Representing Pennsylvania's third annual health conference, held in August 1954 at State College, Pa., are the papers summarized in this section. Four deal with chronic illness and one with the work of the local health laboratory.

Pennsylvania Health Conference

Cardiovascular Health Center in New York

PHR brief

In coronary heart disease and hypertension, foremost among chronic disease control problems, much excellent research is being done to improve our understanding of the basic mechanisms causing the conditions.

Keys, for example, has gathered much evidence for the theory that a high proportion of fat in the diet is related to the development of atherosclerosis of the coronary arteries. He has demonstrated that countries having a high proportion of fat in the diet also have high death rates from degenerative heart diseases. Morris and co-workers suggest that occupational groups associated with physical exercise have lower death rates from coronary heart disease than do those who work at more sedentary pursuits. Gertler and associates have marshalled evidence that persons of the mesomorphic-endomorphic body type seem especially prone to develop coronary heart disease. Levy and associates have pointed out that hypertension develops in individuals who have labile blood pressure or tachycardia. The relationship of obesity and hypertension is also well known.

For a long while official health departments have been waiting for basic studies to give answers which can be translated into control programs. Meanwhile most health officers have contented themselves with some peripheral activities in the heart disease field, such as postgraduate education of physicians and nurses, provision of cardiac consultants for certain clinics, and the extension of public health nursing services to cardiac patients. A few departments have become interested in rehabilitation of the cardiac patient, largely a problem of the patient's attitude and that of his employer toward the disease.

Health Department Job

But none of these measures is meeting the main issue. Knowledge required for the control of disease has often preceded that concerning its etiology and pathogenesis. The public health physician has behind him years of experience in controlling diseases before their cause has been determined. This has been true of cholera and typhoid fever, the prevention of leukemia among radiologists, and the control

By George James, M.D., M.P.H., assistant commissioner for program development and evaluation, New York State Department of Health, and associate professor of preventive medicine and public health, Albany Medical College, New York.

of diabetes. Adult heart disease may present more of a challenge, but this should serve mainly to give it a high priority for our public health resources.

One method of approach open to official health agencies is a study of the epidemiology of coronary heart disease and hypertension. Departments of health have teams of trained epidemiologists, statisticians, and, recently, social scientists. They possess the legal responsibility to take necessary measures to control prevalent diseases. Health departments, furthermore, are the legal custodians of morbidity data, and through their liaison with medical and other professional societies and their association with industrial health programs, they are indeed in a fortunate position to pursue such studies.

But the official health agency has a far greater responsibility than the undertaking of discrete epidemiological studies. It must mobilize its resources more completely for a large-scale, long-term study of coronary heart disease and hypertension.

New York Study

In New York State it was decided that the official health agency is not only able to undertake long-term longitudinal studies, it is the organization best able to make them. This decision led to the establishment of the cardiovascular health center program in February 1953.

The cardiovascular health center has been established as a part of the Albany Medical College under contract with the New York State Department of Health. The dean, professors of medicine and radiology, and the associate professor of medicine for cardiology are members of the governing council. The close and continuous association of the project with a medical school makes available to it all the clinical specialties and preclinical science departments of the school.

Another essential of such a project is close and continuous association with the professional personnel of the State health department. The governing council of the cardiovascular health center includes the commissioner of health and the assistant commissioners of medical services, laboratories and research, and program development and evaluation. In addition, at a series of training and discussion staff meetings, all the bureau directors were asked to devise ways in which their programs could assist the heart disease activities and goals of the cardiovascular disease center and how, in turn, the center's activities could assist their programs. The program development and evaluation unit maintains continuous liaison between the center and the other programs of the State health department. Statistical service is provided by the State health department.

A third criteria is a suitable stable population of sufficient size, willing to cooperate in this type of study. The male civil service population between the ages of 40 and 54 in the Albany area, numbering about 2,000 individuals, was selected as a group of sufficient size, stability, and susceptibility to give statistically significant results under a program of long-term study of the cardiovascular center. Eighty-seven percent of those contacted have received the first examination on a voluntary basis and have agreed to follow through the periodic examination program at the center. Participants with significant medical findings are referred to their private physicians for treatment.

An attempt is being made to discover how to diagnose coronary heart disease and hypertension in the earliest possible preclinical phase. This diagnosis will make epidemiological studies of these conditions more effective by broadening the number of conditions that can be listed as early stages of these diseases.

Diagnostic Tests Applied

The center is applying existing diagnostic tests periodically to the same population. As cases of coronary heart disease accrue, we may then search back through the examination records in the hope of discovering which findings suggest the development of degenerative heart disease. Keys has suggested that more attention should be paid to the measurable variations among so-called normal individuals, since some of these differences may be significant in predicting the development of later chronic illness. Preliminary blood pressure and weight measurements made at the center on 1,054 par-

ticipants in the study suggest that the higher blood pressures tend to occur more frequently among persons of greater body weight.

Among the tests used by the center is an electrocardiogram following measured physical stress administered either through the Master's stairstep test or the treadmill. Of the first 1,072 participants studied, the diagnosis of coronary heart disease was made in 27 cases in the preliminary findings. Nine were in groups diagnosed by history alone, 10 by history plus electrocardiogram, and 8 by electrocardiogram alone. In the latter group, three cases were discovered solely through the use of the stress test.

In this type of project the applicability, reliability, and validity of existing diagnostic tests for heart disease should be studied in order to discover which are suitable for more general application to the community. This information, too, will facilitate future community epidemiological studies. Tests made at the center indicate that cardiac enlargement can be measured by both X-ray and electrocardiogram and that each of these techniques discovers a group not discernible to the other. Studies are also proceeding on the use of skinfolds in the determination of obesity and on the cost, availability, speed, and safety of the various detection tests proposed for wider usage.

The cardiovascular health center must serve as a core for research teams interested in performing both basic and applied research. Thus, it is working in cooperation with the new protein laboratory of the New York State Health Department, which has ultracentrifuge, electrophoresis, and blood fractionating equipment for the study of lipoproteins. The State laboratory, with its long experience in immunology, can study possible parallels between this field and the biological mechanisms responsible for chronic disease. The bureau of nutrition of the department is investigating the obesity measurements and diet histories of participants. Social scientists in the department are interested in social and emotional stress and heart disease. Epidemiologists are taking retrospective histories on hospital patients to check the association between clinical heart disease and certain factors. Members of the Albany Medical College department of medicine are engaged in studies on basic physiological mechanisms associated with the cardiovascular status of the participants.

Progress in State Rehabilitation Program

PHR brief

Some time during our lives each of us has seen someone fall victim to a serious crippling disease or disabling injury; some we remember as "shut-ins," while others we hazily recall as being in the hospital for a long time. Some get around a little, trying to work occasionally at odd jobs; the others are confined to a bed or wheelchair.

Many of these people just seem to disappear from our personal lives. They join that army of disabled people who fill the chronic disease hospitals, the back bedrooms of thousands of homes, the mental institutions, the nursing and convalescent homes, the institutions for the aged and infirm, and homes for the poor. Physicians and nurses know about them, for the institutions are so crowded that applicants and their families must be carefully screened and checked to make sure that only the most urgent cases are accepted.

Decade of Progress

We have recently closed a significant decade of progress in rehabilitation in which we have discovered that many men and women formerly destined to lead a life of dependency can be rehabilitated. The way has been pointed toward a more complete approach to the problems of the disabled person. No longer do we consider the social, physical, or economic effects of a disability as separate entities in an individual.

By Floyd L. Kefford, chief of physical restoration, bureau of rehabilitation, Pennsylvania State Board of Vocational Education.

Rather we see the many phases composing the individual as interrelated, one with another—his job, his family, his physical condition, his place in the community, his desires, and all of the attainable factors comprising the entire person.

It is also possible with the new drugs, the improved techniques of surgery, better hospital facilities, the establishment of comprehensive rehabilitation centers, and the employers' realization that ability, not disability, counts that thousands can leave their wheelchairs, their hospital beds, and their homes to become self-sufficient.

Ten years ago who could foresee that a paraplegic mother bedfast in her home could be physically improved enough to resume the responsibilities of raising her children and making a living for her family; that a boy so badly crippled with arthritis that he was unable to bend any joints except those in his arms and hands could become a successful watch repairman; that a 45-year-old railroader, forced to give up his chosen vocation because of a severe cardiac condition, could undergo surgery enabling him to return to full employment.

Maximum Help

Pennsylvania has demonstrated that these citizens can be improved physically and prepared vocationally for employment through the services of the bureau of rehabilitation, a State agency under the supervision of the Pennsylvania State Board of Vocational Education. With its trained staff of counselors, medical consultants, and full complement of services, which include medical and psychological evaluation, surgery, hospitalization, appliances, vocational training, and maintenance, the bureau is prepared to help chronically disabled clients achieve maximum rehabilitation.

Probably the most important single factor in the development of Pennsylvania's rehabilitation program during the past 10 years was the inclusion of physical restoration as a part of the services offered by the bureau of rehabilitation through enactment of Public Law 113 in 1943. By the passage of this bill the Federal-State rehabilitation program definitely joined hands with the men of medicine. Their knowledge of how physical defects can be reduced or corrected plus the counselor's knowledge of how to prepare a client for a suitable vocation made it possible to achieve maximum rehabilitation for the client with a chronic disability.

Before this phase of the program was developed the counselor encountered many problems. He was required to "rehabilitate around" a disability which could have been reduced or corrected with good medical services. A young girl with an unattractive clubfoot supported with a brace, for example, was helped in her mental adjustment, trained for suitable work, and placed in a remunerative job, but the chronic physical condition remained. Today, through the physical restoration services available in the bureau's program, such a case would be treated differently. The foot could be amputated and the client fitted with an artificial limb. Taught to use it and to dress and walk like other girls her age, she would have little left of her "chronic disability."

For persons with cleft palates and harelips—to illustrate from a different area—rehabilitation was not considered feasible because the disability interfered with the client's preparation for an occupation commensurate with his capabilities or with his attainment of experience necessary for entering an occupation. Many of these people were placed, without service, in jobs requiring menial labor, where they did physical work but gained no mental satisfaction. This deepened their emotional problems, and they were considered misfits in society. Now it is possible to provide these clients with prosthetic appliances which enable them to speak and with surgery which can reduce the disability to the point where one would hardly be aware that it exists. For such persons the physical restoration program has opened a new world.

60 Percent of Total

But what has all this to do with meeting the problems of those who are handicapped because of a chronic disability? A review of the bureau's case records of the 3,011 persons rehabilitated in 1953 revealed that 1,817 of them were disabled because of disease, amounting to 60

percent of the total rehabilitated. Among these 1,817 clients are cases of poliomyelitis, epilepsy, hemiplegia, paraplegia, cardiac involvement, mental illness, diabetes, tuberculosis, bronchiectasis, silicosis, hearing deficiency, Buerger's disease, cerebral palsy, and cancer. Today these people are all gainfully employed and are now "tax-paying" instead of "tax-costing" citizens.

The bureau has not provided rehabilitation services for narcotic addicts, but it has helped many disabled individuals who, because of their disability and the factors involved, have become alcoholics. The division of alcoholic studies of the Pennsylvania Department of Health is now establishing facilities throughout the State for the treatment of alcoholics, and the bureau of rehabilitation is planning to assist in the rehabilitation of those who in addition to being alcoholics also have employment handicaps.

In 1953, the State legislature appropriated more than $2 million for the construction of a comprehensive rehabilitation center in Pennsylvania. With the completion of this facility and the expansion of the rehabilitation program through passage of new laws by Congress in 1954, the bureau's program will provide additional services for chronically disabled individuals.

Chronic Disease Factor In Public Assistance

PHR brief

Studies of public assistance recipients in Illinois, Connecticut, New Jersey, and Wisconsin show that about one-fourth are chronic invalids. An analysis of the public assistance rolls in Pennsylvania indicates about the same proportion of chronically ill persons.

By Robert P. Wray, deputy secretary of the Pennsylvania Department of Public Assistance.

On Pennsylvania's present assistance rolls are 60,000 persons, age 65 or over, in the old-age assistance category; 16,000 persons in the blind category; 12,000 permanently and totally disabled persons in the aid-to-disabled category; 103,000 persons in the aid-to-dependent-children category, approximately 26,000 of them adults; and 42,000 persons receiving general assistance, most of whom are adults. It is observed from the description of these categories that the bulk of assistance recipients who are chronic invalids are in the old-age assistance, blind pension, and aid-to-disabled categories. Collectively these constitute the hard long-time core of the public assistance rolls.

Cause of Impairments

A study the Pennsylvania Department of Public Assistance made of the social and medical characteristics of persons receiving financial help in the aid-to-disabled category showed that three types of diseases or conditions account for nearly two-thirds of all the major impairments suffered by these recipients. Heart and circulatory diseases rank first and account for 33 percent of the major impairments for the total group. Paralyzing conditions account for 20 percent of the impairments, and arthritis and other bone diseases fall in third position with a rating of 12 percent. Respiratory diseases, mental and psychiatric disorders, and tuberculosis each accounts for 6 percent of the major impairments. Three percent of the total impairments are attributable to cancer, syphilis, ear and eye diseases, and epilepsy, respectively. Diseases of the digestive system occur in 2 percent of the recipients, and diabetes is the cause of the major impairment in 1 percent of the cases. The other 2 percent of the recipients have a variety of major impairments that are too diversified to classify.

Forty-two percent of the group studied had been impaired for 10 or more years; 20 percent, between 5 and 10 years; 27 percent, between 2 and 5 years; and in 8 percent of the instances the elapsed time since disablement was less than 2 years. The period of disablement was not reported for the remaining 3 percent.

Approximately 6 percent of the impairments

suffered by the group studied were caused by diseases or injuries resulting from employment. The incidence of such disabilities increases rapidly with age and is much higher for men than for women. Injuries not connected with employment are responsible for only 4 percent of the major impairments. Congenital conditions or injuries at birth account for approximately 5 percent of the disabilities. The great majority of disabilities are brought on by age or serious illness and for the most part are chronic or degenerative diseases. Heart and circulatory ailments are the most common. About one-third of the mental and psychiatric disorders are congenital or were caused by certain injuries, as were about one-fifth of the epileptic impairments.

Where They Live

Most of these disabled persons are living in their own homes or at the homes of relatives or friends. With considerable effort they manage to care for themselves, and many of them undergo suffering and distress because they do not have other persons to care for them.

About 5,500 recipients of assistance, most of them chronic invalids, reside in institutions. About one-half of these are in nursing or convalescent homes. About one-fifth are in commercial boarding homes for the aged and another one-fifth, in other miscellaneous homes for the aged. The remainder are blind persons living in homes maintained by county institution districts. Under Pennsylvania's public assistance laws only blind pensions can be granted to persons residing in a public institution. Most of this group of 5,500 persons are able to manage their own affairs, and guardians or trustees have been appointed for only a small fraction. All of these persons, however, need some services beyond the basic items of food, shelter, and laundry. They are predominantly an aged group. The average age is 78 years, and 7 percent are 90 years of age or more.

A comparison of the above figures with similar studies made in other States indicates that these same relationships for all disabled persons are found rather generally throughout the country. In a booklet entitled "Care of the Long-Term Patient," the Public Health Service has reported some comprehensive statistics for 1950. The study showed that in the country as a whole there were an estimated 5,298,000 persons who had been disabled for more than 3 months. Seventy-nine percent of these were living in places outside of institutions, such as their own or other private homes, boarding houses, or hotels. Twelve percent were in mental hospitals; 7 percent were in homes or schools for the handicapped and the aged and dependent; 1 percent were in tuberculosis hospitals, and less than one-half of 1 percent were in chronic disease hospitals and correctional institutions.

Money Grants

Under Pennsylvania's public assistance program, money grants are made to persons who are found to be in financial need on the basis of schedules of assistance allowances established by the Pennsylvania Department of Public Assistance with the approval of the Pennsylvania State Board of Public Assistance. Grants are made either to the assistance recipients themselves or to a trustee or guardian.

As mentioned, persons receiving a blind pension may reside in a public institution where they receive care and attention. Other recipients may reside in various types of privately operated institutions, but the assistance allowances do not include any additional amount of money necessary to pay for institutional services.

Under Pennsylvania law, county institution districts have a responsibility for persons who are physically and mentally infirm. As a result of a divided responsibility between the department of public assistance and county institution districts for indigent persons who are physically or mentally limited, it is an understatement to say that their needs are not being adequately met. But even if legislation is enacted to fix responsibility for this group of persons, this action in no way will decrease the number of persons who are financially dependent and in need of care.

The basic problem of disabled persons, including those with chronic illnesses, should be met by providing facilities for the care, treatment, and rehabilitation of those presently afflicted with chronic illnesses and by conducting an intense program of research into the causes of chronic illness in order to reduce the incidence and improve the methods of treatment. For the long run only the latter alternative will provide a solution.

Facilities Inventory For Chronic Sickness

PHR brief

In Pennsylvania, one of the greatest needs of patients with chronic illness is for better facilities. Pennsylvania does not have one hospital specifically designed for the care of the chronically ill. However, four projects of this type have been requested under the new Medical Facilities Survey and Construction Act of 1954.

The chronically ill patients are now being cared for in the existing 1,344 institutions supervised or licensed by the bureau of homes and hospitals of the Pennsylvania Department of Welfare. These institutions by classification are 356 hospitals (exclusive of mental); 419 licensed nursing and convalescent homes; 289 licensed boarding homes for the aged; 218 nonprofit homes; and 62 county homes. Eighty-seven of the hospitals are licensed proprietary, and the rest are incorporated nonprofit.

Pennsylvania needs 20,968 beds for chronically ill patients, or 2 beds per 1,000 population, according to the 1954 revision of the State plan required under the Hospital Survey and Construction Program. Twenty-four facilities are now supplying 1,613 acceptable and 358 nonacceptable beds. Nursing, convalescent, and boarding homes account for approximately 10,390 of the remaining 18,997 beds.

Under Pennsylvania law every home keeping for profit one or more persons requiring care, treatment, or nursing for sickness, injury, or other disability is required to be licensed. Every home providing for profit service or domiciliary care for three or more elderly persons who are not ill or in need of nursing care must also be licensed. No person classified as a patient may be kept in a licensed boarding home for the aged.

County homes give care—some of it good and some very poor—to all types of dependent persons. Fourteen county homes have approved medical facilities. Nine counties have no county homes. The department of welfare is making determined efforts to improve the care of the residents of these homes. One of the greatest problems facing the department is to get the individual county institution district authorities to recognize their responsibility for the care of their ill dependents. This responsibility is placed on these authorities by the county institution district law, which states "dependent means an indigent person requiring care because of physical or mental infirmity." A survey completed in the spring of 1954 shows that 43 counties contribute to patient care in nonprofit hospitals.

Responsibility for supervision of nonprofit homes for the aged was placed with the Pennsylvania Department of Welfare by the 1953 session of the State legislature. Rules and regulations for this group have been completed and mailed to them.

Although the number of institutions responsible to the bureau of homes and hospitals is steadily increasing, we do not now, nor can we in the forseeable future, have anywhere nearly enough homes for all of our needy aged and chronically ill. Therefore, the department of welfare is doing all it can through education and consultation to see that the institutions under its supervision meet State requirements and give proper care to the needy residents of the State.

By Ira J. Mills, director of the bureau of homes and hospitals of the Pennsylvania Department of Welfare.

The Local Health Laboratory

PHR brief

Laboratory service related to health is a cooperative effort between laboratory scientists who provide factual data and qualified persons who apply the data to the individual, the group, or the community.

To provide service intelligently, the laboratory should have some knowledge of the conditions under which the specimens were collected and other pertinent facts that will direct the laboratory efforts into productive channels. It must be aware of any special problems peculiar to the specimen which might influence the scientific findings of the laboratory.

The physicians or health officers the laboratory serves should receive laboratory reports as early as possible. Every day, in fact every hour, that passes between the time the specimen is collected and the time the report is received means just that much delay in applying the scientific facts of the report to the diagnosis of the disease and its indicated treatment or in instituting the proper measures to control its spread.

In short, close liaison must be maintained between the laboratory and its patrons if the service is to be effective and efficient. Local laboratories have the advantage of prompt communications—face-to-face conferences, local telephone calls, and short-distance written communications.

The liaison is particularly important to local, county, and district health departments since scientific facts, which can be determined only in the laboratory, are frequently the basis on which health department activities rest. No health department, regardless of the size of the population it serves, can operate efficiently without prompt laboratory service, which is best furnished by a local laboratory.

By Edmund K. Kline, Dr.P.H., director of laboratories, Cattaraugus County Department of Health, Olean, N. Y.

Although for many years the larger municipal health departments have maintained laboratories to provide local service, public health authorities have been slow to recognize the need for local laboratory services for suburban and rural populations through laboratories organized as integral divisions of local health units.

Decentralization

In the field of public health, laboratory service, in general, has been supplied by State health departments on a statewide rather than a local basis. In a small State, the central laboratory can perhaps serve the entire State, but centralized service in a larger State becomes increasingly difficult because of the lack of proper and prompt communication.

Many States now have programs aimed at decentralizing laboratory services, either by establishing branches of the central State laboratory or by stimulating the formation of local laboratories.

The State branch laboratory is actually a part of the State laboratory, under direction of the State laboratory director. Its personnel are State employees, and it is financed by the State as a part of its laboratory budget. It is usually placed in a strategic communications center for the purpose of getting the maximum amount of rapid mail service from the largest possible territory.

Maryland and Alabama, for example, have branch laboratory systems covering the entire State. Maryland maintains 12 branch laboratories in addition to the central laboratory in Baltimore, and Alabama maintains 8 branch laboratories directed from the State laboratory in Montgomery. Several other States maintain a few branch laboratories at strategic points but do not have a statewide coverage. Michigan has branch laboratories in Grand Rapids and Houghton, and Pennsylvania has branches in Wilkes-Barre and Pittsburgh.

The development of decentralized local laboratories integrated into a statewide system, but maintained by local communities, is well illustrated by the experience of New York State. The basic law promoting such service, passed in 1923, permits the county governing body, the

board of supervisors, to establish local laboratories to serve a whole or a part of a county. The same law permits the establishment of municipal laboratories by the city council or the incorporation of municipal services into the county laboratory district.

These local laboratories may be operated as independent services under a county board of laboratory managers or as an integral part of a city or county health department, or the city or county may contract with a hospital to have both public health and hospital services performed in a single laboratory. They operate under the supervision of the division of laboratories and research of the New York State Health Department, which inspects them, sets standard qualifications for their directors, reviews their methods, and issues annual certificates of approval to them.

A provision in the New York State law granting State aid to the extent of 50 percent of the net cost of operating the laboratories encouraged and stimulated their establishment. As a result of these permissive laws, New York State has some 45 city and county public health laboratories, most of them operating in conjunction with hospitals. In addition, about 105 hospital and private clinical laboratories have State health department approval although they do not receive financial assistance.

California has some 43 local laboratories administered under the jurisdiction of local health officers and supervised by the State laboratory.

Scope of Service

The scope of local laboratory service depends in part on the program of the local health department and in part on other local laboratory services available. It may even include services related to clinical and hospital medicine.

Traditionally, public health laboratory services have been related to communicable disease control and sanitation. All other laboratory services related to health have been classified as clinical and usually have not been performed in a public health laboratory.

However, in recent years the concept that all disease is a problem of the community has gained considerable headway, and official health departments have expanded their activities to embrace such programs as diabetes and cancer control, geriatrics, dental hygiene, and mental health problems—programs that go far beyond communicable or community disease.

The prevention and control of communicable disease will certainly continue to be a part of all health department activities, and all local laboratories will continue to be prepared to identify the causative organisms and the vectors of such diseases and to perform the sanitary examinations that are concerned with their spread in a community.

If the local health department operates clinics or hospitals, the local laboratory will perform the examinations that will provide diagnostic or prognostic information regarding the patients attending the clinics or served by the hospitals.

Except for the diagnostic services with relation to communicable diseases, the services required by private practitioners will usually be referred to private commercial or hospital laboratories. However, if other local facilities are not available, services in such fields as hematology and biochemistry may have to be provided by the local health laboratory.

The health laboratory should also be prepared to serve the entire community in certain specialties, such as parasitology and mycology, if these services are not available at other local laboratories.

If, as is the general pattern in New York State, the public health laboratory is also acting as a hospital laboratory, its scope of service will be all-inclusive. The only distinction between public and private service is that patients who can afford to pay are usually charged a fee for all service not directly related to the communicable diseases. Welfare patients, or those classed as medically indigent, receive all services free of charge.

Organization

In even the smallest laboratory some effort should be made to departmentalize the work even though two or more departments must be combined under a single individual. Departments of bacteriology, serology, sanitary bacteriology and chemistry, hematology, and clinical chemistry, in addition to service and cleri-

cal departments, are the essential ones. If hospital service is included, a separate department of tissue pathology is indicated. Specialties, such as parasitology, mycology, and virology, which do not furnish a volume of work sufficient to support a department, should be integrated into other departments according to the knowledge and skill of the workers in them.

Even if the laboratory staff is too small to provide one worker for each department, it is a great convenience to group the materials and supplies needed for each of the separate activities in one part of the laboratory and to attempt to arrange the flow of specimens through the laboratory as though there were separate and distinct departments.

Broad training in the laboratory sciences is indicated for the personnel in a local laboratory. Obviously, if one person has to serve in more than one department, he will have to be skilled in more than a single scientific specialty. Not many such broadly trained persons are available, but, if necessary, inservice or brief postgraduate training courses may be used to teach competent employees to function in several of the specialties.

Integration in a State System

If a comprehensive local laboratory coverage is developed and maintained, it must not be assumed that the services demanded of the State laboratory will decline. In fact, exactly the reverse is true, for in New York and California, the two States with the most comprehensive local laboratory coverage, the State health department laboratories have grown steadily year after year in response to new service demands. True, there may be a shifting away from the performance of simple routine examinations and concentration on the more specialized types of service and greater administrative and research responsibilities.

The local laboratory will be dependent upon a central State laboratory for many parts of its service program. In certain instances, it is desirable to have unexpected or unusual findings checked by some authority. For this purpose a State laboratory should offer a reference diagnostic service to review and confirm such results. The local laboratory will not be able to employ experts in every scientific field. However, the State laboratory usually has such experts on its staff or has access to them through Federal agencies or educational institutions.

In certain technical fields it is neither desirable nor profitable for the local laboratory to carry its specimens to the final end result. For instance, the exact antigenic analysis of every *Salmonella* species isolated in a local laboratory is unnecessary. Culture of such organisms should be referred to the State laboratory for final studies.

Certain laboratory reagents can only be prepared and standardized in laboratories with access to sufficient clinical material to afford a proper evaluation. Other reagents are best prepared in large batches, each batch being carefully standardized so as to be of uniform titer and reactivity with previously used batches. The State laboratory should assume responsibility for all such reagents, either by actually preparing them or by testing commercial products and distributing them to the local laboratories.

State Responsibilities

The State laboratory should be the scientific center around which all of the laboratory work in the State is focused. It should keep abreast of new scientific and technical developments, determine their applicability within the State, and if found desirable recommend them to the local laboratories. It should also assume some administrative responsibility for the quality and uniformity of services provided by local laboratories.

Some uniformity of methods and reporting should be common to all local laboratories within a State. For instance, in reporting serologic tests for syphilis, it is confusing to have one laboratory report a result of 3+ while its neighbor reports it as positive 2 dils or 6 units. Likewise, it is not desirable to have one laboratory report on complement fixation tests alone while its neighbor reports on flocculation tests alone. Discrepancies, which will reflect on both laboratories, are bound to occur.

Either the State laboratory should prescribe and approve all methods, as does New York, or else the results of test specimens sent out by the

State laboratory should be used as criteria for assurance that comparable work is being performed by the local laboratories.

To minimize errors in technique or deviations from the accepted methods that may lead to incorrect results, the State laboratory should submit a series of "test specimens" to local laboratories from time to time. This procedure will check the actual performance of these laboratories against each other and against suitable control laboratories.

Maryland and Massachusetts have developed extensive programs of this type. Many other States have tried limited programs, and almost every State has used test specimens for syphilis serology in programs patterned after the Federal program for evaluating State laboratories.

The struggle to insure competent personnel for all laboratory services is a continuing one. The State laboratory should assist the local laboratories to maintain a high level of competence by setting standards, both in education and experience, for all local laboratory employees, and it should insure that these standards are met.

New York approves the qualifications of local directors only. California licenses all technical employees after examination. Connecticut requires all serologists in local laboratories to prove competence by performance tests in the State laboratory.

The California State Health Department also licenses all schools giving courses in laboratory science and issues registration certificates to all trainees in such schools. Upon completion of a prescribed training course, the State gives examinations. Those passing the test are licensed to work either in health department laboratories or in the 800 to 900 clinical laboratories licensed in the State.

The State laboratory can assist in training by encouraging personnel from local laboratories to spend training periods in the State laboratory. Refresher courses may be offered in the State laboratory or in selected training centers covering various regions of the State. Specialty experts can be sent on trips to local laboratories. Some States have made scholarships available to local laboratories for advanced study at educational centers.

Finally, the State laboratory should take active leadership in all activities of health laboratories of all kinds in order to weld them into a harmonious service system.

On the Care of Premature Infants

"Your Premature Baby," a pamphlet for parents of prematurely born babies, has been recently issued by the Children's Bureau, Department of Health, Education, and Welfare, as a supplement to the bureau's booklet on "Infant Care."

All babies weighing 5½ pounds or less at birth are usually considered as premature.

The new leaflet tells parents what happens to their child at the hospital until the time when he is ready to be brought home and why he may need special care. It provides brief answers to the questions that parents most commonly ask, such as: Will the baby always be small and weak? Will he be "late" in developing? Will he be normal mentally? Does a 7-month premature infant have a better chance of surviving than an 8-month infant has?

Copies of the new publication may be purchased from the Superintendent of Documents, United States Government Printing Office, Washington 25, D. C., for 10 cents each.

technical publications

Management of Venereal Disease

Public Health Service Publication No. 327. Revised 1954. 14 pages.

The 1954 revision of this pamphlet briefly states the latest (as of June 1, 1954) information available on the treatment and re-treatment of venereal diseases. The pamphlet is available to physicians, nurses, students of medicine and allied professions, medical societies, and other professional groups.

The schedules for treatment of primary and secondary syphilis are based upon experience of the Venereal Disease Branch, Public Health Service. Schedules for treatment of other stages of syphilis and other venereal diseases are based upon experience of various workers and have been used satisfactorily at the Service's treatment centers.

The management of gonorrhea, nonspecific urethritis, saprophytic spirochetal balanitis, chancroid, granuloma inguinale, and lymphogranuloma venereum, as well as syphilis, are outlined in the pamphlet.

Chronic Illness

Digests of Selected References, 1950–52

Public Health Service Publication No. 305 (Public Health Bibliography Series No. 1, Supplement). 1953. By Violet B. Turner. 262 pages. $1.00

In 1951, digests of selected references on chronic disease published before 1950 were issued as Public Health Service Publication No. 10. This supplement contains digests of articles and books published during 1950–52. The digest numbers are continued from the earlier bibliography and the indexes cover both publications.

In a few instances publications issued before 1950 and early in 1953 are included. A new section on planning, design, and construction of institutions for the chronically ill, for example, was made as complete as possible by including some earlier references even though a few entries duplicated those in the first volume. Other new sections are those on coordination of facilities and services and on prevention and control. The subsection on nursing homes has been divided into three parts to facilitate its use.

Remaining sections in the bibliography are: dimensions of the problem, contributory factors, rehabilitation, noninstitutional services, and institutional services.

Clinical material dealing with specific medical diagnosis or treatment of chronic disease has been excluded in both volumes.

Communicable Disease Center Activities, 1952–53

Public Health Service Publication No. 391. 1954. 31 pages; illustrated.

Intended as an aid to State, local, and other health agencies in planning their programs, this report summarizes the major activities of the Communicable Disease Center, Bureau of State Services, Public Health Service, during the fiscal year 1953.

It treats in general terms, rather than precise grouping, the scope, nature, and interrelationships of activities as conducted in different areas of the public health field by the CDC staff. The current structure of the center is shown in a flow chart; its professional personnel are described, and field installations are listed.

The report discusses projects pertaining to established procedures and practices, such as administration and management, epidemic intelligence service and disaster aid, laboratory training, disease control operations and demonstrations, control of arthropod vectors and animal reservoirs of disease, and training programs for field work and for aids.

The section entitled "Activities Directed Toward Specific Diseases" discusses the CDC activity in relation to such individual diseases as anthrax, diarrheal diseases, encephalitis, leprosy, malaria, pinworms, poliomyelitis, rabies, trichinosis, and many others.

Report of Local Public Health Resources, 1952

Public Health Publication No. 398. 1954. By Clifford H. Greve, Josephine R. Campbell, and Kathryn Connor. 85 pages; tables.

This annual report of personnel, facilities, and services in local areas is the sixth since 1946 in a series of analyses based on data submitted to the Public Health Service by full-time local health organizations. Data for 1948 is unpublished.

Those units reporting as of December 31, 1952, (excluding Alaska, Hawaii, Puerto Rica, and the Virgin Islands) number 1,313 organizations and include 2,207 counties and 215 independent city health departments serving more than 88 percent of the population of the United States. Approximately 50 units did not report.

The current analysis in addition to the extent of coverage is presented in these categories: personnel engaged; selected public health services and clinical facilities; selected community sanitation facilities and services; and per capita expenditures for public health and per capita income of areas served.

The number of personnel employed full-time increased over the previous year. Public health nurses continued to be the most acute staffing deficiency in the majority of health units, followed by sanitation personnel, physicians, and clerks.

The selection of services and clinical facilities for inclusion in the report was made on the basis of significance to program divisions of the

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Public Health Service and the Children's Bureau. Provision of chest X-ray for tuberculosis case finding ranked first among services reported. Topical fluoride application and diabetic group instruction were the two reportable services least frequently included in health programs.

In the selected community sanitation facilities and services category, there was slight difference between the 1952 information and that submitted for 1951.

For the first time this 1952 report carries information on the expenditures for public health services by units and the per capita income for each jurisdiction. The majority of the single county units and local health districts spent between $0.50 and $1.00 per capita; the largest proportion of city health departments, $1.00 and $1.50. No expenditure data were available for 9 percent of the reporting units.

Pulmonary Fibrosis in Soft Coal Miners

An annotated bibliography on the entity recently described as soft coal pneumoconiosis

Public Health Service Publication No. 352, Public Health Bibliography Series No. 11. By H. N. Doyle and T. H. Noehren. 59 pages. 25 cents.

This bibliography contains abstracts of publications presenting information on a form of respiratory disability among soft coal miners believed to be unrelated to and different from silicosis. The disability is associated with prolonged inhalation of excessive amounts of coal dust. The incidence of the condition is particularly high in south Wales, and Great Britain has been making long-range comprehensive studies of the disease, which is gaining in medical significance. Various groups in this country are finding these studies of particular interest.

The foreword of the bibliography describes the symptoms of the pulmonary ailment and explains the identification and nomenclature problems met in assemblying the material for this publication. It points out that the compilers have chosen papers presenting a cross section of views on the subject and historical reviews, using as much as possible in their abstracting the language of the original authors.

The abstracts are chronologically arranged—the first, a paper published in 1834.

Directory of State and Territorial Health Authorities, 1954

Public Health Service Publication No. 75. Revised 1954. 73 pages. 30 cents.

The 1954 revision of this directory was compiled from information reported to the Public Health Service as of May 1954 by State and Territorial health departments and by other State agencies participating in grant programs administered by the Public Health Service. Also included are agencies officially designated for the administration of the Water Pollution Control Act and State agencies other than health departments administering crippled children's services.

The listing of health department personnel is designed to reflect the organizational structure of State health departments and to delineate placement of responsibility for the major health functions. The principal organizational units and subordinate components are arranged alphabetically, according to the current departmental organization. The name of each health official appears opposite the unit which he directs. If the name of the health unit is not self-explanatory, its major functions are noted.

The title and location of each State health department and the name of the health officer in charge is in a section preceding the organizational listing of officials for the individual States. The same information is shown for other State agencies designated to administer any pertinent program, such as mental hygiene.

Personnel of the Public Health Service in charge of functions closely associated with State health departments are listed in the appendix.

Refuse Collection and Disposal

A Bibliography—1951–1953

Public Health Service Publication No. 402. Public Health Bibliography Series No. 4 (Supplement A). 1954. 39 pages.

The first volume of this bibliography, Public Health Service Publication No. 91, listed items which appeared during 1941 and 1950. The present supplement covers the years 1951–53.

The organization of the listings is substantially the same as in the first volume. The five main divisions of the bibliography are regulations, finances, storage, collection, and disposal. The sections on collection and disposal are subdivided further as in the earlier book.

This bibliography is intended as an aid in the exchange of information in research and operational phases of refuse-sanitation activities.

Home Care of the Sick

Public Health Service Publication No. 70, Health Information Series No. 21. Revised 1954. 2-fold leaflet. $2.50 per 100.

This leaflet contains general information on taking care of sick persons at home. It describes how to select a bed and other sick room

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equipment and gives similar patient-care instructions. The publication also outlines ways in which the attendant can be of help to the physician and suggests organizations and individuals who can give instructions in nursing care.

Ringworm

Public Health Service Publication No. 46. Health Information Series No. 6. Revised 1954. 1-fold leaflet. $2.00 per 100.

Ringworm is the common name for skin diseases caused by a fungus growth. This leaflet describes four varieties and their effect upon the body. The most common is ringworm of the feet known as athlete's foot; the others are ringworm of the scalp, of the body, and of the nail.

The pamphlet tells of the symptoms of each, explains the danger of contagion, and suggests preventive measures. It advises seeking prompt medical attention to obtain proper treatment in each case.

Proceedings of the Third Research Conference on Psychosurgery: Evaluation of Psychosurgery

Public Health Service Publication No. 221. 1954. 173 pages; illustrated. $1.00.

The proceedings of the Third Research Conference of Psychosurgery held in New York City in 1951 under the auspices of the National Institute of Mental Health, Public Health Service, are presented in this publication. Most of the participants had also attended the two previous conferences: the first, held in 1949, on the criteria for selection of patients for psychosurgery; the second, in 1950, on the determination and measurement of the effects of psychosurgery.

The 1951 conference devoted its attention to a general evaluation of psychosurgery — its indications, methods, and results. The theme of the conference is developed by the speakers as they give their evaluation of psychosurgery in relation to drive, social service, reaction to painful stimuli, treatment of intractable pain, psychoneurosis, sex variants, psychopathic personality, and organic cases with emotional manifestations.

The publication also includes the report on techniques of psychosurgery given by the Committee on Surgery, a summary of the findings of the three conferences, and appendixes.

Pinworms

Public Health Service Publication No. 108 (Health Information Series No. 51). Revised 1954. 1-fold leaflet. 5 cents. $2.00 per 100.

Pinworms are discussed from the viewpoint of their effect on persons, especially children in this recently revised leaflet. Symptoms and diagnosis of pinworm infection are described. Suggestions are offered for the control of pinworms and their eggs to prevent spread of infection within a household. Treatment by a physician is recommended for infected persons.

Hospital Services—Pharmacy

Prepared by the Division of Hospital Facilities, Public Health Service. 1954. 42 pages; illustrated.

Suggested plans, equipment, supply lists, minimum standard, and organization for hospital pharmacies are presented as an integral part of the Public Health Service activities relating to the Hospital Survey and Construction Program. Directed to architects, hospital administrators, pharmacists, and others concerned in hospital planning, this pamphlet is designed to help them understand the functions, layout, and equipment of hospital pharmacies.

The booklet is a compilation of articles prepared by the Division of Hospital Facilities which have appeared in other journals. The five sections of the booklet include suggested plans for hospital pharmacies; suggested equipment lists for hospital pharmacies; pharmacy supplies and pharmacological index; minimum standard for pharmacies in hospitals; and a discussion of the value of a hospital pharmacist.

Home Sanitation

Public Health Service Publication No. 231, Health Information Series No. 39. 2-fold leaflet. $2.50 per 100.

Home sanitation facts, important in the control of communicable diseases, are pointed out in this leaflet. It describes the precautions that should be taken to safeguard the water supply and gives advice on sewage and refuse disposal Outlined are the best methods of combating flies and other insects and rats. It also gives information on proper light and ventilation, heating, plumbing, refrigeration, and accident prevention in the home.

This section carries announcements of all new Public Health Service publications and of selected new publications on health topics prepared by other Federal Government agencies.

Publications for which prices are quoted are for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Orders should be accompanied by cash, check, or money order and should fully identify the publication. Public Health Service publications which do not carry price quotations, as well as single sample copies of those for which prices are shown, can be obtained without charge from the Public Inquiries Branch, Public Health Service, Washington 25, D. C.

The Public Health Service does not supply publications issued by other agencies.

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