the Americas considered together problems in the control of the diarrheal diseases. By resolution the Pan American Sanitary Bureau was requested to implement the technical recommendations which grew out of the technical discussions.

From that point the matter is being carried forward by critical planning. A series of international regional seminars will give attention to the newer scientific advances in the knowledge of the diarrheal diseases. A demonstration area to apply and evaluate a broad preventive program is deemed essential. As an immediate life-saving program, the easily applicable measures to

prevent dehydration and resulting death will be promoted widely.

The effectiveness of these and other procedures can be measured only by time, but it may be anticipated that there will be an increased emphasis on the control of diarrheal diseases at national and local levels in our sister countries.

Prematurity Program In North Carolina

brief Premature birth is the greatest single factor associated with the deaths of infants in North Carolina as well as in the United States.

The reduction of infant deaths in the first 28 days of life has not kept pace with the decline in mortality in the later infancy period, 1 month to 1 year. Approximately 60 percent of the infants who die in the first month are premature—that is, they weigh 5½ pounds (2,500 grams) or less at birth.

If progress in the lowering of infant mortality is to continue, steps must be taken to reduce the number of deaths among prematurely born infants. To this end, a premature infant care program was established in North Carolina in July 1948. The program, sponsored by the North Carolina State Board of Health, the North Carolina Pediatric Society, and the Children's Bureau, is designed to reduce the infant mortality rate in the State through:

1. Prevention of premature labor by the methods known to prolong gestation.
2. Care of the premature infant by lessening risk of delivery, early case finding, hospitalization in approved centers, and followup.
3. Education of nurses, physicians,

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and the laity in the care of premature infants.

In 1952 a special report form was initiated for collecting detailed information on each premature infant born in the six participating hospitals or referred to them for care. This form calls for information on prenatal care of the mother, previous pregnancies, complications of pregnancy, type of delivery, and use of anesthesia and analgesia. Information on treatment and progress is requested for infants whose care is paid for by the State.

These records, along with consolidated birth and matching mortality data kept since 1952 on a statewide basis supplied the information for analyzing the effect of the program.

During the study period 1952-53, there were 16,378 single premature births in North Carolina; 1,307 of these births occurring in the six participating hospitals are compared with the 15,071 births in other places.

Analysis showed that a significantly larger proportion of the premature infants in the lower weight groups, 2,000 grams or less, were born in the premature centers—38 percent compared with 31 percent.

The greatest weight difference was found for nonwhite infants in the previsible group of under 1,000 grams. The percentage of babies (9.1) in this group in the premature centers was almost twice the corresponding percentage (4.6) for all other nonwhite prematures.

Because of a higher proportion of early premature babies and the referral of obstetric problem cases, the centers had a higher neonatal mortality rate—156.8 per 1,000 live births compared with 146.7 for all other prematures. Actually, with the exception of the lowest weight group, the weight-specific mortality rates in the premature centers were much lower than for other premature births.

Immaturity, unqualified or subsidiary to other conditions, was the most important cause of death for both groups of prematures—80.3 per 1,000 live births in the centers compared with 71.3 for all other births. For nonwhite births the difference

was more striking—105.3 per 1,000 live births in the centers compared to 75.1 for all other nonwhite pretermatures. These differences in mortality rate might be accounted for again by the difference in the weight distribution. With a large proportion of early pretermatures in the centers one might expect a larger proportion of deaths due to immaturity.

Death rates due to asphyxia and atelectasis for white babies and birth injury for nonwhite babies were considerably higher among premature center births.

Maternal Factors

Analysis of maternal factors related to prematurity revealed that type of delivery, use of anesthesia and analgesia, and complications of pregnancy are closely related to the survival of the premature infant.

Type of care received by the mother was reported for all but 10 of the 1,307 premature births in the hospitals. Of these 29.4 percent received clinic care, 68.3 percent private care, and only 2.3 percent no care.

The type of delivery—normal, abnormal, instrument, cesarean, and

unknown—was stated for all but three births. For 66 percent of the cases the delivery was normal, presumably without operative interference. Another 21.1 percent were delivered by instrument—low, mid, or high forceps.

Mortality rates were highest for babies with an abnormal presentation delivery and those delivered by cesarean section—333.3 per 1,000 live births for abnormal and 246.4 for cesarean. However, each of these rates is based on less than 100 cases and is subject to great variability.

Anesthetics used were classified according to three types: general, local, and spinal or caudal. The analgesias administered were barbiturates, demerol, scopolamine, or other specified analgesia.

It is known that both an anesthesia and an analgesia were given for 60.5 percent of the deliveries. In 63.4 percent of these cases a general anesthesia was given, and demerol was the most frequently used companion analgesia.

In comparing the causes of death and various types of anesthesia administered, it was found that for deaths due to asphyxia and atelec-

tasis the mortality rates were highest for births in which either caudal or general anesthesia was used at delivery. Among deaths due to immaturity, the group of births experiencing the highest mortality rate had been administered no anesthesia. The rate for this group was 278.1 per 1,000 live births.

Complications Affect Survival

The following classes of complications were arbitrarily set up on the report form: toxemia—mild, severe, and eclampsia; hemorrhage; infection tuberculosis, syphilis, and german measles; premature rupture of membrane 24 hours prior to delivery; and other specified complications.

Of the 1,307 premature infants 41 percent were born to mothers with complications of pregnancy. Also 52 percent of the 205 neonatal deaths occurred among the births to mothers with complications.

The mortality rate for this group was 198.5 per 1,000 live births while that for babies born to mothers without complications was 128.1. The difference between these two rates is statistically significant. Deliveries

Single premature live births and neonatal deaths according to birth weight, North Carolina (exclusive of premature centers) and premature centers, 1952 and 1953

Birth weight (in grams)	Live births						Neonatal deaths					
	Number			Percent			Number			Rate ¹		
	Total	White	Non-white	Total	White	Non-white	Total	White	Non-white	Total	White	Non-white
<i>North Carolina</i>												
Total.....	15,071	8,786	6,285	100.0	100.0	100.0	2,211	1,296	915	146.7	147.5	145.6
Under 1,000.....	758	467	291	5.0	5.3	4.6	561	361	200	740.1	773.0	687.3
1,001-1,500.....	1,284	719	565	8.5	8.2	9.0	609	364	245	474.3	506.3	433.6
1,501-2,000.....	2,636	1,513	1,123	17.5	17.2	17.9	506	284	222	192.0	187.7	197.7
2,001-2,500.....	10,393	6,087	4,306	69.0	69.3	68.5	535	287	248	51.5	47.1	57.6
<i>Premature centers</i>												
Total.....	1,307	1,022	285	100.0	100.0	100.0	205	157	48	156.8	153.6	168.4
Under 1,000.....	100	74	26	7.6	7.2	9.1	82	57	25	820.0	770.3	961.5
1,001-1,500.....	132	106	26	10.1	10.4	9.1	51	38	13	386.4	358.5	500.0
1,501-2,000.....	261	206	55	20.0	20.2	19.3	39	33	6	149.4	160.2	109.1
2,001-2,500.....	814	636	178	62.3	62.2	62.5	33	29	4	40.5	45.6	22.5

¹ Rate per 1,000 live births.

complicated by hemorrhage exhibited the highest mortality rate.

Infants born to mothers with complications comprise about 60 percent of the weight group of 2,000 grams or less. In the lowest weight group, under 1,000 grams, 63 percent of the births were to mothers with complications. The risk of a previsible or early premature baby was greatest for the mother with a complicated pregnancy.

Further study will be necessary to determine the relationship of certain maternal factors to prematurity and survival. Data presently available are insufficient for any definite conclusions to be drawn, and 1954 and then 1955 data will offer additional evidence. However, we are confident that many premature babies that would have died have been saved as a result of this program.

Congenital Disorders— A Problem for Research

brief Events of the past two decades present public health statisticians with an opportunity to help solve the problems of congenital malformation, cerebral palsy, epilepsy, and mental deficiency. These disorders have perplexed both professional and lay thinkers throughout the period of recorded medical history.

The occurrence of malformation at birth has commonly been thought to be the result of some defect in the germ plasm and thus hereditary. Recent clinical observations and experimental demonstration in animals indicate, however, that the hereditary hypothesis is not a sufficient explanation of these disorders, and the concept of environmental determination has evolved. If proved true as a general mechanism, this

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concept provides great hope for the prevention of these tragic abnormalities.

There is a pressing need for extensive statistical research to examine a set of hypotheses which are consistent with the concept of environmental determination. Since the public health statistician already has, by his custody of vital records, possession of much of the information required for this task, he stands in a particularly fortunate position to produce useful information.

Hypotheses To Be Tested

The principal questions that need clarification are:

1. Does the presence of infection during pregnancy affect the risk of congenital anomaly? Two further questions apply here: (a) Do all diseases exhibit teratogenic properties or only specified types? (b) Is the time of onset a determinant of the teratogenic potential of a disease?

2. Does the presence of noninfectious disease—toxemia, hypertension, anemia, diabetes—affect the risk of congenital anomaly? (Questions 1-a and 1-b also apply here.)

3. Does the presence of nonspecific insults—vaginal bleeding, accidental injury to mother, dystocia, malpresentation—affect the risk of congenital anomaly? (Question 1-b, when applicable.)

4. Do cultural and socioeconomic variables directly affect the risk of congenital anomaly?

5. Is the increased risk of mongolism and gross malformation in babies born to older mothers independent of cause-effect mechanisms under investigation as outlined in questions 1, 2, and 3?

Information Required

The basic data required to compose a meaningful and useful body of knowledge on congenital disorders may be listed as follows:

1. Frequency of malformation, total and by type, among stillbirths and live births.

2. Time trends in the incidence data, by year and by season.

3. Geographic variation in incidence by type of malformation.

4. Variation in incidence by socioeconomic status, age of parents, and birth order.

5. Presence of infectious disease, by type and by date of onset during pregnancy for each live birth and each stillbirth.

6. Presence of specified complications of pregnancy for each live birth and each stillbirth, with specific reference to anemia, hemorrhage, and toxemia.

7. Presence of specified complications of labor for each live birth and each stillbirth with specific reference to malpresentation, placental abnormality, and dystocia.

8. Presence of symptoms of respiratory difficulty in the infant at birth.

Sources of Data

The public health statistician has an instrument in the form of vital records which is clearly without equal for establishing the characteristics of the study universe. There is little question that birth records can provide useful working information on distribution of infants at risk according to area of residence, season of gestation, weight at birth, age of mother and of father, birth order, and, by deduction, occupation of father, residence of parents, and socioeconomic status.

A number of health departments have attempted to secure significant elements of the prenatal history, including labor, and an indication of the presence or absence of congenital malformation and birth injury by the use of a medical supplement to the birth certificate. Experience with this procedure appears to be fairly uniform. In areas in which hospital births approximate 95 percent of the birth experience, gross understatement of complications of pregnancy and labor has been noted when the findings are compared with data as found in the hospital history.

In my experience, I have found no insurmountable difficulties to securing accurate and complete data on specified segments of the prenatal and labor history of the mother and on the physical state of the newly born infant. The medical supplement to the birth record is a useful instrument for obtaining the birth

weight and information on operative procedures and complications of labor, but recourse to additional sources is necessary for a more complete measurement of several of the variables to be considered. For example, malformations often are not discovered until after the birth record is filed. When these conditions result in death, they will be noted on the death record, which can be matched with the appropriate birth record. Also, the public health nurse's visit to the home of the infant a few weeks after birth can be made the occasion of an examination for malformation and a report thereof. Another source is the program for crippled children.

The recorded birth universe is also an excellent source for the selection of a control population. In a study of the relationship of prenatal and paranatal factors and the development of epilepsy, for example, Lilienfeld and Pasamanik secured their case population from the available clinic registers and known institutionalized patients. For each case, they selected as a control the next infant in the birth register born in the same institution and matched for race and maternal age. They abstracted the hospital records for both series for certain variables of interest and compared the two groups.

These two methods—the use of the medical supplement to the birth record and the matched control hospital record survey—for obtaining data on factors associated with congenital disorders both involve to some extent a retroactive type of investigation. Essentially, at birth or following birth, an attempt is made to record the prenatal history of the infant or child. There are two serious limitations to this approach. If one is concerned with a known case of malformation, there is some tendency to search in the prenatal record or to query the mother about prenatal events with more care than in a case where no malformation is present, thus producing a bias that makes it impossible to construct any useful inferences. The second difficulty arises out of the fact that the records may not uniformly contain the detail required when we set about to an-

swer questions based on past experience.

A Course of Action

Assuming that research in congenitally determined disorders suggests itself as worthy of statistical research by a health department, what is a practical course of action?

First, the birth record, including the fetal death record, should be used to describe the population at risk, the distribution characteristics of prematurity, and, to the extent that local conditions permit, the incidence of complications of pregnancy and labor. To obtain uniform coverage of prenatal history, summary sheets for inclusion in the hospital record can be provided.

Second, the birth record plus the fetal death record, the death record, and data on malformations from public health nurses, well baby clinics, and crippled children services should be used as a basis for estimating the incidence of congenital malformations and some of their distribution characteristics.

There are, no doubt, areas where the procedures given above will require years of nurture before data of value can be produced. It may be that, as a universal system is being developed, it would be desirable to construct a study area within a given jurisdiction consisting of the prenatal clinics administered by the local health departments, the teaching hospitals, and such other large obstetrical services willing and capable of participating in longitudinal studies. Each birth within the study area would be reported by the usual live birth certificate or fetal death record supplemented by a record of the prenatal life, the labor history, and a statement based upon an examination of the newborn for evidence of malformation. The public health statistical unit should be prepared to provide consultation on the study design and assistance in collation and interpretation of data.

At present, the most practical method for probing into the prenatal determinants of cerebral palsy, epilepsy, and mental deficiency remains the retroactive study, for these conditions are rarely apparent

at birth. But this type of study would nevertheless benefit from the proposed universal collection scheme. The population as a whole would be described and known. The cases under study could be matched back to the appropriate birth record, and their characteristics thereby established.

Integrated Rehabilitation Of Cleft Palate Patients

brief Because of the variety of problems presented by the person with a cleft palate, no one specialty can attempt to deal with them all. A cleft palate is not just a "hole in the head" to be closed up in any fashion, or just a speech defect, or just a malocclusion. All of these conditions, along with the emotional and intellectual aspects, are related and interdependent. Hence, the team approach is gaining wide acceptance as the most productive way of rehabilitating these patients.

The essential services in rehabilitating the cleft palate patient are pediatrics, surgery, dentistry, orthodontia, prosthodontia, speech therapy, otolaryngology, psychology, and social service. Other services are added as the need arises. Each member of the team has a particular responsibility, but all members must work together for maximum effectiveness.

Pediatrics, Surgery

The pediatrician is in a position to guide the parents as soon as the baby is born. The manner in which he handles their attitudes and reactions toward the condition is all-important in the later adjustment of the parents to the child and, consequently, in the adjustment of the child himself to the handicap.

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The pediatrician can steer the parents' thinking toward the positive aspects of what can be done, rather than letting them dwell on the negative questions of what has not been done. He can reassure them that the baby can be provided with a cosmetically normal facial structure and with adequate oral structures for speech and nutrition.

It is the responsibility of the pediatrician, therefore, to acquaint the parents with a cleft palate team or with whatever agencies or resources are available in the community for cleft palate rehabilitation.

There is not much controversy concerning the surgical closure of the cleft lip. This procedure is usually carried out as soon as the baby is judged strong enough, usually about the third or fourth month.

Surgery on the palate, however, is another question, one that can best be answered through the team approach. The traditional treatment of cleft palate was by surgery. However, because surgery has so often been unsuccessful, many workers have felt that a reevaluation of surgical procedures, and especially of the timing of surgery, should be undertaken.

With the help of the orthodontist, prosthodontist, and speech therapist, the surgeon can better decide how and when to operate. The following criteria are now being used to judge whether or not a palate should be closed surgically and, if so, at what age:

1. Adequacy and vitality of tissue.
2. Spatial configuration of anatomic segments of the cleft, that is, width and shape of the cleft.
3. The relationship of the palate to contiguous anatomic structure in the pharynx.

Dentistry

Good general dental care is even more important for the cleft palate patient than for the average person. The successful use of a prosthetic device often depends upon the amount of retention which can be provided. Teeth should be cared for so that they do not become carious nor the gums diseased.

The influence of the deciduous teeth on the eruption of the permanent teeth and the consequent development of facial structures cannot be overemphasized. There is a direct relationship between the size and shape of the dental arch and the health of the baby teeth. Good habits of oral hygiene are a necessity for the cleft palate patient and must be instilled early and followed faithfully.

Through orthodontia, it is possible to restore teeth to their proper positions and to maintain them in their correct relationships. The orthodontist must have a thorough knowledge of growth factors and must know when to use appliances and what types to use to achieve the maximal results in alignment of structures. He aids the surgeon or prosthodontist by retaining the parts in the desired position or by repositioning structures so that they can work more effectively.

Prosthesis and speech appliances were formerly viewed as a last resort, after surgical failure. Subsequently, some workers developed the philosophy that prosthesis was the method of choice and that surgery should never be used.

It is now generally accepted that surgery and prosthesis offer complementary procedures for the rehabilitation of the cleft palate patient. When tissue is inadequate and a poor surgical result is almost a certainty, an appliance may be indicated from the beginning. Sometimes the surgeon can repair the hard palate but is unable to construct a functional soft palate. Then a speech appliance can be used to improve articulation. Young children may be fitted with a training appliance until they have reached the optimal age for surgery.

Speech Therapy, Otolaryngology

Among the several duties of the speech therapist, the most obvious one is the evaluation of the speech. In some patients, defective speech is due to causes other than the cleft, and the therapist must be able to differentiate these cases.

The therapist then must evaluate the structures in the light of the speech. Is the velo-pharyngeal clo-

sure adequate? Are there barriers to good tongue movement, such as orthodontic appliances? All these points must be assessed so that the advisability of further surgery, further orthodontia, or other procedures may be decided upon.

With a child who has not yet begun to talk, the speech therapist assumes the role of counselor to the parents. Ways in which to foster normal speech development and behavior to be avoided are discussed. As the child begins to talk, the parents are given specific suggestions for working with him at home until formal speech therapy is indicated.

Children with cleft palates are more susceptible to respiratory infections and more often have ear infections and accompanying hearing loss than normal children. They need careful periodic checkups to reduce the incidence of middle ear pathology.

Since much middle ear involvement is caused by blockage of the eustachian tube with hypertrophied lymphoid tissue, the otolaryngologist is faced with a problem in advising tonsillectomy and adenoidectomy. Often, the velo-pharyngeal closure which provides adequate speech is achieved because the palate rests against a large pad of adenoid tissue on the back wall of the pharynx. Removal of this adenoid pad may cause serious consequences speechwise. The otolaryngologist must decide whether an operation is indicated, how much tissue to remove, and the possible consequences to speech.

Social Service, Psychology

The social worker serves as a liaison between the team and the patient or his family. He interprets to the patient the decisions as to type of treatment, steps in the program, and the like. Also, he can help the team to plan by informing them of the attitudes and feelings of the family and the ability of the patient to cooperate and carry out recommended procedures.

In a total rehabilitation program, the mental and emotional factors are of vital importance. It is necessary to know the capacities of the patient so that a realistic policy can be pursued. Sometimes a patient, because

of intellectual capacity or economic, social, or emotional influences, is incapable of sufficient cooperation to make a prosthetic device practical. Therefore, surgery may be a better choice for him, although it is not the better one structurally.

The psychologist can be of value not only in testing, but in counseling and guiding both the patient and his family. A realistic, objective attitude to the handicap, an acceptance of the limitations of therapy, and a healthy emotional atmosphere can be as helpful as good surgery or a perfect appliance.

Excess Water in Milk— Georgia's Experience

brief

A program for the detection and control of excess water in milk through the systematic use of the refractometer and cryoscope in Georgia has resulted in a marked decrease in the number of samples containing excess water. During the first year of the program, 1950, over 32 percent of the 2,623 milk samples examined showed excess water as compared to only 3.3 percent of the 16,176 samples examined during 1954. The results suggest that other States might find more water in their milk supplies if greater emphasis were given to this important examination.

Important in the success of the program was the excellent cooperation between State and local health department personnel in their work with milk plant operators and dairy farmers. Authority for milk control is not vested in the Georgia Depart-

ment of Public Health. This department acts only in an advisory capacity to local health departments. The local departments have adequate authority to enforce regulations adopted by their boards of health. However, it is to the Georgia Department of Public Health that local health departments turn for assistance, advice, and guidance on milk sanitation, and for laboratory services.

The State laboratories first offered laboratory services for the examination of milk and dairy products during the latter part of 1948. From the beginning, a sufficient number of low lactometer readings were obtained to indicate the need for a thorough investigation of excess water in milk. Consequently, when the central laboratory milk unit began operating in April 1950, the detection of excess water was emphasized. The findings indicated that either adulteration or gross carelessness, or both, was a common practice.

In July 1950, the central laboratory instituted the cryoscopic method of determining excess water in milk as a routine laboratory procedure. The results obtained aroused widespread interest throughout the State and accelerated the demand for this service.

Methods

At the beginning of the program, the equipment and procedure outlined in Standard Methods for the Examination of Dairy Products was closely followed. This involved the use of the Hortvet cryoscope or its equivalent. It soon became apparent that the freezing of all samples with the cryoscope would be too time consuming for routine application. The other official procedures outlined were then investigated. From these, a modified sour serum method was developed for screening all samples for possible adulteration with water. A Bausch and Lomb juice refractometer was selected as the instrument for this screening job. With it, the percentage of dissolved serum solids could be read after filtering a small amount of milk which had been rapidly soured by adding 25 percent acetic acid and subsequently heating

in a 70° C. water bath to speed the separation of milk curd and serum.

In 1952, Vandiviere, Brooks, and Sunkes reported a comparison of results obtained in a parallel study of 2,898 milk samples examined with both cryoscope and refractometer. This data indicated that a screening point of 7.55 percent dissolved serum solids, or greater, by the Bausch and Lomb refractometer reading, could be used to eliminate a large number of samples from cryoscopic examination.

It was then policy to report excess water in all samples in which the cryoscope indicated 3 percent or more excess water. This tolerance of 3 percent is allowed in the official procedures. Later, the policy was altered to allow for an operational error in addition to the 3 percent allowed for variation in the freezing point of normal milk.

Data on 7,115 milk samples examined during November 1951 through December 1952 revealed a definite break in the percentage of positive samples observed to lie between the refractometer readings of 7.40 and 7.35. Of the 1,628 samples with refractometer readings of 7.40 or higher, only 71, 0.9 percent of all samples, showed reportable excess water of 5 percent or greater when examined on the cryoscope, and only 23 had greater than 6 percent. Hence, most of these 71 samples were borderline cases considered to be of little significance.

The screening point for milk to be reported as "free of excess water" was set at 7.40. All samples showing a lower percentage of dissolved serum solids were then subjected to cryoscopic examination. Excess water is reported only when the cryoscope examination shows 5 percent or more present and is reported to the nearest 0.5 percent.

Evaluation Control

From the beginning, a monthly evaluation of the procedure has been maintained. The evaluation samples involve the use of a herd sample milked under the surveillance of a health department official. Milking machines and other containers are inspected to see that no excess

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water gains entrance to the milk. Known amounts of water are then added to portions of this milk and samples in iced cases are shipped to reach the regional laboratory on the following day.

The evaluation samples are examined by all cryoscope operators routinely making examinations. The central laboratory, which acts as a control, performs its tests on the same day as the regional laboratories. By means of this evaluation program, the work done in the central laboratory and three regional laboratories is closely coordinated, and any need for restandardization of freezing-point thermometers is promptly indicated.

Education

Much of the success of this program can be attributed to the educational approach of the sanitarians in dealing with those in whose milk excess water has been found. Only in a few instances, where there was no response or indication of cooperation in keeping excess water out of the milk, have local health departments had to revoke the permits of offending dairymen.

Whenever excess water is found in milk, the laboratory report is accompanied with a slip of paper on which it is pointed out that "it is believed that in the majority of cases an excess of water is due to the lack of knowledge of the condition rather than willful adulteration on the part of the dairymen." Then, the following list gives possible causes of excess water in milk:

1. Utensils not thoroughly drained before use.
2. Leaking cooling boards which allow the cooling water to enter the milk when it is flowing over the board.
3. The use of leaking milk cans which, submerged in water, allow the water to enter the milk.
4. Haste to cool milk by placing ice directly in the milk.
5. The addition of water to milk by employees in an effort to impress the owner of the dairy with their ability to maintain or increase the volume of milk production.

Results

During the 5 years of the program, the incidence of watered milk has sharply dropped. During 1950, the first year of the program, 2,623 milk samples were examined with the cryoscope. Of these, 846, or 32.3 percent, contained excess water. However, since many of these examinations were made on repeat samples in which excess water was suspected, this did not mean that 32 percent of the milk being sold on the Georgia market was watered.

During 1951, 9,074 samples were screened with the Bausch and Lomb juice refractometer; 3,823 of these, plus 831 others, were examined with the cryoscope. Of the 9,905 samples submitted to screening or direct cryoscopic examination, 1,264, 12.8 percent, were found to contain 3 percent or greater excess water. Thus, in the second year of the program, the positive findings were reduced by almost two-thirds.

In 1952, only 9.0 percent of the samples examined contained excess water. Part of this decrease was due to the change in policy from reporting 3 and 4 percent findings. However, in 1953 the positive findings were further reduced to 4.7 percent. The extent of watering appears to have leveled off now, for examinations on 16,370 samples in 1954 yielded only 3.3 percent positive for excess water.

The Anthrax Epizootic In Louisiana in 1954

brief

In 1954, Louisiana experienced its first significant anthrax epizootic since 1949. Outbreaks of the disease have been recognized in limited areas of the State each year since about 1880, but epizootics have occurred at infre-

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quent intervals. Until the 1954 epizootic, anthrax appeared to occur in 30-year cycles. The first was recognized about 1890, the second in 1927, in the delta section; and the third in 1949, in the northwestern corner of the State.

Anthrax vaccine was used in each of the epizootics. Still in the experimental stage in 1890, the vaccine was adjudged to have had some bearing on the epizootiology of the disease, but when the supply was exhausted, the infection continued for only a short time. It appeared to burn itself out in northern Louisiana, several miles north of the last vaccinated areas. After the 1927 epizootic, when considerable research on the vaccine was conducted, several types became established on the market. Two types, the subcutaneous spore and the intradermal spore, have become traditional tools in increasing herd immunity to anthrax.

The 1954 epizootic in Louisiana apparently started in the relatively inaccessible delta region during June. The outbreak was recognized as a potential epizootic by July 18 and was confirmed as such by September 7. The last case was proved in the laboratory on October 20. Subcutis spore vaccine (No. 4) had been used extensively, but apparently it was not effective as administered.

Investigation of the epizootic was hampered by the type of terrain in the delta region and to some extent by the nature and customs of its people. The season, the temperature-humidity ratio, the sucking insect population, and the spread of the disease in a northerly direction appeared to be similar in all the epidemics that have occurred in the State so far.

The anthrax bacillus was isolated from a horsefly removed from a dying horse in the Venice area and from a fly taken from a febrile cow in the New Orleans area. Horsefly cultures were especially pathogenic for mice and displayed heavy capsular formation either directly from mice or when inoculated from first and second subcultures. However, no unusual cultural characteristics were observed.

Orientation of Dentists In Administration

brief In mid-20th century, the dentist is a highly skilled technician in an intensively specialized health practice. Throughout his 4 years of study, the pressure is on to develop, simultaneously, scientific background and judgment and the manual skills of dentistry. In recent years patient education, regimens of treatment, and certain techniques of prevention have occupied an increasing but inadequate segment of the dental school curriculum. Yet in practice the dentist must meet community responsibilities as well as responsibilities for individuals. As a professional health practitioner, he must accept this role cast for him by the public.

To successfully accomplish these things within 4 years is a credit not only to the students but also to the pedagogical abilities of the school faculties. To be able to enter the competent practice of a profession upon graduation from school and licensure is evidence of the intensiveness and effectiveness of the course.

More important, however, to this discussion is the fact that such an intensive experience in health science, in methodology, and in technique makes for a high degree of specialization focused on the individual and his pathology.

Orientation

Like the physician, particularly one trained in a medical specialty, the dentist in public health has the double problem of unlearning the attitudes of individual care and developing the philosophy of the community as the patient. Yet, both the physician and the dentist undertook their course of study because of a real interest in the practice of the chosen profession.

The role of the dentist in public health administration must, there-

fore, be predicated on adequate public health orientation or training through which he has had opportunity to redirect his interests and philosophy to a different type of patient—the community. No longer should the correction of defects or disappearance of pathology in an individual be the objective, but rather the dental health of a group of people for all of their lives becomes his aim.

The second prerequisite for the dentist in public health administration, growing out of this change, must be the concept of family and communitywide service. Not only the potentiality of resources in a community to solve its own problems but the requirement of professional teamwork to exploit this strength must become a way of life for each public health worker. How the specialized professional skills of doctors, nurses, engineers, dentists, sanitarians, clerks, and so forth are integrated and coordinated determines to a great extent the effectiveness of the public health team. And effectiveness cannot be achieved without full realization of these facts by each member of the team.

The physician is ordinarily the leader of the public health team, and, in fact, by law in most States, the responsibility for local and State health departments must lie upon a physician. To meet this responsibility and to serve adequately as leader of the organization, he must become a generalist in many other public health sciences. His basic profession becomes only a part of the spectrum of skills which he and the community must use to create a state approaching complete well-being. The less provincial he remains with respect to medicine, the more effective he is as a public health administrator. And this holds true for one who is to assist in administration.

For any professional person in public health, therefore, a basic decision must always be made, usually early in his experience—do I wish to be a public health or a program administrator? For the former the entire field becomes the generalist's bailiwick. For the latter, the program becomes the specialist's area in which his profession may remain his

primary interest, though it must still be seen in proper relation to the other fields of public health.

Public Health Duties

The dentist may effectively be an administrator of the dental public health program. In this responsibility he must solve such problems as competence of professional individual care in the community; availability of care to all members of the community; development of the attitudes and philosophy of health maintenance and promotion, as well as correction; and the application of preventive measures, such as nutrition, topical fluoride, and fluoridation of public water supplies. He should be delegated the authority to represent the health department in dental matters; to expedite dental health education activities, and to serve as liaison with dentists and their organizations. He must be able to evaluate dental programs, promote professional growth in the dentists, and insure the application of community resources to all of the community needs. And in doing these things he must have a sympathetic appreciation of the entire public health program, supporting it even as he works within his own field.

A second possibility for the trained and experienced dentist is in general public health administration. The educational background in the health sciences, once the transition to public health philosophy has been attained, should make the dentist invaluable in public health administration provided he can be comfortable in this relation to the health officer. Medical people need training and experience in the matter of delegation and sharing responsibility but can make this transition. The dentist, like a physician, must become a generalist, leaving behind the concentrated interest in one profession for the overall team approach. Yet, like the physician with the minimum of clinical medicine as a taproot to his profession, so would the dental administrator wish to keep contact with his parent profession.

In either instance, the dental public health administrator, who has successfully made the transition

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from individual to community for a patient, and to health maintenance and promotion and prevention of disease as an objective rather than the correction or repair of disease, will derive deep satisfaction from his practice.

And satisfaction in the job he has done and the consciousness of important service rendered leave little for a professional to want.

Inter-American Health Program Since 1942

brief Competent observers agree that there has been startling and thrilling improvement in the health of people living south of the Rio Grande. That this is so, they also agree, is due to the aggressive activity of public health workers in the countries of Latin America, living and working in a land with a future.

Real help in the form of stimulation and technical assistance has come from foundations such as Rockefeller and Kellogg and more recently from international and national official agencies such as the Pan American Sanitary Bureau and the International Cooperation Administration—the new agency assuming the functions of the Foreign Operations Administration.

Since 1942 the United States Government, through the Institute of Inter-American Affairs, has been offering technical assistance to the ministries of health of Latin America. The IIAA, as it has become well known, now continues its

work as part of the International Cooperation Administration.

As of today there are cooperative bilateral health programs with 18 sovereign republics in Latin America and with the 3 semi-independent governments of Surinam, British Guiana, and Jamaica. This work is carried on by 135 United States professional health workers and more than 2,000 professional workers from the Latin American countries. An additional 5,000 subprofessional and clerical workers are employed in the operational phases of the programs.

The work is financed by an annual appropriation on the part of the United States of approximately \$5 million. The United States contribution is more than matched by the Latin American governments. Last year they appropriated more than \$12 million in local currencies.

It is unnecessary to describe in detail all the activities that have taken place since 1942. Programs of basic sanitation, community health promotion, and professional education have received priority by common consent.

Within the past 18 months some important changes have been made in the orientation of some of the cooperative programs with the separate countries. Characterized in the early years by operational projects, often turned over completely to United States technicians for professional management, more and more the operational phases are properly being assumed by the Latin American ministries of health. Technical advice and consultation continue to be offered by our technicians working directly with the ministries. This encouraging trend is receiving the active support of the International Cooperation Administration.

During this same period, in addition to continuing work in all of the original fields of health activity, an effort has been made to expand into new fields in order to keep up with the needs of a rapidly developing region. Work has been started in health education, nutrition, industrial hygiene, and medical education. Assistance has been given in organizing a model State health department in Brazil, the largest and one

of the more decentralized countries of Latin America.

A pleasant aspect of the inter-American health picture is the maturing relationship among the several agencies, public and private, working in this field of international health. The International Cooperation Administration is participating actively in efforts to improve this coordination. Joint planning with the Pan American Sanitary Bureau in medical education and mass disease control is part of this effort. The Pan American Sanitary Bureau has established, in Washington, D. C., a center for the exchange of information on medical education to which all interested agencies make contributions. By such formal means, and by means of frequent friendly informal exchange of ideas and information, a fine working relationship has developed.

This bright picture I have painted is not intended to convey the impression that all, or even most, of the problems are solved. Latin America still faces towering problems in public health, in many areas with grossly inadequate resources. The region supports only 1 physician per 3,000 population and 1 nurse per 15,000. Training facilities for both physicians and nurses need improvement. There are still mass disease control problems in such fields as malaria, diarrheal disease, and tuberculosis. Much remains to be done, but movement is occurring, and in the right direction.

Although the ministries of health have good leadership at the top, there are deficiencies in depth. Many more trained workers in the public health professions are needed at the local level. Considerable work still needs to be done in extending public health services to this level.

In moving to meet its needs, Latin America has available some fine resources. They are mostly governmental, however, since the voluntary health organization, as we know it in the United States, is not well represented in Latin America. For this reason a major effort of the cooperative health program is encouragement of voluntary health agencies to complement the work of official agencies.

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