

PROVINCE OF BRITISH COLUMBIA

Sixty-fifth Annual Report of the
Public Health Services
of British Columbia

HEALTH BRANCH

DEPARTMENT OF HEALTH SERVICES AND HOSPITAL INSURANCE

YEAR ENDED DECEMBER 31

1961



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1962

Public Health Service of Public Health

Annual Report of the

U.S. Public Health Service, 1908-1909.



G. F. Amyot, M.D., D.P.H., D.Sc., Provincial Health Officer, 1940 to 1961,
Deputy Minister of Health, 1946 to 1961

OFFICE OF THE MINISTER OF HEALTH SERVICES
AND HOSPITAL INSURANCE,
VICTORIA, B.C., January 25, 1962.

*To Major-General the Honourable GEORGE RANDOLPH PEARKES,
V.C., P.C., C.B., D.S.O., M.C.,
Lieutenant-Governor of the Province of British Columbia.*

MAY IT PLEASE YOUR HONOUR:

The undersigned respectfully submits the Sixty-fifth Annual Report of the Public Health Services of British Columbia for the year ended December 31, 1961.

ERIC MARTIN,
Minister of Health Services and Hospital Insurance.

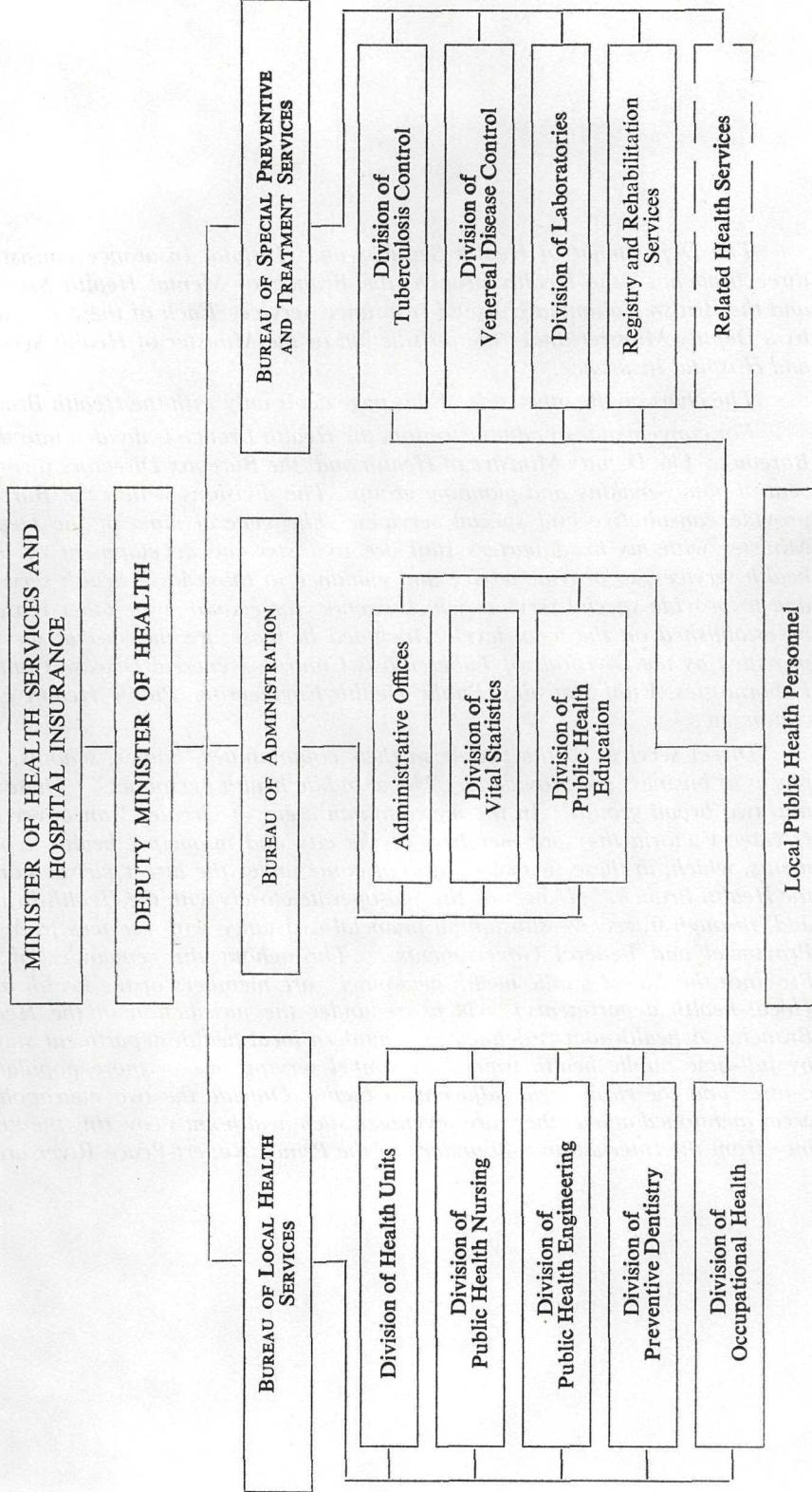
DEPARTMENT OF HEALTH SERVICES AND HOSPITAL INSURANCE
(HEALTH BRANCH),
VICTORIA, B.C., January 25, 1962.

*The Honourable Eric Martin,
Minister of Health Services and Hospital Insurance,
Victoria, B.C.*

SIR,—I have the honour to submit the Sixty-fifth Annual Report of the Public Health Services of British Columbia for the year ended December 31, 1961.

G. F. AMYOT, M.D., D.P.H., D.Sc.,
Deputy Minister of Health.

HEALTH BRANCH ORGANIZATION



The Department of Health Services and Hospital Insurance consists of three branches—the Health Branch, the Branch of Mental Health Services, and the British Columbia Hospital Insurance Service. Each of these is headed by a Deputy Minister under the jurisdiction of the Minister of Health Services and Hospital Insurance.

The chart on the other side of this page deals only with the Health Branch.

For convenience of administration, the Health Branch is divided into three Bureaux. The Deputy Minister of Health and the Bureaux Directors form the central policy-making and planning group. The divisions within the Bureaux provide consultative and special services. The general aims of the Deputy Minister with his headquarters staff are to foster the development of local health services, to provide advice and guidance to those local health services, and to provide special services which cannot, for economic or other reasons, be established on the local level. Included in these are the special services provided by the Divisions of Tuberculosis Control, Venereal Disease Control, Laboratories, Vital Statistics, Public Health Engineering, Public Health Education, etc.

Direct services to the people in their communities, homes, schools, and places of business are provided by "local public health personnel." These fall into two broad groups. In the metropolitan areas of Greater Vancouver and Greater Victoria they are members of the city and municipal health departments, which, in these two cases, do not come under the direct jurisdiction of the Health Branch. (However, they co-operate closely with the Health Branch and, through it, receive substantial financial assistance with services from the Provincial and Federal Governments.) Throughout the remainder of the Province the "local public health personnel" are members of the health units (local health departments), which are under the jurisdiction of the Health Branch. A health unit is defined as a modern local health department staffed by full-time public health trained personnel serving one or more population centres and the rural areas adjacent to them. Outside the two metropolitan areas mentioned above, there are seventeen such health units covering the Province from the International Boundary to the Prince Rupert-Peace River areas.

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HEALTH BRANCH

DEPARTMENT OF HEALTH SERVICES AND HOSPITAL INSURANCE

YEAR ENDED DECEMBER 31, 1961

G. F. AMYOT, DEPUTY MINISTER OF HEALTH AND PROVINCIAL HEALTH OFFICER

The organization of the Health Branch and its place in the Department of Health Services and Hospital Insurance are described in the chart and brief narrative near the front of this volume. This Report begins, immediately below, with general observations concerning the major events and trends. The sections beginning on page 14, written by the heads of the various bureaux and divisions, set forth the year's story in greater detail.

THE PROVINCE AND THE POPULATION SERVED

Distances, topography, types of people, and population densities are factors of importance in the provision of any health service. In British Columbia the distances are great, the terrain is mountainous, and the population density is relatively low. In 1961 the population was estimated as 1,640,000, an increase of 34,000 above the figure for 1960. The total area of the Province is about 366,000 square miles, but the Lower Mainland area and the southern tip of Vancouver Island have by far the greatest population concentration. However, virtually every person in the Province has made available to him fully organized and well-established public health services. These are provided either by the health units (local health departments) of the Province or by the metropolitan health departments of Greater Vancouver and Greater Victoria. For the non-Indian population, about 53 per cent of the people are served by the Provincial health service and about 47 per cent are served by the metropolitan health departments. There is no radical problem which causes any special difficulty. In the case of the native Indians who have not been enfranchised, however, the public health services are provided by or through the Federal Government.

THE HEALTH OF THE PEOPLE

For the fourth consecutive year there has been a decline in the birth rate in British Columbia. This year it was 23.2 per 1,000 population, compared with 25.0 in 1960. The rate this year is the lowest since 1946.

The marriage rate was 6.5 per 1,000 population, which was down from the rate of 7.0 per 1,000 population in 1960.

The crude death rate this year was 8.6 per 1,000 population, compared with 9.2 in 1960. This is the lowest death rate recorded in over thirty years.

Stillbirths, which are considered to be one of the indices of health care, were 9.6 per 1,000 live births, well below the 1960 rate of 10.7. This is the lowest rate ever recorded in British Columbia. The infant mortality rate for 1961 was 24.6 per 1,000 live births, slightly higher than the rate in 1960, which was a record low. The maternal mortality rate was 0.3 per 1,000 live births, compared with 0.5 in 1960, and is the lowest rate yet recorded in British Columbia.

The principal cause of death was heart disease, with a rate of 326.6 per 100,000 population, well down from the 1960 figure of 345.8. Malignant neoplasms were responsible for a death rate of 145.9 per 100,000 population, slightly lower than the 1960 rate of 148.6. The death rate for cerebrovascular lesions was 90.5, compared with 103.0 in 1960, while the accidental death rate was 61.6 this year, contrasted to 64.1 in 1960. The rates for each of these four leading causes of death are among the lowest ever recorded in this Province.

In the field of communicable diseases there were 697 cases of new active tuberculosis reported and 60 deaths from this disease, which is the same number as last year.

There were seventeen deaths from the late complications of untreated syphilis, compared with thirteen in 1960. The incidence of gonorrhœa in 1961 was 3,686, slightly above the figure of 3,546 for 1960.

Paralytic poliomyelitis was down from 165 cases in 1960 to seven cases in 1961. No death from poliomyelitis was reported in 1961, compared with fourteen deaths in 1960.

Botulism, which has not been reported in British Columbia since 1958, caused five deaths among the nine cases that occurred.

There are indications that a peak in infectious hepatitis is approaching. During 1961 there were 1,677 cases reported, which is an increase of 82 per cent over the year 1960.

One case of diphtheria was reported this year, after three years of complete freedom from this disease.

Salmonellosis continued to increase in importance, with 475 cases and four deaths being reported, while typhoid and paratyphoid fever, caused by a related organism, occurred twenty-eight times this year, which is a slight increase over 1960.

OTHER IMPORTANT EVENTS AND TRENDS

After some months of detailed negotiations, the Greater Victoria Metropolitan Board of Health was established in July, 1961. This brought together into one body the Victoria-Esquimalt Health Department, the Saanich and South Vancouver Island Health Unit, the Oak Bay Health Services, and the school services of School District No. 61. It is anticipated that this will meet a long-felt need in providing co-ordinated services.

In this connection it is interesting to note that the Greater Vancouver Metropolitan Health Committee celebrated its twenty-fifth anniversary in 1961. Greater Vancouver's basic organizational plan was used as the design for the health service for Greater Victoria.

A further seven communities completed construction of health centres during 1961. This brought to fifty-seven the number constructed under the programme which was started in 1948. As in previous years, local funds, Provincial funds, and National Health Grants were used.

Good progress was made in the planning for the construction of new accommodation for the Vancouver Island Chest Centre adjacent to the Royal Jubilee Hospital in Victoria. The present building is too small and also presents an obstacle to construction plans for the Royal Jubilee Hospital itself.

The Health Branch co-operated in planning undertaken by the Deputy Minister of Mental Health Services to establish, with headquarters in Kelowna, a Regional Mental Health Clinic for the Okanagan area. This important forward step will be accomplished not only by the provision of physical accommodations for the mental-health team in the community health centre, but also by the close integration of the professional services.

Much study and several conferences were devoted to the Federal Government's *Act for the Vocational Rehabilitation of Disabled Persons*. The Act makes provision for the Federal Government to share equally with the Provincial Government expenditures on vocational rehabilitation. This source of funds supplements that already available under the Medical Rehabilitation and Crippled Children Grant of the National Health Grants programme.

The Health Branch continued to take an active part in the national survival programme (civil defence), working closely with emergency-measures officials at National, Provincial, and local levels. Senior officials attended training courses at the Civil Defence College at Arnprior, Ont. Health Branch personnel also took part in the three nation-wide exercises—Advance 1 in January, Tocsin in May, and Tocsin B in November.

This 1961 Report has a special meaning for me as Deputy Minister of Health because it is the last which I shall have the privilege of submitting. At this time of my retirement, I look back on twenty-two such reports written while I was chief health officer for British Columbia.

The programmes, activities, and services described by my co-workers over the years show how well the public health staff, related professional groups, voluntary agencies, local authorities, and other departments of government have worked together in the interests of the health of the people. For this loyalty and high professional purpose, I am deeply grateful. I am secure in the knowledge that these features will continue.



REPORT OF THE BUREAU OF ADMINISTRATION

A. H. CAMERON, DIRECTOR

The Bureau of Administration includes the central administrative offices, the Division of Vital Statistics, and the Division of Public Health Education. Separate reports concerning these divisions appear elsewhere in this volume.

The Bureau Director, who is a member of the Health Branch's central policy-making, planning, and administrative group (the Deputy Minister and the three Bureau Directors), is concerned particularly with non-medical administration. The main trends and events in this field are given below.

ADMINISTRATIVE CHANGES

Plans were made and, in some cases, implemented by the end of the year to bring about some important changes in the administrative organization. The impending retirement of Dr. G. F. Amyot, Deputy Minister of Health, had the greatest impact, of course. Fortunately Dr. Amyot had taken great care to inform and train his co-workers so that the necessary changes could be brought about with the least difficulty. Another event which resulted in a shift of responsibilities was the departure of Dr. J. L. M. Whitbread from his position as Director of Occupational Health to assume the position as Senior Medical Health Officer, Greater Victoria Metropolitan Board of Health. At the year's end, plans were being made to transfer the position of Director of Occupational Health to the Health Branch's Vancouver offices (to bring about easier contact with industrial firms) and to transfer the position of Director of Epidemiology from the Vancouver offices to the Victoria headquarters (to bring about closer liaison with the Director of Local Health Services). In addition, an assistant to the Director of the Bureau of Local Health Services was provided by making an appointment to the position of Director of Health Units.

Toward the end of the year a change was made in the Bureau of Special Preventive and Treatment Services. Mr. P. M. Nerland, who had served the Bureau in a senior administrative capacity since September, 1949, left to accept a position with the Department of Continuing Medical Education, Faculty of Medicine, University of British Columbia. Rather than make a direct replacement for him, it was decided to combine his position with that of the Administrator, Division of Tuberculosis Control. This change, made possible by continued administrative studies, is to be accompanied by a consolidation of procedures and certain physical facilities in the Bureau. The transfer of a senior official to the Faculty of Medicine should make for an even closer association between that Faculty and the Health Branch.

STAFF

On the average, the Health Branch had on staff about 1,000 full-time employees during 1961. The largest proportion of these, approximately 420, was in the Division of Tuberculosis Control, which includes the institutions (Pearson Tuberculosis Hospital, Willow Chest Centre, and the Poliomyelitis Pavilion). The staff of the seventeen health units, which give Province-wide coverage, numbered approximately 370. The Division of Vital Statistics employed about seventy-five persons. Central administration (Victoria and Vancouver offices) had a combined staff of slightly more than sixty. The Division of Laboratories staff was slightly less than sixty. The Division of Venereal Disease Control had the smallest number of employees, with seventeen persons on staff.

Of the 1,000 persons employed, about 180 (approximately 18 per cent) were supported by the National Health Grants. In addition, National Health Grants

funds were also used for the employment of part-time clerical workers, health unit aides, student interns in Local Health Services, and practical-nursing trainees and part-time physicians in the Division of Tuberculosis Control.

Training of staff, particularly at the postgraduate level, continued to have an important place in the Health Branch philosophy and programme. A service like that of the Health Branch, which depends basically upon the professional and technical knowledge of its employees, must encourage the employees to improve their qualifications. The Health Branch has been fortunate in being able to draw upon National Health Grants for this purpose. During 1961 seven nurses completed the course for the Certificate in Public Health Nursing at the University of British Columbia, and six others started the training. Two public health nurses completed a year's academic training in nursing administration, and two others commenced the same course. Another senior public health nurse completed the training for the degree of Master of Public Health. Two physicians obtained the Diploma in Public Health after a year's training at the University of Toronto, and a third physician started the training in September. Also at the University of Toronto, two dental officers completed training for the Diploma in Dental Public Health and one health educator completed the training for the Certificate in Public Health.

With the aid of National Health Grants and the facilities of the Department of Extension and Department of Continuing Medical Education at the University of British Columbia, the Health Branch sponsored a refresher course in June for those sanitary inspectors who had not been able to attend the course held in 1959. Twenty-two of the Health Branch's sanitary inspectors and thirteen of the sanitary inspectors from Greater Vancouver and Greater Victoria were in attendance.

Staff-training was also conducted at the Public Health Institute which was held in Victoria during the Easter season. The main theme was rehabilitation, and the organizers of the institute drew upon Health Branch personnel and authorities in rehabilitation and related fields from other agencies to provide the instruction in the form of lectures and panel discussions.

RECIPROCAL AGREEMENTS (TUBERCULOSIS)

During 1961 reciprocal agreements for the care of tuberculosis patients were continued with Alberta, Saskatchewan, Manitoba, Ontario, and Quebec. The *per diem* rate was changed from \$8 to \$10 with Ontario, Manitoba, and Alberta, and it remained at \$8 with Saskatchewan and Quebec.

For varying lengths of time during the year, eighteen British Columbia cases were hospitalized in other Provinces (Alberta, 9; Saskatchewan, 1; Manitoba, 2; and Ontario, 6). At the end of the year, six of these were still in hospital. The number of cases from other Provinces who received care in British Columbia tuberculosis institutions was five (Alberta, 3; Ontario, 1; Saskatchewan, 1). At the end of the year, two of these were in hospital.

NATIONAL HEALTH GRANTS

The National Health Grants continued to play a large part in the employment of staff, the provision of training, the construction of hospitals and community health centres, the purchase of equipment, and the conduct of research. As in previous years, the principal beneficiaries were the Provincial health services (particularly community health services), the metropolitan health departments of Greater Vancouver and Greater Victoria, the voluntary health agencies, and general hospitals. Details of the 1961 experience are presented in the Assistant Provincial Health Officer's report, which appears later in this volume.

REPORT OF THE BUREAU OF LOCAL HEALTH SERVICES

J. A. TAYLOR, DIRECTOR

The function of a health department is primarily to promote and maintain ideal community health with the objective of ensuring for each individual optimum conditions for maximum personal health. Organized health service at the municipal level is desirable to co-ordinate community action toward that goal. Health services at the Provincial level foster and support those local health services at the municipal level, and the various divisions Provincially serve in a consultative and advisory capacity to the staff within the local areas. Provincial health services are designed, therefore, to contribute to local health service, and the Bureau of Local Health Services is organized basically to co-ordinate and integrate the Provincial consultative and advisory roles in provision of guidance to the local health departments.

Under the authority of the *Health Act*, each municipality within the Province is required to establish a local Board of Health "to superintend and see to the execution of any regulations made under the Act." Basically, the ideal type of full-time local health service has been found to be most efficiently administered through a health unit, and under this same Act authority is provided for this wherein two or more Municipal Councils may elect to unite their respective local Boards of Health into a Union Board of Health. At the same time an opportunity is afforded the district School Boards to transfer their school health services to the Union Board of Health and to appoint the staff of the health unit to direct those services for the future. Those areas which have taken this action have developed a uniform basic public health administration, not only for the entire unit area, but which, because of consultation and supervision through the Health Branch, is co-ordinated with all the similar services throughout the Province. This means, then, that there is a quality and uniformity of service for all citizens of the Province whether they reside in a large city area or in a small hamlet in some remote area. Because of the geography and topography of the Province, however, there are isolated, sparsely settled areas in which it is not economically practical to maintain a full-time health service; in those areas, basic services are provided on either a visiting programme or through the employment of part-time personnel.

In the beginning, plans were laid for the provision of seventeen health units throughout the Province, which, together with the autonomous city health departments in Vancouver and Victoria and the public health nursing districts serving Kitimat and Ocean Falls, provided full-time health service for almost all populated areas in British Columbia. Once these became established, the basic framework of public health administration was set up, on which additional services and programmes could be added as the industrial and population growth of the Province indicated and the changing patterns in public health needs warranted. The progress that can be recorded in this and other fields in public health has, in a large measure, been aided by the National Health Grants programme, which, over the past thirteen years, has allowed for expansion and extensions of existing health services. It can truly be said that local health services in this Province have progressed materially through the stimulation engendered by the National Health Grants programme.

Probably in no area is the aid derived from the National Health Grants programme in the field of local health services more truly evident at the moment than in the development of the Greater Victoria Metropolitan Health Service, which, after months of negotiation, became a reality in July, 1961. The proposals toward the establishment of this integrated health service were fully recorded in the last Annual Report, at which time it was predicted that the new service could probably

become operative early this year. However, certain contentious issues in relation to a preliminary agreement by the participating components prolonged the negotiations, while the desire to obtain the appointment of a highly qualified Senior Medical Health Officer created some additional delays. However, the Metropolitan Board of Health for the area became organized by mid-year, and subsequently was able to ratify the appointment of a qualified experienced public health physician in the person of Dr. J. L. M. Whitbread as the Senior Medical Health Officer. Immediately following this appointment, arrangements for other staff appointments were negotiated, and as the year ended the proposed organization was fully operative and a metropolitan health service definitely established for the Greater Victoria area. Financing revolved around contributions by each of the participants in a pooling of their existing costs in provision of health services; this, however, was not sufficient to meet the estimated cost, the difference being obtained through National Health Grants contributing an amount approximating 12 per cent of the total budget. The service is developed and organized around the health unit principle with integration of their administration through a senior administrative group; this provides for a co-ordinated health service for the whole of the Greater Victoria area, which should provide a more efficiently operated series of programmes.

The plan for the Greater Victoria Metropolitan Health Service was designed almost entirely along the pattern developed by the Greater Vancouver Metropolitan Health Service, which this year celebrated its twenty-fifth anniversary. Since its inauguration in 1936 there has been a considerable growth in population, which has created expansion in health service needs and programmes, but the health service has been able to meet those needs through extension and expansion of its services. The original agreement establishing the Greater Vancouver Metropolitan Health Committee has been reviewed and redrafted to provide for membership on the Committee of Union Boards of Health administering services in some of the component areas; this agreement was ratified by a revision of the *Health Act* to permit this form of organization, and the same principle has been applied in the organization of the Greater Victoria Metropolitan Health Board. Thus, for the first time in the history of the Province, the two largest centres of population are provided with equivalent co-ordinated health administrations in which the basic health unit principle serves as the unit of administration, paralleling that provided throughout the rest of the Province.

Within those health units in the remainder of the Province some administrative readjustments became necessary as a result of turnover in staff since resignations and transfers prevailed in the usual number, particularly among the ranks of the public health nurses, as shown in the report of that Division. However, some changes occurred in the employment of the public health physicians which brought about changes in the Peace River, Cariboo, Skeena, South Central, South Okanagan, and Central Vancouver Island Health Units. In all those cases the administration by the Health Unit Director was disrupted either by resignation, transfer, or leave of absence, while in the Central Vancouver Island, Boundary, and Cariboo Health Units the positions of Assistant Director were vacant for at least part of the year until new appointments could be made in those categories.

With the growth in complexity and quantity of public health services, some consideration was given to developing a position of Director of a Division of Health Units to supervise administration of those services and to provide more adequate consultative services to the public health physicians in charge of those units, while encouraging uniformity throughout the Province. When this proposal was presented to the National department, it was endorsed as acceptable under the National Health Grants programme, and the position became established in the spring of the year.

It has relieved some of the administrative details for senior Departmental officials. The position was assumed by the Director of the Cariboo Health Unit, this selection being in keeping with Departmental policy to have senior appointments filled by individuals experienced in field administration. Since his appointment he has been devoting the major portion of his attention to inspectional visits to the field to acquaint himself with the programmes, services, and problems related to each health unit; at the same time, revision of certain existing policies was transferred to his administration to allow him to design Departmental policy in keeping with the needs of the health units in direct contact with the service to the public.

COMMUNITY HEALTH CENTRES

Over the past ten years the Department has sponsored a plan adopted from the National Health Grant programme designed to encourage the construction of community health centres to provide more suitable office accommodation and clinic space for local health services. The proposal as originated with National Health Grants suggested that designs for such projects should begin in the community, initiated at the municipal level or by some voluntary service club, that would undertake to raise community funds for the construction. The financing would then be shared between the three levels of government—Municipal, Provincial, and National; however, it is usually found that since the National and Provincial grants are fixed on a formula basis per square foot of interior floor area, there is a larger share to be raised municipally. In all instances the municipal portion has been materially assisted by grants from voluntary health organizations, such as the British Columbia Tuberculosis Society, the British Columbia Division of the Canadian Cancer Society, Canadian Red Cross Association (British Columbia Division), the British Columbia Foundation for Child Care, Poliomyelitis and Rehabilitation, St. John Ambulance Association, Canadian Arthritis and Rheumatism Society (British Columbia Division), and others. Considerable credit must be given the British Columbia Tuberculosis Society and the British Columbia Cancer Society, who have been generous in their support of this programme in nearly all areas of the Province where community health centres have been sponsored. In recognition of contributions from the voluntary health agencies, the buildings, in addition to providing office and clinic space for the official health agencies, have been providing workrooms and meeting-rooms for the voluntary agencies. Through this medium the community health centre then becomes a focal point for all community health services, both official and voluntary, and promotes co-ordination of those services in the interest of community health generally.

During 1961, construction of community health centres was completed in another seven communities to bring the total number constructed to date to fifty-seven. Such an accomplishment has prompted a capital outlay of \$3,009,228, of which the share provided by the National and Provincial Health Grants has amounted to \$1,201,533. The bulk of the construction has been in the Interior areas of the Province, where facilities for the local health departments have been most urgently required, but an amount of \$927,484, was spent in the Greater Vancouver Metropolitan Health Service in provision of seven community health centres there, while \$113,541 was spent some years ago on the headquarters of the Victoria-Esquimalt Health Unit in Victoria, which now becomes the headquarters of the Greater Victoria Metropolitan Health Service.

During this past year newly constructed accommodation came into being in Golden and Natal-Michel in the East Kootenay Health Unit, Abbotsford in the Upper Fraser Valley Health Unit, Prince Rupert in the Skeena Health Unit, Prince-

ton in the South Okanagan Health Unit, Powell River in the Upper Island Health Unit, and Duncan in the Central Vancouver Island Health Unit, while recognition was given to new accommodation constructed a year or so ago in the Municipality of Oak Bay for the Oak Bay Health Department, which now becomes a sub-office of the Greater Victoria Metropolitan Health Department. As the year drew to a close, plans were well advanced for construction of community health centres at Field in the East Kootenay Health Unit, Campbell River in the Upper Island Health Unit, Nelson in the Selkirk Health Unit, Gibsons Landing in the Howe Sound Health Unit, and Chilliwack in the Upper Fraser Valley Health Unit. Plans were also well advanced for construction of new accommodation under the community health centre programme for the headquarters of the Vancouver Island Chest Centre on grounds of the Royal Jubilee Hospital in Victoria to relieve the cramped accommodation of that service in buildings which were interfering with construction plans of the hospital itself. Also under way was an extension of the Kelowna office of the South Okanagan Health Unit, in which accommodation is desired for a developing regionalized mental-health service, and in which joint planning by the Health Branch and the Mental Health Services Branch of the Department is being undertaken in the interests of improved community mental-health services throughout the Okanagan area involving the three health units operating therein. In addition, negotiations toward community health centres were under way for Saanich in the Saanich and South Vancouver Island Health Unit, Cloverdale in the Boundary Health Unit, Castlegar in the West Kootenay Health Unit, Comox in the Upper Island Health Unit, Alberni in the Central Vancouver Island Health Unit, Rutland in the South Okanagan Health Unit, 100 Mile House and Clinton in the Cariboo Health Unit, Hope in the Upper Fraser Valley Health Unit, and Terrace in the Skeena Health Unit, while an addition was contemplated for the Revelstoke office of the North Okanagan Health Unit. This provides that the allowable funds for community health centre construction are earmarked well into the fiscal year 1963/64 and is indicative of the depth of interest continuing to prevail in the matter of more suitable accommodation for the operating health services throughout the Province.

GRANTS TO RESIDENT PHYSICIANS

The programme to provide grants-in-aid to resident physicians has been continued; this programme is designed to encourage physicians to take up residence in remote communities and to provide service on a periodic schedule of visits to neighbouring communities which are not sufficiently large in themselves to support a physician. Such a system of grants has been instrumental in attracting a number of physicians to provide medical care in the sparsely settled areas of the Province, where a nominal grant based upon a definite formula proportionate to the population density and the distances to be travelled is made available.

No essential change has occurred in the method of administration of these grants, as each physician under the programme is required to present a report on a quarterly basis about the services provided, following which a quarterly payment of the grant is rendered. At present, grants are being paid to some eighteen physicians to provide medical care to some thirty-one rural locations within the Province.

Administratively the one area requiring attention has been that concerning Stewart, where the industrial shut-down of two years ago has been maintained, creating difficulties for the community to continue to attract a physician. It was evident that without a physician then the hospital might have to close its doors and the community would be left without either hospital or medical care. An increase in the grant to the physician was undertaken in an effort to maintain his residence

in that community, but the lack of community medical needs is a decisive factor. During the past year it has been possible to have one physician remain to the extent that the community has been assured of continuous medical care.

From time to time, requests are received from isolated communities for assistance in obtaining a resident physician. However, the initial responsibility must rest with the community to attract a physician to take up residence among them; following on this basic step, a grant-in-aid can be proffered the physician to aid in some of the incidental expenses involved in establishing practice in the community and in remuneration for travel to neighbouring areas. The grant-in-aid can only be considered ancillary to the action initiated by those anticipating the service.

SCHOOL HEALTH SERVICES

School health services are only one facet of a community health service in which the individual is treated as a whole individual influenced by the environment and the custom with which he is in daily contact. It is not possible to segment the child into the infant, pre-school, and school-age child for which a separate division of services can be designed for each period of his life. It must be recognized that the experiences during the formative years as an infant and pre-school child may be an asset or a liability to future educational progress in the measure of mental, emotional, and physical development available to each person.

Therefore, the school health programme must be correlated with the other health programmes of the community generally, but at the same time must concentrate certain specialized services toward the child, in which the main considerations must be health services, health guidance, health instruction, and school environment. In this the classroom teacher and the public health nurse predominate, since close collaboration between them can materially aid the child in the greatest need of professional attention. A conference between the teacher and the nurse must serve as the basic framework and can often suffice to determine the students requiring need and the solution to that need. In other instances, the support of the parents, the family physician, and the school physician, in consultation with others, will be required. The public health nurse is the major link between the school and the home in this field. There is presently a need for evaluation of the health programme for school-age children to determine whether it is fulfilling the needs and whether revisions may not be desirable. To that end, the Health Officers' Council has appointed a standing committee on school health services, which, during the past year, convened a number of times in examination of the present programme. This committee demonstrated that under the existing programme 9.7 per cent of children in all grades are routinely examined, of whom approximately 85 per cent have either no defect or a minor defect only. On the other hand, 70 per cent of the Grade I children are routinely examined, with less than 25 per cent at which parents are present, which means that there really is no adequate history obtainable in respect to these pupils. In the examinations, approximately 36 per cent are carried out by the Health Unit Director and the remainder by private physicians employed specifically for that task alone. In those health units doing routine examinations, only seven were able to complete the examination of 80 per cent or more Grade I children. All had a Grade I enrolment of less than 1,400, three of them less than 1,000. It is obvious from this that in the larger health units the pressure of other responsibilities has prompted the discontinuation of routine physical examinations, and in the years ahead it was felt that with population increase there will be further automatic reduction in the number of routine physical examinations. In examination of this trend it was decided that the referral system was of infinitely more value in

those areas where medical care was already available, and it was recommended that this should be the preferable procedure. It was pointed out that:—

- (a) The referral system encouraged the development of a desirable pattern of family reliance on the family physician for provision of continuing medical care. The emphasis on routine medical examinations in schools deprives parents of the incentive to link up with the family physician.
- (b) The performance of routine physical examinations reduces the time available for examination of referrals and for adequate follow-up.
- (c) The referral system allows health personnel to concentrate on screening tests, follow-up to include thorough examination, consultation, and family counselling.
- (d) Routine examinations are of value only with the parent in attendance, when a history may be obtainable and some degree of parental education carried out. This is not done in the majority of routine examinations at the present time.
- (e) The referral system lends itself toward involvement of the family physician and tends to further the philosophy of the treatment of the individual child as a member of the family.
- (f) The referral examinations appear to be on the increase due to involvement in mental health.
- (g) The referral system tends to offer more help to the school personnel, with improvement in rapport and co-operation between Health and Education.
- (h) In some areas, many children are already being examined by the family physician, and the referral system allows health unit personnel to concentrate on the individual whose need is the greatest.
- (i) The referral system involves the teacher as a member of the health team.

It was reasoned that the referral system accomplishes the primary purpose of the school health examination as a case-finding technique, and permits a rapid identification by the health team (including the teacher) of the majority of conditions which are picked up on routine examination, such as deafness, eye defects, orthopaedic defects, etc., but entails much less time and less disruption of the day-to-day school programme. It is reasoned that efforts should be devoted to identification of these children with many of these debilities while they are still of pre-school age, since correction of the defects is more readily obtainable at this age. Ideally, then, if routine examinations are to be done, the parents should be encouraged to take the child to the family physician at an early pre-school age.

There seems to be gathering evidence that health problems among the adolescent in the high schools need some additional attention; certainly human behaviour research and clinical medicine are beginning to focus attention in that direction, which may well influence the future of the school health programme for the high-school grades. It would seem that if an impression is to be made on the future community health, the influence that can be created on the adolescent may have far-reaching effects since adult health habits and attitudes do largely become established during adolescence. Both public health and medical personnel are expressing some concern about adolescent nutrition problems, for it does seem that many of this group display either underweight or obesity. During the past year, in co-operation with the Nutrition Division of the Department of National Health and Welfare, some investigation into this was taken to determine what proportion of the adolescents might be anemic; the school health services in the larger cities undertook to obtain blood samples for analysis in determination of haemoglobin levels, which it was planned to relate to the dietary intake of the individual pupil. As the year ended, this study was under way.

Certain, too, is the need for a consultative service in the field of mental health involving children and particularly among the adolescents, many of whom display irritating behaviours, rebellion against authority, and frequently more deep-seated difficulties. Investigation of these situations taxes the patience, skill, and energy of almost everyone actively concerned with this age-group. For that reason, it is indeed encouraging to be associated with an expansion of the mental-health services within this Province. The metropolitan health services for Greater Vancouver has demonstrated the practicability of a programme designed to provide consultative services for emotional problems in children through a Division of Mental Hygiene. In the other parts of the Province, the Mental Health Services Branch within the Department of Health Services and Hospital Insurance has been providing mental-health guidance through travelling clinics operating, for the most part, from the Lower Mainland. While these have served a useful purpose, the periodicity of visits did not suffice to allow sufficient time for all the consultations and examinations. While reorganization did provide for more frequent visits, it is nevertheless the intent of the Mental Health Services Branch to endeavour to regionalize its programme; during the year, negotiations toward that goal were conducted with a view to establishing a regional mental-health clinic for the Okanagan area, by which a psychiatrist and the requisite ancillary personnel would become resident there, to concentrate all their energies in services in the three health units within the Okanagan Valley. It is hoped from this approach that a co-ordinated programme between the mental-health and the public-health services will promote an improvement in community mental hygiene. In many of the schools there are available to the teachers mental-hygiene counsellors who, through special training in the mental-hygiene programme within the metropolitan health services, are qualified to provide counselling services to the teachers and the pupils. It would seem that more of these are desirable in an endeavour to fulfil the need in meeting pupil emotional problems.

In the field of tuberculosis-control there has been increased emphasis directed toward regular tuberculin testing on a community-wide basis, but also involving the school pupil; actually a tuberculin survey among school-children is a very practical case-finding tool from the community point of view for the location of a positive finding in a school pupil who warrants some special attention directed toward the family. Originally it was proposed that routine tuberculin testing be provided all school-children entering school, and that the continuing policy would be retesting twice more during school life. This recommended policy has, however, been subjected to question, since it would seem to present a work load beyond the ability of existing staff; therefore, while it may be the ideal, a somewhat more practical policy may be an initial tuberculin testing of all school pupils, to be followed thereafter by routine testing in the future confined to those entering the school. Discussions relative to this are under way in evolution of a definite recommendation for the future.

Further attention was directed to the present screening methods for vision and hearing testing, which are always the subjects of inquiry. In so far as visual acuity was concerned, it was further determined that vision screening is most adequately served through the use of a modified Snellen Letter Chart. From the point of view of checking for colour-blindness, it was evident that this does not interfere directly with the learning ability and is therefore not necessarily a subject for routine investigation. Referred pupils, however, can be given the opportunity of a check into their ability to detect colours. From the point of view of hearing tests, consultation with specialists in that field indicated that the present method of testing children with the Oto-check and the audiometer is quite adequate. It was proposed, however, that any hearing loss should be reported as an "average decibel loss" rather than as a

percentage loss, and for this reason no percentage hearing loss will be calculated in the future. It was recommended that special seating arrangements should be made for pupils who display a hearing loss of 15 decibels or more, that minimal hearing losses are of no significance from the point of view of speech development, and that referrals should be arranged for those pupils with higher hearing disabilities.

Examinations of the school environment are completed at least annually by the sanitary inspectors attached to the health units. In these fields, investigation of the water-supply, sewage-disposal, school lighting, ventilation, safety features, fire protection, and building construction are all evaluated in a report which forms part of the record presented to the School Board, indicating where improvements and alterations in the school plan are desirable in the interests of the health of the school pupils and the staff. The school population continues to advance at an appreciable rate, and new school buildings are being constructed throughout the Province. These more recently designed buildings are eminently superior to the older buildings, indicative of the trend to better designing, better lighting, and more suitably accommodated classrooms.

It does not seem desirable to enumerate in detail all the programmes within the health field that have a bearing on the school health programme; therefore, referral to the numerous sections of this Annual Report dealing with public health nursing services, dental services, nutrition services, sanitation services, vital statistics, and health education will round out the pattern that has a bearing on the health of the school pupil who cannot be segregated from either his family or his community environment.

HEALTH OF THE SCHOOL-CHILD

The school health programme is designed to provide health services to the pupil for the academic year, and the analysis of the health status of the children in the various grades within the schools is collated on that basis from September, 1960, to June, 1961, during which school health services were provided in the 1,221 schools included in the eighty-two school districts and the sixteen small school areas. In these schools there were 11,894 classrooms. Within the grades examined there was a 5.6-per-cent increase in pupils enrolled during 1960/61, there being 328,497, compared with 309,993 in the previous year. In those grades, 38,134 pupils were examined, a greater number than had been examined the previous year but only 11.7 per cent of the enrolment in those grades. This increase occurred throughout all the grades in the school and was merely a reflection of the higher total enrolment in each of the grades rather than an increase in the volume of services. From Table I, showing a comparison of the physical-examination findings in the British Columbia schools over the past five years, it is evident that approximately 85 per cent of the pupils examined have little or no defects. This evidence strengthens the argument in favour of the referral system of examinations. It confirms the fact that 85 per cent of the pupil enrolment requires medical supervision only, and that the bulk of the professional attention can be concentrated on the remaining 15 per cent.

*Table I.—Summary of Health Status of Pupils in All Grades in All Schools
in British Columbia, 1956 to 1961*

Item	1956/57	1957/58	1958/59	1959/60	1960/61
Total pupils enrolled in grades examined.....	251,005	272,499	279,040	309,993	328,497
Total pupils examined.....	43,010	42,947	38,174	37,175	38,434
Percentage of enrolled pupils examined.....	17.1	15.8	13.7	12.0	11.7
Percentage examined with minor or no physical, emotional, or mental defects.....	78.9	85.8	84.5	84.5	84.8
Percentage examined having specified type and degree of defect—					
Physical 2.....	15.8	11.5	10.9	10.8	11.2
Emotional 2.....	1.0	3.4	3.8	3.7	3.0
Mental 2.....	0.1	1.5	1.8	1.8	1.8
Physical 3.....	4.3	0.7	0.8	0.8	0.6
Emotional 3.....	0.2	0.2	0.2	0.2	0.2
Mental 3.....	(1)	0.3	0.3	0.4	0.2
Physical 4.....	1.9	0.1	0.1	(1)	0.2
Emotional 4.....	0.3	(1)	0.1	(1)	(1)
Mental 4.....	0.3	0.2	0.2	0.4	0.1

¹ Incidence of less than 0.1 per cent.

The findings in Table II, showing the percentage of pupils examined by grades, indicate a concentration of routine examinations on beginners enrolled in Grade I, in which 26,315 (71.5 per cent of the enrolled number) were examined in this academic year. This compares with 25,658 examined (73.4 per cent of the enrolment) the previous year. While there was an increased number of pupils examined, the increased enrolment in the grade actually created a significant decrease in the percentage receiving physical examinations. This examination, occurring at a transitional period in the child's life as transfer from home to community environment takes place, should be of value, especially if undertaken in co-operation with the parents and the family physician. In the later grades, screening methods are adopted as a basis of selection for medical examinations, and, as is evident in Table II, the volume of examinations in the elementary grades averages between 3 and 5 per cent of the pupils enrolled in each grade. In the high-school grades, selectivity becomes even more definitive, so that the proportion of those examined to those enrolled by grade becomes further decreased to between 2 and 3 per cent. This indicates that a lesser amount of medical supervision is provided the young adolescent; however, some queries are raised whether more psychological service to this population group may not be desirable.

Table II.—Health Status of Individual Grades of Total Schools, Including Greater Vancouver Metropolitan Health Area, 1960/61

Item	All Schools	Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI	Grade VII
Total pupils enrolled in grades examined	328,497	36,827	33,913	32,441	30,478	29,798	29,374	30,035
Total pupils examined	38,434	26,315	1,577	1,192	1,621	1,063	1,005	2,096
Percentage of enrolled pupils examined	11.7	71.5	4.7	3.7	5.3	3.6	3.4	7.0
Percentage examined with minor or no physical, emotional, or mental defects	84.8	85.6	83.9	81.5	82.5	81.4	81.7	86.3
Percentage examined having specified type and degree of defect—								
Physical 2	11.2	10.3	12.6	14.3	14.3	15.2	14.7	10.0
Emotional 2	3.0	3.3	2.7	2.9	2.1	2.9	2.1	2.0
Mental 2	1.8	1.7	2.3	1.3	1.2	1.5	1.1	2.2
Physical 3	0.6	0.5	0.6	0.7	0.7	0.5	0.7	0.7
Emotional 3	0.2	0.2	0.3	0.2	0.1	0.4	0.3	0.1
Mental 3	0.2	0.1	0.4	0.2	0.1	0.1	0.2	0.3
Physical 4	0.2	0.1	1.3	0.3	0.1	0.3	0.3	—
Emotional 4	(¹)	(¹)	0.1	—	—	—	—	(¹)
Mental 4	0.1	(¹)	0.1	—	—	—	—	—
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Item	Grade VIII	Grade IX	Grade X	Grade XI	Senior XII	Senior Matric.	Special Classes	Other Classes
Total pupils enrolled in grades examined	28,626	24,160	19,405	15,906	12,725	1,286	3,523	3,132
Total pupils examined	904	900	690	397	288	3	383	920
Percentage of enrolled pupils examined	3.2	3.7	3.6	2.5	2.3	0.2	10.9	29.4
Percentage examined with minor or no physical, emotional, or mental defects	84.1	85.7	85.4	88.4	92.7	100	51.7	87.4
Percentage examined having specified type and degree of defect—								
Physical 2	14.6	11.3	11.6	9.1	5.2	—	23.0	12.4
Emotional 2	1.7	1.2	2.0	1.0	1.4	—	12.0	3.8
Mental 2	0.4	1.4	0.4	1.0	—	—	19.1	1.3
Physical 3	0.4	1.1	0.3	0.5	0.3	—	4.4	0.4
Emotional 3	—	0.1	—	—	—	—	2.9	0.1
Mental 3	—	—	—	—	—	—	8.4	0.2
Physical 4	—	0.1	—	—	—	—	1.6	0.3
Emotional 4	—	—	0.1	—	—	—	1.3	—
Mental 4	—	—	—	—	—	—	10.7	0.2

¹ Incidence of less than 0.1 per cent.

In Table II the great deal of medical service devoted to children enrolled in special classes, which include classes for mentally retarded children, is indicated. Of the enrolment in all special classes, 10.5 per cent received examination, of which 48.3 per cent had specific defects of one type or another. Significantly in this group there seems to be more than one defect present at the same time, indicative of the fact that the seriously defective were more likely to have a multiplicity of defective conditions.

A breakdown of the medical examinations in the Vancouver schools, as provided by the Greater Vancouver Metropolitan Health Service, is shown in Table III. It shows results that parallel those being provided in the rest of the Province, except that a significantly greater proportion of the beginners in Grade I receive medical examination (91.4 per cent). A comparison with the results for the remainder of the Province may be made by examination of Table IV; it becomes evident that in all grades a proportionately greater number of the pupils enrolled in each grade in

the Vancouver schools have fewer physical defects than their counterparts throughout the Province. This may be a reflection of the medical services available in the city as compared with those available in the country, or may be indicative of an increased emphasis in selectivity of referrals for examination or in the quality of that medical examination.

Table III.—Health Status by Individual Grades of Total Schools, Greater Vancouver Metropolitan Health Area, 1960/61

Item	All Schools	Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI	Grade VII
Total pupils enrolled in grades examined	115,424	12,114	11,471	11,166	10,466	10,143	10,203	10,374
Total pupils examined	15,795	11,076	649	549	460	417	382	439
Percentage of enrolled pupils examined	13.7	91.4	5.7	4.9	4.4	4.1	3.7	4.2
Percentage examined with minor or no physical, emotional, or mental defects	87.5	88.4	87.5	86.5	85.2	87.3	86.9	88.6
Percentage examined having specified type and degree of defect—								
Physical 2	8.0	7.1	8.3	10.4	10.2	8.6	10.2	8.4
Emotional 2	4.0	4.3	3.9	3.8	3.3	3.4	2.4	2.5
Mental 2	1.5	1.3	3.5	1.6	1.7	2.6	0.5	1.6
Physical 3	0.5	0.3	0.8	0.5	0.9	0.5	0.5	0.9
Emotional 3	0.4	0.3	0.2	0.2	0.4	1.0	0.5	0.5
Mental 3	0.3	0.2	0.3	—	0.4	0.2	—	—
Physical 4	0.4	0.2	3.2	0.7	0.2	0.7	0.5	—
Emotional 4	0.1	(¹)	—	—	—	—	—	0.2
Mental 4	0.3	0.1	0.2	—	—	—	—	—
Item	Grade VIII	Grade IX	Grade X	Grade XI	Grade XII	Senior Matric.	Special Classes	Other Classes
Total pupils enrolled in grades examined	10,184	8,710	7,140	6,160	5,419	302	1,572	1,912
Total pupils examined	396	495	313	234	142	2	241	670
Percentage of enrolled pupils examined	3.9	5.7	4.4	3.8	2.6	0.7	15.3	35.0
Percentage examined with minor or no physical, emotional, or mental defects	89.1	89.5	85.9	86.3	90.8	100	47.3	83.3
Percentage examined having specified type and degree of defect—								
Physical 2	9.1	8.1	11.8	12.0	5.6	—	24.1	11.6
Emotional 2	2.0	1.2	2.9	1.7	2.8	—	9.1	5.1
Mental 2	0.5	0.8	0.6	—	—	—	8.7	1.6
Physical 3	0.8	0.8	0.3	0.4	0.7	—	5.4	0.4
Emotional 3	—	0.2	—	—	—	—	3.7	0.1
Mental 3	—	—	—	—	—	—	7.1	0.3
Physical 4	—	0.2	—	—	—	—	2.5	0.4
Emotional 4	—	—	—	—	—	—	2.1	—
Mental 4	—	—	—	—	—	—	15.4	0.3

¹ Incidence of less than 0.1 per cent.

*Table IV.—Health Status of Individual Grades of Total Schools, Excluding
Greater Vancouver Metropolitan Health Area, 1960/61*

Item	All Schools	Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI	Grade VII
Total pupils enrolled in grades examined	213,073	24,713	22,442	21,275	20,012	19,655	19,171	19,661
Total pupils examined	22,639	15,239	928	643	1,161	646	623	1,657
Percentage of enrolled pupils examined	10.6	61.7	4.1	3.0	5.8	3.3	3.2	8.4
Percentage examined with minor or no physical, emotional, or mental defects	82.9	83.5	81.4	77.3	81.5	77.6	78.5	85.6
Percentage examined having specified type and degree of defect—								
Physical 2	13.3	12.6	15.5	17.7	15.8	19.5	17.5	10.4
Emotional 2	2.4	2.5	1.9	2.0	1.6	2.6	1.9	1.8
Mental 2	1.9	1.9	1.4	0.9	0.9	0.8	1.4	2.4
Physical 3	0.6	0.6	0.5	0.8	0.6	0.5	0.8	0.6
Emotional 3	0.1	0.1	0.3	0.2	—	—	0.2	0.1
Mental 3	0.2	0.1	0.5	0.3	—	—	0.3	0.4
Physical 4	(1)	(1)	—	—	—	—	0.2	—
Emotional 4	(1)	—	0.1	—	—	—	—	—
Mental 4	(1)	(1)	—	—	—	—	—	—
Item	Grade VIII	Grade IX	Grade X	Grade XI	Grade XII	Senior Matric.	Special Classes	Other Classes
Total pupils enrolled in grades examined	18,442	15,450	12,265	9,746	7,306	984	1,951	1,281
Total pupils examined	508	405	377	163	146	1	142	315
Percentage of enrolled pupils examined	2.8	2.6	3.1	1.7	2.0	0.1	7.3	24.6
Percentage examined with minor or no physical, emotional, or mental defects	80.1	81.0	84.9	91.4	94.5	100	59.2	87.9
Percentage examined having specified type and degree of defect—								
Physical 2	18.9	15.3	11.4	4.9	4.8	—	21.1	11.4
Emotional 2	1.4	1.2	1.3	—	—	—	16.9	0.3
Mental 2	0.4	2.2	0.3	2.5	—	—	36.6	0.3
Physical 3	0.2	1.5	0.3	0.6	—	—	2.8	0.3
Emotional 3	—	—	—	—	—	—	1.4	—
Mental 3	—	—	—	—	—	—	10.6	—
Physical 4	—	—	—	—	—	—	—	—
Emotional 4	—	—	0.3	—	—	—	—	—
Mental 4	—	—	—	—	—	—	2.8	—

¹ Incidence of less than 0.1 per cent.

Table V.—Immunization Status of Total Pupils Enrolled, According to School Grade, 1960/61

Grade	Total Pupils Enrolled by Grades	Smallpox		Diphtheria		Tetanus		Poliomyelitis	
		Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent
Total, all grades	328,497	250,429	76.2	264,042	80.4	243,618	74.2	294,598	89.7
Grade I.....	36,827	29,923	81.3	32,753	88.9	32,727	88.9	32,722	88.9
Grade II.....	33,913	28,874	82.2	30,215	89.1	30,149	88.9	30,354	89.5
Grade III.....	32,441	26,203	80.8	28,305	87.3	28,225	87.0	29,090	89.7
Grade IV.....	30,478	23,012	75.5	24,784	81.3	24,723	81.1	27,238	89.4
Grade V.....	29,798	23,320	78.3	23,756	79.7	23,695	79.5	27,123	91.0
Grade VI.....	29,374	24,728	84.2	25,303	86.1	25,032	85.2	27,170	92.5
Grade VII.....	30,035	22,663	75.5	24,038	80.0	22,425	74.7	27,060	90.1
Grade VIII.....	28,626	19,982	69.8	21,529	75.2	18,198	63.6	25,671	89.7
Grade IX.....	24,160	18,239	75.5	19,070	78.9	14,176	58.7	21,778	90.1
Grade X.....	19,405	14,086	72.6	14,229	73.3	9,831	50.7	17,096	88.1
Grade XI.....	15,906	9,808	61.7	9,412	59.2	6,853	43.1	14,154	89.0
Grade XII.....	12,725	7,646	60.1	7,641	60.0	4,947	38.9	11,386	89.5
Senior matriculation	1,286	744	57.9	754	58.6	450	35.0	1,071	83.3
Special classes	3,523	2,201	62.5	2,253	64.0	2,187	62.1	2,685	76.2
Other classes	3,132	1,420	45.3	1,991	63.6	1,965	62.7	1,946	62.1

The additional tables clearly demonstrate that the physical condition of the pupils, even those selected pupils, is at a fairly high standard, as 84.8 per cent of those examined exhibited either minor or no physical defect. In the Grade I classrooms, where routine physical examination is the rule rather than the exception, 85.6 per cent were in good physical condition. Thereafter, only referred pupils were given intensive medical examinations because of some suspected medical reason, yet a high percentage, never lower than 81.5 per cent, were found to be physically sound. These findings are justifiable demonstrations for the revision that has occurred in the school health programme toward a decrease in routine physical examinations for all pupils. Certainly, if only a small proportion of selected examinees are found to be medically defective, it seems obvious that the great majority of pupils enrolled must enjoy a fairly high standard of normal health.

The amount of mental and emotional trauma in the regular grades in school becomes apparent through the newer classifications of health status of the pupils now in operation for six years; it permits comparison of this year with past years. In making this comparison, it is evident that some adjustment on the part of the examiners was reflected in the earlier years as the amount of emotional and mental defect showed a consistent increase year by year, but for the past two years it has been almost constant.

It is evident that the number of children selected for examination for reasons of mental or emotional instability does not vary greatly from grade to grade. It should also be noted that the pupil seems to be able to adjust to the school programme without any undue upset, maintaining a fairly constant emotional equilibrium throughout.

The second factor indicative of the health of the school-child is that of immunization status, and it is evident from Table V that this is being maintained at a fairly high level. As a matter of fact, the results shown in Table V demonstrate a further improvement in this status as something approaching 75 per cent in each category, compared with slightly over 70 per cent a year ago, have become immunized, the greater proportion against poliomyelitis. The fact that the poliomyelitis immunization receives the greatest interest is probably a reflection of the incidence of that disease, which was rather high during the first part of this academic year. The use of multi-valent antigens, in which diphtheria and tetanus are combined with polio-

myelitis, has created greater immunization against those two diseases because of the individual desire to obtain poliomyelitis immunization. However, a very gratifying increase in the number immunized to smallpox is also clearly demonstrated (76.2 per cent this year as compared with 73.5 per cent a year ago); this is probably indicative of concentration on immunization by local health services throughout the Province, and is a reflection of an encouraging educational programme to increase the immunity status of the total population.

The fact that approximately 75 per cent of the school population is now immunized against the major communicable infections probably confers a degree of protection on the whole population. However, the non-immunized 25 per cent remain as a threat to the health of the school pupils and warrant some attention being devoted to increasing the immunity status. It is amongst this group the disease incidence can develop, and the fact that cases of diphtheria and tetanus were reported during the year is evidence that immunization should be concentrated at as high a level as possible.

The incidence of communicable diseases presents another guide to the health of the school-child, since a considerable majority of the communicable infections occur in childhood. The major communicable infections so common to childhood, such as mumps, measles, rubella, and chicken-pox, while continuing to create a degree of school absenteeism, are no longer reported on a routine basis. It is recognized that these minor communicable infections are prone to recur cyclically every four or five years in a peak incidence until an immune population develops, when they begin to decrease. They do not display serious complications, and aside from creating a volume of school absenteeism do not occasion serious defects on the health of the average school-child. It is the major communicable infections that are of more serious importance in so far as child health is concerned, and it is evident that during the past year the school-child was exposed to a considerable amount of this.

Infectious hepatitis has shown some significant increase, at a rate of 102.3 per 100,000 population. This viral infection has been showing an increasingly greater incidence year by year, and as a significant number of the cases occur among school-children, it is a serious factor in school absenteeism. Some endeavours at control measures are being undertaken through the provision of immune serum globulin, but because of shortages of this material its use has had to be restricted to intimate contacts in closed population groups.

Scarlet fever and streptococcal sore throat took their toll in sickness through streptococcal infections that seemed to be fairly prevalent during the spring. The high incidence of scarlet fever (a rate of 65.9 per 100,000 population) and streptococcal sore throat (a rate of 60.2 per 100,000 population) is indicative of the volume of infection that was being experienced, for the most part, amongst the school-age population. The use of antibiotics and chemotherapeutic drugs over the past several years has decreased the severity of this type of infection so that the complications formerly associated with it do not seem to occur; nevertheless, it did make inroads in the school attendance figures, and no doubt there will be the occasional pupil left with cardiac complications. One of the many serious sequelæ of streptococcal infections is rheumatic infection, which may take several forms, including rheumatic fever, rheumatic carditis, and so forth. It is well established that rheumatic infections follow infections of the haemolytic streptococcus, usually developing within one to five weeks after a sore throat. The exact nature of the disease process is not established; the most probable theory is that it is an allergic reaction. Antibiotics have only limited usefulness in the treatment of the acute stages, but are very useful in preventing recurrences, to which these

patients are prone. The prophylactic antibiotics presumably assert their influence by protecting the patient from further attacks of streptococcal infection, which might again aggravate the rheumatic condition and lead to permanent cardiac damage. The best prophylactic antibiotic is penicillin, administered daily by mouth or as a monthly injection. It is recommended that after an established attack of rheumatic fever the person should receive antibiotic prophylaxis until he is 18 years of age, or at least for five years. Such a prophylactic programme has been introduced in this Province on a trial basis over recent years and has recently been extended to all areas of the Province.

Poliomyelitis showed a very significant decrease this year—a rate of 0.4 per 100,000 population, which was the lowest recorded in the past twenty years. However, of the seven cases reported, three were among school-age children and two in pre-school children. It cannot be definitely stated that the Salk vaccine programme was a significant factor in promoting this unduly low incidence since it might have occurred in any case, but it is possible that the Salk vaccine was one factor favouring the decreased incidence.

The fact that diphtheria occurred again is a reflection of the need for increased vigilance in connection with this disease. Unfortunately once it becomes uncommon then its possibility is often overlooked in patients with early symptoms of sore throat and fever until other cases have become infected; therefore, the greater the volume of immunization to the disease, the more likely the community resistance to its spread.



On November 29, 1961, Powell River celebrated the opening of its new health centre, with the Honourable Eric Martin, Minister of Health Services and Hospital Insurance, officiating at the ceremony. The centre was planned in conjunction with the Powell River Hospital expansion programme.

REPORT OF THE BUREAU OF SPECIAL PREVENTIVE AND TREATMENT SERVICES, VANCOUVER

G. R. F. ELLIOT, DIRECTOR

The main elements of the Bureau of Special Preventive and Treatment Services have continued to operate during 1961 in the same manner as in 1960. However, during November some changes were made in the Bureau organizational structure. While the various divisions (Tuberculosis Control, Venereal Disease Control, and Laboratories) and the Rehabilitation and Registry Services within the Bureau headquarters structure retained their original form, the position of Administrator for the Bureau was created in place of the position of Personnel Officer, when the incumbent in the latter position left the service. The new position includes the personnel function, financial management of the Bureau and its divisions, and other administrative assignments under the Director.

The liaison with certain voluntary health agencies was continued effectively by the Bureau. The activities of these agencies are summarized in a subsequent section of this Report.

It may be noted in the report of the Division of Tuberculosis Control that an extension and modification of the "progressive patient care" programme has taken place. This programme was discussed in the previous report, but its extension on a modified basis to the Willow Chest Centre marks a further advance of this concept. It has been found that a more effective type of care can be provided and many economies realized with this type of service.

VOLUNTARY HEALTH AGENCIES

Once again voluntary health agencies have contributed substantially to the public health services in the Province. The activities of those agencies which have received direct financial support from the Provincial Government are summarized below.

THE BRITISH COLUMBIA CANCER FOUNDATION

The British Columbia Cancer Foundation in 1949 was designated by the Provincial Government to be the recognized agent for the diagnosis and treatment of cancer in the Province of British Columbia. Programmes at the British Columbia Cancer Institute (Vancouver), the Victoria Cancer Clinic, the thirteen consultative cancer clinics at centres throughout the Province, and the boarding home with 56 beds, which is attached to the Cancer Institute, are the responsibility of the Cancer Foundation. Operational expenses are provided by the Cancer Control Grant of the National Health Grants and by a matching grant from the Provincial Government, plus fees from private patients.

During 1961 an extension to the Radiotherapy Department was constructed, thus bringing to completion the present expansion programme. A second cobalt radiotherapy unit has been installed, and space has been provided for another supervoltage machine in 1963.

In Victoria, plans are under way for the new premises for the Victoria Cancer Clinic at the Royal Jubilee Hospital. The Cancer Foundation will share in the costs of construction and will provide a small cobalt radiotherapy unit in 1963.

BRITISH COLUMBIA MEDICAL RESEARCH FOUNDATION

The British Columbia Medical Research Foundation is a voluntary organization whose objective is to provide financial support for certain important needs of medical research workers in the Province which are not yet adequately covered by

the research agencies of the Federal Government or by the National voluntary health agencies. The greater speed and flexibility which can be achieved by a local organization and the absence of any special emphasis on specific diseases permit the Foundation to make a substantial contribution to the over-all effectiveness of medical research in British Columbia by using its limited resources to eliminate various temporary bottlenecks which might otherwise impede the progress of a wide variety of projects.

During the past year the Foundation made grants totalling approximately \$35,000 to fifteen projects which were recommended to the board of trustees by the medical board after a detailed review of all applications received. About half of the Foundation's annual income is derived from a Provincial Government grant, and the remainder is obtained from private sources, including an allocation from the Community Chest of the Greater Vancouver area and a grant from the Leon and Thea Koerner Foundation.

CANADIAN ARTHRITIS AND RHEUMATISM SOCIETY
(BRITISH COLUMBIA DIVISION)

In eleven years of practical experience, the Canadian Arthritis and Rheumatism Society has learned that complete rehabilitation can rarely be accomplished without trained personnel and a properly planned integration of services and follow-up. Therefore, every effort is made to effect liaison with doctors, hospitals, and other agencies on a planning basis and in the treatment field at in-patient and out-patient levels where time permits.

The Canadian Arthritis and Rheumatism Society has undertaken the care of those with disabilities caused by other diseases as well as arthritis where the only physiotherapy service available is that provided through this society. During 1960, 4,674 patients received general service from the Canadian Arthritis and Rheumatism Society staff in British Columbia. Of these, 3,565 were referred because of their rheumatic disease and 1,109, or 23.7 per cent, had other disabilities, an increase of 190 non-arthritic cases referred over previous years.

The sites of treatment service have varied very little in four years. Seventy-eight per cent of the arthritis patients and 52 per cent of the non-arthritis are treated as out-patients. Eight per cent of the arthritics and 32 per cent of the non-arthritics are seen as in-patients. The treatment quarters utilized in the communities outside Vancouver are in most cases adequate, but the lack of space in the Vancouver medical centre is imposing great difficulties and limiting effectiveness. For instance, to make it possible for the Occupational Therapy Department to continue to provide self-help aids, home adjustments, and splints, a workroom has had to be borrowed from a neighbouring building.

Proper facilities for the rapidly advancing children's programme are badly needed also. Two hundred and twelve patients under 21 years were referred to the Canadian Arthritis and Rheumatism Society during 1960. Of the 695 cases under 40 years of age, 84.9 per cent show improvement. Eighty-two per cent of the 40-to 64-year age-group and 79 per cent of the over 64 group also showed improvement.

In Britain a shortage of physiotherapists is described as catastrophic. The Canadian Arthritis and Rheumatism Society has always secured the majority of its staff from Britain, but this is no longer possible. Consequently six to eight of Canadian Arthritis and Rheumatism Society treatment units are without full-time staff at some time during the year, leaving sixty to one hundred patients without immediate service, often for months at a time. Therefore, funds for the renovation of the building for the School of Rehabilitation Medicine at the University of British

Columbia were solicited from other organizations or donated by the Canadian Arthritis and Rheumatism Society. An intensive educational campaign resulted in a full enrolment of students for the first year. Bursaries, loans, job studies, and essay prizes are being offered to encourage interest in physical-medicine therapy.

The Canadian Arthritis and Rheumatism Society annual lectureship was given by a prominent paediatrician from Minnesota. A conference of Canadian Arthritis and Rheumatism Society medical directors of all Provinces from Ontario to British Columbia was held in Vancouver in June. A new film, "Prevention of Disability in Rheumatoid Arthritis," has been produced for distribution to medical and para-medical groups. With assistance of a National Health Grant, the medical director of the Canadian Arthritis and Rheumatism Society (British Columbia Division) visited centres for the treatment of rheumatic disease in Britain and in other European countries after his attendance at the International Rheumatism Conference, where his paper on "Functional Assessment in Rheumatic Diseases" was given.

Until a community-wide special training and production workshop for disabled persons is established on a proper basis, the Canadian Arthritis and Rheumatism Society is continuing the operation of the CARSCRAFT Instruction Centre, followed by the Bluebird Shop for sales at Christmas time. Because the Canadian Arthritis and Rheumatism Society believes that such a centre is both necessary and possible, a limited number of referrals are being accepted from the G. F. Strong Rehabilitation Centre and the Canadian Paraplegic Association. One paraplegic and one quadriplegic have had instruction, and, together with the thirty-six arthritis patients, they have produced articles which are sold on a competitive market. The workers receive the proceeds. Over \$7,000 worth of articles was sold in 1960.

The Canadian Arthritis and Rheumatism Society board of directors is exploring sub-contracts which could be handled by disabled people. Members of the division and branch boards also share as committee or active members in planning and working for such projects as special housing for disabled people, welfare of the aged, and health planning for the community. In order to assure themselves that the affairs of the Canadian Arthritis and Rheumatism Society were being administered on as efficient and economical basis as possible, an internal investigation was made by the auditors. A research fellow has been added to assist the professor in charge of the Canadian Arthritis and Rheumatism Society research unit at the University of British Columbia.

Everywhere in the Province, the Canadian Arthritis and Rheumatism Society has a policy of utilizing volunteer help to save paid staff and society funds and to give others the opportunity of learning about, and helping in, community projects. In Vancouver alone, approximately 4,000 hours of work were given in the clerical, arts and crafts, and medical departments, and drivers provided over 2,500 patients with transportation.

G. F. STRONG REHABILITATION CENTRE

The G. F. Strong Rehabilitation Centre is a non-profit community organization registered under the *Societies Act* and the *Hospital Act* of British Columbia.

Its primary purpose is to assist in the rehabilitation of disabled children and adults, on an in-patient and out-patient basis, through an integrated programme of medical, psychological, social, educational, and vocational evaluation and services under competent professional supervision. The major portion of such evaluation and services is furnished within the Centre, and all medical and related health services are prescribed by and under the supervision of physicians employed by the Centre who are licensed to practise medicine in British Columbia.

In fulfilling its purpose, the Centre has developed a co-operative working relationship with other community organizations in order to bring the maximum

resources possible to bear on the problems experienced by disabled individuals in the Province.

The admission policy requires that patients must be referred by a physician, and only those patients will be admitted who, in the opinion of the medical director, will benefit from the services offered.

The year 1960 reflected the continuous upward trend of services provided by the Centre. A 16-per-cent increase in in-patient days was recorded, along with a 7-per-cent increase in half-days of service provided patients. In the latter part of the year there was a significant increase in the number of patients waiting for admission.

While the statistics for the year 1961 are not, of course, complete at the time of preparing this report, it is anticipated that the Centre's operation in 1961 will experience a moderate increase in in-patient days and the provision of a similar amount of out-patient services when compared with the previous year.

The following statistics for the complete year of 1960 will be of interest. In 1960, 527 patients were admitted to a programme or seen in consultation, exclusive of 124 patients carried over from the preceding year. Of this number of 527, 426 or 88 per cent were managed on an out-patient basis. Of the out-patient group, 232 were enrolled in a programme of rehabilitation and 194 were seen in consultation but not admitted to a programme.

Thirty-four per cent of the group of 527 patients were 19 years of age or under, 25 per cent were between 20 and 39 years of age, 24 per cent were between 40 and 59 years of age, and 17 per cent were 60 years of age and over.

In addition, 299 children were provided services in the cerebral palsy out-patient clinic, aggregating a total of 9,236 visits. This clinic is operated co-operatively with the Cerebral Palsy Association of Greater Vancouver.

The Centre continues to provide floor space and other facilities for the treatment services of the Canadian Arthritis and Rheumatism Society. Also, meeting facilities are regularly provided for twenty-seven voluntary and professional organizations in the community for business and educational meetings, and the gymnasium is loaned in the evening to handicapped groups for social and recreational activities.

The increased level of services provided by all three organizations in the Centre has intensified the urgency to expand its physical facilities, which have long since passed the point of efficient utilization, and which offer no scope for increasing services.

The Centre's professional training programme provides internships each year for physiotherapists and occupational therapists and field placements for social workers. Orientation courses in rehabilitation are regularly arranged for student social workers and physical education instructors. Many of the training-hours contributed by Centre personnel are devoted to student-nurses, public health nurses, paediatric and other graduate nurses who are introduced, by a practical demonstration of the Centre's programme in operation, to the spectrum of disease and injury treated. The Centre's public relations programme also continued through the provision of numerous tours for interested lay groups comprising both adults and youths.

BRITISH COLUMBIA HEART FOUNDATION

The British Columbia Heart Foundation, a rapidly growing voluntary agency, is an affiliate of the National Heart Foundation of Canada. The Foundation has depended upon public support through its annual campaign for funds for the financing of its activities.

The support of research into the various types of heart disease has been one of the principal objectives of this organization, and, during the last completed fiscal

year, over 60 per cent of the total expenditures was involved in this aspect of the programme. Research is carried on into the problems of the discovering of causes, cures, and methods of preventing heart disease.

In addition to research, the Foundation is concerned with making present knowledge of the prevention and treatment of heart disease more effective. In this regard, a programme of education for the public and for professional groups is supported. Literature, films, and speakers are supplied to interested groups, and newspapers, radio, and television have been used to convey information. A similar growing demand has been experienced for technical journals, research publications, and other professional literature, as well as medical films, in relation to the professional educational programme. The success of the annual symposia for the medical profession involving outstanding speakers in various specialities has been marked.

The Foundation hopes to extend its activities into the field of helping the vast number of individuals who are forced to adjust to living with a form of heart disease.

Finally, the Foundation is able to report a remarkable increase in the number of volunteer workers in the past years, further evidence of the growth of this organization.

THE BRITISH COLUMBIA EPILEPSY SOCIETY

The Society, established to provide assistance to those suffering from epilepsy in the various areas of the Province, during the past two years has concentrated its efforts on the establishment of the Vancouver Epilepsy Centre. The Centre operates a programme of counselling and group psychotherapy for patients referred by physicians and is also launching a programme whereby younger patients may have summer camping facilities made available to them.

Now that the Vancouver Epilepsy Centre is in operation, the Society has turned its attentions to developing an educational programme in the communities. Initially, public meetings will be held in the general area of Vancouver to explain the social problems of the epileptic. A social worker has been engaged for this purpose. This programme, which will include regular newspaper releases, will establish the intensive campaign to create a better social climate for the rehabilitated epileptic.

MULTIPLE SCLEROSIS SOCIETY OF BRITISH COLUMBIA

The Vancouver Chapter of the Multiple Sclerosis Society of British Columbia commenced operations in June, 1961, in order to assist in the provision of needs for multiple sclerosis patients. In other areas of the Province, efforts are presently being undertaken to add chapters to the Provincial body of the Society.

NATIONAL HEALTH GRANTS

Several of the senior officials of the Department of National Health and Welfare of Ottawa met with members of the British Columbia Hospital Insurance Service and the Provincial Health Branch in March to discuss the programmes related to the National Hospital Insurance Plan and the National Health Grants. These visits provide an excellent opportunity to clarify the principles of the National Health Insurance Plan in connection with the services provided to this Province and also to discuss changes in the National Health Grants programme.

An appropriation of \$5,152,167 was made available to British Columbia for 1961/62, being an increase of \$284,625 from that appropriated for 1960/61. This represents a slight increase in the amount allocated to each grant, except the Tuberculosis Control Grant, and a greater amount of funds being available in the revote

of the Hospital Construction Grant. This amount excludes the Public Health Research Grant, which is administered in Ottawa.

Of the \$4,397,510 approved for projects for the year ended March 31, 1961, \$4,079,642 was expended, or 83.8 per cent. The total expended by all Provinces for 1960/61 amounted to 75.5 per cent.

PROFESSIONAL TRAINING GRANT

A new course in nursing unit administration was commenced this year, being sponsored jointly by the Canadian Nurses' Association and the Canadian Hospital Association. This course, consisting of extra- and intra-mural studies, was set up to assist supervisors, head nurses, and assistant head nurses to improve their administrative practices. Nineteen nurses within this Province participated in the course, with the policy being established that only one nurse from a general hospital or institution be accepted for grants support during the first year.

Continued assistance was provided to hospital administrators and medical-record librarians in the respective courses sponsored by the Canadian Hospital Association.

Funds were supplied to physicians, nurses, and other personnel undertaking postgraduate training at universities. Short-term postgraduate training was made available to personnel of general hospitals, the Faculty of Medicine of the University of British Columbia, the G. F. Strong Rehabilitation Centre, the Health Centre for Children, and other voluntary health agencies, together with personnel of the Metropolitan Health Committee of Greater Vancouver and the Provincial Health Branch.

The training of radiotherapy technicians at the British Columbia Cancer Institute continued to receive support from this grant, with equal financial assistance being available from the British Columbia and Yukon Division of the Canadian Cancer Society.

HOSPITAL CONSTRUCTION GRANT

The Hospital Construction Grant for this year was committed to the extent of \$1,785,000.

Construction of community health centres accounts for approximately 5 per cent of the grant; the remainder was for general hospital construction and renovation.

MENTAL HEALTH GRANT

The Mental Health Grant this year was allocated \$791,907, or essentially the same as last year.

Most of the projects have been submitted by the Mental Health Services Branch, and, as in previous years, the greater portion of the grant is assigned to the provision of professional staff and technical equipment for use in the hospitals and clinics operated by the Mental Health Services Branch. A new project provides consultant staff in the headquarters office of the Branch. Consultants in clinical psychology and in medical records and statistics have been authorized.

Assistance to the Department of Psychiatry, University of British Columbia, was again given. The programme of training key professional mental-health personnel was continued. The programme provided bursaries for trainees in administrative psychiatry, clinical psychiatry, clinical psychology, medical social work, and psychiatric nursing. Selected senior personnel of the Mental Health Services Branch are helped to keep up to date in their special fields by Mental Health Grant sponsorship of their attendance at short postgraduate institutes and workshops.

The British Columbia Epilepsy Society was assisted in its clinical service by a Mental Health Grant. The Children's Foundation was again given a grant to assist in the operation of the Esther Irwin Home for Emotionally Disturbed Children.

The Psychiatric Out-patient Department of the Vancouver General Hospital continues to receive support, as did the mental-hygiene programme of the Metropolitan Health Committee of Greater Vancouver. Support for the Mental Hygiene Course for senior school counsellors of the Greater Vancouver area was continued.

The research programmes in mental health conducted by the Departments of Neurological Research and Pharmacology of the University of British Columbia continued along the lines established, the sponsorship being provided by the Mental Health Grant.

TUBERCULOSIS CONTROL GRANT

There was a reduction in the appropriation for this grant, in the amount of \$4,916, due to the changing trends in the treatment programme for tuberculosis.

The Province is responsible for the majority of the tuberculosis services, and the largest portion of the grant was therefore allocated to the Division of Tuberculosis Control.

X-ray equipment was purchased for health units and general hospitals, with assistance also being available for vocational training for students, payment for special out-patient investigations in general hospitals, and to antimicrobial therapy. Projects to assist the tuberculosis-control treatment programmes conducted by the Metropolitan Health Committee of Greater Vancouver and the Princess Margaret Children's Village were continued.

PUBLIC HEALTH RESEARCH GRANT

Two research projects carried out by the Departments of Pharmacology and Obstetrics and Gynaecology, Faculty of Medicine, were completed during the year—namely, drug-induced influences on the activity of enzymes involved in energy utilization and contractile function in cardiac tissue, and adrenal steroids and immune reactions in pregnancy.

Three new studies were undertaken by departments of the Faculty of Medicine, University of British Columbia—two related to heart surgery and the other related to obstetrics. An epidemiological study of arthritis in Haida Indians was commenced by the British Columbia Division, Canadian Arthritis and Rheumatism Society. It is hoped that a comparison of the data obtained with other similar studies may provide clues as to possible etiological factors which are not presently understood.

Three studies were continued by departments of the Faculty of Medicine, University of British Columbia, related to connective tissue metabolism, investigations of arthritis and rheumatism, and control of infection cause by staphlococci in patients.

The Health Centre for Children continued its two projects connected with speech and auditory disorders in children. Continued assistance was provided to the Department of Geology and Geography of the University of British Columbia in relation to its study into trace elements in some limestones and related sediments, and their possible relationship to the distribution of multiple sclerosis.

GENERAL PUBLIC HEALTH GRANT

Continued provision was made for the general public health programme of the local health services, and detailed information regarding the programme has been outlined earlier in this Health Branch Report.

The community and school health services within the Greater Victoria area were consolidated late in 1961, covering a population of approximately 162,000

residents. In order to provide for the increased administrative responsibilities, funds were supplied for the additional staff required.

Partial assistance was continued to the Metropolitan Health Committee of Greater Vancouver through payment toward staff and purchase of equipment for its dental programme.

The study of hospital utilization being conducted through the University of British Columbia Faculty of Medicine continued for its second year. Emphasis was placed on a pediatric hospital care survey, emergency facilities in hospitals, and a pilot study was conducted as to utilization of beds in acute hospitals, using the White Rock District Hospital and Surrey Memorial Hospital as the locations for the study.

A two-month study was carried out on the need for and the requirements of a Faculty of Dentistry at the University of British Columbia. Partial assistance toward this study was obtained from the National Health Grants, with the British Columbia College of Dental Surgeons assuming an equal share of the cost.

The rheumatic fever prophylaxis programme was extended to include all areas of the Province, both rural and urban, with patients accepted up to the age of 18 years to be carried on the programme for five years. The cost of this programme was not as great as anticipated due to the fact that the number of patients reported from the urban areas did not increase as early as expected. Also, two major decreases in the price of penicillin, the medication used, occurred during the year.

The glaucoma clinic which is being operated at St. Joseph's Hospital, Victoria, continued for the second year with assistance made available from the grants.

The British Columbia Division, Canadian Arthritis and Rheumatism Society, opened a new unit at Dawson Creek during the year. To assist in this important service, funds were provided toward the purchase of an automobile for the physiotherapist and also some equipment for use in its treatment programme.

The Salk vaccine immunization programme was continued, with funds being made available from Federal and Provincial sources.

Support was again provided toward personnel of the speech and hearing services of the Health Centre for Children, with assistance also being provided by the British Columbia Foundation for Child Care, Poliomyelitis and Rehabilitation. Due to the resignation of the director of this programme, certain reorganization was carried out during the year in order to extend its speech-therapy services.

The total funds available for the venereal-disease programme are paid to the Province, this project being on a matching basis. The report of the Division of Venereal Disease Control appears in a later section of this Health Branch Report.

In order to enable the Province to obtain technical advisory assistance in the development of public health services, in the setting-up of studies and surveys for the appraisal of the existing public health services and for the assessment of future needs for all Provinces, assistance was provided, on a population basis, to the Canadian Public Health Association to cover the additional staff required for this service.

The placement of medical-student interns in health unit areas and divisions of the Health Branch during the summer months continued to receive favourable response.

LABORATORY SERVICES

Development of the fifth regional laboratory service in this Province began in July, when a pathologist was appointed for the Central and Upper Vancouver Island area. The regional laboratory was situated in Nanaimo, and organization of pathology service and supervision to six laboratories in the northern part of Vancouver Island was commenced. Two pathologists were appointed to fill vacancies in two other regional laboratories, thus approximately thirty smaller hospitals outside the urban centres enjoyed the benefits of pathology services. The hospitals in the Prince

Rupert-Terrace-Kitimat district have not had any direct pathology service and submitted a brief asking for some coverage. A survey was made by the technical supervisor, who submitted a report to the Laboratory Advisory Council for study.

The training-school for medical laboratory technologists at the University of British Columbia Medical School Building and the Vancouver General Hospital, as well as those in other hospitals, was filled to capacity. High-school students are becoming aware of medical technology as a vocation, and all training-schools have many more applicants than they are able to handle. However, the demand for graduate technologists still exceeds the supply, and a solution to this problem has been sought. An Institute of Technology has been proposed for Vancouver, and the pathologists were invited to participate in the planning if they wished to have a training-school for medical laboratory technologists situated in this building. This invitation was accepted, and pathologists, senior technologists, and administrators met on several occasions to draw up preliminary plans for a training-school to accommodate eighty students.

In order to assist non-technical personnel who carry out basic laboratory procedures in the smaller hospitals in the Province, a week's course was given. The pathologists and senior technicians from the Vancouver and New Westminster hospitals and the director of the Provincial Laboratory assisted with this project. Sixteen persons took advantage of this training.

The haematologist, assistant haematologist, and senior technician from the blood bank at the Vancouver General Hospital sponsored a course in advanced blood-bank procedures. They were assisted by the Provincial medical director of the Vancouver depot of the Canadian Red Cross Blood Transfusion Service, and twenty senior technicians from the larger hospitals in the Province attended this week-long programme.

The fourth annual postgraduate course for medical laboratory technologists was held in Kamloops in May. Each year this programme attracts wider attention, and fifty-one technicians attended.

The sub-committees of the Laboratory Advisory Council were active. The technical sub-committee reviewed all applications for equipment for which grants were requested, and the sub-committee on laboratory planning met on several occasions to review plans for laboratories of new hospitals.

RADIOLOGICAL SERVICES

The Radiological Advisory Council, advisers to the Deputy Minister of Health on matters pertaining to all phases in the development of radiological services in the Province, and its various committees had an active year, which was highlighted by the technical training committee's efforts to establish a central two-year training course.

For years the various teaching centres and technical societies have been concerned with the programmes for training X-ray technicians. This has been primarily due to the limited physical facilities that hospitals have been able to provide and the fact that volunteer instructors are unable to devote the time that is necessary for this training. This has resulted in a chronic shortage of technical personnel in the smaller rural hospitals; the Radiological Advisory Council therefore established a committee to assess the problem and bring in recommendations for a programme that could correct this situation.

Their recommendation was a central school, to accommodate double the numbers in training, for teaching the theory, with a special emphasis on laboratory work. The practical work was to continue to be given in approved training hospitals in the Province.

Cost of the physical facilities was a problem until the Department of Education proposed its new Institute of Technology and invited the committee to participate in its plan. With the assistance and full co-operation of the present training institutions and technical and professional groups, a central school for radiographers will become a reality on completion of the building that will house the Institute of Technology some time late in 1963.

Two very successful refresher courses were conducted early in the year, with a total of fifty-three X-ray operators attending from all parts of the Province. Arrangements are now being finalized for two more courses at an elementary and an advanced level for early in 1962.

The equipment committee of the Radiological Advisory Council, at the request of the British Columbia Hospital Insurance Service, reviewed fifty applications for grants toward the purchase of X-ray equipment. Approved for grant assistance was equipment with a total value of \$128,856.

The active study of the radiation problems in the Province was slowed down by the resignation, late this year, of the Director of Occupational Health, who chaired this radiation committee, but the principles so far developed in radiation protection have been applied and are being carried out by the survey staff in their visits to medical, industrial, and research installations.

One hundred and twenty-five radiation surveys and inspections were carried out during the year by the Technical Adviser, fifty-three of these being in the East-West Kootenay region of the Province. Hospitals, doctors' offices, dentists, chiropractors, veterinarians, and industry in the area were covered, with a considerable number showing electrical or mechanical deficiencies of which they were not aware and 95 per cent showing some weakness in their radiation-protection facilities.

The office of the Technical Adviser was called on more and more as the year progressed for assistance and inspections in the acquisition and use of radioisotopes in industry and commerce. This is a rapidly expanding technical field that will require more time spent on it in the future, especially since the Atomic Energy Control Board, the licensing body, is encouraging the Province to assume more inspectional responsibilities.

A much greater understanding of the problems of radiation at the National level and the role of the Provinces in control and protection were detailed in a Federal-Provincial conference on radiation in Ottawa, attended by the Deputy Provincial Health Officer and the Technical Adviser. There is to be more responsibility for management and control of all phases in the use of radioisotopes vested in the Provinces in future.

There has been a radiation inspector added to the staff, whose duties will be to conduct radiation surveys, in a stepped-up programme, of all known sources of ionizing radiation in the Province.

CANCER CONTROL GRANT

The major portion of funds allocated to this grant, which are matched by Provincial funds, was used for the operations of the British Columbia Cancer Foundation. Details of the programme of the Foundation are outlined earlier in this report in the section on voluntary health agencies.

The balance of the funds provided were used for the operation of the cytological diagnostic laboratory, which is located at the British Columbia Cancer Institute. This laboratory is under the direction of the Director, Department of Pathology, Vancouver General Hospital. The British Columbia and Yukon Division of the Canadian Cancer Society provided financial assistance.

From October, 1960, to September, 1961, 87,604 examinations were carried out, as compared with 57,923 for the same period in 1959/60. Requests for examinations to detect carcinoma of the cervix account for a large portion of the increase. This new programme has received a very favourable response from the medical personnel in this Province.

The average number of examinations per month increased from 544 in 1952 to 7,858 in 1961.

MEDICAL REHABILITATION AND CRIPPLED CHILDREN GRANT

This grant is on a matching basis, with \$236,982 being allocated from the National Health Grants funds for 1961/62.

The G. F. Strong Rehabilitation Centre and the Cerebral Palsy Association of British Columbia continued to receive substantial assistance toward their services.

The operation of the Registry for Handicapped Children and Adults and a rehabilitation service for adults, by the Health Branch, continued to expand. The report on these services appears in a later section of this Health Branch Report.

CHILD AND MATERNAL HEALTH GRANT

Equipment was purchased for the extension of classes for expectant parents and for the pre-natal classes conducted by the Metropolitan Health Committee of Greater Vancouver.

The child health programme of the University of British Columbia continued to receive support for its services to the children of students.

Equipment was purchased for the Research Department of the Health Centre for Children in connection with the new research section on genetics and endocrinology.

Partial assistance was continued to the British Columbia Co-ordinating Council for Child Care, with equal assistance being received from the Poliomyelitis and Rehabilitation Foundation of British Columbia.

The study being undertaken by the Department of Obstetrics and Gynaecology, Faculty of Medicine, University of British Columbia, on maternal mortality, maternal morbidity, and certain aspects of foetal wastage in British Columbia continued to receive support, with supervision being provided by the Division of Vital Statistics.

A one-year research project was carried out by the Research Department of the Health Centre for Children, in conjunction with the Vancouver General Hospital, entitled "Studies of leucocyte alkaline phosphatase levels in the neonatal period with special reference to the early detection of intrauterine infection and the stress produced by delivery and respiratory disease." A new continuing research study, entitled "Correction of experimental neonatal atelectasis," is also being conducted by the Research Department of the Health Centre for Children to assist in solving the contentious question regarding the management of foetal atelectasis.

REPORT OF THE DIVISION OF EPIDEMIOLOGY

A. A. LARSEN, DIRECTOR

Although there were no major outbreaks of communicable disease in British Columbia during 1961, the increased incidence of such divergent infections as syphilis, infectious hepatitis, and salmonellosis has been the cause of some concern. There was a gratifying drop in the number of paralytic poliomyelitis infections, with only seven cases reported during the entire year. The decrease in streptococcal infections noted last year has continued, which may indicate that the peak of the secular cycle of this disease has been reached. Although food poisoning by bacteria or their toxins was less common this year, there were nine cases of botulism reported, which resulted in five deaths. In common with the rest of Canada, there was an increased incidence of trichinosis, traced in each instance to the consumption of raw pork products. *Salmonella* infection, with food as a vehicle of infection, continued to increase as well.

In 1961 the total reported communicable-disease morbidity was 931:100,000. This is 9-per cent less than for the year before.

The reporting of the more serious communicable diseases is felt to be fairly accurate since few communities are without some form of local health service, and there are now full-time medical officers of health in the majority of the larger centres, who are also on the staffs of most hospitals in the Province.

Infectious hepatitis occurs in cycles, with peaks up to ten years apart. The annual increase in British Columbia over the past few years indicates that we are again approaching a peak year. During 1961 there were 1,677 cases reported, which is an increase of 82 per cent over 1960. Large amounts of antiserum are being issued in order to prevent the spread of this disease to close contacts. The most serious outbreaks have occurred in residential schools, and two deaths from this disease have been reported among children living in these institutions.

After reaching a low of twelve cases in 1955, early infectious syphilis began to increase again year by year, so that by 1960 there were fifty-six cases reported, and this year sixty-six new cases were discovered. Until this year most of the increase was proven to be due to spread through homosexual practices in the Vancouver area; now, however, infectious syphilis is again being found among males and females alike in many parts of the Province. In order to keep this increase to a minimum, public health personnel are being asked to give high priority to the search for named contacts to this serious disease.

In 1959 and 1960 there were in British Columbia 132 and 165 cases respectively of paralytic poliomyelitis. This year only seven cases were reported, none of which were fatal. This decline was general throughout Canada and the United States. It will take several years to determine how much of this improvement is due to the widespread use of Salk poliomyelitis vaccine.

Although its services were fortunately little needed this year, the Royal Canadian Air Force continued to hold itself ready to evacuate patients with respiratory complications of poliomyelitis who needed medical care obtainable only in Vancouver.

A number of rural health units are participating in a conjoint study being carried out by the Health Branch and the Connaught Medical Laboratories to determine the current immunity status of children throughout the Province who have had three doses of Salk vaccine. About 89 per cent of all school-children have now had the recommended immunization against poliomyelitis, and most of these children have also received at least one reinforcing dose of vaccine.

An unknown but definitely smaller proportion of pre-school children are protected, and a relatively small number of adults have had three doses of vaccine. The Federal Government, as has been its custom for several years, has paid through National Health Grants half the cost of all poliomyelitis vaccine used. This has allowed the Health Branch to make Salk vaccine freely available to all private physicians.



Poliomyelitis immunization for all adults is offered in every health unit.

Streptococcal infections have in recent years been poorly reported due, to a great extent, to difficulties in making a diagnosis and to the mildness of the resulting illness. The 1961 rate of 126.1:100,000 is not an accurate reflection of the number of infections actually occurring, but may be usefully compared with rates reported in previous years. The sharp increase in streptococcal infections noticed in 1959, when the rate was 290.6:100,000, is not being maintained, and it now appears that we are not going to be subjected to a prolonged and increasingly severe outbreak of streptococcal disease.

The outbreak of bacillary dysentery in 1960 which resulted in 1,192 cases, and which included reports from almost every sector of the Province, appears to have subsided somewhat, since only 307 cases were notified this year. Particular efforts were made during the spring of 1961 to acquaint all summer-camp leaders with the seriousness of this type of infection if it established a foothold in their camps, and to advise them of the precautions that should be taken. No major outbreak of dysentery was reported from any camp this year.

Salmonellosis, with food as a vehicle of infection, continued to increase, with 475 cases and four deaths being reported. Because of the ever-expanding nature of this disease and the difficulties being experienced in its control, a sub-committee of the Health Officers' Committee on Communicable Disease Control has been

formed and given the task of developing a research project to study the basic factors responsible for the widespread occurrence of salmonellosis.

Typhoid and paratyphoid fever, caused by a related organism, was reported twenty-eight times this year, which is a slight increase over the two preceding years. There were no epidemics of typhoid such as used to occur with contaminated milk and water; rather, isolated family groups or individuals were infected. A typical outbreak took place in the Fraser Valley, where, as a result of a family with one infected member spending a week-end with friends, the father, mother, sister-in-law, and five children of the host family acquired a paratyphoid B infection.

After three years of complete freedom from diphtheria, one case was recorded in 1961. This case occurred in an adult new Canadian living in a crowded household in Vancouver. Despite the most intensive investigation, the source was never determined nor were any infected contacts discovered.

Every few years two or three cases of botulism occur in British Columbia, usually due to the consumption of improperly prepared food. This year no less than nine such cases were diagnosed, five of whom died. The first case, which was fatal, occurred in the Kootenays as a result of the consumption of a pint of home-canned asparagus. The other eight cases were in native Indians and followed the ingestion of small portions of home-smoked salmon eggs. Four of these eight cases ended in death. The treatment of botulism is complicated by the fact that there are three different strains of botulinus organism, each producing a specific toxin, and an anti-toxin specific against the particular strain involved must be given if the patient is to be helped. At the present time, only two types of antitoxin are available from commercial sources; the third type, which offers protection against the strain of botulinus organism most frequently encountered along the British Columbia coast, is available only as an experimental product through the Department of Bacteriology at the University of British Columbia.

Trichinosis continued to be reported from several centres. In midsummer an outbreak numbering some twenty-two cases took place in the Abbotsford area. In this latter incident, the source of infection was in nearly every case traced directly to the eating of improperly cooked pork products. It has so far not been possible to trace the source of the infected pork. A single case was also reported from Vancouver Island.

There have been no cases of smallpox in British Columbia since 1939; however, every year a number of people who enter the Province by air from foreign countries are reported as having been recent contacts to this disease. Each such contact, when located, is placed under surveillance and his vaccination status checked. This year two people entered British Columbia who had been in contact with an incubating case of smallpox while in flight from an eastern country to Europe. Fortunately both had been recently vaccinated and did not develop the disease. This is an ever-growing problem and one that calls for constant vigilance.

About the middle of the year an outbreak of cholera occurred in Hong Kong. Because it would have been possible, under present conditions of air travel, for a person incubating this disease to travel from Hong Kong to almost any part of this Province, special precautions were taken by the Federal authorities to make certain that everyone arriving by air from Hong Kong had had cholera vaccine. Arrangements were also made to inform everyone leaving for Hong Kong by air of the danger and to see that they were protected by vaccination.

Numerous animals that had bitten humans were submitted to the Federal Animal Pathology Laboratories, located at the University of British Columbia, for examination for rabies this year. None showed any evidence of this disease. Rabies in dogs and wildlife is a very serious hazard to humans in Eastern Canada and in many parts of the United States; we are indeed fortunate that it has not yet appeared here.

SPECIAL PREVENTIVE AND TREATMENT SERVICES, VANCOUVER U 45

The Health Branch has continued its activities in the field of non-communicable disease.

The British Columbia Poison Control Council has ceased to operate the British Columbia poison-control programme, and has become an advisory body only. The Health Branch has therefore undertaken to supervise this programme and is now engaged in reviewing the activities carried on up to now with a view to vitalizing certain aspects of the programme that had been allowed to deteriorate. During 1961 there were 941 instances of accidental poisoning reported, with eighty-seven deaths. Detailed tabulations and an analysis of this programme are being published as a separate report.

This was the first full year of operation of the Province-wide rheumatic fever prophylaxis programme. Just over 800 children who have had rheumatic fever are now receiving free prophylactic penicillin in an effort to reduce the number of recurrences. Children are accepted only at the request of their family physician, and once on the programme are supervised by the public health nurse, who sees each child every three months. The statistical data obtained from this project are also being published in a separate report.

Notifiable Diseases in British Columbia, 1957-61 (Including Indians)

(Rate per 100,000 population.)

Notifiable Disease	1957		1958		1959		1960		1961	
	Number of Cases	Rate	Number of Cases	Rate	Number of Cases	Rate	Number of Cases	Rate	Number of Cases	Rate
Botulism.....	3	0.2	1	0.1	—	—	—	—	9	0.5
Brucellosis.....	2	0.1	2	0.1	6	0.4	3	0.2	2	0.1
Cancer.....	4,150	279.0	4,103	265.7	3,968	252.7	4,347	270.7	4,672	284.9
Diarrhoea of the new-born.....	*	*	*	*	53	3.4	24	1.5	35	2.2
Diphtheria.....	5	0.3	—	—	—	—	—	—	1	0.1
Dysentery, amebic.....	4	0.3	6	0.4	1	0.1	2	0.1	2	0.1
Bacillary.....	132	8.9	936	60.6	336	21.4	1,192	74.2	307	18.7
Unspecified.....	*	*	*	*	62	3.9	319	19.8	499	30.4
Food poisoning—										
Staphylococcal intoxication.....	*	*	*	*	8	0.5	238	14.9	3	0.2
Salmonella infections.....	259	17.4	292	18.9	355	22.6	434	27.0	475	29.0
Unspecified.....	*	*	*	*	3	0.2	52	3.2	46	2.8
Hepatitis, infectious.....	393	26.4	558	36.2	907	57.7	924	57.5	1,677	102.3
Malaria.....	1	0.1	2	0.1	—	—	3	0.2	1	0.1
Meningitis, viral or aseptic—										
Due to polio virus.....	*	*	*	*	3	0.2	137	8.5	2	0.1
Due to coxsackie virus.....	*	*	*	*	23	1.5	36	2.3	10	0.6
Due to ECHO virus.....	*	*	*	*	—	—	1	0.1	—	—
Other and unspecified.....	*	*	*	*	56	3.6	83	5.2	87	5.3
Meningococcal infections.....	35	2.4	25	1.6	31	2.0	16	1.0	15	0.9
Ornithosis.....	13	0.9	—	—	1	0.1	—	—	—	—
Pemphigus neonatorum.....	*	*	*	*	3	0.2	5	0.3	12	0.7
Pertussis.....	941	63.3	1,427	92.4	680	43.3	962	59.9	212	12.9
Poliomyelitis, paralytic.....	25	1.7	12	0.8	132	8.4	165	10.3	7	0.4
Rabies in man.....	—	—	1	0.1	—	—	—	—	—	—
Scarlet fever.....	325	21.9	1,098	71.1	3,839	244.5	1,576	98.1	1,081	65.9
Streptococcal sore throat.....	115	7.7	172	11.1	724	46.1	633	39.4	987	60.2
Tetanus.....	2	0.1	1	0.1	3	0.2	2	0.1	3	0.2
Trichinosis.....	—	—	2	0.1	—	—	7	0.4	23	1.4
Tuberculosis.....	1,338	90.0	1,128	73.1	1,200	76.4	1,122	69.9	902	55.0
Typhoid fever.....	6	0.4	8	0.5	4	0.3	5	0.3	7	0.4
Paratyphoid fever.....	10	0.7	22	1.4	12	0.8	20	1.2	21	1.3
Generalized vaccinia.....	—	—	—	—	—	—	—	—	2	0.1
Venereal disease—										
Gonorrhoea.....	3,806	256.0	3,426	221.9	3,353	213.5	3,611	224.9	3,666	223.6
Syphilis (includes non-gonorrhoeal urethritis, venereal).....	748	50.3	582	37.7	545	34.7	580	36.1	502	30.6
Other (chancroid).....	2	0.1	3	0.2	6	0.4	2	0.1	—	—
Totals.....	12,315	828.2	13,807	894.2	16,314	1,039.1	16,501	1,027.4	15,268	931.0

* Not notifiable prior to 1959.

REPORT OF DIVISION OF PUBLIC HEALTH NURSING

MONICA M. FRITH, DIRECTOR

The Division of Public Health Nursing functions as part of the Bureau of Local Health Services. It performs a dual role through its administrative and consultative functions. The Division is responsible administratively for maintaining a high standard of public health nursing performance on a local level through the recruitment, placement, and training of public health nurses, and through the provision of technical information and consultative help and guidance it assists them to give efficient service. Unless otherwise indicated, this report concerns the services provided by public health nurses under the jurisdiction of the Provincial Health Branch and does not include the services provided by Greater Vancouver, Victoria, Esquimalt, Oak Bay, and New Westminster.

During 1961 the public health nursing service continued to make progress, partly because it was possible to add twenty public health nurses to the field staff. There are now 238 full-time and eleven part-time public health nurses employed in Local Health Services. The additions were casual appointments made under the provision of National Health Grants or from the special fund for home care. In addition, there are a Director, three consultants, and two occupational health nurses in the Division, making a total of 245 full-time public health nurses.

The Division works closely with other health agencies, such as the Greater Vancouver Metropolitan Health Committee, the Greater Victoria Metropolitan Board of Health, Indian Health Services, Department of National Health and Welfare, as well as voluntary agencies such as the Victorian Order of Nurses and the Red Cross nursing service. Thus it is possible to avoid overlapping and duplication and co-ordinate the use of health facilities and resources.

PUBLIC HEALTH NURSING ADMINISTRATION AND CONSULTATION

The Public Health Nursing Division regularly assesses the programmes conducted by the public health nurses and endeavours to allocate public health nursing staff to fit the need for service in each health unit and nursing district. This is done by a number of annual studies as well as through field visits by the public health nursing consultants.

During 1961 the following health units increased their public health nursing staff to assist with general health programmes: North Fraser Health Unit at Mission, Upper Fraser Valley Health Unit at Chilliwack, Upper Island Health Unit at Courtenay and Powell River, Central Vancouver Island Health Unit at Nanaimo, South Okanagan Health Unit at Summerland, Simon Fraser Health Unit at Coquitlam, Cariboo Health Unit at Prince George, and four in the Boundary Health Unit at North Surrey, Cloverdale, and Langley.

In order to provide home care, additional nurses were also placed in health units as follows: Cariboo Health Unit, one nurse at Vanderhoof and two at Prince George; Saanich and South Vancouver Health Unit, two in the Saanich Municipality; Skeena Health Unit, one at Prince Rupert; while part-time nurses were added at Nelson, Revelstoke, Grand Forks, and Smithers. By the addition of staff it has been possible to maintain an over-all ratio of one public health nurse for around 5,000 population for general health programmes and 1:3,800 when home care is added.

During the year it was possible to extend public health nursing service to a number of Indian reserves, under an arrangement whereby the Department of National Health and Welfare assumes the cost of such services. This included Stoney Creek in the Cariboo Health Unit, served by the Vanderhoof public health nurse,

while reserves on the Hart Highway, McLeod Lake, McLeod River, and Shelley are now served by public health nurses from Prince George. The large Kitimat Reserve is now being served by one of the public health nurses from Kitimat Public Health Service, while the Metlakatla Reserve is covered from the Skeena Health Unit at Prince Rupert. The latter arrangement was completed through an exchange of nursing service, and an Indian Health Service nurse now provides public health nursing service to all residents on the Queen Charlotte Islands. The public health nurses now serve sixty-five Indian reserves, while the Greater Vancouver Metropolitan Health Committee serves two additional reserves. In all, a total of around 7,000 Indians, or 18 per cent of the Indian population, in British Columbia now receive the same service as is provided residents in local health units. This forward step in integration of health services is being continued, and it is anticipated that additional service to reserves will be added as the situation warrants.

To provide for continuity and expansion of service, a considerable number of changes were required to make available public health nurses for the various positions in local health service. Eighty-four appointments were made, while there were twenty-eight transfers. An additional seven nurses returned from educational leave of absence and were placed in areas requiring public health nursing staff. There were forty-six resignations. The Health Branch continues to maintain a high proportion of qualified public health nursing staff, with 89.1 per cent of the full-time staff having either a diploma or university degree in public health nursing. This is slightly higher than in 1960, when 88.7 per cent were similarly qualified. The high percentage of qualified nurses makes possible a high standard of service. Eight public health nursing trainees are on educational leave of absence completing diploma programmes in public health nursing.

In August the Public Health Nursing Division added another consultant to the Division, with headquarters in Victoria. With the third public health nursing consultant it was possible to reallocate duties within the Division, so that the Province remains divided into three regions with each consultant serving a number of health units and nursing districts which are visited on a routine basis at least twice a year. The Director is no longer responsible for a region and is able to devote attention entirely to administrative responsibilities. Public health nursing consultants continue to play an important role in developing public health nursing programmes as studies are carried out regularly to evaluate the services being provided by public health nurses on a local level. Among these studies is a case-load analysis of each public health nursing district to determine the work load and the progress being made. A time study is also done each year by each public health nurse to analyse time spent on each specific activity. A review of these studies in relation with other pertinent information makes possible the necessary adjustments in the use of personnel, the size of the nursing districts, and time allocated to professional services. For example, there has been a gradual decrease in time spent on non-professional activities, such as clerical, recording, preparation of supplies, etc., as studies such as these indicate the need for emphasis on essential activities which can be done only by a public health nurse. Another analysis of activities in the school health programme, with particular reference to teacher-nurse conferences, has shown an improvement in service to school-children. These inquiries, coupled with monthly reports received from each public health nurse and information obtained on field visits of public health nursing consultants attached to the Division, serve to promote evaluation of field services and provide supervisory guidance of the nursing services.

Certain other activities are carried out by the public health nursing consultants to encourage efficiency in procedure and service by nursing staff, including provision of literature, technical information, and equipment. The policy manual has con-

tinued to be a useful tool for the public health staff, and the public health nursing consultants have contributed many new sections and revised others. The Public Health Nursing Records Committee has met less frequently this year, but the revised records manual was completed and distributed. The Home Nursing Care Procedure Committee was re-established and is planning additions and revisions to the manual. One of the consultants has been an active participant in the School Health Committee, which has also met several times and is now redrafting a section for the policy manual on this subject. The consultant in Vancouver continues to act as a public health nursing adviser to the Bureau of Special Preventive and Treatment Services and maintains liaison with voluntary and official agencies in Vancouver. She has been particularly active this year in committees on speech and hearing. As the additional consultant in Victoria has special preparation in rehabilitation, she has been active in providing assistance to field personnel in the nursing-care aspects of rehabilitation. A successful two-day institute was conducted on a pilot basis for the public health nurses in the Selkirk Health Unit, and plans are being made to repeat the institute in other health units.

TRAINING PROGRAMMES

As the work of the public health nurse is complex, requiring a highly technical background of knowledge and skills, it is necessary to have well-trained public health nurses to provide field service. For this reason, a certificate or degree in public health nursing from a recognized university in addition to registration as a nurse is the requirement for a staff position. Although the Health Branch continues to maintain a high proportion of qualified public health nurses, with 89.1 per cent of the full-time staff having the required training, it has been necessary to fill a certain number of positions with registered nurses who do not have the required university course. These nurses are classified as public health nursing trainees, and this year twenty were placed in carefully selected districts. Public health nursing trainees remain on staff about a year and may apply for a bursary, provided under National Health Grants, toward completion of the academic requirement for a permanent position as a public health nurse. The bursary recipient agrees to return to the public health nursing staff for a two-year period, and after training is usually placed in a centre to which it is difficult to recruit public health nursing staff. Seven public health nurses returned this year following completion of the diploma course in public health nursing at the University of British Columbia, while seven are on educational leave of absence enrolled in the same programme. As public health nursing supervisors require additional skills and techniques, an effort is being made to give special training to this group of employees. During the year two public health nursing supervisors returned from the University of Toronto, where they completed the diploma course in supervision and administration in public health nursing to take over the public health nursing supervision of two large health units. Two senior public health nurses are at McGill University this year and will be required for similar postings on their return. Plans are being developed for a one-week refresher course to be conducted in the coming year for nurses in supervisory positions, so that all nurses in senior positions will have some assistance with their particular problems.

Local health units provide field experience for nursing students from the University of British Columbia, and public health nurses act as field guides in planning and supervising this experience. During the year fifty-six students were placed in selected health units for periods ranging from two weeks to one month. Under-graduate nurses in all schools of nursing in British Columbia now observe for periods of time ranging from four to five days in local health services. One hundred and

sixty-five students had field observation in Provincial health units adjacent to their schools of nursing, which included Boundary and Simon Fraser Health Units for the Royal Columbian School of Nursing, the South Central Health Unit for the Royal Inland Hospital, and the Saanich and South Vancouver Island Health Unit for the two schools of nursing in Victoria—St. Joseph's and the Royal Jubilee. The plan established last year whereby student-nurses from St. Paul's Hospital School of Nursing had field experience following their annual vacation in the health units of their residence has proved so successful that a number of students from the Vancouver General Hospital School of Nursing are now having a similar observation period using the same plan. As a result, many of the health units which had not participated in this type of educational programme have been able to make a valuable contribution to nursing education and training.

Assistance was given the Provincial Civil Defence Co-ordinator in planning and conducting courses of training in emergency health services by assisting with the selection of candidates for the special courses for nurses given at the Civil Defence College at Arnprior, Ont. Seven public health nursing supervisors had the opportunity of taking the course.

The public health nurse in the Occupational Health Service continued to provide a valuable service for the employees in the Victoria area. An experienced public health nurse was selected to initiate a similar service for the employees in the Vancouver area, and this service is progressing satisfactorily.

LOCAL PUBLIC HEALTH NURSING SERVICE

The public health nursing programme is developed on a local level to meet the health needs of the community following an accepted standard of service. In addition to the 242 full-time public health nurses on the staff in the Provincial Health Branch at the end of the year, other official agencies employed a total of 218 public health nurses to provide service to other parts of the Province. This included the Metropolitan Health Committee serving the Greater Vancouver area, which has 169 public health nurses, the City of New Westminster, which is part of the Simon Fraser Health Unit and has eight public health nurses, the City of Victoria and Oak Bay and Esquimalt Municipalities, which form part of the Greater Victoria Metropolitan Board of Health and which have fifteen public health nurses, and the Indian Health Service, which has twenty-six positions for public health nurses in various centres throughout the Province. In addition to the above, the Victorian Order of Nurses supplements the public health nursing programme in the larger cities and some rural municipalities through the provision of home nursing care and other selective services. The Victorian Order of Nurses employs a total of sixty full-time nurses. At the end of the year a total of 520 full-time public health nurses was employed in public health nursing activities in this Province. These nurses work closely with occupational health nurses employed privately in certain industries and with nurses in hospitals to provide continuity of public health nursing service in local communities.

The public health nursing programme throughout the Province is designed as a generalized service to meet the health needs of all members of the family. Although minor differences exist on a local level in the conduct of the various health programmes, every effort is made to have all public health organizations follow policies which are worked out on a Provincial basis so that the residents of the Province have an equal opportunity to benefit from the best type of care.

Certain health programmes are directed toward specific age-groups where special health needs are known to exist. The public health nursing service includes



Bathing the baby is demonstrated at classes for expectant parents. More than one-third of all new mothers in 1961 attended these courses.

health instruction for expectant parents through individual and group classes. Every community which has a sufficient number of expectant mothers has a group class, and attendance has been increasing each year, with 1961 having doubled attendance in three years. It is estimated that these classes were attended by 35 per cent of all new mothers, or approximately 15 per cent of mothers in relation to the total number of infants born. All official agencies conduct this programme, and in addition the Victorian Order of Nurses participates in the Greater Vancouver and Victoria areas. Public health nurses visit newborn infants and give anticipatory guidance and instructions to parents in home visits and at child health conferences to assist them to recognize the physical and emotional needs of their children. Assistance is given parents in providing resources for the correction of defects and medical care as indicated. Specific services, such as immunization against preventable diseases, including smallpox, diphtheria, poliomyelitis, typhoid fever, tetanus, and whooping-cough, are provided at child health conferences, schools, and special clinics. Regular child health conferences were held in 902 centres, and 64,795 infant and 68,842 pre-school visits were made by parents to these centres this year. It is estimated that in the Provincial health unit areas almost every infant receives public health nursing service through attendance at a child health conference or in home visits. Mothers of pre-school children are encouraged to attend child health conferences so that the child may be in good health on entering school. A continuous health supervisory programme is carried on in schools to assist in the promotion of health among the school-age children. More children under 18 years of age have been included this year in the rheumatic fever prophylaxis programme, which includes regular home supervision by the public health nurse. Service to the school-children has taken about 34 per cent of the time of the public health nurses, and the study of

certain aspects of the school health service indicated that a total of 78.4 per cent of all classrooms had completed follow-up on the individual health problems of the some 193,000 school-children. Follow-up of accidental poisonings is made by the public health nurses following receipt of reports from the Poison Control Centres. An increased emphasis is being placed on mental-health problems, and a number of changes have been made in the mental-health travelling clinics, which are now providing more complete consultative assistance to health units in the follow-up of referred patients. Public health nurses are active in the referral and follow-up of selected patients to these clinics.

The number of home and office visits by the public health nurse to tuberculosis patients and contacts was higher than last year, amounting to 12,685, while the number of streptomycin injections was down to 9,374 from a slightly higher figure last year. This has been due largely to a gradual change in treatment of the tuberculosis patient. Venereal-disease treatments, examinations, and follow-up continued to be fairly low, amounting to 1,919, which is less than last year. Prophylactic injections for communicable disease were up 1,600 injections over last year, showing a total of 5,133. Public health nurses made a total of 105,738 home visits, which shows an increase of 16,539 over last year. The immunization programme continued to take a considerable amount of time as it is not limited to any age-group. This year a total of 290,821 individual doses was given for protection against preventable disease, while in addition 30,932 tuberculin tests and 1,341 other tests were administered. (See summary at end of this section.)

During the year the special organized home nursing programme continued to expand, and ten new areas took advantage of the home nursing service as the first step in the larger programme of home care and rehabilitation. The new areas added this year include Prince George, Vanderhoof, Smithers, Quesnel, and Williams Lake in the Cariboo Health Unit; Grand Forks and Castlegar in the West Kootenay Health Unit; Terrace in the Skeena Health Unit; Salmo in the West Kootenay Health Unit; and Revelstoke in the North Okanagan. This brought to thirty-four the number of communities which provide home care as a basic public health service. Local communities arrange for the home nursing and rehabilitation service to be provided as part of health unit service by agreeing to pay an additional assessment of 10 cents *per capita*. Patients may then receive needed care at home, which permits them to be discharged earlier from hospital. It is estimated that as more facilities become available in each community, more persons can be cared for at home and more community facilities can be organized so that in some instances expensive institutional care may be avoided. During the year, public health nurses made 21,128 visits for nursing care in the home as part of the special organized programme. This is an increase of around 25 per cent in visits over last year. In addition, public health nurses made 5,133 nursing-care visits in areas not on the special organized programme. As there has been an increased emphasis on the need for rehabilitation procedures to be carried out, not only on a community level, but in the actual nursing care of the patient, the public health nursing consultant with special training in this work has been able to give special assistance to field staff on the rehabilitation aspects of home care. It is hoped that as public health nursing staff develops new skills in this field, more patients will be referred for care and receive special help in the home.

The 1960 statistical analysis of the nursing-care programme was completed during the year and the results published in Special Report No. 58, "Nursing Care Programme Statistics, British Columbia, 1960," which, together with the 1959 report, has given valuable data on the trend and importance of this programme. In 1960 approximately 35 per cent of the population in Provincial health units in

twenty-two areas had home care service available. There was a one-third increase in the numbers of patients receiving care over 1959, as indicated by a total of 963 patients. As in the previous study, the majority of the patients (73.4 per cent) were in the age-group of 60 years and over and received 77.5 per cent or most of the home visits. The report shows that the average time of a public health nurse's visit was thirty-two minutes, which included ten minutes in travel and twenty-two minutes in the care of the patient. The cost per visit was \$1.86, or approximately \$2 when certain administrative charges are added. The types of service given by the public health nurse fitted into three main categories, the largest of which was injections, which accounted for 60 per cent of the visits, the remainder being 23.2 per cent for general care and health supervision and 16.6 per cent for other treatments, such as rehabilitation exercises, irrigations, dressings, etc. Rehabilitation is considered an essential part of all care, and every effort is made to have each patient become as self-sufficient as possible. About one-third of the patients are referred on discharge from various types of institutions. Institutional days are not always saved, but it was estimated that 13,727 days were saved in 1960, of which approximately 10 per cent were acute hospital, 60 per cent chronic hospital, while the remaining 30 per cent were savings of care in other types of institutions. Actual savings in cost to the family or subsidizing agency may be estimated by calculating the number of days which might have been spent in an institution. Of greater importance is the fact that many patients have been able to live complete and healthy lives as the result of professional nursing care available at home.

During the latter part of 1961 a physiotherapist was employed on a part-time trial basis to demonstrate the values of consultative assistance to the public health nurses in the Saanich and South Vancouver Island Health Unit in assessing the physiotherapy procedures applicable to selected patients. This added service proved successful, and plans are now under way to employ a full-time physiotherapist so that the entire area contained in the Greater Victoria metropolitan services will benefit from this type of guidance in rehabilitation nursing procedures. In this area also, close liaison has been established this year with the "activation" ward of Gorge Road Hospital in Victoria, so that patients are able to receive required nursing care and health supervision on return home. It is hoped that this pattern will continue as more "activation" centres are established elsewhere in the Province.

The need for more organized homemaker services is being stressed to encourage the development of better home care services in the community. However, this phase of the programme has been going forward slowly, with the South Okanagan Health Unit continuing with the two excellent homemaker services at Kelowna and Penticton, while the Red Cross homemaker service proves its usefulness at Chilliwack in the Upper Fraser Valley Health Unit. An encouraging development has been the establishment of a course of training for homemakers under the Canadian vocational training scheme at Nanaimo, which started this year. Through that medium should develop a nucleus of trained homemakers available to assist with further organized community homemaker services.

The Health Branch has continued to work closely with the Victorian Order of Nurses, particularly in connection with the development of rehabilitation services, through the provision of funds for additional employees for this programme; for example, a physiotherapist for the Greater Vancouver area, two male nurses, etc. It is anticipated, therefore, that the rehabilitation nursing programme will develop on a similar pattern throughout the Province. Plans for the future include extension of the home care service into more of the larger centres and organized areas of the Province, and it is anticipated that this will be accomplished as the value of the programme is demonstrated.

*Statistical Summary Showing Volume of Public Health Nursing
Services during 1961¹*

School service—	
Assistance with doctor's examinations	23,342
Service by nurse	131,852
Teacher-nurse conferences (classroom)	5,676
Consultations—staff members	70,121
Meetings	720
Home and office visits	36,367
Meetings with parents	4,325
Phone consultations	32,900
Infant—	
Child health conference attendance	64,795
Infant home and office visits	34,665
New infants, home and office	19,363
Total infants, home and office	54,028
Phone consultations	12,771
Pre-school—	
Child health conference attendance	68,842
Home and office visits	36,831
Phone consultations	13,063
Prenatal—	
Home and office visits	3,184
Expectant parents' classes—attendance	11,223
Expectant parents' classes—exercises	7,815
Adult—	
Services rendered at home and office	104,158
Phone consultations	45,269
Tuberculosis—	
Home and office case and other	12,685
Streptomycin injections	9,374
Venereal disease—Examination, treatment, and other	1,919
Nursing care—	
Injections and other, general programme	5,710
Special programme	21,128
Prophylactic injections for communicable disease	5,133
Total homes visited	105,758
Immunizations—	
Series completed for protection against—	
Pertussis	49,760
Diphtheria	79,835
Tetanus	48,589
Poliomyelitis	101,529
Typhoid	1,282
Smallpox	66,175
Total number of individual doses	290,821
Tuberculin tests	30,932
Other tests	1,341
Other immunizations	1,549

¹ This summary concerns the services provided by public health nurses under the jurisdiction of the Provincial Health Branch and does not include services provided by Greater Vancouver, Victoria, Esquimalt, Oak Bay, and New Westminster.

REPORT OF THE DIVISION OF PUBLIC HEALTH ENGINEERING

R. BOWERING, DIRECTOR

The Division of Public Health Engineering is concerned with the specialized field in public health wherein engineering principles and techniques are employed in the practice of public health. The major fields of work of the Division will be discussed under separate headings.

WATER-SUPPLIES

One of the most important fields of responsibility of the Division of Public Health Engineering is that related to public water-supplies. In accordance with the requirements of the *Health Act*, plans of new waterworks systems and alterations and extensions to existing systems must be submitted to the Health Branch for approval. Engineers of the Division carefully review these plans and recommend approval or non-approval to the Deputy Minister. In some cases, changes are suggested, and usually these are made after a discussion with the consulting engineer who prepared the plans. During the year there were fifty-one approvals or provisional approvals given in connection with waterworks construction.

Many of the waterworks systems are visited from time to time for the purpose of checking on sanitary hazards and for assisting generally in the improvement of waterworks systems. It has been felt that the number of visits to water systems by engineers has not been sufficient, and it is proposed that the frequency be increased during 1962.

For the most part, the water-supply sources are good in British Columbia and expensive treatment is not usually required. Most of the large water systems in the Province obtain water from relatively uninhabited mountain watersheds. Water from this type of terrain usually does not require sedimentation or filtration treatment. Chlorination is the recommended treatment for water necessary to create an accepted bacteriological standard. Over 80 per cent of the population of the Province uses water protected by chlorination.

It is felt that with the increasing industrialization of the Province that increased water treatment may be necessary for those communities obtaining water from major rivers. The reason for this is that although an industry discharging a liquid waste into the water or a municipality discharging sewage into the water may be able to treat the effluent to a high degree, it is not possible to restore the water to its former absolute purity. This means that within possibly the next decade a number of the cities now obtaining water from large rivers may have to build filtration plants.

By the end of the year 1961 there were eight communities fluoridating the water, using either sodium silico fluoride or sodium fluoride. Plans for fluoridation equipment are studied and approved in the same way that plans for any other alteration of a water system are studied. Regular reports are received with respect to the amount of fluoride added to the water, the amount of water used, and reports on testing of the water for fluoride. Fluoridation plants are visited periodically for the purpose of checking their operations.

The local health units are responsible for the regular routine sampling of the water from public water-supply systems. The Division of Laboratories performs the examination of the samples. Copies of all reports are sent to the Division of Public Health Engineering, which offers consultative advice and interpretation of the results of examinations of water. During the year the Division received a number of inquiries concerning private water-supplies. These inquiries are generally referred to local health units, often with a comment. A considerable amount of

advice is given by mail and occasionally by visit. When visiting the health units, public health engineers consult with the local health officials on various water-supply problems.

The Comptroller of Water Rights forwards to the Division information concerning applications for new water licences for domestic purposes. Inspections of these sources are made so that a recommendation can be sent to the Comptroller as to the sanitary quality of the water.

There were no water-borne epidemics resulting from the use of public water-supplies during the year. This has been the case for a number of years now. This record can only be maintained by constant vigilance on the part of local waterworks officials and employees and of the local health authorities and the engineers of this Division.

A course was held for waterworks operators again in 1961 under the jurisdiction of the University of British Columbia, the American Water Works Association, and the Federal and Provincial health departments. Engineers of the Division took a prominent part in organizing the course and in preparing some of the lectures.

SEWAGE-DISPOSAL

The problem of sewerage and sewage-disposal is one that comes within the purview of the Division of Public Health Engineering. The percentage of people served by common sewerage systems is much smaller than the percentage served by public water-supply systems. It is estimated that about 55 per cent of the total population of the Province is served by common sewers. Most of the remainder rely upon septic tanks for sewage-disposal. Because of the fact that the number of people served by common sewers is much less than the number of people served by water-supply systems, and because of the fact that the use of the septic-tank method of sewage-disposal is not really satisfactory for the areas which are now becoming urban in character, an increase in sewerage-works can be anticipated. This is actually happening in British Columbia, there being nineteen provisional approvals and eighty-two approvals given during the year in connection with sewerage-works. This was about double the number of approvals issued in connection with water-supply work. It is also the highest number ever issued in one year.

In reviewing plans for approval, careful study is made of profiles, plans, and plans of appurtenances in order to see that a good standard of sewerage-work is constructed. Also, the study includes plans of treatment-works, if any, and studies of the receiving body of water in order to determine the degree of treatment required.

There has been a trend to establish sewerage systems in some of the smaller cities and villages. Sewerage by-laws were passed in Comox, Burns Lake, and Lumby. Also, a sewerage by-law was passed in North Kamloops and Nelson. Sewerage by-laws were defeated in Alberni, Castlegar, and the District of North Vancouver.

The year saw the first modern sewage-treatment plant built by the Greater Vancouver Sewerage and Drainage District for the District of West Vancouver. The opening of this plant started a new era in sewage-disposal in Greater Vancouver. In addition, the tunnel for the Greater Vancouver Sewerage and Drainage District is under construction, and a start has also been made on the construction of the Iona Island sewage-treatment plant. Among other highlights in 1961 was the continued construction of the sewerage system of Saanich, and continued construction of the sewerage systems in Burnaby, Chilliwack, and Nelson, to name a few places.

There are now thirteen installations of waste-stabilization ponds in British Columbia treating municipal sewage. They serve a combined population of about

35,000 people and provide a reasonably good sewage-treatment service at a relatively low cost. It is felt this type of sewage treatment will be adopted by other small communities in the coming years, although it will only partly replace standard sewage-treatment plants.

There are now several of the newer-type extended aeration packaged sewage-treatment plants for treating the sewage of relatively small populations. Practically all of those installed in British Columbia in the past two or three years have been quite successful.

It is very probable that the percentage of the population of British Columbia served by sewers will increase greatly during the 1960's as the urbanization of land surrounding the larger cities will create demands for sewerage services as population densities increase.

STREAM POLLUTION

The Division of Public Health Engineering considers the general problem of stream-pollution control to be one of the major items to be dealt with. In that part of the Province coming under the Pollution-control Board, the policy and decisions are made by the Board. However, there are large areas of the Province not under the jurisdiction of the Board. In these areas the Health Branch itself has a more direct interest. Stream pollution is caused by the discharge of sewage and industrial wastes into surface waters. These discharges may have quite diverse effects on the receiving body of water because of the extreme variations in the type and strength of the waste and the quality and volume of the receiving water. The net result of such discharges, however, may make the water less desirable and less useful.

Impairment of the quality of water in large rivers and smaller streams is caused not only by direct sewage and industrial-waste discharges. Water quality is impaired to some extent by almost any human activity on a watershed. The result is that pollution-control can never be completely effective. It is not economically feasible to treat sewage and industrial wastes in most cases to the state where the final effluent is of as good quality as the water into which it is discharged. It is also not feasible to treat the waste from farm drainage. However, particularly in large rivers, natural forces bring about a good deal of natural purification. The aim in stream-pollution control should be to so control industrial and sewage effluents that their total effect on the quality of the water in the river will not seriously harm beneficial down-stream uses, related to water-supply, agriculture, recreation, fish-life, etc.

In addition to the Health Branch, other departments of Government have had legislation for the control of certain types of pollution. The Health Branch and the Pollution-control Board work in co-operation with other Government agencies to control pollution wherever possible.

THE POLLUTION-CONTROL BOARD

The Pollution-control Board, which was set up late in 1956 to control the discharge of waste into the Lower Fraser Basin, had its area extended considerably on April 1, 1961, by the inclusion of all of the Columbia drainage in British Columbia into the area controlled by the Pollution-control Board. This area includes all those parts of the Province whose natural drainage eventually reaches sea water via the Columbia River. It includes the Kootenay, main Columbia, Okanagan, and Similkameen Valley.

The Pollution-control Board consists of seven members, the Chairman being the Deputy Minister of Municipal Affairs. The administration of the *Pollution-control Act* is the responsibility of the Minister of Municipal Affairs. However,

under the Act, responsibility for technical advice is laid upon the Health Branch. The Director of Public Health Engineering acts as secretary and executive engineer of the Pollution-control Board and is technical adviser to the Board.

During the year eight permits for discharge of wastes were issued. Five of these were for discharge into the Fraser, two for discharge into the Columbia, and one for discharge into salt water. In each case some form of treatment was required. One of the first decisions made by the Board after taking over the Columbia was the decision to permit no new outfalls into the Columbia unless treatment was provided.

A very good working arrangement exists between the Pollution-control Board and the health units in the Columbia Basin. A number of sampling-stations was established at very carefully chosen points, where samples are regularly picked up by sanitary inspectors and forwarded to the Division of Laboratories. Thus during the year a considerable volume of data has been built up regarding the quality of the water in the Kootenay and Columbia Rivers. A complete year of this more intensive sampling programme will not be finished until the summer of 1962. In the meantime the stations already established for the Fraser have been used to provide samples throughout the year. The result of this work has been a large increase in the amount of work performed by the Division of Laboratories as well as the Division of Public Health Engineering.

There is much greater awareness on the part of the public as to the necessity of pollution-control. One of the major items dealt with in the Resources for Tomorrow Conference in Montreal was pollution-control. With a continued policy of issuing permits for discharge of sewage and industrial-waste effluents, so that all new outfalls are readily controlled, and with a programme of gradually increasing the degree of treatment at existing outfalls, there is a good opportunity that British Columbia may never reach a serious pollution problem.

SHELL-FISH SANITATION

The Division of Public Health Engineering has the responsibility of enforcing the shell-fish regulations. Inspection of shucking plants and handling procedures now comes under the jurisdiction of local health units. There are six local health units that have one or more shucking plants within their areas. Certificates of compliance are issued to owners of shucking plants which comply with the regulations.

Studies are also made of the shellfish-growing areas, as all applications to lease areas for shellfish-culture purposes have to be approved by the Health Branch. Until 1961 practically all the oysters produced commercially in British Columbia were grown on leased ground. However, because of an unusually successful spatting of oysters in the Strait of Georgia region in 1958, large numbers of Pacific oysters of commercial size and in commercial quantities are present in many areas in the Strait of Georgia. This means that for the first time the commercial oyster industry is attracted to the harvesting of oysters from areas not controlled by lease.

This has created a number of problems. While most of the wild land has clean water and is suitable for the production of good oysters, the high degree of control that was possible when all oysters were grown on leases is now much more difficult. Also, there is a question as to whether or not the regulations should be altered to fit the new conditions. It is proposed that early in 1962 a complete restudy be made of the shell-fish sanitation regulations and procedures to see whether or not changes are required.

As in the past, there is complete co-operation between the Provincial Health Branch and the Department of National Health and Welfare and the Provincial and Federal Fisheries Departments with respect to the shell-fish industry.

A problem that has been mentioned in earlier reports relates to paralytic shell-fish poisoning. During the year, in co-operation with the Fisheries and Health Departments of the Federal Government and the Provincial Fisheries authorities, a continued sampling was carried on. An increase in the amount paid to samplers in distant parts of the Province resulted in a much better sampling in 1961 than 1960. The results of this sampling showed that the toxicity that existed in butter clams in the Gulf of Georgia area since 1957 has declined to such an extent that there is now no health hazard. For this reason, late in the year 1961 all the areas that were closed for the taking of shell-fish for commercial purposes were reopened. This means that there are now no areas closed for the taking of clams because of shell-fish toxicity.

Unfortunately it is still not possible to predict when shell-fish toxicity will come again. For this reason, a regular sampling programme will have to be carried out on a continuous basis.

GENERAL

The Division of Public Health Engineering provides a consultative service to other divisions of the Health Branch and to the local health units on any matters dealing with engineering. This entails a considerable amount of work and travel. During visits to the health units, various problems requiring engineering for their solution are examined in the field. In 1961 three engineers of the Division were given the responsibility of providing this type of consultative service to three regions of the Province, each covering several health units. In this way it is expected that a better service will be provided to the health units.

The position of Chairman of the British Columbia Examining Board for Sanitary Inspectors was again filled by the Director of the Division. Three persons received certificates in sanitary inspection during the year. A course for sanitary inspectors was held under the auspices of the Health Branch and the University of British Columbia. This course lasted two weeks, and most of the lectures were given by members of the staff of the Division of Public Health Engineering.

The Director attended a Civil Defence Course for Radiological Technical Officers. A number of lectures was given throughout the year to several Civil Defence classes.

One of the responsibilities of the Division is the approval of crematorium plans. One set of such plans was approved during the year.

A considerable amount of the work of the Division depends upon excellent co-operation with the Division of Laboratories, which examines all specimens submitted for examination. The Division wishes to record its appreciation to the Division of Laboratories.

REPORT OF THE DIVISION OF PREVENTIVE DENTISTRY

F. McCOMBIE, DIRECTOR

Early in 1960 there was published the final report of the Commission on the Survey of Dentistry in the United States, which had been appointed by the American Council on Education in 1958. Several Canadians, including the Director of this Division, served either as a member of or as consultant to this Commission.

The first paragraph of the first chapter of this report reads as follows:—

“The dental health problem is not a simple one. The first component of the problem, the high attack rate of dental diseases affecting almost the entire population, would be enough to present a formidable obstacle, since these diseases begin early in life (frequently as early as the second or third birthday) and become progressively more severe with age. This factor is complicated by the irreversible and cumulative nature of most dental diseases, which do not heal spontaneously and cannot be cured by advice or prescription. The widespread failure to seek adequate treatment, the second aspect of the problem, therefore results in the accumulation of a staggering backlog of untreated dental disease existing in the population at any one time.”

The final paragraphs of the final chapter read:—

“Oral disease and deformities can so impair the personal appearance and the speech apparatus that the afflicted person develops serious emotional disturbances. Few who have not experienced them appreciate the suffering and limitations imposed upon those who undergo such personality changes.

“Research has dramatically changed the disease pattern of human life, and transformed the age structure of the population by increasing the life span. Caries (tooth decay) and periodontitis (gum disease) are the commonest chronic diseases. They impair man’s usefulness, not only in advanced years but throughout life, add to his miseries, and contribute to the development of systemic disease.

“The economy likewise suffers through lost time or impaired efficiency because of toothaches, oral infections and dental deformities.

“These are factors which support a plea for immediate concentration on improving dental research. The development of effective and widely applied preventive measures is the indispensable approach to ensuring the dental health of the nation.”

The foregoing statements in this Commission’s report are equally as true when applied to the situation prevailing in Canada and in British Columbia to-day.

PREVENTIVE DENTAL SERVICES

The dental-health programmes of this Province continue to endeavour to reduce “the high attack rate of dental diseases” and to encourage the early and regular treatment of these diseases “as early as the second or third birthday” so that the “staggering backlog of untreated dental disease” may, over the years, be decreased.

In the school dental services of Greater Vancouver and Greater Victoria the individual counselling of parents at the dental chairside concurrently with the examination or treatment of their pre-school or Grade I child continues to be a prominent feature of these programmes. Approximately 9,000 parents with their children received in this way individual instruction as to how dental diseases may be prevented.

*Table I.—Full-time Preventive Dental Treatment Services in British Columbia,
Shown by Local Health Agency, School-years 1955/56 to 1960/61*

School-year	Number of School Districts Included	Preschool Children Dentally Completed	Grade I Pupils				Total of Children in Other Grades Dentally Completed
			School Enrolment	Dentally Completed by School Clinics (1)	Requiring No Treatment when Examined (2)	Attending Family Dentist (3)	
1955/56	15	1,815	13,423	3,878	4,710	3,202	11,790
1956/57	14	2,022	13,761	3,726	5,106	3,271	12,103
1957/58	9	2,213	13,715	3,204	5,587	3,208	11,999
1958/59	8	2,538	14,091	3,617	5,952	3,508	13,077
1959/60	6	2,459	14,134	3,631	6,406	3,510	13,547
1960/61—							
Greater Vancouver Metropolitan Health Committee	5	2,598	12,206	3,775	5,332	2,341	11,448
Greater Victoria School District	1	5	2,147	29	1,216	628	1,873
Totals.....	6	2,603	14,353	3,804	6,548	2,969	13,321
							155

The above table demonstrates the clinical services now being provided in the metropolitan areas of this Province to encourage early and regular dental treatment, and especially at the pre-school age-level. Of the children receiving preventive dental treatment through these programmes, approximately 40 per cent were preschoolers. It will be also noted that at the Grade I level 46 per cent of these children did not appear to need dental treatment when examined in the classroom, 26 per cent were subsequently treated by these services, and a further 21 per cent by their own family dentists. Therefore, a total of 93 per cent of the total Grade I enrolment in the schools of Greater Vancouver and Greater Victoria was either dentally fit when examined or received the necessary dental treatment during the school-year 1960/61.

In all the rural health units of this Province and in sixty-six of the seventy-eight school districts served by these health units, there were during the past school-year ninety-five separately organized and sponsored community preventive dental programmes. The necessary clinical services to these programmes were generously provided at nominal fees by 130 dental practitioners on a part-time basis, mostly in their own dental offices.

Table II.—Part-time Preventive Dental Treatment Services (Community Preventive Dental Clinics) in British Columbia, School-years 1956/57 to 1960/61

School-year	Number of Local Health Unit Areas in Which Clinics Operated	Number of School Districts in Which Clinics Operated	Number of Clinics Which Operated	Number of Dentists Participating	Pre-school Children Dentally Completed	Grade I School Enrolment of Clinic Areas	Grade I Pupils Dentally Completed	Total Completed, Pre-school, Grades I, II, and III
1956/57	16	45	74	96	1,871	8,497	4,115	7,641
1957/58	17	53	80	114	2,277	11,214	4,999	8,793
1958/59	17	59	93	126	2,760	12,948	5,981	10,212
1959/60	17	67	97	134	2,797	13,403	6,079	10,130
1960/61	17	66	95	130	3,701	10,340	4,426	9,045

The trend toward these programmes providing increasing attention to pre-school children is evidenced by Table II, page 60. In the previous school-year, 1959/60, the pre-schoolers represented 28 per cent of the total of all children benefiting by these programmes. In the past school-year, 1960/61, the pre-schoolers represented 41 per cent of the total.

Both the administrative efficiency and educational effectiveness of these programmes are considerably enhanced by the consultative and supervisory activities of the regional dental consultants, who each provide such services to three or four adjacent health units.

These community preventive dental programmes continue to benefit financially to a very significant extent by the National Health Grant programme and are strengthened by the co-operation of the dental health committee and executive of the British Columbia Dental Association.

So that these programmes may also be organized in the smaller and especially the more remote communities of this Province, in the summer of 1961 four dental public health externs were appointed. During the twelve-month appointments of these younger dentists, some forty-five such communities will so benefit, transportable dental equipment being utilized. In addition to providing the much-needed clinical services, these externs are also receiving orientation in the over-all dental public health programmes of this Province.

During the past year, encouragement has been given to the school dental services of the metropolitan areas and to the local agencies sponsoring the community preventive dental programmes to include within their services (and with the parents' consent) a topical application of stannous fluoride, which has been proven to reduce significantly the dental caries subsequently experienced by the child. During the past school-year a total of 6,067 children throughout the Province so benefited.

RESEARCH

The dental-health surveys of children of this Province continue. Base-line data were established on a Province-wide basis during the years 1958 to 1960. During 1961 a second sample of children from the areas served by the Vancouver Island health units was examined. Comparison of the results of this survey with those of the previous survey of 1958 regrettably does not as yet show an improvement in the dental-health status of the children of this region. Of the 7-year-olds, only 3 per cent had not already experienced dental decay. At 15 years of age, children of this area have, on an average, more than twelve of their twenty-eight permanent teeth showing evidence of treated or untreated dental decay. Half of all these children aged 7 to 15 years showed evidence of poor oral hygiene, and 12 per cent showed, even at these ages, evidence of periodontal (gum) disease. At least 32 per cent of these children were in need of orthodontic treatment.

During the past year there was concluded a research study in the Victoria schools which was designed to evaluate the anticariogenic effects of one and of two applications of a solution of stannous fluoride upon the teeth of Grade I pupils. With their parents' consent, approximately 420 children were included in this study. After a period of one year it was demonstrated that the children receiving one such application had experienced very significantly fewer dental caries, and that two applications on two successive days were no more effective.

Also, during 1961, an analysis was completed of the results of a survey of the treatment of cleft palate and harelip in British Columbia as carried out at the close of the previous year. This survey studied a sample of approximately 100 children born with either or both these disabilities during the years 1952 to 1956. Each year

in this Province some fifty children are born with an oral cleft, and this group represents 12 per cent of all congenital abnormalities reported at the time of birth. This study revealed that for all cases examined appropriate surgery had been carried out. In most instances this had been performed in hospitals of Greater Vancouver, although three-quarters of the subjects of the study were not residents of that area. However, there appeared to be unmet needs for facilities for speech therapy and for orthodontic consultation for a significant percentage of such children.

Currently being evaluated are the anticariogenic properties of a single topical application of stannous fluoride when utilized by a group of general dental practitioners. This project includes both Grade I pupils and pre-school children, and is being carried out, with the parents' consent, in conjunction with four community preventive dental programmes in the Fraser Valley. Results of this study, it is planned, will be available at the close of 1962 or early in 1963.

Information has also been received that there may have been developed a solution which, when topically applied to the enamel of children's teeth, may have a greater anticariogenic potential than a solution of stannous fluoride. It is planned that clinical trials of this solution will commence in this Province during 1962. Two other research projects due to commence in 1962 are also being planned.

DENTAL PERSONNEL

As at January 1, 1961, the ratio of dentists to population in British Columbia was estimated at 1:2,426, which is a ratio but little changed from that of the previous year. This Province was indeed fortunate in having attracted during the previous year (1960) a total of thirty-four dentists to commence practice. These replaced the eleven who left the Province, the five who retired, and the eleven who died during the same period. Of the thirty-four new registrants, twenty-two had received their dental education in other Provinces of Canada, eleven in the United States of America, and one in the United Kingdom.

It will be recalled that during 1955 J. B. Macdonald, D.D.S., M.S., Ph.D., then of the University of Toronto, prepared a most comprehensive report as to the need and the steps to be taken for the early establishment of a Faculty of Dentistry at the University of British Columbia. In the summer of 1961 Dr. Macdonald, at the request of the Board of Governors of the University, was invited to revisit the University and amend his report in the light of conditions now pertaining. Financial arrangements for this undertaking were shared between the College of Dental Surgeons of British Columbia and the National Health Grant programme. However, at the time of preparation of this report, no plans have as yet been announced for the establishment of a Faculty of Dentistry at the University of British Columbia.

GENERAL

During the past year the survey of dental X-ray units throughout the Province was completed, except for a few dental offices in which it is planned that film monitoring will be carried out during the early months of 1962. With the generous co-operation of the Radiation Protection Division of the Department of National Health and Welfare, X-ray units in some 418 dental offices in British Columbia have now been surveyed. Possibility of excessive radiation to both patients and operators has been checked in all these offices. As at January 1, 1961, there was a total of 662 dentists licensed to practise in British Columbia. However, this includes dentists in administrative appointments, those sharing dental X-ray facilities, and some retired but who retain a current licence.

Two dental officers of this Division completed postgraduate training in dental public health during the past year, with the support of the National Health Grant programme, and returned to duty in the field. However, during the same period one other dental officer resigned, although a replacement has been engaged to commence duties early in 1962.

The Commission on the Survey of Dentistry in the United States, referred to in the opening paragraph of this report, summarized the section of its report entitled "Dental Health" in the following terms:—

"Every possible approach in expanding dental schools, increasing training facilities for dental hygienists and assistants, development of new methods of using auxiliary personnel, and the widespread application of prevention procedures—must be pursued with vigour if adequate dental service is to be available."

The Division of Preventive Dentistry will play its appropriate part, and it is to be hoped "with vigour," in the further development of services for the improvement of the dental health of the people of British Columbia.

REPORT OF THE DIVISION OF OCCUPATIONAL HEALTH

K. I. G. BENSON, ACTING DIRECTOR

The Division of Occupational Health, as a part of the Bureau of Local Health Services, provides consultative service in industrial health and emergency-measures health services to local health units and metropolitan health departments. In industry to-day the use of radioactive materials has greatly increased, resulting in continued expansion of the radiation protection services. The many problems and often unknown factors related to this field provide one of the most perplexing and challenging aspects of preventive medicine to-day.

On September 1, 1961, the Director of this Division resigned, and at the year's end his successor had not yet been appointed, although it is hoped that the position will be filled early in the coming year. In future the Director of this Division will be located in Vancouver, having responsibilities for industrial health, radiation services, employee health services, and certain administrative responsibilities in the field of venereal-disease control. The Director will thereby have ready access to the Vancouver area, where most of the industrial complex of this Province and associated experts in this field are located.

OCCUPATIONAL HEALTH SERVICES

Although no special courses were held during the year, the education of local health unit staff has been continued and education material has been made available to industrial firms through the Division of Public Health Education. The determination of carbon monoxide air content in factories and garages by health unit staff using portable equipment was continued, and in this, its second year of operation, the programme was extended to include aircraft. This has resulted in increased awareness of the potential dangers of carbon monoxide, with noticeably improved ventilation and maintenance of factory machinery in many instances.

Health unit staff in certain areas have also become involved in the pollution-control programme, particularly in the Columbia Basin. Primarily they are employed in obtaining water samples, with recording of associated temperature and climatic conditions in order to build up records on existing industrial-waste pollution.

WELFARE INSTITUTIONS LICENSING BOARD

Regular meetings of the Welfare Institutions Licensing Board were held during 1961. Certain cases presenting problems were referred to local health unit directors for investigation. Health unit staffs continued to act in an advisory capacity to handicapped children's societies operating schools throughout the Province, and in many areas advantage was taken of the services of sanitary inspectors by private schools to review their standards of hygiene and sanitation. The more official licensing inspections of welfare institutions were carried out as required in the regulations.

EMERGENCY HEALTH SERVICES

Many changes have taken place during the past year in the over-all organization of Civil Defence. These changes have involved staff, planning, and the development of suggested new legislation, and this, in turn, has had a considerable impact on Emergency Health Services, so that many aspects of the services have been subjected to detailed study and revision. By the year's end, with the introduction of new procedures, much of the day-to-day activity has been placed on a sound basis, and it is intended that the service will be completed to an operational level early in 1962.

Two meetings of the Health Advisory Committee were held, serving to co-ordinate all agencies involved in Emergency Health Services to include professional associations, departments of Provincial and Federal Governments, and the Army medical services.

An addendum to the B.C. Emergency Health Services Plan, 1960, in regard to target-area hospitals was published, and in most cases the target-area hospitals have now revised their planning from one of evacuation to one of dispersal and fallout accommodation.

The Emergency Health Services Plan is presently being revised, and when completed will spell out full operational procedures and authorities to include the role of all members of local health unit staffs.

A plan of pre-positioning of emergency health supplies at the Provincial level is complete, and a contract is presently being negotiated with the Department of National Health and Welfare.

Emergency Health Service Committees have been named and are operating in all zones and in most areas. Health Supplies Officers have been appointed throughout the Province and have received instructions and terms of reference regarding their particular duties. Plans are complete to carry out a survey of local medical supplies, staffing, and facilities. A survey of depots, agencies, and distributors handling oxygen, together with equipment and transport facilities, has been completed throughout the Province. A marked increase in hospital disaster planning took place in 1961. The Disaster Committee has reviewed over thirty plans, and twenty-seven hospitals have been approved and have received disaster kits accordingly.

Lectures on Emergency Health Services were given throughout the Province to medical staffs, at public meetings, in secondary schools, and in universities. Interviews with press, radio, and television were granted in the communities visited. A close liaison has been developed with other government departments at Provincial and Federal levels, with the armed services, Canadian Red Cross, and the St. John Ambulance. In the fall a nursing consultant attached to the Department of National Health and Welfare visited to consult with senior health officials in this Province.

During Federal and Provincial exercises, the Provincial Emergency Health Services operated at full capacity. Following these exercises, meetings were held to study situations which arose, mistakes and areas of weakness being noted for correction.

Demonstrations with full staff and simulated casualties using the three Advanced Treatment Centre training units received from the Federal authorities were carried out in Victoria, Duncan, Nanaimo, Prince George, Nelson, Penticton, and Vernon. At this time training courses for potential Advanced Treatment Centre personnel are being held in Duncan, Penticton, and the Fraser Valley. Three physicians, one dentist, and seven nurse specialists from the public health service attended courses at Arnprior.

During the coming year it is anticipated that the following phases will be completed:—

- (1) Revision to the operational stage of the Emergency Health Services Plan.
- (2) Pre-positioning of supplies throughout the Province.
- (3) Survey of medical supplies.
- (4) Designation of assembly points, stockpiling, and operational buildings for Advanced Treatment Centres and emergency hospitals.
- (5) Further hospital training and exercises.
- (6) Further training courses for physicians, dentists, pharmacists, and health unit personnel.
- (7) Designation of health man-power and war-supplies priorities.

EMPLOYEES' HEALTH SERVICE

In February the Employees' Health Service was extended to include Provincial Government employees in the Vancouver metropolitan area. An experienced public health nurse was appointed full-time occupational health nurse, and much of her time to date has been devoted to general organization and orientation with a slow build-up of casework. This nurse visits nine separate offices in Vancouver, and satisfactory accommodation is still being sought in certain of these offices where large numbers of Civil Servants are employed.

Information regarding the services supplied by the occupational health unit in Victoria is outlined below.

	1959	1960	1961
Visits to clinic—			
Male	2,524	3,105	2,888
Female	2,117	2,743	2,365
Immunization and injections.....	4,641	5,848	5,253
Tuberculosis—diagnosis or treatment (chiefly reading tuberculin tests).....	1,443	2,635	1,704
Employees' health cards on file.....	443	288	317
Existing conditions shown—	2,446	2,742	2,898
Diabetes	12	13	16
Epilepsy	2	4	7
Kidney conditions	16	13	14
Rheumatic or arthritic conditions	75	94	96
Heart conditions	35	44	39
Tuberculosis	46	55	56
Back or head injuries.....	99	136	145
Other chronic diseases.....	88	104	111
Permanent defects due to illness or accidents.....	101	117	116

Advantage continued to be taken of the availability of poliomyelitis vaccine, 276 employees completing their series of vaccinations and 117 receiving booster doses. The majority of Government employees have now been immunized against poliomyelitis. As in previous years, the Canadian Red Cross Society blood donors' service held two clinics, one in June and one in December, the preliminary organization being done by the occupational health nurse. The Provincial Government employees in Victoria gave 700 pints at these clinics, representing an increase of 128 pints compared with 1960.

RADIATION PROTECTION SERVICES

The radiation protection programme was expanded during the year, and survey work was accelerated, especially at the industrial level, with Medical Health Officers throughout the Province taking a more active part in surveillance and distribution of information to the users of both X-ray and gamma sources.

The various health professions of the Province have continued their excellent co-operation in assisting this Division's efforts to reduce radiation to the public by instituting all the recommended safety procedures as suggested by their Provincial and National associations or by this Division.

Under the *Atomic Energy Control Act*, the Director, Division of Occupational Health, has been appointed the Provincial health authority for radiation, and the Technical Adviser has been appointed as the radiation inspector. This has resulted in a greatly increased work load, with many previously unknown isotope sources now being reported for inspectional checks. Location of sources that were in existence prior to promulgation of the *Atomic Energy Control Act* with mandatory licensing and registration has proved very difficult. Further difficulties have been

encountered in endeavouring to keep track of the importation and movement of sources within the Province, but investigations carried out during the past year, together with a better understanding of the Provincial problems by Federal authorities, should result in facilitating this aspect of control in the years ahead.

In late fall the Federal authorities called a Dominion-Provincial Conference on Radiation, at which representatives from the Provincial Health Branch were in attendance. A great many problems involving all aspects of radiation were discussed, and responsibilities at various governmental levels were clarified. As a result of this conference, several committees were appointed to study the many complex problems associated with health in this field. Solutions to these problems become increasingly urgent now that radioisotopes are finding a rapidly expanding use as tools in industry, research, and medicine, not to mention their inclusion in certain commercial products for over-the-counter sales.

Results obtained from the Film Badge Monitoring Service of the Department of National Health and Welfare led to several investigations where overexposure had occurred. In most cases, changes in operating technique or some slight mechanical improvement in equipment reduced the danger. The value of this service is beyond question, and every person handling radiation equipment of any kind which is capable of giving off potentially harmful ionizing radiation must be encouraged to take advantage of it.

The radiation survey of dental X-ray units within the Province was continued this year, using films from the Film Badge Monitoring Service, Ottawa, and being directed through the office of the Director of the Division of Preventive Dentistry with the assistance of regional dental consultants at the local level. The results of this survey are presently being compiled. While engaged in the radiation survey of hospitals in the Kootenay area, the Technical Adviser in Radiation also visited dentists within that area to give advice on the installation of diaphragms and filters. A few high film badge readings have been investigated, and these have invariably been found to be due to the operator or his assistant standing too close to the patient during exposure and using a tube head that did not have a lead diaphragm to restrict the useful beam to the proper size of the field under consideration.

Field surveys were continued, being concentrated in the Kootenay regions of the Province. These surveys were intended primarily for hospitals but have included personnel using isotopes in other health professions and within industry. A total of fifty-three installations was surveyed, and these revealed many mechanical and radiation defects among the various devices being used. The local Medical Health Officers are presently carrying out follow-up investigations and offering advice and assistance where necessary.

In November a radiation inspection technician was appointed, and he will be responsible for conducting surveys on all sources of ionizing radiation equipment used in hospitals, in industry, in commercial and health buildings, be they X-ray or radioisotope.

REPORT OF THE SANITARY INSPECTION SERVICE

C. R. STONEHOUSE, CHIEF SANITARY INSPECTOR

The Union Board of Health is responsible for the efficient and satisfactory operation of the sanitation programme within the health unit. The Bureau of Local Health Services endeavours to provide the broad principles of consultative service to the health unit director and sanitary inspector in the prevention of environmental health hazards, and policy procedures. Sanitary inspection is increasingly being recognized as a form of guidance and assistance as compared with the mere detection of defects and errors. Every opportunity is used during inspection visits to instruct and advise.

In meeting the demand for increased services, the number of sanitary inspectors was increased from forty-one to forty-five. Twenty-five of the positions, including the four additions, are supported by National Health Grants.

An intensive two weeks' advanced training course for sanitary inspectors was held in June at the University of British Columbia under the auspices of the Department of Continuing Medical Education. Twenty-two persons attended from health units, nine from Metropolitan Vancouver, and two from the Victoria-Esquimalt Union Board of Health. The subject-matter included public health engineering, bacteriology, statistics, public health education, and ionizing radiation.

MILK-CONTROL

The supervision of milk production and distribution is divided between the Department of Agriculture and the Health Branch. Medical Health Officers and sanitary inspectors have the responsibility of enforcing the bacterial requirements of the *Milk Industry Act*. The Chief Sanitary Inspector provides the liaison between these milk inspectors and the Deputy Minister of Agriculture.

The evaluation of laboratory reports indicated continued improvement in milk quality by the majority of the milk vendors; this is a credit to those engaged in the milk industry. Non-compliance on the part of two vendors resulted in prosecution. In the evaluation of standard plate counts on pasteurized milk, the average of 6,200 colonies per millilitre on 2,805 samples is a record low. Comparable improvement is noted in the evaluation of coliform content of pasteurized milk. Eighty per cent of the 2,805 samples were less than 1 colony per millilitre.

In a 1955 survey, 95 per cent of the milk distribution in the Province was pasteurized. This year the amount is indicated to be 98 per cent in organized municipalities and 97 per cent in unorganized territory.

The South Okanagan Union Board of Health, supported by resolutions from its nine participating municipalities in 1957 for a compulsory milk-pasteurization area, increased that support in 1961 by receiving resolutions from responsible community organizations in all the non-incorporated communities within the health unit boundaries. It has been estimated by the South Okanagan Union Board of Health that it now has corporate and non-corporate support representing 97 per cent of the population in the South Okanagan Health Unit area.

FOOD-CONTROL

The fine record of performance of our food outlets and eating-places has virtually eliminated the incidence of even minor food illness. To-day an æsthetically accepted environment is a necessary ingredient in our standard of living. An intelligent and co-operative implementation of uniform sanitary standards in the interest of the public health does much toward the growth of the food industry and public acceptance of new methods of merchandizing foods. Three reports of illness commonly associated with public eating-places were investigated. Each instance involved

banquet suppers prepared and served by volunteer workers unequipped and untrained in public feeding. To overcome this problem, many health units are adopting procedures similar to that introduced by the Boundary Health Unit in offering training in food-catering practices to volunteer groups.

Routine periodic inspections of food premises by the inspector reveal the operator who is conscientious in his efforts and the one who is indifferent or careless. This inspection, coupled with the food-handling classes in the health units and sales and services courses for waitresses by the Department of Education in co-operation with the health unit, Restaurant Association, and School Boards, has been an effective instrument in elevating the prestige of the public eating-place.

Inquiries were received concerning alleged inferior food products, including bread, oysters, canned vegetables, soft drinks, and horse-meat for human consumption. Liaison on these items and related matters is maintained with the Inspection Division, Food and Drugs Directorate, Department of National Health and Welfare.

SLAUGHTER-HOUSES AND MEAT INSPECTION

Seventy-five slaughter-houses were licensed during the year under the *Stock Brands Act*. These premises may be divided into four categories, the first three of which distribute inspected meat, which is 95 per cent of all meat sold in the Province:—

- (a) Four Canada-approved premises, which are also under Federal licence and account for 90 per cent of the inspected meat distributed.
- (b) Four premises have meat inspection occasioned by municipal by-laws prohibiting the sale of non-inspected meat, and account for 2 per cent of the inspected meat distributed.
- (c) Six premises are licensed under the Provincial *Meat Inspection Act* and account for 3 per cent of the sales of inspected meat.
- (d) The remaining sixty-one premises without meat inspection are located in the smaller centres.

A great deal of respect is given by the operator to the licence under the *Stock Brands Act* and the sanitary inspection certificate issued annually by the Medical Health Officer, which reduces the possibility of diseased food of animal origin reaching the consumer. Two new slaughter-houses were approved this year. Three other establishments expressed interest in meat inspection on their premises.

PLUMBING

In lieu of a Provincial plumbing code, municipalities, architects, plumbers, and persons in unorganized territory are advised to follow the recommended requirements of the plumbing services section of the National Building Code. As it is the responsibility of each municipality to adopt plumbing and drainage by-laws, it has been a policy of the Health Branch to encourage each municipality to carry out its own inspections. Exceptions have been made on the health unit level until the municipality assumes the function. As the Sanitary Regulations provide the authority for the local board of health to administer routinely a permit system, some union boards of health have adopted a permit-inspection arrangement. In most health units the sanitary inspector acts in a consultative and advisory capacity. With the recent expansion and enlargement of community planning areas in the Province under the *Municipal Act*, a greater control will be exercised in this phase of sanitation in unorganized territory.

INDUSTRIAL CAMPS

The inspection of logging and construction camps is the oldest organized activity of the sanitary inspector in this Province. The quality of the accommodation

provided by operators and required by regulations has improved and the need for inspection time has been decreased. Both workers and camp operators agree, with pride, that the accommodations provided in British Columbia are surpassed nowhere. Despite the generally favourable conditions, eight complaints were received during the year, but these were resolved without difficulty.

SUMMER CAMPS

No group of operators is more deserving of assistance than those operating summer camps. These camps are licensed under the *Welfare Institutions Licensing Act* and include camps supported by churches, welfare agencies, fraternal societies, service clubs, and other charitable organizations. The approach to the inspection is to offer information on building construction and environmental sanitation. Visits are made early in the season, and discussions held on good sanitation practices. Much emphasis is placed on the early recognition of gastro-intestinal diseases, the necessity of reporting, and the isolation of cases.

The 1961 evaluation of reports on seventy-six camps showed that 72 per cent were classified as good, 34 per cent as fair, and 4 per cent as poor or unsatisfactory.



The sanitary inspector takes a sample of the school water-supply.

PEST-CONTROL

The usual educational work in regard to rodent and insect control has been carried out. The latest information concerning eradication measures, insecticides, and rodenticides is always available from the health unit offices to persons with home and garden insect problems.

SCHOOLS

The sanitary inspectors' programme provides for an inspection visit to each public school in his district at least once annually. Reports on each school inspection are made to the School Board, as provided for in the *Public Schools Act*. This inspection service is also made available to private schools and boarding schools.

SUBURBAN DEVELOPMENT AND SUBDIVISION APPROVALS

The sanitary inspectors continued the programme of inspecting subdivisions in rural areas in respect to suitability of land for the individual water-supply and sewage-disposal system prior to registration of subdivision plans. In the Boundary Health Unit a denial of approval was unsuccessfully contested by the subdivider. As in previous years, co-operation with the Central Mortgage and Housing Corporation included the issuance of certificates of approval prior to final payments to the contractor.

TOURIST ACCOMMODATION AND TRAILER COURTS

Responsibility for the sanitary control of tourist accommodation rests with the health unit. With this inspection and the grading of accommodations by the Department of Recreation and Conservation, many of the problems associated with this phase of the tourist industry have been resolved. Only four complaints were received during the year. Requests for information on trailer-court standards have been numerous due to the rapid expansion of trailer parking and camp-sites.

GARBAGE-DISPOSAL

In municipalities the problems associated with refuse-disposal are lessening each year with improved collection and disposal arrangements. The old-fashioned nuisance-grounds are gradually being replaced by sanitary fills, accompanied by rodent-control measures and land-reclamation projects. In non-incorporated communities the problem of indiscriminate disposal prevails because of the failure of local residents to agree to share the expense of disposal facilities. In 1960 a survey of disposal needs in unorganized territory by an interdepartmental committee revealed the most troublesome areas. In 1961 the Department of Municipal Affairs, assisted by health units, has endeavoured to stimulate establishment of quasi-corporate areas under the *Local Services Act* to resolve the problems. It is expected progress will be made in the development of local areas for refuse-disposal purposes in the coming year.

GENERAL

Kits for field use for conducting limited chemical analysis on individual water-supplies were introduced during the year in an effort to answer inquiries associated with nitrate content and corrosive water problems.

Field kits for carbon monoxide testing in garages and industrial plants, in use for the second year, have stimulated improved ventilation in these plants. On request the testing programme was extended to include a few aircraft, but all the tests in this regard were negative.

Under provisions of the *Municipal Act*, approval was given to the sanitation by-laws passed by the Villages of McBride, North Kamloops, and Fort St. John. For the Township of Richmond, approval was given on a "Keeping of Pigeons By-law."

Proposed by-laws reviewed included a "Food Establishment By-law" for the City of North Vancouver, a "Food Handlers By-law" for the Village of Oliver, and a "Control of Infectious Diseases from Rats and Mice By-law" for the Municipality of Delta.

REPORT OF THE NUTRITION SERVICE

JOAN GROVES, CONSULTANT

This report deals with the service by the Nutrition Consultant of the Health Branch. It does not include, with the exception of one combined project, the services rendered by the two nutrition consultants of the Greater Vancouver Metropolitan Health Committee. This project was a survey of the food habits of 125 older people of Greater Vancouver and was part of a nation-wide study being carried out by the Nutrition Division, Department of National Health and Welfare. Preliminary arrangements were made through the Health Branch and a Vancouver nutrition consultant. All three consultants, in conjunction with a team of nutritionists and a biochemist from the Nutrition Division, took part in the survey.

The service of the Nutrition Consultant is carried out mainly along the following lines.

CONSULTANT SERVICE TO PUBLIC HEALTH PERSONNEL

Assistance has been given to the public health teams by means of correspondence, visits to local health units, departmental circulars, and, with the co-operation of the Division of Public Health Education, the provision of nutrition education materials. Reference material has been supplied to assist nurses when counselling mothers on low-cost meal planning, and in some cases aid has been given in planning market lists. Arrangements have been continued as in former years to obtain rats from the Animal Nutrition Laboratory of the University of British Columbia for demonstration to show the effect of good nutrition. Thirty-four demonstrations have taken place in the schools in the last year. Food-habit studies have been carried out to turn the attention of the pupils to the food they eat and to encourage them to improve their food selection.

SERVICE TO HOSPITALS AND INSTITUTIONS

Numerous institutions have availed themselves of consultant services by correspondence. During the year, periodic visits were paid to the following: Marpole and Alcco Infirmary, Jericho Hill School, the boarding home of the British Columbia Cancer Institute, and the G. F. Strong Rehabilitation Centre. Assistance was given with menu planning, adjustment of menus to meet the needs of reducing, diabetic and other diets, work planning, and food preparation.

Distribution of large-quantity recipes published quarterly by the Nutrition Division, Department of National Health and Welfare, Ottawa, has been set up via the local health units. These recipes have been compiled for the use of small hospitals and other institutions.

Advice was given on the renewal of equipment and renovation of the dish-washing area of the Provincial Home at Kamloops. In co-operation with the planning division of the Hospital Insurance Service, assistance has been given on numerous occasions with kitchen planning.

OTHER GOVERNMENT DEPARTMENTS AND AGENCIES

Requests for talks and discussions on nutrition have been received and granted from various groups, such as St. John Ambulance, Victorian Order of Nurses, and home economics teachers of Greater Victoria School Board. Information on food budgeting and low-cost meal planning has been passed on to social welfare workers.

Various inquiries regarding nutrition and group feeding have been received by letter, telephone, and in person.

OTHER ACTIVITIES

The Nutrition Consultant was a member of the British Columbia Nutrition Co-ordinating Committee and was recently asked to act on the Provincial Civil Defence Emergency Welfare Services Committee.

REPORT OF THE DIVISION OF VITAL STATISTICS

J. H. DOUGHTY, DIRECTOR

The Division of Vital Statistics has two major fields of responsibility in the Health Branch. On the one hand, it is required to administer the Province-wide vital statistics registration system, and on the other hand it must provide a centralized bio-statistical service to all other divisions of the Health Branch, to the Mental Health Services Branch, and to a number of voluntary health agencies. Stemming from its civil registration duties, the Division administers in entirety the *Vital Statistics Act*, the *Marriage Act*, and the *Change of Name Act*, and in addition operates a Registry of Wills Notices as required under certain sections of the *Wills Act*. These registration services are provided through the central office in Victoria and through approximately ninety district offices located in population centres throughout the Province. In order to carry out its extensive bio-statistical duties, the Division has a staff of trained bio-statisticians and statistical clerks and a modern mechanical tabulation section complete with punching, verifying, sorting, collating, and tabulating equipment.

REGISTRATION SERVICES

ADMINISTRATION OF THE VITAL STATISTICS ACT

The main registration duties of the Division devolve from the *Vital Statistics Act*. This Act provides for the registration of all births, stillbirths, marriages, deaths, adoptions, and divorces that occur within the Province. It also provides for the issuance of certificates and other forms of certification from the registrations which are on file. Registration of births, deaths, and marriages has been mandatory from the inception of the Province, and the Division has in its vaults a complete file of all original registrations ever filed in the Province, and, in addition, up-to-date microfilm copies of these registrations.

For registration purposes the Province is divided into seventy-three vital statistics registration districts. In each of these districts there is an appointee known as "District Registrar of Births, Deaths, and Marriages," and one or more Deputy District Registrars. Approximately half of the District Registrar appointments are held by Government Agents and another 25 per cent by members of the Royal Canadian Mounted Police. The remaining appointments are held by municipal officials, other Government employees, and private individuals. District Registrars who are not Provincial Government employees or members of the Royal Canadian Mounted Police are paid on a commission basis. District Registrars' offices have been established geographically in such a way as to make it as convenient as possible for the public to register vital statistics events. New offices are opened as necessary to accommodate newly developed areas within the Province. In order to facilitate registration of vital statistics events occurring amongst the native Indian population, all Indian Superintendents within the Province hold the appointment of District Registrar of Births, Deaths, and Marriages for the area encompassed by the Indian Agency.

All original registrations are forwarded by the district offices to the central office on a weekly basis. Certificates may be obtained from District Registrars up until the time that the original registration is forwarded to the central office. After that time, certificates must be obtained from the central office in Victoria.

In line with progressive registration practice elsewhere on this continent and in other parts of the world, the Province subscribes to the principle of the "short form" birth and death certificates. Hence details of parentage are not shown on

birth certificates, making it possible for the illegitimate and adopted child to receive a certificate identical in form with that which is obtainable for other children. Likewise, the cause of death is not included on the death certificate. When certified copies of registrations are required for Court purposes or for other special reasons, a photographic print is produced from the microfilm copy. This method expedites the issuance of the certified copy and eliminates the possibility of errors in transcription.

ADMINISTRATION OF THE MARRIAGE ACT

The administration of the *Marriage Act* is another major responsibility of the Division of Vital Statistics. This Act covers all phases of the Province's jurisdiction over the solemnization of marriage and over the legal preliminaries thereto. The main duties of the Division under this Act relate to the issuance of marriage licences and to the vesting of individual ministers and clergymen with the authority to solemnize marriage in British Columbia. The Act permits civil marriages to be performed by Marriage Commissioners. These Marriage Commissioners are appointed by Order in Council upon recommendation from the Division.

Because of the legal importance of the marriage contract and of the qualifications which are required of the parties to the intended marriage, marriage licences are issued only by specially appointed persons known as "Issuers of Marriage Licences." This provision is one of the safeguards written into the *Marriage Act* as a protection to the public. It is the duty of the Issuer of Marriage Licences to be reasonably satisfied that the persons seeking a marriage licence are properly qualified before the licence may be issued.

The sections of the Act providing for the registration of ministers and clergymen for the purpose of solemnizing marriage are also intended as a protection of the public against the performance of marriages by fraudulent or unauthorized individuals. The Act provides that before registration of a clergymen for this purpose may be granted, the denomination to which he belongs must fulfil certain requirements respecting continuity of existence and must have established rites and usages respecting the solemnization of marriage.

During 1961 a major change was made in the operation of the registry of ministers and clergymen licensed under the *Marriage Act*. As a result of this change, it is now possible to prepare for the governing body of each religious denomination mechanically tabulated lists of those ministers registered under the denomination's auspices. These lists are verified by the denomination prior to the annual publication in The British Columbia Gazette of all ministers and clergymen registered under the *Marriage Act*. Previously it had been necessary for each denomination to compile a complete nominal roll annually for this purpose. The new punch-card procedure provides a number of other advantages in the internal administration of the registry.

ADMINISTRATION OF CHANGE OF NAME ACT

The administration of the *Change of Name Act* is another important responsibility of the Division. Under this Act, persons desiring to change either their Christian names or their surname must meet certain qualifications and must obtain an order from the Director authorizing the change. The principal requirements for a legal change of name are that the applicant be 21 years of age or over, a British subject, and domiciled in this Province. A notice of intention to apply for a change of name must be published by the applicant in one issue of The British Columbia Gazette and one issue of a newspaper circulating in the district in which he resides. Changes in the given names of children effected before the twelfth birthday and

changes of name brought about by marriage or by adoption are exempted from the provisions of the *Change of Name Act*.

OPERATION OF REGISTRY OF WILLS NOTICES

By an amendment to the *Wills Act* in 1945, the Division of Vital Statistics was made responsible for establishing and maintaining a registry for recording the location of wills. A testator may, if he desires, file a notice with the Division stating the date and the location of his will. He may also file supplementary notices showing changes of location of the will or indicating revocation of a will. The Courts require that a search be made of the wills notices on file in this registry before they will proceed with application of a probate of a will. By the end of 1961 over 68,600 wills notices were on file in the Division.

VOLUME OF REGISTRATIONS AND CERTIFICATIONS

There was very little change during 1961 in the volume of registrations filed and in the volume of certifications issued. Revenue received in the central office of the Division increased by 2 per cent. Preliminary counts of the more important registration services rendered by the Division in 1961 are as follows:—

Registrations accepted—	
Birth registrations	38,400
Death registrations	13,900
Marriage registrations	10,900
Stillbirth registrations	410
Adoption orders	1,600
Divorce orders	1,500
Delayed registrations of birth	365
Wills notices	8,230
Legal changes of name	450
Legitimizations of birth	137
Alterations of given name	280
Certificates issued—	
Birth certificates	59,760
Death certificates	7,326
Marriage certificates	5,668
Baptismal certificates	26
Change of name certificates	575
Divorce certificates	340
Photographic copies of registrations	12,010
Revenue searches	42,614
Non-revenue searches	47,888
Revenue received by central office	\$74,404

During the year the Division commenced an analytical study of all applications for certification made to the central office. These applications number around 80,000 per year. This study, which will be made with the use of punch cards, will yield important information respecting the pattern of requests for certification services and will be valuable in connection with the planning of improved work-flow within the Division.

BIO-STATISTICAL SERVICES

In the administration of the Health Branch and in the planning of public health programmes, continual use is made of the wide range of health statistics produced by the Division of Vital Statistics. The efficient planning and operation of the

many health facilities and public health services now provided demands accurate statistical information concerning the health problems of the population and also concerning the effectiveness of the public health programmes undertaken to meet those problems. A statistical section capable of compiling and analysing the complex statistical data which are required in the administration of public health has therefore been developed within the Division of Vital Statistics. This organization of statistical staff and mechanical tabulation equipment has made it possible to provide a comprehensive statistical service, not only to all divisions of the Health Branch, but also to the several units and divisions of the Mental Health Branch and to a number of Government-supported voluntary health agencies. This centralized bio-statistical service of the Division of Vital Statistics has enabled each of the divisions and agencies served to enjoy the advantages of both operational and analytical statistics in a most economical way.

In addition to the statistical services provided to other divisions and agencies, the Division of Vital Statistics compiles and publishes detailed statistics on births, deaths, stillbirths, marriages, adoptions, and divorces derived from the vital statistics registrations it collects throughout the Province. Wide use is made of these vital statistics as base-line data in the statistical analyses of health problems and of public health programmes. The extensive sets of indexes which are required in connection with the registration and certification services of the Division are all produced in the Division's own Mechanical Tabulation Section.

TUBERCULOSIS STATISTICS

The Division of Vital Statistics maintains up-to-date statistical records on all known cases of tuberculosis in the Province and on many thousands of non-tuberculous chest conditions. Statistical analyses of the incidence and prevalence of tuberculosis throughout the Province and of the clinical status of patients under treatment are used extensively in the planning and the administration of the tuberculosis-control programme. Monthly listings of new cases are prepared, and quarterly and annual statistical reports which cover in detail the major phases of case-finding, follow-up, and treatment of tuberculosis cases are produced.

Statistics are maintained on patients being admitted to and discharged from tuberculosis institutions in the Province. These statistics include the medical assessment of the patients upon admission and upon discharge, and reflect the progress made by them while institutionalized.

A special statistical series has been kept for a number of years on all tuberculosis cases undergoing surgery. The information which these statistics has already yielded has resulted in important changes in the types of surgical procedures preferred for certain categories of patients, with improved prognosis for the patients concerned.

The development of regional active-case registries within the Division of Tuberculosis Control, outlined in last year's report, has resulted in an almost complete checking and verification of the index of known active tuberculosis cases. Progress has been made on a similar project to review all known inactive tuberculosis cases. This work was expedited by the provision of special tabulated listings of known cases according to activity status.

The tuberculin testing programme has been expanded greatly during the last two years, and in 1961 the Division processed over 100,000 tuberculin testing reports. Listings of all cases tested, as well as a number of routine and special statistical analyses of the tuberculin testing results, were prepared by the Division. In addition, the records of all B.C.G. vaccinations carried out during the year were transferred to punch cards, and statistical analyses of the results were prepared.

At the request of the Canadian Tuberculosis Association, a procedure for the national reporting of new active cases on a monthly basis was set up. Under the new arrangement this Division was made responsible for reporting to the Dominion Bureau of Statistics each month data relating to new active cases and on reactivated cases of tuberculosis. This new system will provide a much more accurate picture of the tuberculosis problem in Canada than has been available heretofore.

From the standpoint of prevention and control of tuberculosis, it is desirable that each new case of tuberculosis should result in a thorough inquiry into the possible sources and contacts of the case. During 1961 this Division assisted the Division of Tuberculosis Control in designing a statistical procedure whereby information will be recorded on each contact of each active case. From the information which will be obtained from this system, it will be possible to determine the effectiveness of the contact-tracing programme being carried out.

In addition to the foregoing, a number of special requests were dealt with during the year. These included an analysis of miliary tuberculosis cases, a study of tuberculosis amongst Chinese and Japanese in British Columbia, an analysis of cases with diaphragmatic hernia, and special statistical analyses for the Indian Health Services respecting tuberculosis amongst Indians. The staff of the Vancouver office continued to serve on the Medical Records Committee of the Division of Tuberculosis Control.

VENEREAL-DISEASE STATISTICS

The Division of Vital Statistics continued to process mechanically the statistical records of the Division of Venereal Disease Control. These include the reports of all new cases of venereal infection acquired in the Province and the reports of the investigation and follow-up of contacts named by infective cases. From these data monthly, quarterly, semi-annual, and annual reports are prepared.

Various requests for special tabulations of venereal-disease data were handled during the year, including a request for a five-year series relating to the monthly incidence of syphilis and gonorrhœa acquired heterosexually and homosexually.

PUBLIC HEALTH NURSING STATISTICS

The daily service reports submitted by all public health nurses in the Provincial service are routinely processed by the Division, and monthly and annual analyses are provided to the Director of Public Health Nursing. These analyses are used in the day-to-day administration of the public health nursing programme.

The special statistical series which was commenced in 1959 covering all visits by public health nurses to patients served by the home care programme was continued in 1961. The statistics which are being accumulated in this connection are being used to advantage in planning for the rapid expansion of the home care programme into additional areas of the Province, which has recently been under way. These statistics will also serve as a valuable means of assessing these programmes in the future.

Each year a special time-study analysis is carried out respecting the work of the public health nurse. This analysis is used extensively in policy decisions respecting the allocation of public health nursing personnel, the allocation of clerical assistance in health units, and in determining the optimum utilization of public health nursing time.

DENTAL-HEALTH STATISTICS

The Division continued to work closely with the Division of Preventive Dentistry in the carrying-out of the annual community dental-health surveys based on statistical samples of school-children in selected areas of the Province. During the

year a community dental survey was completed covering Vancouver Island, exclusive of School District No. 61 (Greater Victoria). The results were published in the special reports series of the Division. The survey of cleft palate and harelip cases in the Province referred to in last year's report was completed during 1961. The senior research officer of the Division presented an analysis of the results of the survey to the regional dental consultants at the time of the Public Health Institute in Victoria, and collaborated with the Director of Preventive Dentistry in the preparation of a paper relating to the study.

The results of the survey on the effectiveness of the topical application of a stannous fluoride solution to children's teeth which was carried out in the Victoria area were also made available during the year. The first stage of several other studies on topical application of stannous fluoride was completed, and the second-stage assessment of the results was commenced toward the end of the year.

EPIDEMIOLOGICAL STATISTICS

The Division is responsible for the maintenance of the Province's notifiable-disease reporting system, from which are compiled weekly and monthly notifiable-disease reports and an annual report summarizing the disease experience for the year. In addition, the Division maintains a registry of all cases of cancer diagnosed in the Province. A special statistical report on cancer morbidity and mortality is prepared annually by the Division.

During the spring months of the year the Division co-operated with the Dominion Bureau of Statistics in connection with a special nation-wide reporting of the incidence of certain respiratory diseases. This special arrangement was set up at a time when it appeared likely that an epidemic of influenza might develop in Canada.

Several special requests for data derived from the notifiable-disease records were handled during the year. One of these related to the incidence of dysentery and food poisoning, with special reference to possible differentials between the incidence amongst males and females. Another related to cases of trichinosis recorded in the Province. In co-operation with the Consultant in Epidemiology, a report was prepared analysing the incidence of poliomyelitis during 1959 and 1960. This report was presented to the annual meeting of the Canadian Public Health Association in May, 1961.

RHEUMATIC FEVER PROPHYLAXIS PROGRAMME

During the year the Division undertook the responsibility for processing the statistics relating to the rheumatic fever prophylaxis programme, using punch-card methods. An analysis of all records filed to date was made for the purpose of epidemiological study.

POISON CONTROL CENTRE STATISTICS

A two-year series of data relating to the records of the Poison Control Centres in the Province was tabulated in 1961. Data respecting all accidental poisonings reported to the Poison Control Centres continued to be received by the Division for statistical processing.

REGISTRY FOR HANDICAPPED CHILDREN AND ADULTS

Under the direction of the Director of Registry and Rehabilitation Services, the Division of Vital Statistics continued to operate the Registry for Handicapped Children and Adults. Statistical data respecting each person registered are processed by the Division and a detailed annual statistical report compiled. In addition, mechanically tabulated indexes of all cases registered are prepared annually on

both an alphabetic basis and on the basis of disability. Separate indexes are prepared for each health unit in the Province, showing the registered cases that are resident within the health unit area.

By the end of 1961 over 16,000 handicapped children had been registered with the Registry and over 900 adults. Arrangements were made during the year for the registration of all cases seen by the G. F. Strong Rehabilitation Centre. General registration of all handicapped adults has not yet been requested, pending a more complete assessment of the experience being gained with the registration of certain limited groups of adults.

During the year a survey of the deaf and hard-of-hearing registrants over 16 years of age was compiled, and the staff of the Registry co-operated with the G. F. Strong Rehabilitation Centre in a vocational study of persons discharged from that Centre.

For some time it has been evident that a family register of handicapped persons would be a most valuable adjunct to the facilities of the Registry. It is known that certain handicapping conditions may affect several members of a family, and a considerable amount of medical research is under way throughout the world relating to genetic factors in ill health. There are apparently very few sources of information about the occurrence of disease and disability in family groups, and the British Columbia Registry offers an exceptionally good opportunity to develop data of this type.

The planning for a family register within the Registry for Handicapped Children and Adults progressed during 1961 with the appointment of Dr. J. Miller, geneticist in the Department of Paediatrics at the University of British Columbia, as a consultant to the Registry. Already over 1,200 registered cases have been reviewed in connection with the study of disabilities in family groups. Each of these cases related to a person who had some other member of his family registered with a disabling condition. In this same connection, the possibility and the feasibility of automatically integrating existing vital statistics records with the records of handicapped persons registered are being explored.

INFANT MORTALITY STATISTICS

The Division continued to carry out the special study relating to infant mortality in this Province. In this study, information obtained from the infant's death registration is matched with information appearing on the birth registration and on the physician's notice of birth. This project has yielded a body of statistical data which is proving to be of considerable value in delineating some of the factors associated with deaths during the first year of life. During 1961 extensive tabulations were made relating to the 1958-60 infant mortality experience. This study is, in part, a continuation of the previous analysis covering the six-year period 1952 to 1957, which was concluded last year.

MEDICAL-CARE STATISTICS

The Division of Vital Statistics is responsible for processing the claims reports of the B.C. Government Employees' Medical Service in order to compile both the administrative statistics of the service and the morbidity statistics which accrue from the claims reports. This undertaking is carried out under a reciprocal arrangement whereby the Division is committed to provide the administrative statistics which the directors of the plan require in return for the privilege of utilizing the morbidity statistics, which are of interest and value to the Health Branch. Since this plan covers over 42,000 persons for comprehensive medical care, it is a valuable source of morbidity data.

During the year an extensive set of special tabulations was completed for the directors of the Medical Service giving detailed information respecting the pattern of utilization by classes of members and by types of service.

MENTAL-HEALTH STATISTICS

The Division continued to provide a complete statistical service to the Mental Health Services Branch of the Department of Health Services and Hospital Insurance. This includes the statistical processing of all admission and separation reports covering patients treated in institutions of the Mental Health Services Branch, and also the processing of the statistical records of adult patients treated at the Mental Health Centre at Burnaby. Each year the Division compiles the detailed statistical tables which are required for the annual report of the Mental Health Services Branch.

During the year there was an increased demand for special statistical tabulations and studies respecting mental-health data. An admission study of all cases admitted to Crease Clinic for a thirty-day period was planned, and the relevant information placed on punch cards for further cross-tabulation. This study is under the jurisdiction of the social service staff at Crease Clinic. Statistics were prepared in connection with a follow-up study of patients admitted to the mental hospital in the years 1955 and 1956. Special analyses respecting admissions and discharges according to health unit of residence for the years 1953 to 1960, inclusive, were prepared for use in connection with the development of community health services.

OBSTETRICAL DISCHARGE STATISTICS

For several years the Division has handled the statistical aspects of a long-range study of maternal mortality, maternal morbidity, and foetal wastage in British Columbia, which is being sponsored by the Department of Obstetrics of the University of British Columbia. This involves the analysis of the detailed obstetrical discharge records of the several Vancouver hospitals co-operating in the study. During the year, St. Vincent's Hospital and St. Paul's Hospital agreed to participate in the project. Originally the study included the Vancouver General Hospital only, but the records for Grace Hospital were added in 1959.

The statistical aspects of this project are being actively assessed by a permanent committee which was established during the year and which includes representatives of each of the participating hospitals, the Department of Obstetrics of the Faculty of Medicine, and the Division of Vital Statistics.

EPILEPSY CENTRE STATISTICS

The Division continues to process the statistics of the Epilepsy Centre. This system was inaugurated in 1960 and is progressing very satisfactorily.

G. F. STRONG REHABILITATION CENTRE STATISTICS

The Division continued to provide statistical service to the G. F. Strong Rehabilitation Centre. This included the mechanical processing of the statistical records of the Centre and the preparation of an extensive set of tables respecting patients under care and the treatments given to them.

The Division co-operated with the Centre in a complete review of the statistical records and statistical analyses which have been in use since the inception of the system. As a result of this study, improvements in the forms, codes, and statistical presentation have been planned for 1962. In addition, the Division assisted the Centre in the compilation of a manual covering the recording and statistical system.

STATISTICS FOR THE REHABILITATION SERVICES

During 1961, arrangements were made with the Rehabilitation Services to place on punch cards data respecting disabled persons receiving training under either the M or R schedule of the *Canadian Vocational Training Co-ordination Act*. The information which will accrue from these statistics will be of considerable value to the Rehabilitation Services.

The Rehabilitation Services has been involved in a survey of social assistance case loads in certain centres of the Province. In order to facilitate the assessment of the results of this survey, arrangements have also been made for the data to be placed on punch cards by this Division.

CYTOTOLOGY STATISTICS

The statistical processing of the records at the Cytology Laboratory was continued during 1961, and close liaison was maintained in the preparation and analysis of the statistical data required. Reports from over 93,000 examinations or screenings involving about 83,000 women were processed. This was an increase of almost 50 per cent over the number of examinations in 1960. The Division collaborated with the Cytology Laboratory in the preparation of a paper on the decreasing incidence of cervical cancer during the period 1955 to 1960 in British Columbia. This involved the preparation of listings of all cases of cervical cancer reported to the Division during the period in question and the thorough cross-checking of these with respect to date of diagnosis, age, and other pertinent data with the records of the Cytology Laboratory. Following this, the Division calculated the incidence rates of invasive cervical cancer in the Province for each year from 1955 to 1960, inclusive, and carried out the statistical analysis of the decreasing trend in the incidence rates.

OTHER STATISTICAL ASSIGNMENTS

Requests for statistical information from a large number of governmental and non-governmental agencies and from private individuals were received and dealt with during the year. Assistance was given to the Health Centre for Children in connection with a study relating to deafness and impairment of hearing in young children. Special tabulations relating to births, to obstetric factors influencing pregnancy in different age-groups, and to malignant neoplasms amongst females were prepared for various staff members of the Department of Obstetrics and Gynecology, Vancouver General Hospital. During the year a series of lectures on statistics was presented to the group enrolled in the training course for sanitary inspectors at the University of British Columbia.

Lectures are given annually to the graduating class of medical students at the University in connection with vital statistics.

REPORT OF THE DIVISION OF PUBLIC HEALTH EDUCATION

R. H. GOODACRE, DIRECTOR

The ultimate objective in health education is the improvement in attitudes, values, and overt behaviour with respect to health. This is achieved over a period of time through the application of the concepts and techniques of the social sciences to the selective use of the mass media, individual and group interaction, supported by audio-visual aids and written materials.

In the health departments of this Province, health education is primarily the function of the public health field-worker. Thus health education is incorporated into every aspect of the field-worker's service as part of the means by which programme objectives can best be met. In this area of operation the Division of Public Health Education acts in a consultant capacity to, firstly, the programme planners within the Provincial Health Branch and, secondly, to the public health field staff in local health units.

AUDIO-VISUAL AIDS AND WRITTEN MATERIALS

During the year the programme of the Division centred on two areas of activity. The first of these concerned the selection, obtaining, preparation, distribution, and advising on the use of audio-visual aids and written materials. This area involved observing public health activities such as prenatal classes, school health services, and child health conferences as a basis for the selection and acquisition of appropriate educational aids. This included the preparation of items not otherwise readily available, specifically posters, leaflets, and slides. In this respect the use of educational aids continued to increase during the year, and it is estimated that local health services throughout the Province distributed well over 1,000,000 pamphlets and posters. Most of these were used in established public health services, such as classes for expectant parents, school health education, well-baby clinics, and similar activities. Largely due to the increased number of prenatal classes organized, film bookings increased by 34 per cent over the corresponding period during 1960 and reached a total of over 3,300. Consequently this increase required the purchase of not only additional prints of films used in the provision of prenatal classes, but also seven new 16-millimetre movie projectors. These machines were purchased from National Health Grant funds for branch offices not previously supplied with this equipment. The number of projectors now in use throughout the non-metropolitan health units is slightly in excess of fifty, a number which has precipitated the development of a more comprehensive maintenance programme to prolong the life of not only the machines, but also the films maintained in the central library. Commencing in the fiscal year 1962/63, every projector will be overhauled biannually. In addition, every film issued on loan will be accompanied by a small brush for use in cleaning the film gate prior to viewing.

Toward the end of the year, the first in a series of leaflets describing services available from local health departments was completed. This publication, entitled "You and Your Health Unit," describes the professional and clerical persons comprising the staff of a local health department and lists the multiplicity of services available to the general public. This pamphlet is intended to be the first of a series of future publications which will discuss the work of the health unit in more detail.

Only one poster was prepared by the Division during 1961. This was developed in conjunction with the Division of Preventive Dentistry and used the currently popular theme of space travel.

Press releases emanating from the Health Branch are issued through the office of the Minister of Health Services and Hospital Insurance. These are usually prepared only as a result of an occurrence that is considered to be newsworthy. This plan was extended toward the end of the year to include feature articles dealing with health, prepared on a regular basis for release to all daily and weekly newspapers and radio and television outlets throughout the Province. Before release to the mass media, however, copies are issued to local health services to provide the health unit director with an opportunity to supplement the release with information of a more local nature.

Plans to develop a central collection of photographs and slides pertaining to both Provincial and local health services were continued throughout the year. These visual aids are prepared for use by local health unit staff and were used several times during the year, both at health centre openings and in conjunction with talks to local groups concerning health unit services. In addition, a specific series dealing with prenatal and postnatal services provided by local health departments was prepared as part of the "Safeguarding Motherhood" exhibit at the Pacific National Exhibition during the fall.

IN-SERVICE TRAINING

The second programme area receiving attention was that of staff education. During the year this included the co-ordination of specific staff education programmes on behalf of bureau and divisional directors. Each year the Division of Health Education organizes, in co-operation with the Deputy Provincial Health Officer, the annual Public Health Institute, at which time public health workers throughout the Province meet for a four-day period following Easter. This year's session was held at the Oak Bay Junior High School auditorium in Victoria. The main subject discussed was home care and community rehabilitation and was covered in four main talks introduced and co-ordinated by the Deputy Minister of Health. The series was presented by Dr. J. F. McCreary, Dean of Medicine at the University of British Columbia; Dr. W. M. Gibson, Assistant Director, G. F. Strong Rehabilitation Centre in Vancouver; Dr. D. H. Williams, head of the Department of Continuing Medical Education at the University of British Columbia; and Mrs. Dorothy Slaughter, Health Branch Consultant in Public Health Nursing.

The first of a series of proposed short courses for public health nurses in rehabilitation was organized by the Division of Public Health Nursing in October. This took place at the Selkirk Health Unit in Nelson. A representative from the Division of Public Health Education was involved in certain phases of preparation for this course and, in fact, was in attendance during the two-day period of the institute. As a corollary, the Division continued its present role in the development of home care and community rehabilitation by reviewing films, pamphlets, and similar references for use by local health unit staff.

This Division is represented on the Policy Manual Committee, a group responsible to the Deputy Provincial Health Officer for developing a comprehensive guide outlining Departmental policy affecting local health services personnel. In addition to the actual production of the Policy Manual, the Division is becoming more deeply involved in both the revision of existing sections of the manual and in the preparation of new sections, particularly those dealing with the services and facilities of voluntary health agencies.

Selection and purchase of books, journals, and reference material for Health Branch libraries in Victoria and Vancouver and for some seventy-five health unit libraries increased during the year. Approximately 160 new titles were purchased for the Health Branch library in Victoria, and a further twenty-seven volumes for

the Health Branch library in Vancouver. Eighteen new books were added to each of the health unit libraries throughout the Province. In view of the rapid increase in library holdings during the past three years, it became necessary to issue a revised book catalogue listing titles available to local health services from the Provincial Health Branch library in Victoria. These holdings number some 2,300 at the present time. Other in-service training functions, such as the publication of the monthly staff bulletin, designed to keep local health services personnel informed regarding developments in health and in Departmental activities, and involvement with the preparation of various manuals, catalogues, and reports, continued throughout the year.

PERSONNEL

At the conclusion of the year there were three trained public health educators in the Province, two of whom are on the staff of this Division, the third being programme director of the British Columbia Tuberculosis Society. It is interesting to note that all three received postgraduate training in public health in Canada at the School of Hygiene at the University of Toronto, the third person having completed these postgraduate studies in the spring of 1961, under a bursary provided through National Health Grants. Public health education positions in both Vancouver and Victoria are at the present time vacant, although a competition to fill the Vancouver vacancy was conducted toward the latter part of the year. This vacancy was created through the appointment of a professionally trained health educator to the staff of Information Services Division of the Department of National Health and Welfare. This is the second such appointment occurring within the Department of National Health and Welfare, the first being to the staff of the Indian and Northern Health Services. This appointment will be viewed by this Division with considerable interest. The appointee has already been of valuable assistance to this Division, and it is anticipated that further consultative services will become readily available in due course, to supplement the many others that have been available from other personnel employed by Information Services Division.

A further step in planning for the development of this Division was reached in December with the appointment (effective mid-1962) of a Consultant in Public Health Education to concentrate on school health education. Plans have been completed whereby this new member will prepare and give a summer-school course in health education at the Faculty of Education, Victoria College, as another means whereby the Health Branch can be of assistance to health teachers. It is of significance to note that in the staffing of this Division the new appointee brings to the Division of Public Health Education a background of both teaching and public health nursing.

REPORT OF THE DIVISION OF TUBERCULOSIS CONTROL

G. F. KINCADE, DIRECTOR

This is the twenty-seventh annual report of the Division of Tuberculosis Control. It also marks forty years of operation by the Provincial Government of tuberculosis services for the people of British Columbia. These treatment services, first established at Tranquille Sanatorium by the Anti-tuberculosis Society in 1908, were assumed as a responsibility by the Government in 1921, and this eventually led to the establishment of the Division of Tuberculosis Control in 1935.

It is again possible to report with satisfaction progress toward the objective of the eradication of tuberculosis as a major health problem. While this progress may at times seem slow, far-reaching changes in the tuberculosis-control programme have taken place. The success of the programme is chiefly reflected and continues to be shown in the decreasing number of patients under treatment in sanatorium beds. This has made it possible to intensify the effort in the follow-up of the known cases through the clinics and in the search for the unknown case of tuberculosis through the survey programme.

The basis of the programme of tuberculosis-control to-day is to treat the active cases, to supervise the known cases outside of sanatorium, and to discover the unknown cases in the community. Hence the major services of the Division of Tuberculosis Control are the sanatoria for treatment, the stationary and travelling clinics for supervision of known cases, and the survey team for the discovery of the unknown cases.

TREATMENT SERVICES

In evaluating the success of the tuberculosis-control programme it is always necessary to stress that the major accomplishment has been in the field of treatment. The results of treatment are very apparent, and the most striking result has been the reduction of the death rate from tuberculosis of about 90 per cent in the past decade. As a result of more effective treatment methods, not only are patients being cured of their tuberculosis, they are being cured more quickly and more completely so that relapse is a less common occurrence. The length of stay for newly diagnosed patients entering sanatorium has been reduced almost 50 per cent, and now stands at about seven months. This, together with the fact that fewer relapses are occurring from present-day therapy, has accounted for the fact that there has been a marked reduction in the number of patients in sanatorium.

However, there is another factor contributing to the reduction of sanatorium beds, and that is the fact that many of the older chronic relapsing cases of tuberculosis from the pre-antimicrobial era are dying off. Seventy-five per cent of the deaths from tuberculosis at the present time are in persons over 50 years of age. In recent years literally hundreds of these incurable cases who occupied so many sanatorium beds have died and patients who have developed their disease in the era of antimicrobial therapy do not require institutional beds in the same numbers because results of the treatment to-day are so effective.

The beds maintained ready for use in the treatment of tuberculous cases have been reduced by 44 during 1961, and now stand at 300 beds, 90 of these being at Willow Chest Centre and 210 at Pearson Tuberculosis Hospital. In 1952 there were 838 patients under treatment for tuberculosis, while at the end of November, 1961, there were 244 patients under treatment in sanatorium. This represents a 71-per-cent reduction in a nine-year period and a 17-per-cent reduction in the

number of patients in sanatorium one year ago. This is a continuation of a trend previously reported that there has been an annual reduction of 15 per cent in sanatorium patients each year since 1953.

A similar trend is evident in other institutions treating tuberculosis. At the Vancouver Preventorium (now the Sunny Hill Hospital for Children) there were forty-seven children with tuberculosis under treatment in 1959. This was reduced to twenty-five children at the end of 1960 and to thirteen at the end of 1961. Similarly, it has been possible to reduce the number of beds for the treatment of tuberculosis at the North Lawn Building at Essondale from 250 to 150 beds. A similar trend has been experienced in the three hospitals operated by the Indian Health Services for the treatment of tuberculosis.

During 1961 the first admissions and readmissions to the sanatoria of the Division of Tuberculosis Control totalled 420. Of these, 311, or 74 per cent, were first admissions and 109 were readmissions. This compares with 924 admissions in 1956, of which 35 per cent were readmissions, and 488 in 1960, of which 30 per cent were readmissions. On the average about one-third of admissions are readmissions.

Age Distribution in Sanatoria

Date	Total Sanatorium Population	50 Years of Age and Over	Per Cent 50 Years of Age and Over
November, 1952	838	276	32.9
November, 1955	615	251	40.8
November, 1957	448	217	58.4
November, 1958	332	189	56.9
November, 1959	331	161	48.6
November, 1960	294	169	57.4
November, 1961	244	128	52.5

The table above will show that there has been a further reduction in sanatorium patients as previously noted and a decrease in patients 50 years of age and over. However, the patients in this age-group still represent the majority of patients under care in sanatoria. The reduction of total numbers of patients by fifty has mostly been in patients 50 years of age and over, who represent forty-one out of the fifty. In spite of this, 52.5 per cent of all patients in sanatorium are 50 years of age and over. Of the total patients, only fifty-nine, or 24 per cent, are females. Of the female population, eighteen, or 30 per cent, are 50 years of age and over. However, there are 110 male patients 50 years of age and over, representing 59 per cent of the male population. The preponderance of elderly males is in the group 70 years of age or older.

The bed occupancy of 1961 is a reflection of the case-finding activities of 1960. Of the active cases diagnosed in 1960, it is interesting to note that in the minimal classification the majority were under 50 years of age, 105 out of 184 or about 57 per cent. However, in the moderately advanced classification, sixty-eight out of 127, or 54 per cent, were over 50 years of age and only fourteen were under 25 years of age. In the far advanced classification, twenty-two out of thirty-six, or 61 per cent, were over 50 years of age, and only two far advanced cases were under 25.

PROGRESSIVE PATIENT CARE

Since the advent of antimicrobial therapy for tuberculosis, it is not necessary to rely on rest alone as the sheet anchor of the treatment programme; in fact, rest has become a less important factor than the drugs. This, of course, has led to revo-

lutionary changes in sanatorium practice. As a result, it has become apparent that many patients could look after many of their own needs and would become less dependent and better able to make the transition from sanatorium to the home environment on discharge.

At Willow Chest Centre the physical layout of the wards did not lend itself to the grouping of patients in selected areas according to the degree of illness or nursing care required because of the fact of the small number of patients involved and the fact that one ward was largely surgical. However, the principles of progressive care were applied, and in May, 1959, a method was worked out whereby patients would be classified according to their nursing-care needs, whether this should be intensive care, intermediate care, minimal care, or self-care. Patients are classified daily according to these categories, and the wards are staffed daily according to the total nursing requirements as indicated from the classification of patients. This was possible because of the fact that nursing service on a casual basis was available.

On the medical ward at Willow Chest Centre the nursing service per patient per day was reduced from 2.46 hours in 1959 to 2.29 hours in 1961, while on the surgical floor this was reduced from 3.96 hours of nursing service per patient per day to 3.38 hours in 1961. This ranges between 5.35 hours per patient per day for intensive care to surgical patients to 0.56 hour for self-care and from 3.75 hours to 0.56 hour for medical cases.

During this period the same standard of nursing care was maintained, and at the same time the bed capacity was reduced by 11 beds. The total number of staff nurses was reduced from twenty-three to seventeen and the orderlies from eleven to eight. The considered appraisal by the medical and nursing staff of the progressive-care principle for tuberculous patients is that it is a logical adjustment which makes the institutional facilities and care of greater benefit to all types of patients under present-day conditions.

The progressive-care plan in the form of a minimal-care unit was introduced at Pearson Hospital in November, 1959, with accommodation for seventy-eight ambulatory patients. The objective was to provide a type of environment that would encourage self-help and a greater sense of personal responsibility toward the patient's care and welfare during hospitalization and after discharge. The support and active participation of all of the institutions' departments and personnel were essential, and, of course, the patients had to be prepared for such a change. The nursing department was more involved in the planning and reorganization than other services because of providing care on a full-time basis, and the changes in the routine and staffing had a more direct impact on the nursing personnel. Their response was enthusiastic, and much ingenuity and interest were shown by supervisors, staff nurses, and nurses' aides.

There was an initial reduction of twelve staff members as the two minimal-care wards were staffed with minimum coverage on all shifts. The patients seemed to enjoy and welcome the change from the beginning, and no major problems were encountered. They acquired a different attitude toward medication and worked out different methods of reminding themselves to take their medication regularly, some leaving their supply in the dining-rooms to associate the dosages with meal times. Others used plastic boxes for the daily amounts to be taken. Frequently patients have expressed satisfaction in getting used to this responsibility before discharge. Other comments are in relation to the greater sense of freedom, the quiet atmosphere of the area, and the more cheerful environment away from the sicker patients and the activities of a fully staffed and functioning ward. Most patients find the minimal-care atmosphere more conducive to rest and relaxation. Boredom and aimless restlessness have been offset by more constructive activities for self-help, recreation

and socializing, and patients are more content to remain in hospital for the required time. It should be mentioned, too, that the amenities on the minimal-care unit have been an asset for some chronic-type patients whose long-term and, in some cases, permanent hospitalization has been made more liveable and pleasant for them. A proof of the benefits from this plan and the acceptance by the patients is that the "discharge against advice" rate in this group was 7 per cent over the year, as compared to almost 11 per cent in the total sanatorium population.

STATIONARY CLINICS

A continuing trend in tuberculosis-control is the increasing emphasis placed on out-patient services. The relative importance of the clinic services continues to increase as the treatment services in sanatorium diminish. It is through the clinic services, both stationary and travelling, that the known cases of tuberculosis are kept under periodic clinical assessment, and this has become more intensified as it has been possible to redirect the available resources. The over-all costs of hospitalization have shown a great reduction with the closing of two-thirds of the beds, and it has been possible to use some of these savings in the clinic programme.

While fewer people are under treatment in hospital, large numbers are under a programme of treatment extension with antituberculosis drugs outside of institution. At the present time, while under 300 patients are being treated in sanatorium there are approximately 1,450 patients having an extension of their sanatorium treatment as out-patients. This has only been possible because of the fact that clinical supervision could be provided, and because of the fact that in British Columbia there is a well-developed public health service through which it has been possible to keep in close touch with these patients.

At the end of 1961 there were 21,799 known cases of tuberculosis in the Province, of whom 4,832 were Indians. Of the total number, 19,206 were considered to be inactive. The importance of close supervision of the known cases of tuberculosis is shown by the fact that 109 patients were readmitted to sanatorium, and of these, twenty-nine cases were previously considered to be inactive, some for many years.

Besides those classified as known tuberculosis, many others were followed because of other lung changes, and from this group 127 active cases of tuberculosis were found in 1961.

Relapse in tuberculosis has long been recognized, and it will be seen that the groups followed by the clinics are those in whom the incidence of active tuberculosis is very high and who represent the core of the continuing problem in tuberculosis-control.

TRAVELLING CLINICS

The original purpose of the travelling clinics was the extension of the diagnostic facilities of the stationary clinics into the field. The private practitioner referred suspicious cases or those on which he wanted advice to the travelling clinic. Over the years the steady increase in the use of chest X-rays has brought about a change. This change has been furthered by the use of antimicrobials. The effectiveness of antimicrobial therapy and the readily available referred X-ray service has made personal interviews with all patients unnecessary, especially once the patient has been classed as inactive two years or more.

One of the problems inherent in the present travelling clinic set-up is that of making the best use of the clinician's time. On visits to more distant points, time and expense of travelling indicate the necessity for the clinician and technician to travel in the same vehicle. On most clinics of three days' duration it is probable

that one-third of the cases do not need to be seen by the clinician but could be checked by X-ray alone. As a result, more and more use is being made of the referred film service for the follow-up of cases who are considered to have been stable for long periods of time. This is an effort to try to reduce the load of cases seen on clinic trips. It may be possible in the future to extend this practice very much further. Already in two centres, films are all taken at the hospital, and the clinician then calls back for a consultation those cases he wishes to see. In one instance this procedure is followed because of overcrowding at the local hospital where clinics are held; in the other the expense of travelling is out of all proportion to the number of cases seen. It is conceivable that ultimately all films will be taken in local hospitals, no travelling clinic technician will be used, and the clinician will see in consultation only those cases he selects; this group would include the recently diagnosed cases, those under treatment, and those being seen for the first time, that are ordinarily referrals from routine hospital admission or out-patient survey films. A modification of this procedure has been in use for several years in the Kootenay area, this difference being that the clinic technician travels and takes the films, the clinician making his consultation trip later.

Last year reference was made to the problem of providing adequate coverage of the many centres on a uniform basis and to the fact that presently it was not possible to provide additional coverage without an additional technician. Clinic routine on the Mainland is currently based on quarterly visits, which lends itself so well to regulating follow-up work. It had been suggested that a change of the basic interval from three months to four might make further coverage of centres visited only twice a year possible. To date no decision has been reached on this problem. Further consideration will be given to it during the coming year.

The travelling clinics have been fortunate in having no really pressing problems appear during the past year. They have been especially fortunate in having excellent travelling technicians. It has never been necessary to cancel clinics due to illness or other trouble with the technicians. Theirs is a very onerous, trying, and often thankless job, especially when out on the road.

One noticeable change in 1961 compared with 1960 is the fairly large decrease in the number of hospital-admission miniature films taken in the Interior Travelling Clinic area—8,920 in 1960, 4,589 in 1961. This figure in 1958 was 14,000-odd. No obvious reason for this change is apparent. It may be explained in part by, first, the change in policy of not X-raying those under 18 years routinely and, second, not X-raying those who have had a film in the previous year. Rather extensive chest X-ray surveys done in the Interior Travelling Clinic area recently may have precluded the necessity of X-ray on admission to hospital in many cases.

In other categories of X-rays taken, such as clinic films and referred films, an increase is noted in most clinics. The usual variation noted from year to year probably accounts for this, although the difference may be large. For example, standard-size hospital-admission films for the Coast Clinic show: 1959, 5,270; 1960, 1,530; 1961, 3,407. Again, the reason for this variation is not apparent.

The nurse-technician of the Kootenay Travelling Clinic has continued the work of tuberculin surveys of schools in that area. The technician with the Coast Travelling Clinic has continued to assist on occasions in Willow Chest Centre and in X-ray surveys of Provincial Mental Hospital personnel and patients. The travelling clinics have continued to provide an annual X-ray survey service to the Provincial Infirmary at Marpole and the Dellview and Skeenaview Homes for the Aged.

The co-operation from health unit staff received by travelling clinics has been excellent. In many instances, clinic visits result in overcrowding in health unit quarters, but this is all taken in good part. Each year sees the opening of new

health unit buildings equipped with darkroom facilities, which makes the travelling clinic work simpler than working in hospitals. Health unit staff are most helpful in making the work of the travelling clinics simpler and easier, and they have been most co-operative in the additional paper work involved in checking cases on the Division's central registry and the recording of contacts.

The actual volume of work done by the travelling clinics in terms of films read and reported remains up despite a policy of referring an increasing number of routine rechecks (healed primary complex, apical scarring, etc.) to the local hospitals for the chest film. The Division's policy of expanding the tuberculin X-ray survey programme would suggest an increase rather than a decrease in the number of referred films clinics will be called on to read. Probable staff changes in the near future in clinicians, who need to be experienced, will require consideration in planning for the next few years. It is considered necessary to have no increase in the travelling clinic loads, and a reduction would be desirable since a significant increase would require additional staff. In contrast, a reasonable increase in referred film numbers can be handled by the present medical staff. Other possible changes, such as changes in frequency of visits, will be further explored.

OUT-PATIENT ANTIMICROBIAL THERAPY

Mention was previously made of 1,450 patients receiving tuberculosis drugs at home as an extension of their sanatorium treatment. A study of the effectiveness of out-patient antimicrobial therapy has been made at Willow Chest Centre. The study consisted of 128 patients—fifty-two newly diagnosed and seventy-six reactivations of previously healed cases. Included were eighty-five patients who it was deemed feasible to treat on an out-patient basis and forty-three cases who took their treatment as out-patients although hospitalization had been recommended. All patients suffered from active pulmonary disease and were treated entirely as out-patients or had less than thirty days' hospital care during their course of treatment. Individuals were excluded from this study if there were no recorded period of follow-up after completion of therapy.

Of the 128 cases studied, 118 completed their prescribed course of therapy, and an adequate follow-up was available on 115 cases. An analysis of the remaining thirteen patients revealed three cases were admitted to sanatorium, three cases were lost, and therefore follow-up was incomplete, and seven cases died. Only one of the deaths was due to tuberculosis.

The study included cases with all degrees of involvement. There were seven primary types, sixty-five minimal, forty-five moderately advanced, and eleven far advanced. Eleven patients in the group had definite cavity disease at the time of diagnosis.

Treatment consisted of the usual combinations of antimicrobials in the accepted dosage levels. It was continued for a minimum of twelve months and a maximum of sixty-six months. Rest as a form of treatment was considerably modified in this group. Seventy-two were on restricted exercise, and fifty-six were permitted to remain ambulatory, many remaining at work. Of those on restricted activity, approximately 50 per cent were described as exceeding their prescribed exercise.

An attempt was made to assess the co-operation of these patients on the basis of: (1) attendance at clinic for check-up, (2) attendance to obtain drugs, (3) nursing reports. Using all methods of assessment, it was found that approximately 93 per cent of the patients were considered to be co-operative.

As for results, of the 118 patients who completed therapy, 112 or 95 per cent became inactive. Subsequent follow-up of those six who remained active showed that three have become inactive.

In summary, therefore, one would say that out-patient antimicrobial therapy has proven successful. A high degree of success has been obtained in rendering these patients inactive, and it is demonstrated that the vast majority were co-operative in taking their drugs, although this type of treatment did not appear to be conducive to following the prescribed restrictions. Fortunately this lapse did not appear to have a deleterious effect on the cure rate. A study was done several years ago at Pearson Hospital on antimicrobial treatment of in-patients, which revealed 93 per cent of the patients were rendered inactive. The present study compares favourably with these results. The findings are particularly gratifying when one considers that in about 33 per cent of cases included in the study out-patient treatment was our second choice as far as methods of treatment were concerned, the patient having been advised that in-patient care was advocated in their particular case.

TUBERCULOSIS SURVEYS

Tuberculosis surveys in British Columbia were continued, using the total community combined tuberculin test and X-ray method developed over the last few years as part of an over-all plan to identify all tuberculin positive reactors in British Columbia. Further experience has been gained, and a few changes have been made.

Public acceptance of the "needle test" has improved as more people become familiar with the test. The number of people who are reporting for periodic X-rays because of a positive tuberculin test previously is increasing. These people are aware that they are tuberculin positive and know the significance of this, indicating that the Division's education programme is effective.

The percentage of the population reached has remained satisfactory, although this varies considerably in different communities, from 80 to 90 per cent in closely knit communities in the Interior to 60 to 70 per cent in larger metropolitan communities in the Lower Mainland.

The year started with a survey of the City of New Westminster, where 24,218 persons were screened. From there the team moved to the Alberni Valley on Vancouver Island, and 15,247 persons were tested there. The next area covered was the North Okanagan Health Unit, where 25,398 persons were examined in Vernon, Salmon Arm, Revelstoke, and the adjacent areas. With the exception of Kelowna, which will be done this coming spring, the Central Interior from the United States border to Prince George has now been covered. On the 1st of September a survey of Richmond and North Burnaby in the Vancouver metropolitan area was started. In Richmond 24,493 persons were screened and about 16,500 in Burnaby up to the end of December.

Special tuberculin surveys of the inmates and staff at the Haney Correctional Institution and the first-year students at the University of British Columbia, which previously had been carried out on a yearly basis, were done again this year. A total of 2,571 tuberculin tests was done.

Continuing the policy previously arranged, equipment was made available to X-ray the tuberculin positives from the previous year, and the X-ray van revisited Penticton, Kamloops, Prince George, and the industries in the Vancouver area. Of 4,262 persons X-rayed, active tuberculosis had developed in one 33-year-old woman during the year, and she is now under treatment. There were five tuberculosis suspects, who are being further investigated. This does not include the tuberculin positive children, who are all being followed regularly by our stationary and travelling clinics.

These figures confirm the previous impression that while periodic X-rays of positive reactors are indicated, in the age-group over 30 yearly X-rays are not very

productive of new cases, and that an X-ray every three to five years probably would be sufficient.

During 1960, 26,887 persons were tuberculin-tested in industrial surveys in and around Vancouver, and 47 per cent of these were positive. The percentage of large tuberculin reactions was three times higher than in the general population, and most of the complaints about large reactions came from this group. It was found that the attitude of the employee was much different from those who came to the van on their own initiative. Most of them had the test because they felt the employer wanted them to have it, rather than because of any personal interest. This group was not very receptive to the education regarding the importance of the tuberculin test. This was evident in the small percentage of positive reactors who reported for an X-ray in one year. It was also found that industrial surveys hurt the community surveys because the men refused to come to the vans with their families, saying they would be done at the plant. For these reasons it was decided to discontinue industrial surveys, except in exceptional circumstances, and to concentrate on examining the workers in the general community surveys.

Beginning in 1961, all reactions were measured and recorded in millimetres induration, including reactions of 5 millimetres or less, which are interpreted as negative. These records will give us information on the amount and significance of small reactions. The Division has already found that the percentage of small reactions, which are thought to be due to cross-sensitivity, varies considerably in different communities. Also, recent articles indicate that persons with large reactions, especially children, are more likely to have or to develop active tuberculosis than those with the smaller reactions. By recording the size of the reaction, we can get some information on this problem. The record of the size of the reaction is also important where there has been an increase in the size in a subsequent test and is a great help in deciding whether there is true tuberculin conversion or not.

In June, 1959, 1,783 persons were tuberculin-tested in a survey in Steveston. In October, 1961, this area was again surveyed, and the people were asked to have a repeat tuberculin test unless they had had a large reaction in 1959. A number of people volunteered the information that they were tuberculin negative twenty-eight months previously and now showed a positive reaction. These people were all checked with the previous records of those who were negative in June, 1959. Twenty-four now had a reaction of 10 millimetres or more; some had reactions as large as 50 millimetres. These people were all considered to be true recent converters. One girl had already developed pulmonary tuberculosis with a positive sputum and is under treatment; six others were placed on prophylactic I.N.H. because of their age or history of recent contact. The rest are being followed carefully, and an attempt is being made to find the contact in each case. The incidence of active tuberculosis in these recent converters in the first years is higher than in any other group.

Nine others who were tuberculin negative in June, 1959, had a reaction between 6 and 8 millimetres. Most of these probably represent a fluctuation in the tuberculin sensitivity and are not true converters. However, this group is also being followed carefully. The identification of recent converters is an important result of tuberculin surveys.

A special study was done on the follow-up of positive reactors from last year's survey at Penticton, Kamloops, and Prince George, using a different type of notification in each place. When only radio and press were used, only 58 per cent of available positive reactors reported for repeat X-ray. When notified personally by mail, 67 per cent reported for X-ray, and when personal notification, press, and radio were used, 82 per cent appeared.

MENTAL HEALTH AND TUBERCULOSIS

An intensive programme of tuberculosis-control is continuing in conjunction with the Mental Health Services throughout the Province. From past experience all those engaged in the treatment of the mentally ill are well aware of the serious consequences that can occur when unsuspected tuberculosis develops amongst the mentally ill and spreads so rapidly to other patients. It is gratifying to report that this problem continues to be well controlled in the mental institutions in British Columbia. This is achieved by the treatment of the active tuberculosis cases in the sanatorium (North Lawn Building) at Essondale, by the close supervision of the known inactive cases in mental institutions, and through a programme of tuberculin testing and X-raying of all new admissions, as well as annual re-examination of all inmates of Essondale, Woodlands, Colony Farm, Colquitz, and the Homes for the Aged at Valleyview, Dellview, and Skeenaview.

A medical team from the Division of Tuberculosis Control, consisting of a tuberculosis medical specialist, a public health nurse, and a clerk, is stationed at Essondale and is responsible for the tuberculosis programme in that area. The institution at Colquitz is supervised by the Vancouver Island Chest Centre, while the Homes for the Aged at Dellview (Vernon) and Skeenaview (Terrace) are regularly examined by the travelling clinics.

The staff of all mental institutions are also regularly X-rayed and tuberculin-tested and given B.C.G. vaccination where indicated.

In common with other institutions for the treatment of tuberculosis, there has been a lessening need for beds in the North Lawn Building in Essondale, and the number of beds available for the treatment of tuberculosis cases has been reduced from 250 to 150, making it possible to use for other purposes the 100 beds thus released. At the present time there are 135 patients under treatment for tuberculosis in North Lawn, which is a reduction of about sixty-five in the current year. During the year there were sixty-seven admissions, 112 discharges, and twenty-six deaths amongst the tuberculous patients. It will be noted that the death rate was high in this group, but most of the deaths were due to non-tuberculous causes. There were also 234 inactive tuberculosis cases at Essondale under close supervision. One patient was transferred to Willow Chest Centre, where a lung resection was successfully carried out.

An indication of the large volume of work involved in the supervision of the patients and staff at Essondale is shown by the fact that 15,350 chest X-rays were taken, 3,347 tuberculin tests were done, and 194 B.C.G. vaccinations were given.

The close working relationship with the Mental Health Services in this co-operative undertaking is most gratifying.

PENAL INSTITUTIONS

Special attention is given to the problem of tuberculosis in penal institutions because of the fact that there is a high incidence of this disease amongst the type of persons who make up the prison population. This group includes the homeless drifters, the alcoholics and drug addicts, the recalcitrants and the unco-operative, and those of low economic status, all of whom are known to have a high incidence of tuberculosis. Being, for the most part, antisocial, they will not submit themselves voluntarily for examination in community surveys and at tuberculosis clinics. However, it is possible to examine this group while they are in gaol, and, for this reason, chest X-ray facilities have been provided for the Provincial gaols at Oakalla and Prince George. In this way all inmates are screened for tuberculosis as they enter the prison system.

During 1961, at Oakalla Prison Farm 8,266 persons were X-rayed, while at Prince George Gaol 341 persons were X-rayed. Prisoners at Haney Correctional Institution and the British Columbia Penitentiary in New Westminster are screened as they pass through Oakalla, and follow-up examination of this group is done by the mobile survey unit. During the past year tuberculin and X-ray surveys were carried out at both Haney Correctional Institution and the British Columbia Penitentiary for all inmates and staff.

REHABILITATION

With decreasing numbers of patients being treated in sanatoria, particularly patients under 50 years of age, the problem of vocational rehabilitation has diminished greatly. As a result of this, the two rehabilitation officers of the Tuberculosis Division were transferred to the Health Branch's rehabilitation services. These officers are now engaged in the broader field of rehabilitation, while at the same time providing service for the tuberculosis patients as necessary. This is proving very satisfactory.

Patients while in sanatorium and in the convalescent period at home are encouraged to take advantage of the opportunities to improve themselves through correspondence courses, and many do engage in these activities. Full-time school-teachers are employed at Willow Chest Centre and Pearson Tuberculosis Hospital, and a comprehensive teaching programme is provided. Through this programme many students have been able to carry on their studies and keep up with their school classes in spite of spending appreciable periods of time in sanatorium. Others have undertaken vocational studies in connection with the jobs they were doing prior to entering sanatorium and have returned to work better trained in their trades.

NURSING EDUCATION

Education at all levels, both lay and professional, has been one of the most effective parts of the tuberculosis-control programme since its inception. For over fifteen years a full-time specially trained nursing instructor has been employed by the Division of Tuberculosis Control to conduct such a programme for nurses and other personnel engaged in patient-care. This programme is especially directed toward student-nurses, and a course in tuberculosis nursing is a prerequisite to their registration as nurses in British Columbia.

With the rapid changes that have been taking place in the treatment and public health aspects of tuberculosis, this has become more than ever necessary so as to keep all groups well informed and to interpret changing trends to them. Student-nurses from the Lower Mainland training-schools of the Vancouver General Hospital, St. Paul's Hospital, and Royal Columbian Hospital attend such courses at the Willow Chest Centre. To provide instruction for student-nurses in schools outside of Vancouver, the nursing instructor periodically conducts courses in Kamloops and Victoria. During the past year 478 nurses attended these courses.

A course of instruction is also given to practical nurses from the Vancouver Vocational Institute, and as part of their training these students spend four weeks at Pearson Tuberculosis Hospital. Forty-two students participated in this programme during the year.

Twenty-five student-nurses from the University of British Columbia also received instruction. Programmes are also provided for graduate nurses. From the University of British Columbia, four nurses in the public health nursing course and four nurses in the clinical teaching and supervision course also attended special courses provided by the Division of Tuberculosis Control.

The nursing staff of the Division of Tuberculosis Control also participated in several postgraduate courses in various aspects of nursing as lecturers or panel members.

BRITISH COLUMBIA TUBERCULOSIS SOCIETY

After more than fifty years of energetic participation in the tuberculosis programme in this Province, the British Columbia Tuberculosis Society is still making a vital contribution in the field of tuberculosis-control. Since pioneering the campaign to provide treatment facilities at Tranquille and later to operate that institution until the Provincial Government took it over in 1921, the Society has pioneered many fields of activity in an endeavour to take care of the unmet needs as they become apparent. This included the provision of institutional facilities, the establishment and operation of the first travelling clinic, and, since its very beginning, a continuing educational programme primarily to keep the laity informed so that they might have a proper understanding of the tuberculosis problem. The people at large are probably better informed about tuberculosis than any other disease, and this is probably nowhere better demonstrated than in the acceptance by the public of the tuberculosis programme, as shown by the high degree of participation in most centres of the Province when community tuberculosis surveys are carried out.

At the present time the support of the Divisional tuberculosis programme by the Society is chiefly in three fields—education, community surveys, and assistance in the construction of health centres. In the construction of community health centres 10 per cent of the cost of construction is underwritten by the British Columbia Tuberculosis Society to provide facilities within these health centres for the tuberculosis services. In the community tuberculosis surveys, the Society makes a major contribution in being responsible for effective organization. This is a very involved and highly specialized process, on which the success of the surveys depends. It involves obtaining the co-operation and active participation of the local civic and health authorities, enlisting the support of many voluntary agencies, obtaining and instructing large numbers of volunteers for canvassing, clerical work, and technical assistance, and in obtaining the support and co-operation of press, radio, and television. It will be seen that these activities represent a large financial outlay on the part of the Society and make the case-finding programme a truly co-operative effort in this most important field of endeavour.

MORBIDITY AND MORTALITY

During the ten-year period from 1951 there has been a decrease of more than 50 per cent in the number of cases of tuberculosis diagnosed. In 1951 there were 1,332 new cases diagnosed, giving a rate of 114.3 per hundred thousand while in 1961 there were 939 new cases, a rate of 57.3 per hundred thousand. Of these, 522 were new active cases.

The number of new cases of tuberculosis diagnosed among Indians in 1961 was 141, of which 120 were new active cases.

The number of tuberculosis cases known to the Division of Tuberculosis Control totalled 16,967 as at December 31, 1961, and of these, 5.2 per cent or 883 were active.

There has been a reduction in the death rate of over 80 per cent in the past ten years, the rate in 1951 being 23.1 per hundred thousand (292 deaths) and 3.7 per hundred thousand (sixty deaths) in 1961.

REPORT OF THE DIVISION OF VENEREAL DISEASE CONTROL

DR. A. A. LARSEN, DIRECTOR

There was little change in the total number of cases of venereal disease reported during 1961 as compared with the numbers recorded during the previous five years. There were 3,686 cases of gonorrhœa reported this year, as compared with 3,546 in 1960, while the average number of cases per annum over the preceding five years was 3,517.

Newly acquired infectious syphilis has continued to be reported at an increased rate. There were sixty-six cases of primary and secondary syphilis diagnosed in 1961 and fifty-six the year before, compared to an average of thirty-eight cases per annum for the preceding five years. Late syphilis, with and without complications, has continued to decline, with only 143 cases being discovered this year. During the past five years there has been an average of 202 cases per annum of late syphilis reported in British Columbia.

No new or unusual factors have become apparent which might explain the increased incidence of gonorrhœa in this Province. Promiscuity and venereal disease are so closely related that an increase in venereal infections can only signify more pre-marital and extra-marital exposures. The casual manner in which even the youngest and most inexperienced patients tend to regard their disease is disconcerting and probably reflects the ease with which gonorrhœa can now be treated.

For the past few years, reported syphilis, in the early and infectious stages, has been confined almost exclusively to the metropolitan areas. This year, however, infectious cases have again been reported from a number of outside centres. This has made the Division's efforts to locate and examine all contacts considerably more difficult. Although homosexual practices have continued to be responsible for the spread of much of the new syphilis reported in the Vancouver area, the number of heterosexually contracted infections has been proportionately greater this year than for some time.

When penicillin first became available, the Division adopted a schedule of treatment for syphilis, using the maximum recommended dose. In recent years most venereal-disease treatment centres have considerably decreased the amount of treatment given to patients with early uncomplicated syphilis. The Division is now reviewing the schedules used in other clinics in Canada and the United States and hopes shortly to adopt a revised and shortened plan of treatment.

For several years the Division has been taking Papanicolaou smears on selected female patients as a screening test in the diagnosis of cancer of the cervix. Early this year it was decided to take these smears routinely on all parous women and on all non-parous women, at the discretion of the examining physician. Six suspicious cases have been reported in the past six months, and arrangements made for continued investigation either with a private physician or public clinic.

ADMINISTRATION

There have been no senior staff changes in the Division during the year.

The Abbott Street public clinic, located in Vancouver's metropolitan health unit No. 1, closed on a trial basis in 1960, and was closed permanently when it was found that the patients who usually attended this clinic were nearly all going to one of the Division's other clinics.

Arrangements have been made for Dr. J. L. M. Whitbread, Senior Medical Health Officer for the Greater Victoria Metropolitan Board of Health, to take over from the Division the direction of the venereal-disease control programme in Victoria early in 1962. The Division will continue to supply the services of a full-time nurse and a part-time physician.

EPIDEMIOLOGY

The case-finding and contact-tracing facets of the Division's control programme have been aided this year by the exceptionally fine co-operation received from a number of city hotels and from the Vancouver City Police. The operators of a number of hotels frequently named as places of meeting have volunteered to assist our investigators in their search for named contacts, and have given information which has helped locate a number of infected patients. The Vancouver Police have intensified their drive against prostitution throughout the city and have directed many men and women to the Division's clinics for examination.

Experience in the United States has shown that the friends and acquaintances of many patients with a venereal disease, even though they are not named directly as contacts, are more frequently infected with a venereal disease than the average of the population. This year the interviewing staff of the Division has started to ask many patients to send in for examination any of their friends who they think might perhaps also be infected. This procedure, known as the "cluster testing" technique, has been moderately effective, and it is planned to intensify this aspect of the programme in the coming year.

During the year two "call girl" operations in Vancouver were uncovered by the police and closed. A review of the clinic records of the girls involved showed that several had recently been treated for venereal disease. There was no evidence of the operation of any bawdy houses. Several of the establishments named as place of meeting and exposure for homosexuals were visited by the city police, city health authorities, and city licence inspector, with apparently good results.

RESEARCH

This year, for the first time, there has been an increase in the number of male patients with gonorrhœa who failed to respond to the usual treatment with penicillin. In view of the reports of similar findings that are appearing, arrangements have been made with the Division of Laboratories for them to perform penicillin sensitivity tests on positive gonococcal cultures secured from a series of male patients in order to try to determine whether penicillin-resistant strains of gonococci are appearing in this Province.

A two-year study to determine the most effective alternate medication for cases of gonorrhœa apparently refractory to penicillin has also been started.

During the summer, with the help of a National Health Grant, the Division employed a senior medical student, who not only furnished summer relief for the clinic staff, but also began an investigation on the value of various alternative drugs in patients with gonorrhœa who do not respond to penicillin.

Dr. Denys Ford, Associate Professor, Faculty of Medicine, University of British Columbia, continued his investigations on the etiology of non-gonorrhœal urethritis, using patients from the Vancouver clinic as the subjects of his study. As part of this investigation, the clinic has undertaken to treat these cases even though this condition has not been proven a communicable venereal disease.

EDUCATION

The educational programme for physicians, medical students, public health nurses, and student-nurses has changed little from previous years. A number of recently graduated doctors were employed part time by the Division to operate public and special venereal-disease clinics. Appointments continue to be limited to one year, so that as many physicians as possible may benefit from this training. As a result of this programme, there is a continually expanding group of physicians in the community who are competent and willing to treat venereal disease on a private basis, and the Division is receiving more help in tracing contacts than has been the case for many years.

A number of public health nursing students from the University of British Columbia were given a one-week course of instruction covering all phases of venereal-disease control, and several lectures were given to students in medicine at the University. The senior nursing students from the Vancouver General Hospital have continued to spend three days each in the main clinic of the Division, and lectures have been given at St. Paul's Hospital, the Royal Columbian Hospital, and the Vancouver Vocational Institute. An arrangement has been made for the public health nurse attached to the Division to give regular talks on venereal disease to the inmates of the Willingdon School for Girls. The two talks given so far have been well received and resulted in group discussions, felt to be very worth while.

PUBLIC AND SPECIAL CLINICS

Patient attendance for diagnostic and treatment purposes has decreased slightly at the various clinics operated by the Division.

The number of blood tests taken for the United States Immigration Service has continued to increase. In 1959 there were 3,084 such tests done; in 1960 there were 4,347; while in 1961 this had grown to 4,510.

There were 296 new infections discovered at the special female clinics held at the Vancouver Juvenile Detention Home, the Willingdon School for Girls, Oakalla Prison Farm, and Vancouver City Gaol. However, the likelihood of many of these patients serving as a reservoir of infection upon their release gives these cases an importance far greater than their relatively small numbers might indicate.

Public venereal-disease clinics continued to be operated by their respective health units in New Westminster, Prince Rupert, Prince George, and Dawson Creek, at the request of the practising physicians in these areas and with guidance from the Division of Venereal Disease Control. These clinics continue to be well attended and, it is felt, do much to keep down the reservoir of untreated venereal disease in the smaller centres.

REPORT OF THE DIVISION OF LABORATORIES

E. J. BOWMER, DIRECTOR

The year under review brings to a close the third decade of the existence of the Provincial Division of Laboratories as a separate entity within the Health Branch of British Columbia. A review of the Division's history and work is therefore appropriate. After a brief period in the Department of Pathology of the Vancouver General Hospital, the Laboratory moved in 1931 to a site on Hornby Street, where it was accommodated in a series of old wooden houses. In August, 1955, the Division moved to its present spacious accommodation, occupying three floors of the Provincial Health Building. In this thirty-year period the work load undertaken by the Division increased from about 41,000 tests in 1931 to about 360,000 tests in 1961, a ninefold increase in tests. In the same period the population of British Columbia increased from about 700,000 to over 1,600,000. The Division thus performed one test for every seventeen inhabitants in 1931 and one test for every four inhabitants in 1961.

The function of the Division is to provide laboratory facilities for the diagnosis and control of communicable disease and for other laboratory tests required by the various programmes of the Health Branch. Over the years the work load in numbers and in complexity of tests steadily increased. During the past five years the following tests, not previously performed in this Division, were introduced into the routine testing programme:—

- (1) Estimation of the antistreptolysin O titre for the study of rheumatic fever and other late manifestations of streptococcal infection.
- (2) Phage-typing of coagulase-positive *Staphylococcus aureus* for the epidemiological "finger-printing" of strains isolated from cases and carriers.
- (3) Culture from faeces and identification of pathogenic *Escherichia coli*, a common cause of institutional outbreaks of acute gastroenteritis in infants.
- (4) Chemical analysis of municipal water-supplies and effluents responsible for pollution.
- (5) Special examination of atypical acid-fast bacteria.
- (6) Antimicrobial sensitivity tests on strains of tubercle bacilli.

As a mere total of tests performed gives little indication of the actual work load of the laboratory, the Dominion Bureau of Statistics (D.B.S.) unit of laboratory work (one unit equivalent to ten minutes of work) was introduced in 1957. Table I records, in thousands, the tests performed at the main and branch laboratories during the past decade (1952 to 1961) and the work load in D.B.S. units during the past five years (1957 to 1961).

In 1931 the staff numbered twelve; by 1955 the number rose to nearly fifty and in 1961 the total was sixty. The categories and duties of these Civil Servants are recorded in Table II.

LABORATORIES

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*Table I.—Annual Work Load, Division of Laboratories—Tests Performed,
1952 to 1961; Units¹ of Work, 1957 to 1961*

(All figures are in thousands.)

Year	Main Laboratory		Branch Laboratories		Total	
	Tests	Units	Tests	Units	Tests	Units
1952.....	345	—	64	—	409	—
1953.....	371	—	67	—	438	—
1954.....	338	—	56	—	394	—
1955.....	330	—	52	—	382	—
1956.....	358	—	54	—	412	—
Sub-totals.....	1,742	—	293	—	2,035	—
Five-year average.....	348	—	59	—	407	—
1957.....	373	878	48	115	421	993
1958.....	348	890	46	112	394	1,002
1959.....	314	833	42	102	356	935
1960.....	305	873	43	111	348	984
1961.....	315	936	45	115	360	1,051
Sub-totals.....	1,655	4,410	224	555	1,879	4,965
Five-year average.....	331	882	45	111	376	993

¹ One D.B.S. unit=10 minutes of work (introduced 1957).

Table II.—Civil Servants Employed in Division of Laboratories

(a) BY CATEGORIES

Category	Number
Physician	2 ¹
Bacteriologist (21)—	
Senior	7 ²
Junior	14
Technician (21)—	
Senior	8 ³
Junior	13
Non-technical personnel (16)—	
Clerks	8 ⁴
Outfit-makers and glassware-cleaners	6
Service workers	2
Total	60

¹ Includes Director and physician specialist. A second physician is to be appointed in 1962.² Includes Assistant Director.³ Includes Nelson Branch laboratory technician.⁴ Includes one part time.

(b) BY DUTIES

Duties	Number
Executive	4 ¹
Enteric bacteriology	7
Chemistry	2
Sanitary bacteriology	5
Miscellaneous bacteriology	7
Serology	7
Tuberculosis bacteriology	9
Media and supply	6 ²
Outfit-making and glassware-cleaning	6
Clerical	6 ³
Nelson Branch Laboratory	1
Total	60

¹ Includes Director, Assistant Director, physician specialist, and secretary.² Includes three technicians, two service workers, and supply clerk.³ Main office (includes one part time).

The total number of tests and the work load in D.B.S. units during 1961 are compared with the figures for 1960 in Table III. In tests performed the work load for 1961 was 3 per cent greater than in 1960, but the work load in units increased by over 7 per cent. Considerable increases occurred in the tests performed in special tuberculosis bacteriology, miscellaneous bacteriology, parasitology, and chemistry. Decreases occurred in routine tuberculosis and enteric bacteriology. The work loads in tests and units performed in the two branch laboratories at Nelson and Victoria during 1961 are recorded in Table IV.

*Table III.—Statistical Report of Examinations and Work Load in 1960
and 1961, Main Laboratory*

	Unit ¹ Value	1961		1960	
		Tests Performed	Work-load Units	Tests Performed	Work-load Units
Enteric Laboratory—					
Cultures—					
<i>Salmonella-shigella</i>	7	15,034	105,238	17,114	119,798
<i>Pathogenic E. coli</i>	10	2,293	22,930	2,364	23,640
Chemistry Laboratory—					
Water—					
Complete analysis	100	121	12,100	82	8,200
Partial analysis	—	477	8,081	37	1,051
B.O.D.	150	34	5,100	12	1,800
Milk and Water Laboratory—					
Milk and milk products—					
Plate count	4	4,849	19,396	4,993	19,972
Coliform	2	4,355	8,710	4,513	9,026
Phosphatase	3	3,144	9,432	3,190	9,570
Resazurin	1	375	375	430	430
Water—					
Plate count	2	1,459	2,918	1,463	2,926
Coliform	5	13,485	67,425	12,361	61,805
Food poisoning examination	15	52	780	55	825
Miscellaneous Laboratory—					
Animal virulence (diphtheriae)	6	4	24	2	12
Cultures—					
<i>C. diphtheriae</i>	5	11,717	58,585	6,854	34,270
Hæmolytic staph.-strep.	5	11,500	57,500	6,584	32,920
Phage typing	10	—	—	—	—
Miscellaneous	5	3,311	16,555	2,993	14,965
Fungi	5	2,463	12,315	2,197	10,985
<i>N. gonorrhœae</i>	5	10,967	54,835	9,270	46,350
Direct smear					
<i>N. gonorrhœae</i>	2	31,190	62,380	28,045	56,090
Vincent's spirillum	2	132	264	132	264
Miscellaneous	2	2,885	5,770	2,701	5,402
Serology Laboratory—					
Agglut. tests—Widal, Paul-Bunnell, Brucella	2	14,341	28,682	13,616	27,232
Antistreptolysin test	5	2,133	10,665	1,509	7,545
Blood—					
V.D.R.L. (qual.)	1	125,668	125,668	128,824	128,824
V.D.R.L. (quant.)	2	1,522	3,044	1,526	3,052
Complement-fixation	2	10,288	20,576	8,138	16,276
C.S.F.—					
Complement-fixation	2	1,795	3,590	1,887	3,774
Complement-fixation (quant.)	2	26	52	24	48
Cell count	2	78	156	145	290
Protein	2	79	158	148	296
Darkfield— <i>T. pallidum</i>	3	365	1,095	397	1,191
Viruses—					
Complement-fixation	4	63	252	25	100
Shipping	2	100	200	127	254
Tuberculosis Laboratory—					
Animal Inoculation	10	632	6,320	655	6,550
Antimicrobial sensitivity	25	1,222	30,550	1,032	25,800
Atypical mycobacteria	25	259	6,475	223	5,575
Cultures— <i>M. tuberculosis</i>	6	22,374	134,244	24,635	147,810
Direct smears— <i>M. tuberculosis</i>	2	9,403	18,806	12,588	25,176
Intestinal parasites	3	5,054	15,162	4,252	12,756
Totals	—	315,249	936,408	305,143	872,850

¹ One D.B.S. unit=10 minutes of work.

Table IV.—Statistical Report of Examinations and Work Load during the Year 1961, Branch Laboratories

	Unit ¹ Value	Nelson		Victoria	
		Tests Performed	Work-load Units	Tests Performed	Work-load Units
Enteric Laboratory—					
Cultures—					
Salmonella-shigella.....	7	180	1,260	1,175	8,225
Pathogenic <i>E. coli</i>	10	—	—	261	2,610
Milk and Water Laboratory—					
Milk and milk products—					
Plate count.....	4	728	2,912	809	3,236
Coliform.....	2	588	1,176	809	1,618
Phosphatase.....	3	370	1,110	624	1,872
Resazurin.....	1	139	139	182	182
Water—					
Plate count.....	2	21	42	2,121	4,242
Coliform.....	5	1,823	9,115	2,328	11,640
Food poisoning examination.....	15	—	—	15	225
Miscellaneous Laboratory—					
Animal virulence (diphtheria).....	6	—	—	3	18
Cultures—					
<i>C. diphtheriae</i>	5	516	2,580	1,097	5,485
Hæmolytic staph.-strep.....	5	516	2,580	1,097	5,485
Miscellaneous.....	5	357	1,785	63	315
Fungi.....	5	—	—	295	1,475
<i>N. gonorrhœæ</i>	5	—	—	534	2,670
Direct smear—					
<i>N. gonorrhœæ</i>	2	259	518	635	1,270
Vincent's spirillum.....	2	12	24	4	8
Miscellaneous.....	2	34	68	1,451	2,902
Serology Laboratory—					
Agglut. tests—Widal, Paul-Bunnell, Brucella.....	2	609	1,218	641	1,282
Antistreptolysin test.....	5	—	—	3	15
Blood—					
V.D.R.L. (qual.).....	1	3,880	3,880	15,701	15,701
V.D.R.L. (quant.).....	2	15	30	217	434
Complement-fixation.....	2	—	—	941	1,882
C.S.F.—					
Complement-fixation.....	2	—	—	321	642
Cell count.....	2	—	—	328	656
Protein.....	2	—	—	330	660
Darkfield— <i>T. pallidum</i>	3	—	—	17	51
Tuberculosis Laboratory—					
Animal inoculation.....	10	—	—	2	20
Atypical mycobacteria.....	25	—	—	2	50
Cultures— <i>M. tuberculosis</i>	6	—	—	1,222	7,332
Direct smears— <i>M. tuberculosis</i>	2	80	160	1,150	2,300
Intestinal parasites.....	3	121	363	557	1,671
Totals.....	—	10,248	28,960	34,935	86,174

¹ One D.B.S. unit = 10 minutes of work.

TESTS FOR THE DIAGNOSIS AND CONTROL OF VENEREAL DISEASES

The demand for standard tests for syphilis (S.T.S.) continued to decrease and was about 3 per cent less than in 1960. Certain technical difficulties were encountered with the antigen used in the screening (V.D.R.L.) test for syphilis, which resulted in much additional work. The tenth evaluation survey conducted by the National Laboratory of Hygiene was completed, and the results indicated that the Provincial laboratory's Kolmer testing is less sensitive than that of the control laboratory. During 1961, 365 exudates from 213 individuals were examined by the darkfield technique for the presence of *Treponema pallidum*. Twenty-eight of these patients (13 per cent) were positive, compared with nineteen (10 per cent) in 1960 and twenty-eight (13 per cent) in 1959. The *Treponema pallidum* immo-

bilization (T.P.I.) test was performed by the National Laboratory of Hygiene and the Ontario Provincial Division of Laboratories on 341 sera; positive results were reported in 113 patients (33 per cent).

The demand for laboratory work for the diagnosis and control of gonorrhœa showed a marked increase compared with 1960—20 per cent more cultures and 10 per cent more smears for microscopic examination. A special study was carried out between June and December, in collaboration with the Division of Venereal Disease Control, to determine the sensitivity to penicillin of selected strains of *Neisseria gonorrhœæ*. No strains were found to be resistant *in vitro* to penicillin.

Out of 31,000 smears examined, 4,000 were positive (13 per cent); out of 11,000 cultures investigated, 1,600 were positive (15 per cent). The percentages positive in 1960 were 14 and 17.

OTHER SEROLOGICAL PROCEDURES

The year 1961 was the first full year in which all serological procedures were undertaken in the Serology Section. There was an increase of 5 per cent in the number of agglutination tests performed in 1961 compared with 1960, and an increase of 40 per cent in the number of antistreptolysin O titre (A.S.T.O.) estimations. Since the A.S.T.O. test was introduced in 1958, the demand has increased each year.

TESTS RELATING TO THE DIAGNOSIS AND CONTROL OF TUBERCULOSIS

The number of smears examined microscopically for *Mycobacterium tuberculosis* continued to decrease from 16,000 in 1959 to 13,000 in 1960 and to 9,000 in 1961. A similar trend occurred in requests for cultures for *M. tuberculosis*, which decreased from 26,000 in 1959 to 25,000 in 1960 and to 22,000 in 1961. This decline in routine tuberculosis bacteriology permitted the extension of the special work on sensitivity of *M. tuberculosis* to antimicrobial agents and on the anonymous mycobacteria which were isolated in increased numbers. Over 1,200 strains were tested in 1961 for their sensitivity to streptomycin, isoniazid, and para-aminosalicylic acid, compared with 1,000 in 1960. A number of strains were also tested for their susceptibility to cycloserine, viomycin, and pyrazinamide. Over 250 atypical mycobacteria were investigated.

ISOLATION AND IDENTIFICATION OF PATHOGENIC ENTERIC BACTERIA

While the total number of specimens received for culture decreased substantially from over 19,000 in 1960 to 17,000 in 1961, the number of new cases of salmonella infection increased from 472 in 1960 to 521 in 1961. This increase in the incidence of salmonella infections stimulated a special study to determine the important reservoirs and vehicles of infection. By contrast, the number of new cases of shigella infection fell dramatically from nearly 1,200 in 1960 to about 300 in 1961, and the number of new cases of infection with pathogenic *Escherichia coli* decreased from 200 in 1960 to 150 in 1961. No explanation for these paradoxical findings is available. The positive results for the five-year period 1957 to 1961 are summarized in Table V.

Table V.—Enteric Bacteria Causing Diarrhoea—New Patients with Positive Laboratory Results

Year	Salmonellæ	Shigellæ	Pathogenic <i>E. coli</i>	Total
1957	243	174	7	424
1958	344	552	143	1,039
1959	458	388	207	1,053
1960	472	1,161	199	1,832
1961	521	323	153	997

The number of *Salmonella heidelberg* infections was, for the third year, greater than that of *S. typhi-murium* infections, and *S. thompson* in 1961 occurred more commonly than *S. typhi-murium*. The ten most common salmonellæ isolated in the five-year period 1957 to 1961 are listed in Table VI.

Table VI.—Ten Commonest Salmonellæ Isolated in 1957 to 1961

Organism	1957	1958	1959	1960	1961	Total
1. <i>S. typhi-murium</i>	111	180	139	108	81	619
2. <i>S. heidelberg</i>	27	23	179	144	217	590
3. <i>S. thompson</i>	23	8	5	108	91	235
4. <i>S. newport</i>	18	56	36	11	12	133
5. <i>S. paratyphi B</i>	13	16	20	29	48	126
6. <i>S. typhi</i>	8	8	5	6	10	37
7. <i>S. brandenburg</i>	2	6	11	2	9	30
8. <i>S. tennessee</i>	1	8	8	12	—	29
9. <i>S. san diego</i>	4	5	8	7	3	27
10. <i>S. montevideo</i>	6	7	7	6	—	26
11. Other salmonellæ	30	27	40	39	50	186
Totals	243	344	458	472	521	2,038

SANITARY BACTERIOLOGY

EXAMINATION OF DAIRY PRODUCTS

The number of milk samples received during 1961 was 7 per cent fewer than in 1960. Of the 441 milk shipments received in 1961, ten arrived at the main laboratory at a temperature in excess of 10° C. and were therefore unsuitable for examination.

EXAMINATION OF WATER

The number of water samples received during 1961 was 8 per cent greater than in 1960. A laboratory evaluation survey was carried out in collaboration with the laboratory of the Greater Vancouver Water District, and Sewerage and Drainage District Boards. Samples were collected at the same time by representatives of the two laboratories and examined independently. The results obtained by both laboratories were substantially the same.

BACTERIAL FOOD POISONING

In 1961 fifty-two food remnants suspected of causing food poisoning were submitted for bacteriological examination. Coagulase-positive *Staphylococcus aureus* was isolated from three specimens—canned meat, canned chicken, and canned shrimp. Each of these incidents involved only the immediate family.

Four incidents of botulism occurred during 1961; materials for laboratory study were submitted to the Department of Bacteriology at the University of British Columbia.



Milk samples from throughout the Province are tested at the Health Branch Laboratories.

OTHER TYPES OF TESTS

DIPHTHERIA

After two years with no isolates of *Corynebacterium diphtheriae*, a single case was diagnosed in the laboratory during 1961. Throat swabs from the man's contacts were negative.

LISTERIOSIS

Listeria monocytogenes was isolated from the cerebrospinal fluid of a newborn infant with acute meningitis. The strain was identified as Type 4b by the Agricultural Experiment Station, Bozeman, Montana. The child recovered on intravenous erythromycin.

PARASITIC INFECTIONS

The demand for microscopic examination of faeces for intestinal parasites increased by nearly 20 per cent in 1961 compared with 1960. The following parasitic protozoa were identified in specimens of faeces: *Entamoeba coli* (143), *Giardia lamblia* (117), *Endolimax nana* (46), *Entamoeba histolytica* (10), and *Iodamoeba bütschlii* (6). The following helminth eggs were also identified: *Trichuris trichiura* (66), *Clonorchis sinensis* (32), hookworm (23), *Taenia* spp. (9), *Enterobius vermicularis* (7), *Ascaris lumbricoides* (5), and *Schistosoma mansoni* (1). The following adult worms were seen: *Ascaris lumbricoides* (4), *Taenia saginata* (4), and

Diphyllobothrium latum (1). Out of 1,700 National Institute of Health swabs, 410 revealed eggs of *Enterobius vermicularis*.

A large outbreak of trichinosis involving at least twenty people was investigated in the Lower Mainland. The first case was diagnosed by muscle biopsy; subsequent cases by skin tests or serological tests. The vehicle of infection was probably uncooked farm sausage containing pork. Another trichinosis incident occurred in the Interior of British Columbia when three hunters ate undercooked bear steaks.

Loiasis, caused by infection with the West African filarial worm, *Loa loa*, is a rare disease outside West Africa. Three persons who had visited West Africa were diagnosed in British Columbia by examination of blood films or by serological tests.

The specimen of faeces which showed *Schistosoma mansoni* eggs was from a missionary returned from Africa. The typical eggs were seen, and serum from the patient yielded a positive result when tested at the Communicable Diseases Center, Atlanta, Georgia.

FUNGUS INFECTIONS

There was a 10-per-cent increase in the demand for mycological investigations in 1961 compared with 1960. The following dermatophytes were isolated in 1961: *Trichophyton rubrum* (128), *T. Mentagrophytes* (51), *Microsporon canis* (51), *Epidermophyton floccosum* (14), *Trichophyton verrucosum* (10), *T. tonsurans* (9), *Microsporon quinckeum* (3), *M. audouini* (1), and *Trichophyton megnini* (1). Pathogenic *Candida albicans* was isolated on 321 occasions and other non-pathogenic strains of *Candida* 172 times.

Once again over 30 per cent of all specimens submitted for mycological examination proved positive.

MISCELLANEOUS TESTS

Of the 250 blood cultures submitted for examination, fifteen yielded organisms. The bacteria isolated were *Staphylococcus albus* (7), *Escherichia coli* (3), *Aerobacter aerogenes* (2), *Salmonella paratyphi B* (1), and *Streptococcus pneumoniae* (1).

VIRUS INVESTIGATIONS

A total of sixty-three viral and rickettsial complement-fixation tests, involving twelve patients, was performed. Four sera reacted with the mumps viral antigen and two with the mumps soluble antigen. One serum gave a positive Weil-Felix agglutination reaction and reacted in low titre with the Rocky Mountain spotted fever antigen.

During 1961 specimens from 100 patients were submitted to the Virus Laboratories of the National Laboratory of Hygiene. Only twelve enteroviruses were isolated: Poliovirus Type 1 (2), Poliovirus Type 3 (2), Coxsackie A23 (2), Coxsackie B2 (1), Coxsackie B4 (1), and Coxsackie B5 (4).

Nearly 400 blood specimens from children immunized with Salk polio vaccine were separated and sera shipped to the Connaught Medical Research Laboratories for polio-antibody titre estimations.

CHEMICAL ANALYSES

Due to the initiative of the chemist the work load in the Chemistry Section increased from about 11,000 units in 1960 to over 25,000 units in 1961. Many of the additional tests were performed on behalf of the Pollution-control Board at the request of the Director of Public Health Engineering.

BRANCH LABORATORIES

The Assistant Director made one visit to the Nelson Branch Laboratory and discussed laboratory management with the technician in charge, the hospital administrator, and the health unit director. No technical assistance was available to help the sole technician in the running of the laboratory; she therefore willingly undertook overtime duties throughout the year. A proportion of the work was transferred to the main laboratory in Vancouver.

The Director visited the Victoria Branch Laboratory twice. Discussions were held with the Director of Pathology, Royal Jubilee Hospital, and the Senior Medical Health Officer, Greater Victoria Metropolitan Board of Health, to discover the laboratory implications of combining the health services of Saanich and South Vancouver Island, Oak Bay, Esquimalt, and Victoria.

GENERAL COMMENTS

Two courses on serological techniques, each lasting one week, were conducted at the Vancouver School of Medical Laboratory Technology, in place of the usual four courses held in previous years. Eight members of the staff participated in instruction at the University of British Columbia in the Faculty of Medicine and in the Departments of Bacteriology and Nursing. In August the Director presented two papers at the sixteenth annual meeting of the International Northwest Conference on Diseases in Nature Communicable to Man, at Fort Collins, Colorado; he was elected president of the conference for the year 1961/62. In November the Director attended the seventeenth annual meeting of the Technical Advisory Committee on Public Health Laboratory Services to the Deputy Minister of National Health, in Ottawa, and presented two papers at the twenty-ninth annual Christmas meeting of the Laboratory Section, Canadian Public Health Association, in Toronto.

The staff is to be congratulated on undertaking without increase in strength additional and more complex laboratory investigations.

REPORT OF REGISTRY AND REHABILITATION SERVICES

CHARLES L. HUNT, DIRECTOR

The integration of the Registry and the Rehabilitation Services has proceeded in accordance with original plans.

REGISTRY FOR HANDICAPPED CHILDREN AND ADULTS

The Registry has continued to grow, until it now has over 16,000 children recorded. The registration of adults was begun during this year, with arrangements for the G. F. Strong Rehabilitation Centre to register all cases seen at that Centre. There have been registrations from some of the health unit areas also. The number of registrations as adults number about 900 at this time.

Plans were discussed during the year for a more regular registration from the Vancouver General Hospital. These plans have had a slight setback, and other arrangements are under discussion now in this connection, and it is hoped that by the first of next year fairly regular registration will be coming from the Pædiatric Department.

Some of the community agencies also have become interested in registering their own handicapped.

During 1961 the G. F. Strong Rehabilitation Centre Vocational Study and the Survey of the Deaf and Hard of Hearing registrants over 16 years of age were compiled.

The planning for a family registry came closer during 1961 with the appointment of the geneticist in the Department of Pædiatrics of the University of British Columbia as consultant to the Registry. The geneticist has set up four objectives:—

- (1) To formulate the needs and uses of a family registry.
- (2) To make a survey of the cases presently registered in an attempt to assess the number that were determined by genetic factors and which could be grouped by families.
- (3) To examine the family groups to determine what additional data might be desirable to have on the Registry files.
- (4) To study methods of automatically integrating the existing vital statistics records with the Registry data, and whether mechanical processing could be used in this connection.

The geneticist has processed approximately 1,230 cases by hand, the groups checked being those where two or more members of a family were on the Registry. The cases have been restricted to those disabilities of genetic origin. In collaboration with the Atomic Energy of Canada Limited, a method has been arrived at whereby mechanical processing of these data may be feasible, and continuing work is being done in this regard.

Publicity for the Registry has been extensive, and has received the official recognition and support of the British Columbia Division of the Canadian Medical Association and the British Columbia Hospital Insurance Service.

All the staff members of the Registry still participate on committees and executives of voluntary agencies that work with handicapped children and adults, as they have done in previous years, in order to offer the co-ordination service, both on the individual patient level and on the agency level.

PHYSICAL REHABILITATION

Many of the larger acute general hospitals throughout the Province are interested in developing activation wings for the rehabilitation of patients with long-term disabilities. Visits by the Director of Rehabilitation Services have been made to hospitals in Burnaby and in the Okanagan and Kootenay regions to discuss with medical staffs ways in which such services might be inaugurated. Requests have been made for visits to other areas in the near future for a similar purpose.

Close liaison is being maintained with other centres providing physical rehabilitation, including the G. F. Strong Rehabilitation Centre, Gorge Road Hospital, the Sunny Hill Hospital for Children, the Pearson Poliomyelitis Pavilion, and various community agencies, including the Canadian Arthritis and Rheumatism Society, Cerebral Palsy Association, Poliomyelitis and Rehabilitation Foundation of British Columbia, Multiple Sclerosis Society, etc. Members of the staff of the Rehabilitation Services serve on the boards of many of these groups.

Liaison is also being maintained with the rehabilitation services provided by the Mental Health Services Branch and by the Workmen's Compensation Board.

HOME CARE PROGRAMME

Home care is being developed in many sections of the Province in the metropolitan areas and the Provincial health units as community-centred programmes. Home care and rehabilitation nursing is utilized to provide professional nursing care in the home and is the beginning of a more extensive home care programme. Accordingly, special emphasis is being directed toward the development of home nursing-care service in areas where this has not been available. Thirty-four centres in Provincial health units now provide home care and rehabilitation nursing service as part of the health unit service. The Victorian Order of Nurses provides a similar programme in the larger metropolitan areas of Vancouver and Victoria and in three centres in Provincial health units. In all, approximately 73 per cent of the population of the Province has home nursing-care service available. It is anticipated that the remaining areas will develop such programmes under local health services as the need becomes apparent.

In the Provincial health unit areas, home care and rehabilitation nursing is available upon payment of an additional assessment of 10 cents *per capita*. The health unit then provides the extra nursing personnel who may be required. The local area is already paying 30 cents *per capita* for health unit services, with the balance of the cost being made up by the Provincial Government. As the service is fully tax-supported, no charge is made to the patient for care, and the service is available to all age-groups on a written request from a local physician. The patient must be suitable for care at home as service is available only on a part-time visiting basis.

Where home care services are in effect, arrangements are made for close liaison with the local hospitals so that there will be continuity of care for patients discharged home. The public health nurses visit local hospitals to discuss patient-care, and to encourage referrals so that needed service can be given to patients sent home. In many cases it is possible to prevent need for admission or to reduce time spent in institutional care.

During the past year a physiotherapist has been employed, utilizing Provincial grants, by the Victorian Order of Nurses in the Greater Vancouver area to provide consultative assistance to the public health nurses on the staff to improve rehabilitation nursing care for patients receiving service. Similar consultative assistance was inaugurated in the Saanich and South Vancouver Island Health Unit on a part-time

basis, and it is planned to extend this programme throughout the Greater Victoria metropolitan area. In less densely populated sections of the Province where home nursing demands are less, it is hoped that arrangements can be made to utilize the services of a physiotherapist employed by other organizations or institutions.

Homemaker services, which have developed in some communities to supplement the home nursing service, have demonstrated the need to extend this type of programme in almost all parts of the Province, as present organization covers only a limited section of the Province.

In conclusion there is a need

- (1) to continue to organize home nursing and rehabilitation nursing service to areas not presently served;
- (2) to utilize physiotherapy services on a local level as part of the organized home-care programme for consultative purposes in connection with the home nursing programme, and for direct service to patients as required;
- (3) to develop homemaker services;
- (4) to organize other community facilities for the rehabilitation of persons needing assistance; these would include recreation, vocation, home food services, etc.

PHYSICAL ASSESSMENT

Physical assessment of handicapped persons is carried out at the request of the Rehabilitation Services by private physicians, by the G. F. Strong Rehabilitation Centre, and in the case of mental problems by the Mental Health Centre in Burnaby. In some cases other community resources have been used when applicable; for example, in cases of hearing-loss. Where necessary, arrangements have been made to bring patients in to these centres from widely scattered areas of the Province.

VOCATIONAL ASSESSMENT AND TRAINING

Vocational assessment has been available on a limited basis at the Vancouver Youth Counselling Service and at the G. F. Strong Rehabilitation Centre. Both these facilities have been used by the Rehabilitation Services, as well as some on-the-job assessment when available.

In training persons for employment, use has been made of the services of the Department of Education in its vocational institutes, and in the technical training schools. The numbers, accommodation, and scope of such services are gradually being increased, thus adding considerably to the training facilities for the handicapped.

LIAISON WITH THE UNEMPLOYMENT INSURANCE COMMISSION

The liaison programme with the National Employment Service of the Unemployment Insurance Commission commenced as an experimental programme in February, 1959. It has now been confirmed on a permanent basis since April of this year. Through this programme the Unemployment Insurance Commission has seconded a senior placement officer to the Rehabilitation Services to provide constant contact between the Rehabilitation Services and the local and regional officers of the Unemployment Insurance Commission, with the purpose of providing consultative service to both offices and to assist in developing and improving job-placement services to the handicapped. During the year the officer has visited most of the local offices of the Unemployment Insurance Commission and has been most effective in helping to promote increased co-ordination between public and voluntary agencies at the local level.

This project, which was developed in this Province as a prototype, has been extended by the Unemployment Insurance Commission, and similar arrangements are being concluded in several other Provinces.

CONSOLIDATION OF REHABILITATION SERVICES

Since 1949 the Division of Tuberculosis Control has provided a vocational rehabilitation service for persons disabled by tuberculosis, and has employed two rehabilitation officers.

It was felt that in the interests of increased efficiency and in order to provide these rehabilitation officers with experience and training in a wider spectrum of disability, the rehabilitation section of the Division should be consolidated with the Rehabilitation Services. This consolidation was gradually effected during the year, with no reduction in service to tuberculosis patients. The two rehabilitation officers have been seconded to the Rehabilitation Services for direction and supervision.

REHABILITATION SURVEY PROJECTS

A rehabilitation survey was inaugurated as a joint interdepartmental undertaking by the Health Branch and the Department of Social Welfare, using funds from the National Health Grants. The objective was to determine whether there were individuals in receipt of public assistance, due mainly to medical reasons, who might benefit from rehabilitation services.

PILOT STUDIES

An initial pilot study was undertaken in the Nanaimo area to develop procedures. From a total of 375 cases, 167 were identified as having health problems. Of this number, forty-eight cases were selected as a demonstration group, and rehabilitation procedures implemented. One year after the pilot project began, an evaluation showed twenty-six of the forty-eight cases were either rehabilitated or in the process of being rehabilitated, while the remaining twenty-two had been judged unsuitable for rehabilitation services.

On the basis of these results, a further study was inaugurated in Chilliwack, utilizing the principles, procedures, and methods which had been developed in Nanaimo. Modifications were made to suit local conditions, and special forms were developed to aid in medical and social-vocational assessment. A total of 549 cases was surveyed in Chilliwack, with 154 cases identified as having health problems. Procedures are now under way to select a demonstration group from this number of 154 cases.

In view of the experimental nature of this study, all procedures are being documented and evaluated in order to determine their effectiveness.

It appears evident there are a number of recipients of public assistance who require rehabilitation services; however, the extent of these services, the results which can be obtained, and the best methods of implementing such services are research questions not yet completely answered by the present survey.

CASEWORK SERVICE

Rehabilitation casework on referred disabled persons continued during the year.

Services to such cases include, initially, consolidation of known information about the patient and an assessment of his potential to benefit from vocational rehabilitation measures.

Where vocational rehabilitation appeared to be indicated, further attention was given with respect to physical restoration, social adjustment, vocational assessment and counselling, vocational training and placement in suitable employment through existing agencies.

Case closures have kept pace with those of previous years in the face of increasing difficulty in obtaining satisfactory job placement for the disabled, which probably is related to the general picture of unemployment. It also has been more difficult to arrange vocational training for the disabled due to the increased numbers of applicants generally and to the limited capacity of vocational training resources to satisfy the ever-increasing demand.

*Case Load of the Rehabilitation Services, January 1, 1961,
to December 31, 1961*

Cases active at January 1, 1961.....	117
Cases deferred at January 1, 1961.....	4
Cases accepted January, 1961, to December 31, 1961.....	58
Total	179
Cases closed, January 1, 1961, to December 31, 1961.....	72
Cases active at December 31, 1961.....	107
Cases deferred at December 31, 1961.....	2
Active case load at December 31, 1961.....	109

Seventy-two case closures were reported, of which forty-two were closed after having been established in gainful employment. Twenty-nine cases were closed as having received maximum benefit from presently existing services, but without the desired result of job placement and financial independence having been achieved. An increased degree of physical and social competence was attained among the latter group. One patient died.

The age-grouping of the referred cases remained consistent with past experience. As might be expected, it is more difficult to achieve the ultimate desired result of industrial and financial independence in those over the age of 40.

Thirty-six of the seventy-two cases closed were, at the time of referral, receiving Social Allowance, thirty-three were supported by parents or other relatives, and two were dependent on unemployment insurance for support. None was self-supporting.

Forty-two cases successfully placed in regular gainful employment became self-supporting. Of the remainder, two had been granted a Disabled Persons' Allowance, sixteen continued to receive Social Allowance, nine were supported by parents or other relatives, one had died, and the source of support for the remaining two was not known.

As previously reported, thirty-six of the seventy-two cases were receiving Social Allowance at the time of acceptance at an annual cost to public funds of \$38,247. At closure, only fifteen continued to receive Social Allowance and two were granted a Disabled Persons' Allowance. The total cost of supporting the whole group on public funds was reduced to \$15,846 per annum. The total earnings of the group which was rehabilitated exceeded \$90,000 per year.

REPORT OF THE ACCOUNTING DIVISION

For the Period April 1, 1960, to March 31, 1961

J. McDIARMID, DEPARTMENTAL COMPTROLLER

The functions of the Accounting Division are to control expenditure, process accounts for payment, account for revenue, forecast expenditures, and prepare the Departmental estimates of revenue and expenditure in their final form. In addition, the Division is responsible for the inspection and control of expenditures for Departmental cars.

The table shown at the end of the report gives a comparison of gross expenditures and percentage of expenditure related to various services within Public Health Services for the fiscal years 1958/59 to 1960/61, inclusive.

In the fiscal year 1957/58 there was a decrease in the gross Health Branch expenditure of 0.4 per cent from 1956/57, and in 1958/59 there was a decrease of 1.0 per cent from 1957/58. In 1959/60 this trend was reversed, and there was a slight increase of 0.2 per cent in the gross expenditure over 1958/59. The fiscal year 1960/61 shows a higher rate of increase, which amounts to 5.7 per cent over 1959/60.

It is interesting to note the steady decrease in the gross expenditure on tuberculosis-control, both absolutely and as a percentage of the Departmental gross expenditure. This reflects the decrease in day care within the in-patient section of this division.

On the other hand, the gross expenditure on local health services has been increasing both absolutely and as a percentage of the Health Branch gross expenditure. This increase reflects services for a growing population and extension of services at the community level.

The Mechanical Supervisor and his assistant have followed the policy of regular inspections of motor-vehicles throughout the Province. The over-all fleet of vehicles has been increased, and a number of vehicles have been replaced by new cars. There are 419 cars operating within the Health Branch, of which 163 are Government owned and the balance are privately owned and operated on a mileage-rate basis.

The Department, during the past year, has increased the number of small and compact cars in relation to the total fleet, and at the present time 20 per cent of the fleet is within the small and compact classification.

The Departmental Comptroller and other personnel visited institutions and various field offices, and wherever possible newer methods were inaugurated and procedures of accounting were shortened.

*Comparison Table of Public Health Services Gross Expenditure for the
Fiscal Years 1958/59 to 1960/61*

Service	Gross Expenditure			Percentage of Gross Expenditure		
	1958/59	1959/60	1960/61	1958/59	1959/60	1960/61
Division of Tuberculosis Control	\$2,555,389	\$2,342,565	\$2,265,614	33.8	30.9	28.3
Local Health Services	2,144,454	2,417,767	2,692,908	28.4	31.9	33.6
Cancer, arthritis control, rehabilitation, etc.	857,766	899,090	957,942	11.3	11.9	12.0
Research, training, etc.	526,197	309,430	422,033	7.0	4.1	5.3
Poliomyelitis	391,397	413,249	478,009	5.2	5.5	6.0
General administration and consultative services	369,552	405,688	412,442	4.9	5.4	5.1
Division of Laboratories	342,055	376,785	379,134	4.5	5.0	4.7
Division of Vital Statistics	275,523	312,200	308,802	3.6	4.1	3.9
Division of Venereal Disease Control	97,731	99,145	93,422	1.3	1.3	1.2
Totals	7,560,064	\$7,575,919	\$8,010,306	100.0	100.0	100.0

Printed by A. SUTTON, Printer to the Queen's Most Excellent Majesty
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1962