PROVINCE OF BRITISH COLUMBIA

Sixty-third Annual Report of the

Public Health Services of British Columbia

HEALTH BRANCH

DEPARTMENT OF HEALTH SERVICES AND HOSPITAL INSURANCE

YEAR ENDED DECEMBER 31ST

1959

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1960

OFFICE OF THE MINISTER OF HEALTH SERVICES AND HOSPITAL INSURANCE,
VICTORIA, B.C., February 24th, 1960.

To His Honour FRANK MACKENZIE ROSS, C.M.G., M.C., LL.D.,
Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to present the Sixty-third Annual Report of the Public Health Services of British Columbia for the year ended December 31st, 1959.

ERIC MARTIN,
Minister of Health Services and Hospital Insurance.

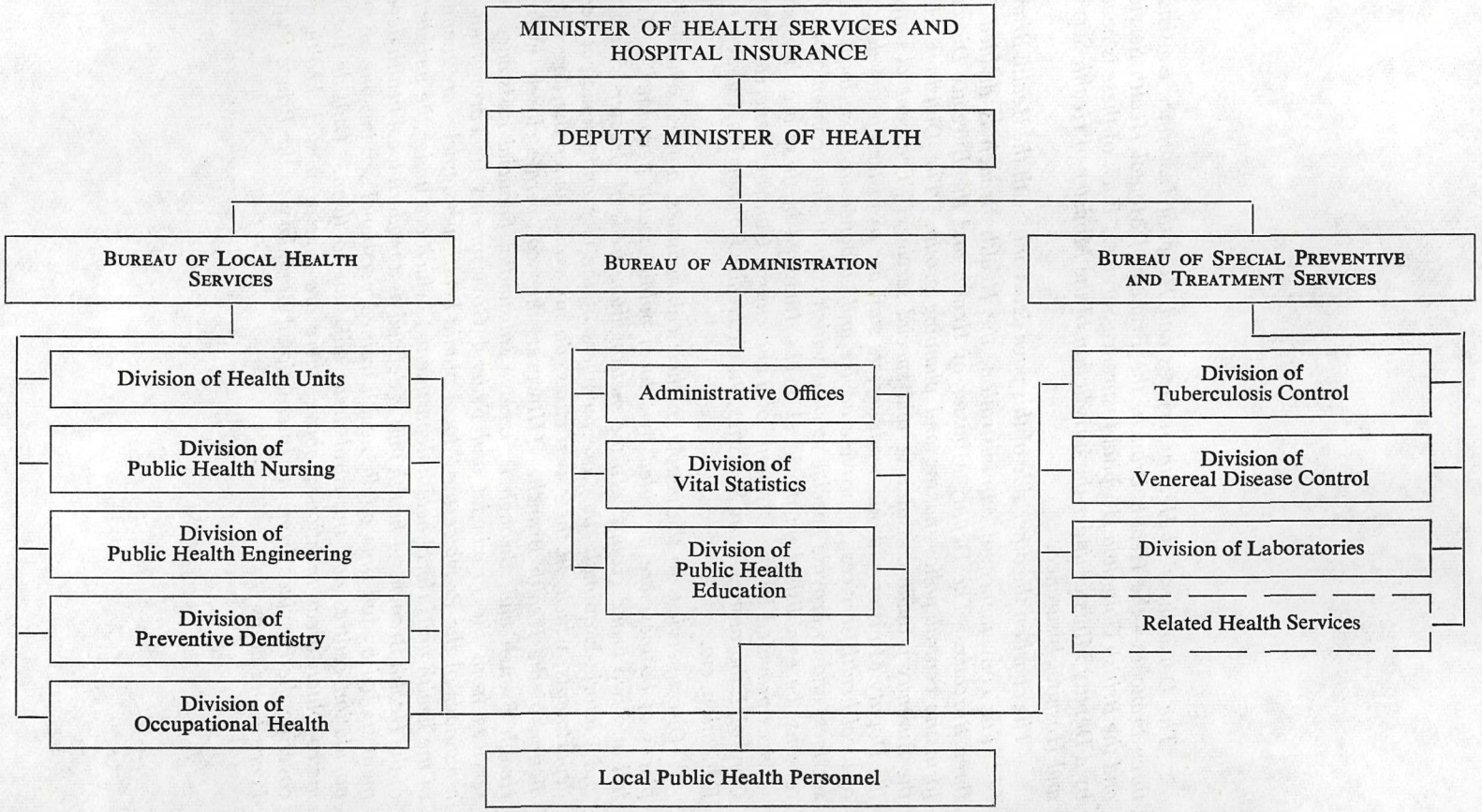
DEPARTMENT OF HEALTH SERVICES AND HOSPITAL INSURANCE (HEALTH BRANCH),
VICTORIA, B.C., February 24th, 1960.

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

SIR,—I have the honour to submit the Sixty-third Annual Report of the Public Health Services of British Columbia for the year ended December 31st, 1959.

I have the honour to be,
Sir,
Your obedient servant,
G. F. AMYOT, M.D., D.P.H.,
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 Victoria-Esquimalt, 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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Sixty-third Annual Report of the Public Health Services of British Columbia

HEALTH BRANCH

Department of Health Services and Hospital Insurance

YEAR ENDED DECEMBER 31st, 1959

G. F. Amyot, Deputy Minister of Health and Provincial Health Officer

A comparison of the above title with that of previous years shows that there was a reorganization of the Department during 1959. The Department of Health and Welfare ceased to exist and the Department of Health Services and Hospital Insurance came into being. This reorganization did not cause any change within the Health Branch itself, but it combined in one department public health, mental health, and hospital insurance services.

This Report deals with the Health Branch and its public health services and consists largely of sections written by the heads of the bureaux and divisions. Details of the year's events and trends are presented in those sections. Some general observations are as follows:—

AREA AND POPULATION OF THE PROVINCE

The population increased by some 26,000 during 1959, reaching approximately 1,570,000. According to preliminary figures, the birth rate was again down slightly from the record of 1957 and the death rate was at its second lowest point in nearly twenty-five years. The infant mortality rate in 1959 was the lowest ever recorded. British Columbia's relatively high birth rate is making it necessary to devote an increasing amount of time to maternal and child health programmes.

The proportion of British Columbia's population over 60 years of age is higher than it is in other Provinces. This makes it necessary to give particular attention to this group also.

In area, the Province is approximately 366,000 square miles, but the metropolitan areas of Greater Vancouver and Victoria-Esquimalt contain about 45 per cent of the population. Although there are cities and communities of significant size throughout the remainder of the Province, there are also vast areas which are only sparsely populated. Great travel distances are, therefore, an important factor in the provision of public health services. Nevertheless, these services were available to practically every citizen in British Columbia in 1959, as they have been for a number of years. Calculations based on the non-Indian population show that approximately 45 per cent of the population were served by the two metropolitan health departments and almost 55 per cent were served by the Provincial health service. The Federal Government provides services for the treaty Indians.

THE HEALTH OF THE PEOPLE

Most of the deaths that occurred during 1959 were caused by heart disease (343.8 per 100,000), cancer (148.8 per 100,000), intracranial lesions of vascular

origin (103.9 per 100,000), and accidents (66.2 per 100,000). The death rate from suicides was 11.0 per 100,000, which was almost the same as it was in 1957 and 1958.

Motor-vehicle accidents were responsible for 33 per cent of the accidental deaths reported, falls 16 per cent, drownings 12 per cent, and fires 8 per cent.

Accidental deaths are responsible for a disproportionate number of years of lost life because most such deaths occur among young people.

The maternal mortality rate per 1,000 births has remained unchanged for four years at 0.4. Deaths of infants under one year, however, continued to decrease, being 24.7 per 1,000 live births in 1959, compared with 27.6 in 1958 and 28.3 in 1957.

The death rate from tuberculosis continued to drop, standing at 3.7 per 100,000, compared with a rate of 4.5 the year before.

Poliomyelitis killed fourteen. This has not been exceeded since the major outbreak of 1953, when twenty-eight people died.

Although no epidemics occurred, several of the more important communicable diseases were reported with increased frequency this year. Paralytic poliomyelitis was reported 132 times. This has not been exceeded since 1955, when there were 143 cases. In 1958, only twelve notifications were received.

Although there was little change in the total number of cases of venereal disease, early infectious syphilis increased despite the most intensive efforts at control.

There was a marked increase, too, in the number of reported Salmonella infections, with over 350 cases reported by local health services. This disease was fatal to six persons (three infants and three male adults).

There were only two outbreaks of bacterial food poisoning—one following a church dinner, the other in an armed forces' mess.

Other infectious diseases with an increased incidence were infectious hepatitis, with 907 cases reported, contrasted to 558 the year before, and streptococal infections, including septic sore throat, scarlet fever, etc., with 4,563 cases, compared with 1,270 in 1958.

Sixteen cases of typhoid and paratyphoid fever were reported this year, which is fourteen less than the year before.

Again this year there were no confirmed cases of diphtheria in the Province.

OTHER MAJOR EVENTS AND TRENDS

A further improvement in accommodations for the staff of local health units was brought about. Seven communities completed construction of health centres during the year, five communities had centres under construction, and eight others took planning action. Since 1951, when the present policy of providing Provincial funds and National health grants to supplement the local funds was introduced, forty-three community health centres have been constructed. In recent years, funds from voluntary health agencies have given material assistance.

The use of anti-tuberculous drugs and surgery has enabled the Division of Tuberculosis Control to reduce still further the number of sanatorium beds in operation. Even more important from the public health standpoint, the availability of beds has made it possible to take patients out of the community as soon as they have been diagnosed and so reduce the spread of infection. The new methods of treatment of tuberculosis have also increased the amount of care each patient can give himself. This has improved the rehabilitation process and has also resulted in substantial reductions in staff.

The tuberculosis institutions also effected economies in the operations of their clinical laboratories, dietary, housekeeping, and accounting departments, and janitorial services.

The policy in respect to tuberculosis surveys has changed. Until recently it was considered desirable to take a chest X-ray of each member of the population. Tuberculin testing has now been combined with the chest X-ray as a survey method. This has led to a reduction in the number of X-rays taken, particularly in the younger age-groups.

The physical condition of school-children was good. In the Grade I group, approximately 80 per cent of the pupils received physical examinations. About 85 per cent of those examined were in good physical condition. In the higher grades, in which examinations are given only to those referred because of some suspected problem, the findings were also good.

The immunization status of the school population improved over that of previous years. One of the more encouraging developments was the trend toward a higher immunization status of pupils in the more advanced grades.

In the important field of home nursing care, all health units were providing this service on a short-term demonstration basis during 1959. The experience showed that the development of a more complete home-care service can be brought about as personnel become available.

Close liaison with the voluntary agencies, the professional groups, and the other departments of Government was maintained during 1959. The Deputy Minister of Health is grateful for the co-operation of these groups, whose services are so valuable in meeting the health needs of the people of British Columbia. The Deputy Minister also wishes to thank his fellow public health workers for their help in all parts of the Health Branch.

REPORT OF THE BUREAU OF ADMINISTRATION

A. H. CAMERON, DIRECTOR

The Bureau of Administration consists of the administrative offices, the Division of Vital Statistics, and the Division of Public Health Education, which are grouped together because they serve all other parts of the Health Branch. The Division of Vital Statistics and the Division of Public Health Education have separate reports elsewhere in this volume. The Bureau Director is a member of the Health Branch's central policy-making, planning, and administrative group and is concerned particularly with non-medical administration. Some important features of the year's experience in this field are as follows:—

PERSONNEL

The table below shows the number of regular full-time positions in the various offices, divisions, and services of the Health Branch at the end of 1959 compared with the number at the end of 1958.

Office, Division, or Service	Location	Positions [1]	
		1958	1959
Central office	Victoria	36	36
Branch office	Vancouver	26	24
Division of Vital Statistics	Victoria	61	61
	Vancouver	16	16
Division of Venereal Disease Control	Vancouver	18	17
Division of Laboratories	Vancouver	59	59
	Nelson	1	1
Division of Tuberculosis Control—			
Headquarters	Vancouver	14	17
Willow Chest Centre	Vancouver	159	151
Pearson Hospital	Vancouver	228	212
Vancouver Island Chest Centre	Victoria	10	8
New Westminster Stationary Clinic	New Westminster	7	7
Mainland Travelling Clinics	Vancouver	10	10
Island Travelling Clinic	Victoria	4	4
Poliomyelitis Pavilion	Vancouver	56	58
Local Health Services		293	306
Totals		998	987

[1] These figures show the number of regular full-time positions. There were vacancies in various sections from time to time. In addition, there were some part-time positions.

Particular attention is directed to the reduction in the number of positions at Pearson Hospital. This was largely the result of the new policy of allowing certain patients to take care of many of their own needs with a view to increasing their progress in rehabilitation. The report of the Division of Tuberculosis Control, which appears later in this volume, provides greater details.

There was also a significant reduction in the number of positions at the Willow Chest Centre. This reduction was brought about through studies in the effective utilization of staff.

The increase in the number of positions in Local Health Services is largely the result of increases in population.

ACCOMMODATIONS

In a co-operative effort to provide the Deputy Minister of Mental Health and his headquarters staff with offices geographically separate from the Provincial Mental Hospital, plans were made to complete the seventh (top) floor of the Provincial Health Building in Vancouver. It is hoped that the construction work will be com-

pleted early in the new year. The Health Branch looks forward to this close association with the Deputy Minister of Mental Health as a means of improving still further the good relations with the Mental Health Services.

Because of the increase in poliomyelitis cases, there was a danger of overcrowding in the Poliomyelitis Pavilion. Some patients there require three types of bulky equipment—ordinary hospital bed, rocking bed, and respirator. To alleviate this space problem, plans were made in co-operation with the Department of Public Works to erect a temporary storage building connected to the Pavilion. At the year's end, construction was about to be undertaken. It was anticipated that the building could be erected in a few weeks.

TRAINING

In-service training and academic training enable the Health Branch staff to provide up-to-date professional, technical, and administrative services to the public. National health grants again aided various members of the Health Branch to undertake postgraduate training at universities and to attend short-term courses. In 1959 sixteen employees completed professional training, fifteen commenced training, and sixteen attended short-term courses. (These figures do not include training provided to personnel of hospitals, the Mental Health Services, and other health agencies.)

National health grants provided funds for a refresher course for Medical Health Officers in January of this year. The grants also enabled the Health Branch, in conjunction with the Mental Health Services, to sponsor a Mental Health In-service Education Institute for fifty public health nurses in October.

Weekly meetings of headquarters staff and monthly meetings of local health unit staffs enabled Health Branch personnel to discuss current problems and to keep abreast of new programmes both at the local and divisional level. The Annual Public Health Institute, this year held in Victoria in April, also served to maintain a high standard of public health knowledge. The principal speaker was Dr. J. F. McCreary, Dean of Medicine, University of British Columbia.

NATIONAL HEALTH GRANTS

The Assistant Provincial Health Officer, who is stationed in Vancouver, holds the prime responsibility for the administration of the National health grants programme under the direction of the Deputy Minister of Health. However, the Director of Administration, who is stationed in Victoria with the Deputy Minister of Health, must maintain an active interest in the programme and serve as an adviser to the Deputy Minister in connection with it. There were no major changes in the programme during 1959. The report of the Assistant Provincial Health Officer, which appears later in this volume, gives details of the 1959 experience.

RECIPROCAL AGREEMENTS (TUBERCULOSIS)

In 1959 reciprocal agreements for the care of tuberculosis patients were continued with Alberta, Saskatchewan, Manitoba, Ontario, and Quebec. The reciprocal *per diem* rate with all these Provinces was raised to $8.

The number of British Columbia cases which were accepted by the other Provinces in 1959 was nineteen (Alberta, seven; Saskatchewan, four; and Ontario, eight). The number of patients from other Provinces receiving care in British Columbia in 1959 was only five (Alberta, three; Manitoba, one; and Quebec, one). By the end of the year the number of British Columbia patients cared for in other Provinces had decreased to nine, and only two patients from other Provinces were being cared for in British Columbia.

REPORT OF THE BUREAU OF LOCAL HEALTH SERVICES

J. A. TAYLOR, DIRECTOR

ORGANIZATION AND DEVELOPMENT

The term " local health services " denotes public health services at the municipal level, embracing public health nursing and environmental sanitation, and is closely allied with services in tuberculosis control, venereal disease control, public health laboratories, occupational health, vital statistics, public health engineering, public health dentistry, and public health education, which, although administered by separate divisions, are provided to the community by the field staff in local health services. Basically the ideal type of full-time local health services has been found to be most efficiently administered through a health unit in which a number of municipalities unite their local Boards of Health into a Union Board of Health, employing qualified public health personnel to render public health services to their communities. 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 municipalities and school districts 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 similar services throughout the Province.

In the beginning, plans were laid for the provision of seventeen health units throughout the Province, which, together with the metropolitan areas in Vancouver and Victoria, provided for full-time health service for almost all populated parts of 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 pattern in public health needs warranted. This has now occurred except in the Gibsons-Howe Sound area, where full-time health unit service remains to be organized. Requests from the Municipal Councils and School Boards for that area indicate that they desired this to occur at an early date, and some study has been under way to determine what would be the best type of administration for that area. It is not sufficiently large enough in itself to warrant a health unit, and it should become attached to an already existing health unit. From the point of view of transportation, the best approach administratively would be to have it become part of the North Shore Health Unit; some preliminary negotiations in that direction have been conducted, but considerable further study of the proposal has to be made.

In the Greater Victoria area, the administration of public health services is provided through three different administrations—namely, the Victoria-Esquimalt Health Department, the Saanich and South Vancouver Island Health Unit, and the Oak Bay Health Department. On numerous occasions, consideration has been given toward development of a larger administration patterned along that existing in the Greater Vancouver area, where a metropolitan health committee co-ordinates the numerous separate administrations. Renewed interest in such a proposal arose during this past year when the Greater Victoria School Board indicated dissatisfaction with the administration of school health services through three separate bodies, and suggested that they be transferred to a single health unit, as permitted under the *Public Schools Act*. Negotiations were recommenced for study of the metropolitan

set-up and are being continued into the new year in the hope that some unanimity might be obtained to provide for it.

The Metropolitan Health Services in the Greater Vancouver area has maintained pace with the growth of the area and has increased the scope and quantity of its services to fulfil the health needs there. An employees' health programme came into being with the establishment of an occupational health section under the direction of an occupational health physician. As the year ended, the municipality of Richmond was indicating an interest in the establishment of a complete full-time health service for the municipality, and was investigating the possibility of employing its own full-time Medical Health Officer to direct that service.

Within the Provincial health units, some administrative readjustments became necessary through resignations and transfers of health unit directors. At the beginning of the year the Director of the Central Vancouver Island Health Unit resigned to accept an appointment as Chief, Division of Epidemiology with the Department of National Health and Welfare. The vacancy thus created was filled through the transfer of the Director of the West Kootenay Health Unit, who assumed the appointment. The resulting vacancy in the West Kootenay Health Unit was filled through the placement of a public health physician who had recently completed training in the School of Public Health at the University of Montreal.

A vacancy which had existed for many months in the Selkirk Health Unit, with headquarters at Nelson, was overcome when a recruitment programme directed a public health physician into that position. The same recruitment programme obtained the services of another trained and qualified health unit director to assume an appointment in the Skeena Health Unit, with headquarters at Prince Rupert, resulting from the resignation of the former director to return to the private practice of medicine.

The North Fraser Health Unit, with headquarters at Mission, which had been operating without a director at the beginning of the year, was in that state again at the end of the year, when the director employed through the spring and summer resigned to take the position of director of occupational health with the Metropolitan Health Services at Vancouver. A replacement is being sought for him through a recruitment programme organized to enlist some new physicians to take up appointments in anticipated vacancies within the next few months.

Leave of absence was granted to the Director of the Peace River Health Unit, with headquarters at Dawson Creek, to undertake postgraduate training in public health at the School of Hygiene, University of Toronto. It was not possible to restaff that position, but it was possible to arrange for the Assistant Director of the Cariboo Health Unit to take on the position as Acting-Director, Peace River Health Unit, during the absence of the incumbent. Assistant positions in the Boundary and Central Vancouver Island Health Units, one of which was a vacancy and one new, were able to be filled also. This meant that the vacancy in the Central Vancouver Island Health Unit was replaced, and the newly created position of Assistant-Director in the Boundary Health Unit became operative. Unfortunately the newly created Assistant-Director position in the Cariboo Health Unit did not even get a chance to function as reorganization within the Peace River Health Unit denied that opportunity.

GRANTS TO RESIDENT PHYSICIANS

Because of the sparsity of population in certain parts of this mountainous Province, numerous small communities situated in remote areas are often unable to obtain medical care since there hardly seems to be a sufficient volume of therapeutic need to attract professional interest or to provide sufficient remuneration to a

physician. In an attempt to assist in this problem, a programme of grants-in-aid to resident physicians was organized to encourage physicians to take up residence in remote communities and to provide service on a periodic schedule of visits to the communities not sufficiently large enough of themselves to warrant a resident physician. The amount of the grant is based upon a definite formula designed on a sliding scale, inversely proportionate to the population, and directly proportionate to the distances to be travelled. The grant in itself, therefore, is not large, but does serve to reimburse the physician to some extent for out-of-pocket expenses incurred in providing the necessary medical supervision to the ill members of the community. The community itself is expected to assume some responsibility to ensure that the necessary office space and facilities are provided to the physician to meet his needs. The physician must present a report on a quarterly basis to the Health Branch outlining the services he has provided. During the year, grants were continued to twenty-one physicians in the administration of medical care to thirty communities.

One area of the Province considerably involved in the question of medical care was Stewart, where, as a result of industrial shut-down, it became difficult for the community to continue to attract a physician. As some likelihood of employment returned, it was deemed desirable to provide a grant-in-aid to encourage the physician to stay in Stewart. It is evident that if he left, 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 and has been maintained for somewhat longer than was anticipated, since an uplift in employment has not materialized to the degree that was anticipated.

The City of Greenwood has also suffered from inability to attract a resident physician and for some years has been dependent upon periodic visits of physicians from Grand Forks. Recently a young well-qualified practitioner became resident there, and the former grant-in-aid was re-established to encourage continuation of his stay. In addition to providing services to Greenwood itself, he has undertaken regular schedules of visits to neighbouring communities, notably Beaverdell, where a mine is in operation, and where an additional grant-in-aid is available for his services to that area. It is hoped that a sufficient volume of practice can be located to maintain his professional interest since lack of medical care in this area has been a long-felt health need.

Residents in communities north of Kamloops in the North Thompson Valley have had to travel long distances to obtain medical care, and steps have been under way on numerous occasions by residents in those communities to encourage a physician to become established among them. The most central location seems to be Clearwater, and physicians have tried from time to time to establish themselves. For one reason or another, no one physician has remained for any length of time, but in the fall of the year a new physician was attracted to the location and a grant-in-aid for that area became established. It is hoped that he can be induced to remain as a resident physician to satisfy the needs of the area in the provision of adequate medical therapy.

SCHOOL HEALTH SERVICES

Every school has tremendous opportunities to promote the health of its pupils and of its community. From early childhood to early adulthood, most children are enrolled in schools and are under the supervision of school staffs for a substantial part of the day, approximately half the days of the year. The conditions under which they live at school, the help they are given in solving their health problems, the ideals of individual and community health which they are taught to envisage,

and the information and understanding that they acquire of themselves as living organisms are factors which operate to develop attitudes and behaviour inducive to healthy, happy, and successful living. In all of its efforts, the school must consider the total personality of each student and the mutual interdependence of physical, mental, and emotional health. Policies must be organized toward development of the school health programme, which recognizes that the total health of the child and his total life situation become the prime objective of any school health programme.

It is not possible, of course, to segregate school health services entirely from community health services, since the school pupil is a definite member of a family group in the community. On the other hand, the health of the school-child can be a direct reflection of the community health, since the pupil spends a greater portion of his daily life in the community than as a dweller in the school. Indeed, his experiences during his informative years as an infant and preschool child may prove an asset to his educational progress, in the measure of mental, emotional, and physical development available to him in a healthful environment.

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, to 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 people 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 link between the school and the home in this field.

Improvements in school health services are continually sought for schools. The present programme is the result of study and inquiries that have gone on over many years in analysing the objectives and the results of the programme. Pilot studies have been encouraged in many of the health units in the interests of devising newer approaches. One of these was a long-term study into height-weight relationships as an index of the health of the school pupil, which originated initially through a study of the Wetzel Grid in the school health services of the Central Vancouver Island Health Unit, which was continued in the study of a growth period developed from an analysis of more than 10,000 records available from the past twelve years' programmes. The former director of the health unit sparked the new study and was encouraged in this by the Professor of Pædiatrics in the Faculty of Medicine at the University of British Columbia. It was also aided by the Director of the Division of Vital Statistics, who personally and through use of graphs provided analysis of the charts in preparation of the primary graphs. The departure of the Director of the Central Vancouver Island Health Unit did not close this study, since in his position as Chief of Epidemiology in the Department of National Health and Welfare he has maintained his interest and has had available the consultative services of pædiatricians and nutritionists in evaluation of the proposed graphs. The pædiatricians urge that the information be given thorough consideration in preparation for publication, since they feel that the materal available from the years of recording provides a background of exceeding value in determining the relationship of height-weight figures as an index of health. Collaboration between the interested parties is maintained, therefore, although progress is slow because of the separation of the collaborators by distance.

The need for development of a community mental-hygiene programme is definitely reflected in the repeated representations made for consultative services for emotional problems in children. The Health Officers' council has urged that these services be provided, and the various branches of the Mental Health Association have made similar requests.

The Metropolitan Health Services for Greater Vancouver has pointed the way in its organization of a Division of Mental Hygiene which devotes its major attention to children. Similar approaches are desirable for other areas of the Province. Consultations have been held with the Mental Health Services Branch to determine what action can be taken toward providing a solution to the need, if only in part; similar negotiations in that direction are being planned, in which it is hoped a co-ordinated approach between the Mental Health Services Branch and public health services can be evolved in initiation of some measure of community mental hygiene. In many of the schools there are mental-hygiene counsellors available to the teachers who, through special training in the mental-hygiene programme in the Metropolitan Health Services, are qualified to provide counselling services to the teachers and the pupil. It would seem that more of these are desirable in an endeavour to fulfil the need for handling pupil emotional problems.

Certain refinements and improvements in the design of a hard-of-hearing programme became possible when a qualified physician specializing in otology was appointed to the Health Centre for Children in Vancouver. Under his guidance a hearing-testing programme in schools is being reorganized and a travelling clinic has been developed. Considerable assistance in this came from National health grants and the British Columbia Foundation for Child Care, Poliomyelitis and Rehabilitation. Speech therapists are available to assist in speech therapy for those children requiring help through that type of service. Originally, hearing-testing was planned for each health unit, using audiometers purchased some years ago. Improvement in the design of audiometric equipment has occurred since then, and during this past year it was possible to supply a smaller type of audiometer known as "Otochek" in somewhat greater numbers; the use of these provides promise of an augmented hearing-testing programme. Screening of the pupils requiring this finer testing will be on referral through the teacher-nurse conference, in addition to such referrals as may be directed by the family physician or by the parent. Routine audio-metric testing of entire classrooms is not a feature of the service.

Examinations and reports of environment by the sanitary inspectors attached to the health units are carried out annually. In these fields, investigation of the water-supply, sewage-disposal, school lighting, ventilation facilities, safety features, fire protection, and building construction are all evaluated in a report which forms part of the report 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 staff. The school population continues to advance at its normal rate, and new school buildings are required. 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 schools.

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-child.

THE HEALTH OF THE SCHOOL-CHILD

The school health programme operates within the academic year, so that this analysis of the health of the school-child is based on the programme from September, 1958, to June, 1959, during which school health services were provided in the 1,147 schools included in the eighty-two school districts and the twenty-five small school areas. The increase in the school population is reflected in a further increase in the number of children enrolled in the grades examined in the schools during 1958/59, there being 279,040 children this year, compared with 272,499 the previous year; this represents a 2.3-per-cent increase in the number of pupils registered in the grades examined. In those grades, 38,174 pupils were examined—only 13.7 per cent of the children in those grades. This is an 11-per-cent decline from the previous year, when 42,947 children were examined, and is a further indication of the decline in the volume of routine physical examinations. On the other hand, there was an increase in the number of Grade I pupils examined. Table I shows that 25,394 (79.5 per cent) of the 31,953 children enrolled in Grade I received examinations; last year, only 75.7 per cent were given this service. This examination occurs at a transition period in the child's life when they are entering school for the first time, and is usually conducted with the parent present and is therefore productive of greater results when the parent endeavours to prepare the child for school. In later grades, screening methods are adopted solely as a selection for medical attention. In the elementary grades, somewhere between 3 and 6 per cent of the pupils were selected for extensive examination, and in the high-school grades the volume of medical examinations continued to be based on selectivity and showed a consistent decrease.

As could be anticipated, there was a considerable amount of examination required of children enrolled in special classes, which include classes for mentally retarded children. Twenty-four per cent of the enrolment required examination. In other types of classes there was also need for concentration of medical examinations, when 56.2 per cent of the children so enrolled were given complete examinations.

The results are presented in detail in the various statistical tables.

Table I.—Summary of Health Status of Pupils Examined According to School Grades, 1958/59

Item	Total Pupils, All Schools	Examined in Grades				Special Classes	Other
		Grade I	Grades II–VI	Grades VII–IX	Grades X–XIII		
Total pupils enrolled in grades examined	279,040	31,953	139,174	65,236	39,088	1,923	1,666
Total pupils examined	38,174	25,394	7,109	2,976	1,296	462	937
Percentage of enrolled pupils examined	13.7	79.5	5.1	4.6	3.3	24.0	56.2
Percentage examined with minor or no physical, emotional, or mental defects	84.5	85.1	82.8	87.1	89.7	52.4	80.9
Percentage of pupils examined having specified type and degree of defect—							
Physical 2	10.9	10.6	12.2	9.2	9.0	18.6	12.6
Emotional 2	3.8	3.7	3.7	3.1	1.8	11.3	7.4
Mental 2	1.8	1.4	2.5	2.0	0.3	16.7	1.9
Physical 3	0.8	0.7	1.0	0.4	0.8	4.1	0.1
Emotional 3	0.2	0.2	0.2	0.3	0.1	2.6	0.6
Mental 3	0.3	0.2	0.3	0.1	0.1	9.1	0.3
Physical 4	0.1	(1)	0.1	0.1	.....	0.4	0.2
Emotional 4	0.1	(1)	0.1	.....	.....	0.6	5.0
Mental 4	0.2	(1)	(1)	.....	.....	10.2	1.2

[1] Less than 0.1 per cent.

Table II.—Health Status of Total Pupils Examined in Grades I, IV, VII, and X for the Year Ended June 30th, 1959

Total pupils enrolled in grades examined	101,231
Total pupils examined	29,509
Percentage of enrolled pupils examined	29.2
Percentage examined with minor or no physical, emotional, or mental defects	85.0
Percentage of pupils examined having specified type and degree of defect—	
Physical 2	10.6
Emotional 2	3.5
Mental 2	1.5
Physical 3	0.7
Emotional 3	0.2
Mental 3	0.2
Physical 4	(1)
Emotional 4	(1)
Mental 4	(1)

[1] Less than 0.1 per cent.

Table III.—Health Status by Individual Grades of Total Schools, 1958/59

Item	All Schools	Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI	Grade VII
Total pupils enrolled in grades examined	279,040	31,953	28,925	28,276	27,897	27,019	27,057	24,734
Total pupils examined	38,174	25,394	1,910	1,279	1,673	1,104	1,143	1,631
Percentage of enrolled pupils examined	13.7	79.5	6.6	4.5	6.0	4.1	4.2	6.6
Percentage examined with minor or no physical, emotional, or mental defects	84.5	85.1	86.4	81.5	79.1	86.2	80.5	88.5
Percentage of pupils examined having specified type and degree of defect—								
Physical 2	10.9	10.6	10.8	14.6	13.8	12.0	11.3	8.7
Emotional 2	3.8	3.7	5.4	4.5	2.6	2.7	2.7	2.6
Mental 2	1.8	1.4	4.0	2.0	1.9	2.1	1.6	2.5
Physical 3	0.8	0.7	1.1	1.4	0.6	1.1	0.8	0.5
Emotional 3	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.3
Mental 3	0.3	0.2	0.3	0.4	0.3	0.2	0.2	0.1
Physical 4	0.1	(1)	0.2	0.1	0.2	----	0.2	0.1
Emotional 4	0.1	(1)	0.1	----	0.1	0.1	----	----
Mental 4	0.2	(1)	0.1	0.1	----	0.1	----	----

Item	Grade VIII	Grade IX	Grade X	Grade XI	Grade XII	Grade XIII	Special Classes	Other
Total pupils enrolled in grades examined	20,959	19,543	16,647	12,583	8,886	972	1,923	1,666
Total pupils examined	581	764	811	306	173	6	462	937
Percentage of enrolled pupils examined	2.8	3.9	4.9	2.4	1.9	0.6	24.0	56.2
Percentage examined with minor or no physical, emotional, or mental defects	82.3	87.7	89.4	88.2	87.9	100.0	52.4	80.9
Percentage of pupils examined having specified type and degree of defect—								
Physical 2	11.2	8.8	9.0	7.8	11.6	----	18.6	12.6
Emotional 2	4.1	3.3	1.4	2.6	2.3	----	11.3	7.4
Mental 2	2.4	0.5	0.4	0.3	----	----	16.7	1.9
Physical 3	0.5	0.3	0.5	1.0	2.3	----	4.1	0.1
Emotional 3	0.3	0.3	0.1	----	----	----	2.6	0.6
Mental 3	----	----	----	----	0.6	----	9.1	0.3
Physical 4	0.2	----	----	----	----	----	0.4	0.2
Emotional 4	----	----	----	----	----	----	0.6	5.0
Mental 4	----	----	----	----	----	----	10.2	1.2

[1] Less than 0.1 per cent.

Table IV.—Immunization Status of Total Pupils Enrolled, According to School Grade, 1958/59

Grade	Total Pupils Enrolled by Grades	Smallpox		Diphtheria		Tetanus		Poliomyelitis	
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Total, all grades	279,040	194,170	69.6	206,662	74.1	181,886	65.2	242,383	86.9
Grade I	31,953	24,944	78.1	27,421	85.8	27,277	85.4	25,819	80.8
Grade II	28,925	22,346	77.3	24,299	84.0	24,144	83.5	24,994	86.4
Grade III	28,276	20,441	72.3	22,769	80.5	22,604	79.9	25,112	88.8
Grade IV	27,897	18,925	67.8	20,857	74.8	20,463	73.4	24,873	89.2
Grade V	27,019	19,888	73.6	20,237	74.9	19,337	71.6	24,224	89.7
Grade VI	27,057	20,996	77.6	21,728	80.3	18,887	69.8	24,176	89.4
Grade VII	24,734	16,174	65.4	17,577	71.1	14,048	56.8	21,507	87.0
Grade VIII	20,959	12,167	58.1	13,548	64.6	10,113	48.3	17,925	85.5
Grade IX	19,543	13,164	67.4	13,589	69.5	8,826	45.2	17,149	87.8
Grade X	16,647	10,921	65.6	10,855	65.2	6,823	41.0	14,716	88.4
Grade XI	12,583	7,000	55.6	6,451	51.3	4,213	33.5	11,106	88.3
Grade XII	8,886	4,852	54.6	4,768	53.7	2,872	32.3	7,599	85.5
Grade XIII	972	429	44.1	413	42.5	240	24.7	734	75.5
Special classes	1,923	1,149	59.8	1,040	54.1	941	48.9	1,370	71.2
Other	1,666	774	46.5	1,110	66.6	1,098	65.9	1,079	64.8

A study of these tables is somewhat revealing, since they indicate that the physical condition of even selected pupils is at a fairly high standard, as 84.5 per cent of those examined exhibited either minor or no physical defect. In the Grade I group, where routine physical examination is pursued to the extent that approximately 80 per cent of the pupils enrolled receive examination, 85 per cent of those were in good physical condition. Thereafter, only referred pupils were given intensive medical examinations because of some suspected medical reason, yet a high percentage of those examined were found to be in good physical condition. It is thus evident from these tables that there is some justification for the change that has occurred in the school health programme in the calculation of routine physical examination for all pupils. Certainly, if only a small proportion of those selected for reason of possible physical defect are medically or emotionally impaired, it becomes obvious that the great majority of the pupils enrolled must enjoy a fairly high standard of normal physical health.

It is axiomatic that there should be a higher proportion of pupils in the special and other classes likely to have defects of one kind or another, since these classes are designed for pupils unable to cope with normal school situations. In Table III it becomes evident that these pupils, already handicapped, exhibit the greatest proportion of physical defects (23.1 per cent), emotional defects (24.5 per cent), or mental defects (36.0 per cent). It is possibly a commendable reflection on the efforts being made in the existing educational system to provide educational advantages for these children, especially when it is seen that 10.2 per cent are classified as having a major mental condition (4). The painstaking patience required of teachers in these grades in endeavours to promote some degree of learning is a credit to them.

The amount of mental and emotional trauma in the regular grades in school is now being revealed by the newer classification of health status of the pupil adopted over the past four years; it permits comparison of this year's experience with past years. In the last report, the total amount of emotional and mental defect was somewhat significantly higher than in previous reports, but for the present year of reporting it is almost constant. It is likely that experience with the classification and its use are promoting a more uniform interpretation, and such constancy can be anticipated as an average trend; this will bear study in future reports when comparisons can be pursued further.

Certainly there does not now seem to be any higher proportion of mental or emotional disturbance between grades. The figures apply to children selected for examination for reasons of mental or emotional instability; it becomes evident that the proportion is not too alarming. It should be noted also that the pupil seems able to adjust to the school programme without any undue upset, maintaining a fairly constant emotional equilibrium throughout.

The immunization of the school pupil has improved this year over that of previous years. It is evident from Table IV that the majority of the pupils (over 65 per cent in each category) have become immunized, the greater proportion against poliomyelitis. The opportunities presented through education of parents and children presenting themselves for poliomyelitis immunization has possibly had some effect in promoting an increase in immunization for other diseases; the greater use of multivalent vaccines is an added factor. Certainly this is the case in immunization to tetanus, in which the addition of tetanus toxoid to diphtheria toxoid has prompted a greater increase in the numbers immunized against that disease.

Possibly the most encouraging development in the immunization picture is the trend toward a higher immunity status for the pupils in the more advanced grades; the greater the proportion of immune graduates, the better the protection of the entire community.

The greater proportion immunized has also been reflected in the pupils enrolled in special classes, but, nevertheless, further improvement there is possible. Certainly, these children, already crippled by defect or mental trauma, should be adequately protected against communicable infection.

Because of changes occurring in the method of reporting, it is not possible to give the same reflection on the effect of communicable diseases on the health of the school-child. The minor communicable infections so common to childhood, such as mumps, measles, rubella, and chicken-pox, are no longer reported on a routine basis, and figures are no longer available for comparison with previous years. This, however, is not too serious since these minor communicable infections are prone to occur cyclically every four or five years in a peak incidence, falling in numbers as an immune population develops. 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 an increase in these.

Scarlet fever and streptococcal sore throat took their toll in sickness when an outbreak of streptococcal infection was prevalent during the spring. The high incidence of scarlet fever (a rate of 244.5 per 100,000 population) and streptococcal sore throat (a rate of 46.1) is the highest experienced in the Province since 1952; it is difficult to explain why this should occur, since, in general, the use of antibiotics and chemo-therapeutic drugs over the past few years has reduced the volume of this type of infection. It is possible that a change in the virulence of the organism is a factor, but study will be necessary to determine if such is the case. In general, the outbreak was mild and did not create the complications formerly associated with this infection; nevertheless, it did make inroads in the school attendance figures, and no doubt there will be a few pupils left with cardiac complications. One of the most serious sequelæ of streptococcal infections is rheumatic infection, which may take several different forms, including rheumatic fever, rheumatic carditis, and so forth. It is well established that rheumatic infections follow infections of the hæmolytic streptococcus, usually developing within one to five weeks after a sore throat. The exact nature of the disease process is not established; the most prob-

able theory is that it is an allergic reaction. Antibiotics have only limited usefulness in the treatment of the actue stages, but are very useful in preventive 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 phophylaxis until he is 18 years of age, or at least for five years. A rheumatic fever prophylaxis programme has been introduced in this Province on a trial basis in four of the health unit areas. Seventy-seven cases of the condition are not receiving prophylaxis, and, based on the information available from the administration of the programme to those seventy-seven cases, the desirability of including the whole Province is being studied. The study is going forward under the leadership of Health Branch officials, in consultation with a committee of the British Columbia Division of the Canadian Medical Association; financial support for the programme is forthcoming from National health grants, which provided the money for the purchase of the necessary drugs. It is an additional service designed for the protection of the health of the school-children in which age-group rheumatic infections are more likely to occur.

Poliomyelitis showed an increase this year over more recent years; a rate of 8.4 per 100,000 population was the highest since 1955, being about ten times as great as that of the previous year. About one-quarter of the total cases occurring involved school-children, and four of the thirteen deaths were among that age-group. While this is serious enough, the situation might have been considerably worse except for the well-organized poliomyelitis immunization programme carried on amongst school-children over the past four years.

A change in reporting of poliomyelitis alters comparisons to some degree, since only paralytic poliomyelitis is now being reported as such, whereas the other conditions that cause associated symptoms without paralysis are classified under aseptic meningitis. It is not possible to make any comparisons in that connection with previous years, since such conditions were unreported previously. Nevertheless, the fact that eighty-two cases of aseptic meningitis occurred this year is of interest in any study of the health of the school-child.

Infectious hepatitis is also a creator of school absenteeism and a factor influencing school health. There was an increase in this condition during the year, with a rate of 57.8 per 100,000 population, to cause a greater proportion of illness than in any year since 1955.

One significant situation is the record of a second year with no cases of diphtheria, again a reflection of the efficacy of the immunization programme.

COMMUNITY HEALTH CENTRES

The proposal advanced through National health grants to encourage construction of community health centres by provision of grants has certainly promoted a changed situation throughout the Province in so far as accommodation for the various health unit offices is concerned. To date, forty-three community health centres have been constructed under the sharing grant, and more are being added yearly. Indeed, such is the demand for grants for this purpose that priority lists have had to be established, accepting requests as planning is commenced; for the past three years the list has had to be carried over into subsequent fiscal years, since it was impossible to complete all the construction requested in any one current year.

Under the proposal originating with the National health grants, it was planned to provide a designated grant for a specified square footage of office and clinic accommodation, up to a maximum, providing an equivalent amount was granted Provincially and municipally. Latterly, it became accepted that in addition to the grants available through the senior governments, grants from voluntary health agencies could be added to aid in the financing and might be considered part of the local or municipal contribution; therefore, grants from the British Columbia Tuberculosis Society, the British Columbia Division of the Cancer Society, the British Columbia Division of the Canadian Arthritis and Rheumatism Society, the British Columbia Foundation for Child Care, Poliomyelitis, and Rehabilitation, and others have contributed materially toward the cost of construction of the various health centres. In recognition of contributions from the voluntary health agencies, the building, in addition to providing office and clinic space for the official health agencies, has been providing workrooms and meeting-rooms for the voluntary health agencies. By this means a 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.

Since the introduction of the programme, costs of construction have increased materially, and there has been some agitation over recent years for an increase in the amount of the National and Provincial share of the costs. While it would be possible under the National health grants to increase the National contribution toward construction, it is nevertheless tied to the sharing principle. From the Provincial point of view, it is felt that to alter the financial contribution at this time would be breaking faith with those earlier communities initially participating in the plan. For that reason, plus the fact that there are a sufficient number of demands for the grants, has come a decision to maintain the grant formula as originally set.

During this past year newly constructed community health centres were opened at Williams Lake and Burns Lake in the Cariboo Health Unit, at Smithers in the Skeena Health Unit, at Dawson Creek in the Peace River Health Unit, at White Rock and Whalley in the Boundary Health Unit, and at Port Alberni in the Central Vancouver Island Health Unit. As the year closed, construction was well under way on community health centres at Quesnel in the Cariboo Health Unit, at Creston and Kimberley in the East Kootenay Health Unit, at Kitimat, and in South Vancouver. In addition, planning of community health centres was well under way at Golden, Michel, and Field in the East Kootenay Health Unit, Ladysmith in the Central Vancouver Island Health Unit, and Coquitlam in the Simon Fraser Health Unit, while negotiations for community health centres were being conducted at Abbotsford in the Upper Fraser Valley Health Unit, Nelson in the Selkirk Health Unit, and Princeton in the South Okanagan Health Unit.

DISEASE MORBIDITY AND STATISTICS

Comparisons in disease incidence which have been made in recent years have to be considerably altered this year, since an agreement between the Provinces and the Department of National Health and Welfare has resulted in a change in reporting; this has resulted in dropping of the reports on the minor communicable infections and some change in reporting in the volume of major communicable infections. In so far as the minor communicable infections are concerned, it was felt that since the reporting was inaccurate and since there was little that could be accomplished in control, it did not seem prudent to continue to process the figures when nothing was being done about them, or with them. Consequently, routine reports on the incidence of chicken-pox, conjunctivitis, measles, mumps, rubella, trachoma, and Vincent's angina were removed from the list of notifiable diseases.

These conditions, in past years, have accounted for a considerable volume of the total notifiable diseases each year; their removal, and the inclusion of diarrhœa of the new-born, unspecified dysentery, staphylococcal food poisoning, aseptic meningitis, and pemphigus neonatorum, alters the comparisons that can be made between the disease incidence this year and the disease incidence in past years. However, in order that there may be some comparison, certain figures have been extracted from the notifiable reports of the past four years in an endeavour to arrive at some conclusions on the disease pattern of the Province this past year in relation to that of previous years. As the new methods of reporting are featured in future compilations, comparisons will become more pertinent. Nevertheless, in spite of these reservations it becomes evident that the disease experience of the Province for 1959, with a rate of 1,037.1 per 100,000 population, is the highest for the past five years for comparable conditions. A higher incidence of salmonellosis, hepatitis, scarlet fever, streptococcal sore throat, and poliomyelitis contributed to this. A major factor for the upward trend was the marked increase in scarlet fever and streptococcal sore throat, in which the disease incidence was the highest for the past five years, and, as a matter of fact, for scarlet fever was the highest since 1952 and for streptococcal sore throat for a considerably longer period. It is difficult to explain a rate of 244.5 for scarlet fever and 46.1 for streptococcal sore throat in the face of advances that were being made with antibiotics in the control of these infections. It is possible that a changing virulence of the organism or development of a new strain is rendering the antibiotic drug innocuous, and further increases in this disease can be anticipated. Fortunately the incidence was confined to the spring months of the year and was sufficiently light in its clinical manifestations to preclude the development of serious complications. While it created an increase in the amount of school absenteeism, the modification adopted a few years ago in quarantine regulations resulted in contacts being able to continue their normal activities without prolonged undue restriction.

The amount of infectious hepatitis, with a rate of 57.8, is a definite increase over the incidence in the past three years, although somewhat lower than the 1955 rate of 62.6. This condition is the cause for some alarm, since it can be a factor in chronic liver disease; for that reason, some efforts at control are exercised through the distribution of immune serum globulin as a prophylactic measure.

Gastro-intestinal infections due to salmonella showed an upward trend (a rate of 22.6 to the highest figure for the past five years). The amount of infection due to this organism has shown a consistently upward trend each year, and it can be anticipated it will go even higher as the number of carriers resulting from these infections is equivalently increased from exposure to the disease. Food-borne outbreaks arise through improperly prepared food, especially meat pies or roast fowl, or food prepared by a person who is a recognized mild case of the infection, or a convalescent carrier. Controls can be introduced by exercising exclusion of infected persons from food-handling in occupations involving care of young children, in searching for unrecognized mild cases and convalescent carriers among contacts, and by proper cooking of all foodstuffs derived from animal sources and protection of prepared food against rodent or insect contamination.

Related to the numerous infections resulting from species of salmonella are those definitely due to human transmission in the form of typhoid and paratyphoid fever, caused by specific types of salmonella—namely, *Salmonella typhi* and *Salmonella paratyphi*. These were somewhat less numerous this year than in past years, with a rate of 0.3 per 100,000 population for typhoid fever and 0.8 per 100,000 population for paratyphoid fever. This represents a desirable situation,

and one which it is hoped can be further improved with improvements in sanitation and adequate control over known human carriers.

Another form of gastro-intestinal infection which has occasioned concern in past years is bacillary dysentery, due to and caused by the various forms of shigella organisms. In this Province the most common type seems to be that due to *Shigella sonnei,* which has been the agent creating a number of summer-camp outbreaks, resulting in the disease being spread through many parts of the Province. It was anticipated that an increase would occur as a result of that spread, and such was the case following certain summer-camp outbreaks. It is noted that a decrease in the volume of infection occurred this year in a rate of 21.4 per 100,000 population, compared with 60.6 for the previous year; however, this year's experience was nevertheless sufficiently high to warrant the prediction that the volume of infection can be anticipated to be maintained at about the consistent rate for a number of years, since unrecognized mild cases and convalescent carriers will continue to serve as sources of infection.

Reporting of poliomyelitis was affected by the change in reporting of notifiable diseases generally, since it was decided that only poliomyelitis cases exhibiting paralysis would be designated as true poliomyelitis, and therefore notifiable, while all cases formerly classified as non-paralytic poliomyelitis would be shown as aseptic meningitis. This change meant that case rates occurring this year would hardly be comparable with case rates of previous years until the figures had been corrected by deletion of the reported non-paralytic cases; consequently, in this year's report certain changes will be observed in the figures shown for previous years to permit that comparison to be made.

In this Province, immunization for poliomyelitis was offered on a restricted basis in 1955, when vaccine was first made available in Canada. During that year, vaccine was administered to 49,000 children in the age-group 5 to 7 years, inclusive; from that experience it was very clearly demonstrated that the vaccine conferred a definite protection. In latter years, as the vaccine became available in larger quantities, immunization was extended to cover all children, and in the years 1956 to 1958 immunization was concentrated among pre-school and school-age members of the population. In 1959 this preventive measure was extended to include adults up to 40 years of age. In addition, in 1959 a combined quadruple antigen became available in which immunization to diphtheria, pertussis, tetanus, and poliomyelitis was associated in a single solution. Some evidence of the volume of immunization to poliomyelitis provided in the past year is evidenced in the fact that 604,050 c.c. of poliomyelitis vaccine and 164,400 c.c. of D.P.T. poliomyelitis vaccine were distributed to local health services throughout the Province. This indicates that, in association with the immunization programme conducted during the preceding four years, a considerable proportion of the population had received the benefit of protection through immunization to poliomyelitis. Nevertheless, the disease incidence, which had been showing a downward trend for each of the previous three years, took a sudden upsurge during last year, with 132 cases being established, for a case rate of 8.4 per 100,000 population. It was, of course, a well-established fact that even if the immunity status had been complete for the population as a whole, it would not promote absolute immunity. In the majority of immunological procedures there remains a small percentage of persons unable to obtain a sufficient antibody response to the antigen to attain complete protection to the disease. This well-known truth, garnered from immunization experience over many years, is applicable also to poliomyelitis. It was evident, then, that, in spite of the excellent immunization coverage, a certain proportion of disease could be anticipated. This, coupled with the fact that there remained a definite core of unimmunized persons,

made it not too disturbing to have some increase in the incidence, but it was certainly disquieting to have it attain a rate ten times that for 1958 and five times the one established for 1957. Further epidemiological study will be required to determine if there are any related factors that may be in association with the features created.

Mortality from paralytic poliomyelitis was increased also, with the death of fourteen of the patients. The fact that the case fatality rate of 10.6 is less than that of 25.0 established in 1958 is no particular credit, since, actually, the few cases that occurred in that year influenced the rate decidedly, as is evident from comparison with the rates for the years preceding.

Poliomyelitis Case Fatality Rates, British Columbia

Year	Paralytic Cases	Deaths	Case Fatality Rate
1953	439	26	5.9
1954	107	6	5.6
1955	143	3	2.1
1956	37	3	8.1
1957	25	—	—
1958	12	3	25.0
1959	132	14	10.6

The virulence of the outbreak creating so many paralytic cases and so many deaths prompted a desire on the part of physicians, and relatives, to have the patients obtain the most effective medical care available; this meant that a vast majority of the cases required evacuation to major medical centres in Vancouver and Victoria. In such a situation the facilities of the Royal Canadian Air Force were of tremendous support, since its Communication and Rescue Flight at Sea Island undertook evacuation flights under all types of adverse conditions to expidite the transfer of exceedingly ill patients from inland hospitals to the larger city centres. The quality of medical care provided by numerous individual physicians and the efficient evacuation services have probably had their influence on the case fatality rate, since there is little doubt that without them the rate would have been significantly higher.

In a review of the poliomyelitis situation, some consolation must be derived from the fact that it might have been much more serious. It seems fairly evident that without the concentrated immunization programme of the past five years, the Province would probably have suffered an exceptionally severe epidemic. The public health staffs attached to the various health units in the urban and rural areas have performed yeoman duty in conducting concentrated immunization programmes, and they deserve much credit for the protection conferred on the public. They have been ably assisted, however, by numerous groups, not the least of whom have been the British Columbia Division of the Canadian Medical Association and the individual physicians. The British Columbia Foundation for Child Care, Poliomyelitis, and Rehabilitation gave unstintingly of funds and lay assstance, thereby aiding in the supply of personnel and equipment to promote a more capable organization of clinics. National health grants undertook to defray half the costs of the poliomyelitis vaccine, and in so doing contributed $80,000, thereby helping to make a greater quantity of vaccine available for the conduct of the clinics. The prevention and treatment of poliomyelitis can be a consumer of time and money, requiring the services of many people; on the other hand, prevention in this one disease alone can reap untold benefits to individuals, to families, and to the whole community.

An exceedingly bright feature of the disease morbidity picture was a repetition of the absence of diphtheria from the table of recorded illnesses, since, for the second consecutive year, diptheria has failed to record a single case. While the disease has been occuring in very few numbers over recent years, it is nevertheless gratifying to have it entirely absent. This situation can be maintained if the immunization status of the population can be kept at a high level.

Table V.—Notifiable Diseases in British Columbia, 1955–59 (Including Indians)

(Rate per 100,000 population.)

Notifiable Disease	1955		1956		1957		1958		1959	
	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	.....	.....
Brucellosis	13	1.0	4	0.3	2	0.1	2	0.1	6	0.4
Cancer	3,556	265.0	3,115	222.7	4,150	279.1	4,103	265.7	3,968	252.7
Diarrhœa of the new-born	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	53	3.4
Diphtheria	8	0.6	1	0.1	5	0.3	.....	.....	.....	.....
Dysentery, amœbic	2	0.2	.....	.....	4	0.3	6	0.4	1	0.1
Bacillary	293	21.8	342	24.5	132	8.9	936	60.6	336	21.4
Unspecified	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	62	3.9
Encephalitis, infectious	2	0.2	9	0.6	1	0.1	2	0.1	9	0.6
Food poisoning—										
Staphylococcal intoxication	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	8	0.5
Salmonella infections	92	6.8	187	13.4	259	17.4	292	18.9	355	22.6
Unspecified	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	3	0.2
Hepatitis, infectious	841	62.6	343	24.5	393	26.4	558	36.1	907	57.8
Malaria	1	0.1	1	0.1	1	0.1	2	0.1	.....	.....
Meningitis, viral or aseptic—										
Due to polio virus	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	3	0.2
Due to Coxsackie virus	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	23	1.4
Other and unspecified	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	56	3.5
Meningococcal infections	48	3.6	45	3.2	35	2.4	25	1.6	31	2.0
Ornithosis	.....	.....	.....	.....	13	0.9	.....	.....	1	0.1
Pemphigus neonatorum	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	3	0.2
Pertussis	1,683	125.4	987	70.6	941	63.3	1,427	92.4	680	43.3
Poliomyelitis, paralytic	143	10.6	37	2.6	25	1.7	12	0.8	132	8.4
Rabies in man	.....	.....	.....	.....	.....	.....	1	0.1	.....	.....
Scarlet fever	757	56.4	645	46.1	325	21.8	1,098	71.1	3,839	244.5
Streptococcal sore throat	352	26.2	171	12.2	115	7.7	172	11.1	724	46.1
Tetanus	4	0.3	3	0.2	2	0.1	1	0.1	3	0.2
Trichinosis	.....	.....	.....	.....	.....	.....	2	0.1	.....	.....
Tuberculosis	1,414	105.4	1,331	95.2	1,355	91.1	1,092	70.7	1,160	73.9
Tularæmia	.....	.....	1	0.1	.....	.....	.....	.....	.....	.....
Typhoid fever	8	0.6	32	2.3	6	0.4	8	0.5	4	0.3
Paratyphoid fever	40	3.0	32	2.3	10	0.7	22	1.4	12	0.8
Venereal disease—										
Gonorrhœa	2,508	186.9	3,442	246.1	3,806	256.0	3,426	221.9	3,353	213.5
Syphilis (includes non-gonorrhœal urethritis, venereal)	765	57.0	763	54.6	748	50.3	582	37.7	545	34.7
Other (chancroid)	7	0.5	6	0.4	2	0.1	3	0.2	6	0.4
Totals	12,537	934.2	11,497	822.1	12,333	829.4	13,773	877.2	16,283	1,037.1

[1] Not notifiable prior to 1959.

In any study of morbidity and mortality rates, some consideration must be devoted to the annual toll created by accidents, not the least of which must be the volume of traffic accidents. The collaboration commenced with the Motor-vehicle Branch was maintained during this past year, and agreement reached, following a number of meetings, whereby the British Columbia Division of the Canadian Medical Association would organize a set of minimum physical standards which would be adjudged as basic to the refusal of a driver's licence. A committee of that associa-

tion gave the matter some study, and at the annual meeting of the association in October approval was attained on a set of recommended standards modelled after those approved by the American Medical Association. The Health Branch continued to provide medical consultative services to the Motor-vehicle Branch in review of medical-examiner reports on applicants for driver's licences. As the new standards come into effect, it is anticipated that the amount of review should be decreased, since it is anticipated the individual physicians will be guided by the printed regulations directed to their attention by their own association. There remains a considerable need for further review of the problem. Study is being set up in the Department of Preventive Medicine, Faculty of Medicine, at the University of British Columbia into the relationships of traffic accidents in children, in which one of the health unit directors will be granted leave of absence to assist. The Division of Vital Statistics and the consultant in epidemiology plan to review the situation further, in the hope that some recommendation may be forthcoming to assist the Motor-vehcile Branch in a decrease of the volume of traffic mortality occuring in the Province, which during 1959, caused 304 deaths, more than all those occurring through communicable diseases together.

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

G. R. F. ELLIOT, DIRECTOR

The headquarters of the Bureau of Special Preventive and Treatment Services is in the Provincial Health Building, situated at 828 West Tenth Avenue, Vancouver. Two of the three Public Health Branch divisions included in this Bureau—the Divisions of Laboratories and Venereal Disease Control—also have their headquarters and their major facilities in this building. The other division in the Bureau—the Division of Tuberculosis Control—has its headquarters in the Willow Chest Centre, which adjoins the Provincial Health Building. Its major facilities are in this centre and at Pearson Hospital, situated at 700 West Fifty-seventh Avenue, Vancouver. The Poliomyelitis Pavilion is an integral part of the Pearson Hospital.

The Bureau Director gives general direction to the activities of the divisions comprising it and integrates their services with local health services and other public health activities in the Province. In addition, he has responsibility for liaison with the various voluntary health agencies in the Province to promote the integration of their services with the general public health programme.

The relationships with the Faculty of Medicine, University of British Columbia, continue to be eminently satisfactory; during the year the Assistant Provincial Health Officer was appointed a Professor of Preventive Medicine on a part-time basis.

ADMINISTRATION

The major objective in administration is the provision of consistently high standards of services at the least possible cost. This requires continual assessment of programmes and methods. During the year several significant innovations resulted. A programme of progressive patient-care was introduced. It is expected to improve the effectiveness of treatment and rehabilitation of tuberculosis patients, while affording a substantial reduction in operating costs. Other changes which also afforded the twofold benefits of maintaining a high standard of service at reduced cost occurred during the year. They included an integration of clinical laboratory services at Willow Chest Centre and Pearson Hospital; a modified basis of operation in the dietary, housekeeping, and accounting departments at Willow Chest Centre; and an improved organization of janitor services at the Provincial Health Building.

No material administrative changes occurred in the Divisions of Venereal Disease Control and Laboratories.

The former Director, Division of Venereal Disease Control, completed graduate studies in epidemiology at the University of Minnesota and returned to duty in August. He has assumed full-time responsibility as consultant in epidemiology. The Personnel Officer returned in May from graduate studies in administration at the University of British Columbia.

VOLUNTARY HEALTH AGENCIES

As indicated above, the Bureau of Special Preventive and Treatment Services works closely with voluntary health agencies. In this section a brief outline is given of the activities during the year of those agencies receiving direct financial aid from the Provincial Government. It might be mentioned at this point that each of these agencies plays a vital role in the maintenance and development of public health

services in the Province. That their contributions have been so valuable to the public health service is in very large measure attributable to public-spirited individuals in the community who provide leadership to these agencies.

Alcoholism Foundation of British Columbia

The demand for treatment services during 1959 was at a high level: 406 new cases were admitted to treatment, 85 cases re-entered treatment, and 197 other persons sought information about problem cases and services available. A total of 5,715 therapeutic interviews were carried out, and 292 group meetings were held. These services severely taxed the clinical facilities of the foundation, particularly in view of the staff reductions found necessary in late 1958 to ward off a budget deficit. It became necessary during the year to drop the ancilliary services provided in the Provincial Mental Hospital and the Haney Correctional Institute; however, the services in the Oakalla Provincial Gaol were maintained.

The rehabilitation residence was used to good advantage during the year, particularly to assist patients who reside outside of the Vancouver metropolitan area. A total of 108 patients were admitted, for an average stay of eighteen days.

Recent statistical studies indicate that alcoholism is increasing in British Columbia at an alarming rate (approximately 2,000 cases per year), and partially to meet this situtation the foundation greatly stepped up its preventive education programme in 1959. Institutes were held in several outlying areas; a School of Alcohol Studies was held at the University of British Columbia; and the programme of publications, films, and talks was stepped up.

A great deal of economic and human waste is created by the problem drinker in business and industry. To assist employers with this vexing and little-understood matter in industrial health, the foundation has prepared its "Alco-Plan for Business and Industry," a programme designed to help employers discover early cases of alcoholism and bring them to treatment.

The foundation is constantly striving to give more and better services to the people of this Province and has plans for expansion that will be implemented as soon as funds are available.

British Columbia Cancer Foundation

Since 1949 the British Columbia Cancer Foundation has been the official agency for the diagnosis and treatment of cancer in the Province.

During the past year the number of consultative cancer clinics was increased from twelve to thirteen, by the establishment of a clinic at Dawson Creek.

Good progress was made in the extension of facilities at the British Columbia Cancer Institute in Vancouver, the largest unit of those operated by the foundation. This building programme, when completed, will provide new permanent quarters for the cytology department, the diagnostic X-ray department, the social service department, and enlarge the capacity of the boarding home from 36 to 56 patient-beds. It is expected that extension of the radiotherapy department will provide accommodation for a second Cobalt 60 unit during 1960, and for another supervoltage unit during 1961.

Operating expenses of the foundation's cancer-control programme are provided from National health grants, Provincial Government funds, and fees from private patients.

British Columbia Medical Research Foundation

During the past year the British Columbia Medical Research Institute changed its name to British Columbia Medical Research Foundation. Its constitution was revised in order to modify its programme in the light of recent changes in the type of

support which is most urgently needed by our medical scientists. Originally the institute operated its own laboratories, in which speicalized facilities were made available for use by physicians and surgeons wishing to undertake research projects. As the Medical Faculty of the University became more firmly established, however, the trustees of the institute decided that a significant improvement in over-all efficiency would be achieved if responsibility for the operation of its research facilities was turned over to the University. This was done on January 1st, 1959. The research projects formerly carried on in the institute are now operating efficiently in a new laboratory which has been built, with the aid of funds donated by the institute, as an addition to the Medical School Building at the Vancouver General Hospital.

Under its new constitution the foundation will make grants to support the work of medical scientists in any institution in the Province, without restriction as to the branch of medical science or the specific disease or diseases with which the projects are concerned. By maintaining a high degree of flexibility and by concentrating on those types of support which the scientists themselves feel are not adequately covered by existing private and governmental agencies, the foundation hopes to be able to make a contribution to the productivity of medical research in British Columbia which will be large in relation to the actual amount of money distributed. During the six months which have elapsed since the new constitution was adopted in June, 1959, the foundation has already made a total of nine research grants in support of projects in a wide variety of fields.

Canadian Arthritis and Rheumatism Society (British Columbia Division)

One objective of the Canadian Arthritis and Rheumatism Society is the prevention of crippling and disability from rheumatic and arthritic disease. Good progress is being made toward achievement of this objective. Through education, persons with such disease are being persuaded to seek proper medical advice early in the disease. This education programme, coupled with provision of adequate treatment facilities, is proving effective. An assessment of about 3,200 cases closed in 1958 revealed that 80 per cent showed improvement; about four-fifths of this number were in the under-65 age-group.

The physiotherapy service continued to be provided to all large and most smaller communities in the Province. The continuity of this service is disrupted only when it is not possible to find staff replacements. The service of the occupational therapist travelling in the vehicle van proved so valuable in 1958 that all of the agency's treatment units south of Clinton were revisited in 1959. This occupational therapist visits homes at the request of the family physician and, working in conjunction with the unit physiotherapist, does a functional assessment of patients, makes working splints and self-help aids, and assists in home adjustments as necessary.

As a result of the research programme, the techniques for serological diagnostic testing are made available to physicians throughout the Province where such service is not available in hospital laboratories.

The treatment programme for arthritics has been established on a basis of cooperation with hospitals and physicians. Medical consultative service and special drugs are also provided at the request of the family physician. In 1958, 66 per cent of all patients referred were treated as out-patients, and the remainder as in-patients. Statistics for the first nine months of 1959 indicate that the number of patients receiving treatment will remain at about the same level as in 1957 and 1958, when they numbered about 67,000.

Each year the society offers a refresher course to other physiotherapists and occupational therapists. Also, physicians, interns, and nurses are given lectures and

tours as an integral part of their training through the annual Canadian Arthritis and Rheumatism Society lectureship. The lecturer in 1959 was Professor J. H. Kellgren, Professor of Rheumatology and Director, Rheumatism Research Centre, Manchester University, Manchester, England.

Narcotic Addiction Foundation of British Columbia

The past year has been the first in which this agency has had a treatment programme operating for a full year. In the first eleven months a total of ninety-seven persons—seventy-four men and twenty-three women—were interviewed with a view to treatment. As of November 30th, 1959, there were seventy patients—fifty-two men and eighteen women.

Residence facilities for four male patients were established on December 1st, 1958. Twenty patients were treated in these facilities in the succeeding twelve-month period. All patients were on this programme on a voluntary basis; eighteen were drawn from the community and two from Oakalla Prison Farm.

Since practically all patients who present themselves for treatment are currently addicted, there is a great need for withdrawal services. An adequate level of such services is not yet available, although the foundation does endeavour to provide such services as an integral part of its therapeutic programme.

Research is an essential part of an adequate narcotic addiction control programme. Statistical data are being compiled which will contribute to research.

Since its inception, the foundation has sought to stimulate the interest of communiy agencies in the social, recreational, and occupational fields, since such agencies may be expected to contribute especially to the rehabilitation of ex-addicts. There was encouraging increase of interest demonstrated by such agencies during the year.

G. F. Strong Rehabilitation Centre

In last year's report it was observed that in 1958 there had been the greatest utilization of the centre since its inception in 1949. The statistics for 1959 and estimated statistics for 1960 indicate that this high level of utilization is to be maintained. To date there has been a slight decline in the occupancy of non-nursing beds and in the number of work units (half-days of service per patient), but this has been offset by an increased number of admissions and discharges and an increase in the enrolments in the children's programme.

In the cerebral palsy programme, which is entirely an out-patient service, there has been an increase of 6 per cent in patients on the active list (273 as at December 31st, 1958, compared with 290 as at September 30th, 1959). Further increases can be expected. Related to this increase has been the establishment of a third academic-school room in the centre, which, like the other two schoolrooms, is staffed on a full-time basis by the Vancouver School Board.

NATIONAL HEALTH GRANTS

Dr. Jean Webb and Dr. W. J. Connelly of the Maternal and Child Health Division, Department of National Health and Welfare, visited Vancouver in November to discuss various programmes and research projects being conducted in the child and maternal health field. Considerable benefit is derived from visits of Department of National Health and Welfare personnel, since opportunities are presented to review assistance which may be available to this Province under the National health grants.

The total amount of funds available to British Columbia for 1959/60 was $6,056,144, being an increase of $727,433 over that appropriated for 1958/59. This excludes the Public Health Research Grant, which is administered in Ottawa. Of the $5,328,711 available for the year ended March 31st, 1959, 79.1 per cent was expended, as compared to 74.6 per cent for the previous fiscal year. The total approved for specific expenditures for 1958/59 was 91.4 per cent for British Columbia, compared to 80.2 per cent for all Provinces.

Crippled Children's Grant

The total funds allocated to this grant were $47,221. The speech and hearing programme of the Health Centre for Children was transferred from the Child and Maternal Health Grant to this grant, with assistance being provided for the purchase of equipment and toward personnel. The Cerebral Palsy Associations of Greater Vancouver and Lower Vancouver Island and the cerebral palsy unit at the Children's Hospital continued to receive support. Short-term postgraduate training assistance was also provided to four members of the Cerebral Palsy Association of British Columbia to attend a staff-training workshop which was sponsored by the Cerebral Palsy Section of the Canadian Council for Crippled Children and Adults.

Professional Training Grant

The allocated funds, amounting to $47,221, were expended early in the year, and it was necessary to transfer a further $1,500 from the Laboratory and Radiological Services Grant in order to meet the increased requests for training. Continued assistance was given to trainees of the Canadian Hospital Association extension course for hospital administrators and medical records librarians, and these courses are continuing to prove to be of considerable benefit to the hospitals and the trainees. Provincial health, metropolitan health, and hospital personnel also received short-term postgraduate and university training.

Hospital Construction Grant

Construction of general hospitals utilized almost 84 per cent of this year's grant. Community health centres and mental hospitals each received about 7 per cent. By the end of 1959 the total grant of $1,679,218 for the 1959/60 fiscal year was fully committed.

Venereal Disease Control Grant

There was a slight increase in the amount allocated to this grant, which is on a matching basis, with the total funds being paid to the Province. Expenditures by the Province on the venereal disease control programme are considerably in excess of the grant.

The report of the Division of Venereal Disease Control appears in another section of this Health Branch Report.

Mental Health Grant

The Mental Health Grant was allocated $657,347, and $56,975 was transferred to it during the year. The Mental Health Services Branch submits most of the projects and, as in previous years, the bulk of the assistance was used to provide staff and technical equipment for the mental-health institutions operated by the Province.

This year saw the admission and infirmary unit of the Home for the Aged (Valleyview Building) completely equipped and opened for the care of patients.

In an attempt to overcome shortages of professional staff for mental-health services institutions, bursaries for professional training were increased in number. There are six psychiatrists, ten social workers, six registered nurses, and three clinical psychologists undergoing training, who will be returning to the Mental Health Services Branch in 1960.

Assistance to the psychiatric services of the Vancouver General Hospital and the Mental Hygiene Division of the Metropolitan Health Committee of Greater Vancouver continued along the lines already established. Assistance was continued to the course for training senior school counsellors sponsored by the Vancouver School Board. The newly established programme of the Epileptic Division of the British Columbia Society for Crippled Children was assisted for the first time. Projects to assist the research programmes at the Department of Neurological Research and the Department of Pharmacology, University of British Columbia, were continued.

Tuberculosis Control Grant

Funds allocated to this grant amounted to $374,661, with a further $10,000 being transferred to the grant during the year to meet increased requirements. Continued provision was made for equipment for health units and general hospitals, vocational training for patients, payment for special out-patient investigations in general hospitals, and to antimicrobial therapy. Special tuberculosis surveys were conducted throughout the Province, and assistance was continued for specialized tuberculosis training for staff members of the Division. The Princess Margaret Children's Village received funds toward personnel in its important tuberculosis services.

The majority of the tuberculosis services are provided by the Province, and the largest portion of the grant is used by the Division of Tuberculosis Control of the Health Branch.

Details of the activities of the Division of Tuberculosis Control are reported in another section of this Health Branch Report.

Public Health Research Grant

Two research studies were completed this year. One was conducted by the Department of Biochemistry, University of British Columbia, on the determination of human blood patterns and metabolism of adrenal steroid hormones. The other project was carried out by the G. F. Strong Laboratory of Medical Research on the natural history of hypertension in man. One new research study was commenced by the Department of Geology and Geography on multiple sclerosis, and a new project was undertaken by the Department of Pathology on the fundamentals of connective-tissue metabolism.

General Public Health Grant

The general public health programme as carried on by the local health services of the Province received continued assistance, and detailed information regarding the programme appears in the early part of this Health Branch Report.

A rheumatic fever prophylaxis pilot project was commenced whereby oral penicillin was supplied to patients in four health unit areas within the Province. A good response has been received from the practising physicians in the areas concerned.

The Metropolitan Health Committee of Greater Vancouver received continued support toward personnel and for the purchase of dental and photographic equip-

ment. Air-pollution control equipment was also supplied to the Metropolitan Health Committee of Greater Vancouver for its concentrated control studies.

Equipment was provided to the British Columbia Division of the Canadian Arthritis and Rheumatism Society for use in its treatment services at Terrace.

A second food service institute for hospital cooks was held at the Prince George Hospital and was conducted by the British Columbia Hospital Insurance Service and the Health Branch. Approximately twenty-five staff members attended from various hospitals throughout the Province.

Funds for the purchase of Salk vaccine for the extended poliomyelitis immunization programme within the Province were provided under this grant. Vaccine was made available to all persons under the age of 40 years within the Province, and considerable publicity and voluntary assistance was given to this most important aspect of public health.

The glaucoma clinic which has been established at St. Joseph's Hospital, Victoria, in 1959, received support toward personnel and for the purchase of equipment.

Assistance toward the summer student internship programme whereby medical students are assigned to health units and divisions within the Health Branch continued to receive favourable response.

The three research studies which were being conducted by the Faculty of Medicine, University of British Columbia, were completed.

Cancer Control Grant

Assistance was provided for the training of radiotherapy technicians at the British Columbia Cancer Institute, and short-term postgraduate training was provided to personnel in the cancer-control field. Provision was made for the purchase of a replacement Cobalt source and also for accessories for an X-ray unit which had been transferred to the institute upon the closure of Tranquille Sanatorium.

The major portion of funds allocated to this grant, which are matched by Provincial funds, were used for the operation of the British Columbia Cancer Foundation.

The cytology examinations which are carried out under the Director of Pathology, Vancouver General Hospital, continued to show a marked increase, there being 47,328 specimens examined during 1959, compared to 35,000 in 1958.

Laboratory and Radiological Services Grant

The allocation to this grant was increased to $772,000; during the year $278,608 of this amount was transferred to other grants.

Laboratory Services

The regional laboratory services continued to expand. The appointment of a pathologist for the Okanagan Valley was finalized this spring, and a regional laboratory was set up to serve hospitals in that area. This made a total of four regional laboratories in this Province, which provided service for twenty-five hospitals which had no such service before this plan was instigated.

This past year twenty-three medical laboratory technologists completed the course given in the University of British Columbia Medical School Building at the Vancouver General Hospital. The larger hospitals benefited from the increased number of trained technologists available, but vacancies still occurred in several smaller laboratories in outlying districts.

The Laboratory Advisory Council continued to play an important role in guiding the planning for improved diagnostic facilities. The Technical Sub-committee

of this Council met on several occasions to discuss laboratory equipment for which grants were requested. The Technical Supervisor of Clinical Laboratory Services was frequently called upon by administrators and technologists for advice regarding new equipment and new laboratory procedures.

Radiological Services

The Radiological Advisory Council this year continued to develop and expand its studies into radiation hazards and their control. Through the results of a Provincial survey they recommended that there be instituted some form of training for X-ray technicians, and, with the aid of Federal health grants, developed and conducted two refresher courses for fifty-six technicians from all parts of the Province.

Through the office of the Technical Adviser, the council acted as a clearing-house for information on all matters pertaining to X-ray, developed a standardized form for institutions when ordering X-ray equipment, set up standards for equipment in hospitals of various bed capacities, and, while not an employment agency, made attempts to assist hospitals looking for X-ray staff. All hospital-construction plans are now cleared through this service as far as they affect the functioning of the X-ray department.

Instruments have been acquired to carry out radiation surveys of all X-ray installations in the Province. Working through the Director of Occupational Health, this service will cover also all industrial installations.

It is planned for 1960 that the Technical Adviser will make an on-the-spot survey of hospitals covering the fields of (1) radiation protection, (2) the X-ray machine and its maintenance, (3) darkroom and its equipment, (4) technician technical problems, and (5) administration and film marking and filing problems in the department.

The Radiological Advisory Council has continued to review and approve applications for grants toward the purchase of X-ray equipment. This past year twenty-four applications were approved, with a total value of $115,838.67.

Medical Rehabilitation Grant

Increased assistance was provided to the G. F. Strong Rehabilitation Centre for its expanding services of physical rehabilitation. Postgraduate training was received by a member of the staff of the centre to visit a cerebral palsy centre in Edmonton to review materials being used for making braces and splints.

The traumatic surgical unit at the Vancouver General Hospital continued to receive support under this grant for personnel in connection with investigations into causes of injuries and for studies on the question of rehabilitation of injured people.

The Health Branch operates a rehabilitation service for adult patients who are disabled by illness. Individual patients are helped in obtaining various medical, social, and vocational aids toward their best possible rehabilitation. The rehabilitation team consists of a medical consultant, a rehabilitation co-ordinator, and an employment officer seconded from the National Employment Service. The salary of the medical rehabilitation consultant is provided by this grant.

The programme was extended to include patients in the Pearson Poliomyelitis Pavilion who require prosthetic equipment and other medical aids. These are supplied through the G. F. Strong Rehabilitation Centre upon referral to the Rehabilitation Service and funds for payment of such items are provided through the grant.

The medical consultant maintains a constant liaison with those responsible for actual physical rehabilitation treatment of patients referred from the rehabilitation service and acts in an advisory and consultative capacity to the Health Branch on the over-all programme.

Child and Maternal Health Grant

Funds allocated to this grant amounted to $157,660, with a further $20,992 being transferred during the year in order to meet requests for equipment for the Metropolitan Health Committee of Greater Vancouver for its prenatal classes and for the extension of the Provincial local health services programme for child and maternal health care.

Continued support was given to the Health Centre for Children toward personnel and the purchase of equipment. Members of its staff also received short-term postgraduate training in connection wtih the research studies being carried out in the Health Centre for Children.

The child health programme at the University of British Columbia continued to expand and received support toward personnel and the purchase of equipment and supplies.

The British Columbia Co-ordinating Council for Child Care, which was established a few years ago to review the facilities and possible closer integration of children's hospitals in the Province, was granted funds toward travel for members of the Council, personnel, and supplies. The remainder of the expenses for this council are met by the British Columbia Foundation for Child Care, Poliomyelitis, and Rehabilitation.

Continued assistance was provided for the nursing services in the child and maternal health programme in the Provincial health units.

During the year one research study on new-born infants was completed and one new project on methods of respiratory function testing in the new-born infant was commenced at the Health Centre for Children.

The Registry for Handicapped Children continued to receive support. The programme remains much the same as that outlined in the 1955 report, with an average of 200 cases being reported each month.

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, training of public health nurses, and through the provision of technical assistance, consultative help, and guidance to assist the public health nurses in providing service as efficiently as possible.

The Division works closely with other health agencies, such as the Vancouver Metropolitan Health Committee, Victoria-Esquimalt Health Department, Oak Bay Health Department, and voluntary agencies, such as the Victorian Order of Nurses, to co-ordinate the use of health facilities and resources and thus avoid overlapping or duplication of public health nursing services.

Close co-operation between the Indian Health Services, Department of National Health and Welfare, has resulted in integration of services so that official health agencies in British Columbia, including metropolitan health services, now provide approximately one-sixth of the health services for Indians, the largest amount in Canada.

To provide a high standard of care, public health nurses must receive adequate training, and the Division therefore works closely with educational institutions to assist with the development of training facilities. This includes the various schools of nursing and the University of British Columbia.

During the year seven new public health nursing positions were set up to provide additional service to certain health units in the Province which had experienced increased population growth and service needs. These included Central Vancouver Island at Qualicum and Nanaimo, South Central at Kamloops, North Fraser at Haney, Cariboo at Prince George and Williams Lake, and Boundary at Langley. Three of these positions were provided for by National health grants.

There are 186 public health nursing field positions in local health units, plus a resident registered nurse at Telegraph Creek; one occupational health nurse, Parliament Buildings, Victoria; one consultant public health nurse located in Vancouver, with one consultant public health nurse and the Director, Public Health Nursing located in Victoria. In addition, there are eight part-time nurses serving on a regular basis in areas where it is not possible to employ full-time public health nursing field staff.

PUBLIC HEALTH NURSING ADMINISTRATION AND CONSULTATION

Each year the Division undertakes certain studies to evaluate the services being provided by the public health nurses on a local level.

These include a case-load analysis of each public health nurse's district to determine the work load and progress being made. From a review of the case loads, it is possible to determine the need for adjusting the public health nurse's district. This might show a need for additional nursing assistance or alternatively an extension of the territory. A population guide of 5,000 is considered the maximum for

* 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 the metropolitan health departments of Greater Vancouver, Victoria-Esquimalt, and Oak Bay.

which a public health nurse should provide a generalized health service. In many of the rural districts the population is scattered and travel distances great, so that it is necessary for the public health nurse to serve a smaller population in order to provide the same standard of service as in the more populated districts. Accordingly, every effort is made to keep the size of the public health nurse's district such that she can give the services needed in the community.

A time study is done annually to determine how much time is being spent by the public health nurses in various activities. This information provides data to determine costs of the various services and at the time time provides a useful tool for local public health nursing staff to use in evaluating the services being provided. The study shows trends in the use of time and may point out the need for certain adjustments. For example, a need for more clerical or health unit aide assistance may be shown if too much time is being spent on non-professional activities. During the past five years these studies have shown a 3.5-per-cent reduction in time spent in non-professional clerical work, which can be attributed to the provision of more clerical assistance. Similarly, a reduction of 3.2 per cent of the nurse's time in professional recording in the same period can be attributed to improved record systems and office routine. The studies have indicated an upward trend in time spent on direct services, with a reduction of time in travel, in the office, and in overtime.

The study of the results of the teacher-nurse conferences, which are part of the school health programme, was also done to determine the extent to which the public health nurses are meeting their objectives, and the results this year showed an improvement over last year's study.

From these studies, as well as from other reports received from local health services and from actual visits to the health unit, it is possible to evaluate the service programmes being offered and to make recommendations regarding nursing needs. The public health nursing consultants visit the health units twice a year to give guidance and assistance to the staff.

During the year there were a considerable number of changes of staff required to provide continuity of service. This involved replacements of supervisors, senior and staff public health nurses. As a result, there were fourteen transfers, while fifty-four new appointments were made. This year the Division was fortunate to recruit the largest number of qualified public health nurses to date, and, even so, there were not sufficient numbers to fill all the vacancies. However, of the new appointees, only 6 per cent did not have full public health qualifications and the majority, or 57 per cent of the remainder, had received their public health nursing training in British Columbia. There were forty-two resignations, of which 42.8 per cent were registered nurses without full public health qualifications who decided not to take the public health nursing university training. Forty-five per cent of the resignations were qualified public health nurses resigning for reasons of marriage or family, and a very small group, amounting to 12 per cent of all resignations, left the service to take other positions or to travel.

This year the Health Branch was fortunate to have 94 per cent of the public health nurses with full public health nursing qualifications. This was the highest percentage of qualified public health nursing staff that the Health Branch has had for a number of years. It is hoped that this favourable trend will continue.

To help the public health nursing staff make the best use of time, certain other activities are carried out by public health nursing consultants. This includes an active public health nursing records committee, which meets under the chairmanship of a public health nursing consultant to review and revise public health nursing records and instructions with a view to simplification. The public health nursing

consultants contribute to the Policy Manual, and many new sections were added and revised this year. The Nursing Care Policy Committee has been set up to draft a new section for the Policy Manual. The consultant in Vancouver continues to represent the Division in Vancouver and act as a public health nursing adviser and liaison with voluntary and official agencies.

Assistance was given the Provincial Civil Defence Co-ordinator in planning and conducting courses of training in civil defence for nurses in British Columbia. This included a one-week programme designed for nurses teaching home nursing, and assistance with a similar training programme for directors of nursing in small hospitals, being planned for next year. Assistance is given in the selection of candidates for special courses for nurses given at the Civil Defence College at Arnprior, Ont.

TRAINING PROGRAMMES

As public health nursing is becoming increasingly complex, it is important that the public health nursing staff have a high degree of training. In addition to registration as a nurse, the public health nurse must qualify by securing a diploma or certificate in public health nursing, or a degree in nursing majoring in public health nursing from a recognized university.

As it has not been possible to obtain sufficient nurses with these qualifications, it has been necessary to take a limited number of registered nurses on staff who do not have this university training. These nurses are employed as public health nursing trainees on the understanding that they will complete the university programme at an early date if they prove suited to the work. Eleven public health nursing trainees were granted educational leave of absence and National health grant bursaries to assist them in completing the required course, after completing a satisfactory period of service in a health unit. Nurses accepting financial assistance are required to serve in any district as required in the service for a period of two years. Nine nurses returned this year from university after completing the diploma course on National health grants and were placed in areas where recruitment is usually difficult.

The provision of field experience for nursing students is an important contribution toward the training of nurses. During the year forty-one students of the University of British Columbia were placed in health units for periods of time ranging from two weeks to one month, while three students were accepted for a month of field work from the University of Alberta. One student from McGill University spent a month in the Upper Fraser Valley Health Unit, obtaining experience in public health nursing supervision and administration.

A one week's institute sponsored by the Registered Nurses' Association of British Columbia and directed by one of the public health nursing consultants, for instructors of nurses from the training-schools in British Columbia, provided assistance in planning for the field observation and was an excellent opportunity for nursing instructors to receive an orientation to the public health nursing field. This year a new experience record form and report has been introduced so that all undergraduate students will now complete the same report.

Field work for undergraduate nurses is gradually being extended so that all nurses have a minimum observation period of four days in a health unit. Eighty-seven students from St. Joseph's Hospital and the Royal Jubilee Hospital in Victoria had experience with the Saanich and South Vancouver Island Health Unit; fifteen students from the Royal Inland Hospital had experience with the South Central Health Unit; and thirty-two Royal Columbian students were with the Simon Fraser Health Unit in Coquitlam and Boundary Health Units. The Simon Fraser Health

unit, in addition, provided four- to five-week periods of experience for ten practical-nurse students from the Canadian Vocational Institute in Vancouver.

As public health nursing supervision involves preparation beyond that required for staff public health nurses, it is our plan to have all supervisors and senior nurses complete courses designed to give special training in public health nursing supervision and administration. Two supervisors attended the University of Toronto School of Nursing and completed the diploma course, while two others are now on educational leave of absence completing similar programmes at McGill University.

In-service education included a one-week institute on mental health, planned with the co-operation and assistance of the Mental Health Services Branch and Dr. J. S. Tyhurst, Professor in Psychiatry, University of British Columbia Medical School. The programme was designed to help the public health nurses learn new skills in interviewing techniques, make better use of the Mental Health Centre facilities, and to assist them to deal with certain problem situations found in families. Plans are under way for local institutes to be held in all health units so that the information received in this institute is to be disseminated to all members of the public health staff.

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 191 public health nurses in the Provincial Health Department on staff at the end of the year, other official health agencies employed a total of 200 public health nurses to provide service in other parts of the Province. This included the Metropolitan Health Committee serving the Greater Vancouver area, the Victoria-Esquimalt Health Department, the Oak Bay Public Health Nursing Service, and the City of New Westminster, which forms part of the Simon Fraser Health Unit. The Indian Health Services provides public health nursing service on reservations not served by Provincial health units or the Metropolitan Health Committee. In addition to the above, a voluntary agency, the Victorian Order of Nurses, supplements the public health nursing programme in the larger cities and rural municipalities through the provision of home nursing care and other selective services. The Victorian Order employs fifty-nine full-time nurses. At the end of the year a total of 449 full-time public health nurses were employed in public health nursing activities in this Province. These nurses work closely with occupational health nurses, employed privately in some industries, and with certain nurses in hospitals, to provide continuity of public health nursing service in local communities.

The public health nursing programme, except in the two metropolitan centres, is similar throughout the Province and provides a generalized health service designed to meet the health needs of all members of the family. Every effort is made for all public health nursing organizations to follow policies which are worked out on a Provincial basis so that a similar standard is attained throughout British Columbia.

Certain health programmes are directed toward specific age-groups where special needs are known to exist. The public health nursing service therefore includes health education for expectant parents through individual instruction and group classes. Parents receive anticipatory guidance at child health conferences and in home visits on the physical and emotional development of the child in order that the child will reach its health potential. Assistance is given in providing resources for the correction of defects and medical care as indicated. Specific services, such as immunizations against preventable diseases such as smallpox, diphtheria, poliomyelitis, typhoid fever, tetanus, and whooping-cough, are pro-

vided at child health conferences, schools, and at special clinics. During the past year a considerable amount of time was spent in organizing and conducting special poliomyelitis immunization clinics for all persons up to 40 years of age. A continuous health supervisory programme is carried on in the schools to assist in the promotion of health among the school-age children. An increased emphasis is being placed on the mental-health problems, and public health nurses are giving increasing attention to obtaining help for children needing psychiatric guidance.

In Provincial health unit areas there has also been an increased interest shown in establishing home nursing-care services to meet the need for professional nursing care in the home as provided on a part-time visiting-nurse basis by public health nurses on the staff of local health units. This programme has been increasing gradually since 1947, when the first health unit in the South Okanagan at Kelowna introduced a visiting home nursing service under medical supervision as part of the generalized health service. This nursing-care service was part of a plan for home care which would assist certain types of patients to receive professional nursing care at home and also have the benefit of a "home-maker" service which provided visiting part-time housekeepers. Thus many persons receive care at home rather than in an expensive institutional setting. Acute, chronic hospital beds, as well as other types of institutional care, have been reduced by the use of this type of service. Although there has been a lag in the establishment of organized home-maker or housekeeping services, nine centres now have established the special nursing-care service. These include Kelowna and Penticton in the South Okanagan Health Unit, Vernon in the North Okanagan Health Unit, Ladner and Langley in the Boundary Health Unit, Courtenay and Powell River in the Upper Island Health Unit, and Qualicum in the Central Vancouver Island Health Unit, which was established this year. Arrangements are being completed to start a similar service in the South Central Health Unit at Kamloops and in the Upper Island Health Unit at Campbell River.

All health units are providing limited home nursing care on a short-term and demonstration basis, so that the addition of the special nursing-care programme can readily be carried out with an adjustment of the public health nursing districts. As part of the regular public health nursing programme, 9,265 nursing-care services were rendered during the year. This is in addition ot 13,148 nursing injections of streptomycin provided for tuberculosis patients to enable them to live at home rather than remain for treatment in a tuberculosis sanatorium.

Areas which are interested in the special nursing-care service can arrange with the local health unit to have this service by agreeing to pay an additional assessment of 10 cents *per capita*. Nursing-care service is then provided within the framework of the public health nursing service. The public health nurses are then assigned slightly smaller districts so that they can assume the additional nursing-care programme. Public health nurses usually serve a population of around 5,000 persons, and it is possible at the present time to provide complete public health nursing service, including the special nursing-care service, in an area of around 3,500 persons. By having each public health nurse assume the nursing care required in her area, it is possible to provide the nursing-care service efficiently at a minimum cost as travel time and duplication of service are avoided. All nursing-care services are given on the written order of the private physician. Service is provided during the regular working-day, and special arrangements are made to provide service on week-ends and holidays by the employment of week-end "relief" nurses. In this way the public health nurses are able to maintain their regular work schedule as no time off is required to compensate for overtime or week-end work.

No charge is made to the patient for the service given. Every effort is made to teach the patient or family to carry out nursing procedures so that the patient becomes self-reliant as soon as possible. Whenever possible, patients are asked to come to the health centre for care, in order to help in rehabilitating patients so that they become useful members of the community as soon as possible.

During the year 11,710 nursing-care services were provided in the nine areas which have the special nursing-care service. From an analysis of the first eight months of nursing care, records show the following types of care have been given as shown by the percentage of the total number of visits: Injections, 70.6 per cent; general care, 18.6 per cent; enemas, colostomy irrigations, 1.4 per cent; catheterizations, 2.3 per cent; massage, rehabilitation, inhalations, remove sutures, dress wounds, cancer dressings, etc., 7.1 per cent. Approximately 8 per cent of the total special nursing-care services were given in the health centre, with the balance in the home.

It is anticipated that this nursing-care service will continue to grow.

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 seperate headings.

WATER-SUPPLIES

The Division is responsible for reviewing plans for extensions, alterations, and construction of waterworks systems. The *Health Act* requires that all plans of new waterworks systems and alterations and extensions to existing systems be submitted to the Health Branch for approval. The careful study of these plans, together with inspections on the site in many cases, is one of the major duties of the Division. During the year seventy-nine plans in connection with waterworks construction were approved or provisionally approved. This compares with seventy-one plans in 1958.

In addition to approval of plans, waterworks systems in the Province are visited from time to time for the purpose of checking on sanitary hazards and assisting generally in the improvement of waterworks systems.

Generally, in British Columbia the water-supply sources are good and expensive treatment of the water is not usually required. Where treatment is required, chlorination is the usual method. Over 80 per cent of the population of the Province uses water protected by chlorination. There are only three domestic water-supply systems in the Province where the water-filtration method is used.

By the end of the year 1959 there were seven communities fluoridating the water, some using sodium silico fluoride and some using sodium fluoride. Reports are received regularly 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. There have not been any major problems involved in adding fluoride within the required degrees of tolerance. Fluoridation plants are visited from time to time for the purpose of checking on their operations.

The local health units are responsible for the regular frequent sampling of the water from public water-supply systems. The Division of Laboratories performs the examination of the samples. The Division of Public Health Engineering offers consultative advice on the interpretation of samples to the health units. During the year the policy of having the Division of Public Health Engineering screen all requests for chemical analyses of water was changed to allow for direct contact of the health units with the Division of Laboratories.

Each year the Division receives a number of inquiries concerning private water-supplies. These are referred to local health units. A considerable amount of advice is given by mail and occasionally by visits. Also, when visiting health units, public health engineers consult with local health unit officials on various water-supply problems.

No known water-borne epidemics resulting from the use of public water-supplies were reported during the year. This fact is evidence of the care being taken by the various water authorities to provide a safe water-supply for the citizens. This record can only be maintained by constant vigilance on the part of the local health authorities and engineers of the Division. In order to assist further the efforts of local water authorities to have better-trained people operating the waterworks

systems of the Province, it is the hope of the Division that during the next year a short school for waterworks operators will be held in the Province. This school may be organized in co-operation with the American Waterworks Association.

One problem that is a serious one as far as water quality is concerned is the use of combined irrigation and domestic water-supply systems. The bacteriological quality for irrigation water does not need to be as good as that for domestic water. Where the systems are combined, the cost of treating the whole volume of irrigation water just to protect the water used for domestic purposes is very high. This problem continued to receive study by the Division.

SEWAGE-DISPOSAL

The Division has the responsibility of reviewing plans for extensions, alterations, and construction of sewerage systems. During the year sixty-four approvals were given in connection with sewerage work. This compares with fifty-six approvals in 1958.

Study of plans for approval includes the study of profiles and plans of appurtenances so that a good standard of sewerage work is constructed. Also, the study includes treatment-works, if any, and studies of the receiving body of water in order to determine the degree of treatment required. During the year a considerable number of small sewerage systems were constructed for subdivisions by subdividing companies. This type of sewerage systems usually require a small sewage treatment plant. When the subdivision is built in a municipality, it is the policy to have the municipality request the approval.

During the year a by-law for the construction of sewers failed in the Municipality of Saanich. In the Municipality of Vernon a by-law for the rehabilitation of the sewage and treatment plant, which is now overloaded, also failed.

During the year the Village of Fruitvale had a complete sewerage system built. The treatment provided here is a two-stage waste-stabilization pond. During the year a considerable amount of sewerage construction was carried out in Nanaimo. When this construction is finished, there will be no disposal of raw sewage into the inner harbour.

There are now nine installations of sewage lagoons or waste-stabilization ponds in British Columbia. This method of sewage treatment is mainly used for smaller communities and provides a reasonably good sewage-treatment service at relatively small cost. The design criteria are becoming more uniformly developed each year.

STREAM POLLUTION

The general problem of stream-pollution control is one of the major items dealt with by the Division of Public Health Engineering. Stream pollution is caused by the discharge of sewage and industrial wastes into surface water. 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 body of water. The net result of such discharges, however, may make the water less desirable and less useful.

At the present time there are no pulp-mills discharging waste into fresh water in British Columbia. However, a pulp-mill is now under construction on the Columbia River. The company's plans are to take the best steps possible to prevent serious harm to the river. Control of pollution by sewage under legislation presently in existence has made it possible to prevent the discharge of sewage from affecting communities in lower stretches of streams and rivers. In addition to the Health

Branch, other departments of government have had legislation for control of certain types of pollution. This type of control has not been sufficient to prevent all types of pollution, and for this reason the Pollution-control Board was established to take charge of this problem in the Lower Fraser River Basin. During the year, communities of the Okanagan Valley requested that the authority of the Pollution-control Board be made to extend to the Okanagan Valley. It is possible that this might be done by 1961.

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, requires a considerable amount of work by the Division of Public Health Engineering. The administration of the Act is the responsibility of the Minister of Municipal Affairs. The Pollution-control Board consists of three Civil Servants, one former Civil Servant, and three members from the Greater Vancouver area. Under the Act, responsibility for technical advice is laid upon the Health Branch. The Director of Public Health Engineering acts as secretary of the Pollution-control Board and as technical adviser to the Board.

The area over which the Pollution-control Board has jurisdiction is the Lower Fraser Valley below Hope, together with the contiguous salt-water areas, including Boundary Bay, Roberts Bank, Surgeon Bank, Burrard Inlet, and Howe Sound.

During the year nine permits for discharge of waste were issued. These permits were made valid for only five years, during which time it is believed that adequate studies of the capacities of the area to receive pollution, together with studies of existing discharge into the river, would be made. It is intended to proceed with a fairly detailed study of all outfalls into the river under the jurisdiction of the Pollution-control Board during the year 1960. It is hoped that by the end of the year 1960 standards will be prepared for discharge of waste into the waters covered by the Pollution-control Board.

The most important permit issued by the Pollution-control Board is the one that permits the Greater Vancouver Sewerage and Drainage District to build a sewage-treatment plant on Iona Island. During the year 1959 plans for a considerable portion of the work were completed, and a large amount of construction will be done during 1960.

During the year the Greater Vancouver Sewerage and Drainage District attempted to lower the bacterial pollution in English Bay by the installation of a temporary comminuter and sewage chlorination plant on the outfall discharging into English Bay. The purpose of this was to make it possible to open the Vancouver beaches for the year 1959. Studies of the effects of this operation showed that this treatment had significantly lowered the bacterial count, and it became possible for the beaches to be reopened for the summer of 1959. It is probable that this method of temporary treatment will be carried out until the Iona Island treatment plant is ready. At such time the sewage presently discharging into English Bay will be taken to the south side of the city by tunnel and treated in the Iona Island sewage-treatment plant. This will result in greatly improved conditions on the English Bay beaches.

During the year, plans for the sewage-treatment plant for West Vancouver were completed and approved. Much of the construction will take place in 1960.

A large number of samples were taken through the co-operation of the local health units from Burrard Inlet and the Fraser River. It is intended that this programme be intensified in 1960. It is expected that the work of the Pollution-control Board will occupy a considerable amount of time of the Division of Public Health Engineering for many years to come.

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 area. Certificates of compliance are issued to owners of shucking plants that 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. Practically all the oysters produced commercially in British Columbia are grown on leased grounds. In one area a considerable study was made during 1959 to see whether or not a pulp-mill was contaminating a shellfish-growing area with coliform bacteria. No evidence was found that such was the case.

There is complete co-operation between the Provincial Health Branch and the Department of National Health and Welfare with respect to the shell-fish industry. The Department of National Health and Welfare has the responsibility for approving shell-fish operations where the product is sold outside of the Province of British Columbia.

With respect to paralytic shell-fish poisoning, the area that was closed for the taking of clams was reduced in size during the year. However, a considerable area still remains closed, and reports indicate that the toxicity is lessening.

In view of the difficulty of obtaining samples from certain areas of the Province, it was decided to have several paid samplers pick up samples in some of the out-of-the-way parts of the Province. This programme had just commenced by the end of the year.

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. During the year all of the health units were visited at least once. During these visits the various problems requiring engineering for their solution are examined in the field.

The work entailed by the Frozen Food Locker Plant Regulations has now been greatly reduced, there being only two approvals of locker plants during the year 1959.

The position of Chairman of the British Columbia Examining Board for Sanitary Inspectors was again filled by the Director of the Division. Eight persons received certificates in sanitary inspection during the year.

The Director served as a member of the Advisory Committee on Health, which is a sub-committee of the Associate Committee on the National Building Code of the National Research Council of Canada.

Two members of the Division attended the first International Conference on Waste Disposal in the Marine Environment, held at Berkeley, Calif., in July, 1959.

The staff of the Division was increased by one public health engineer during the year, which has made it possible to extend the operations of the Division.

REPORT OF THE DIVISION OF PREVENTIVE DENTISTRY

F. McCombie, Director

"In one African tribe an attack of dental caries is considered sufficient grounds for divorce. If one of the children has decayed teeth, he is forbidden to eat from the family pot." So reports a recent editorial of the British Medical Journal.

On the North American Continent, the United States Public Health Service states: "Dental decay is recognized as man's most widespread chronic disease. Few persons escape. No special stratum or age group is immune. If everyone who needed dental care wanted it, there would not be enough dentists to provide it. The current progressive accumulation of dental disease is a heavy national burden—painful, costly, and disfiguring."

Yet, in the United States, there are approximately half as many dentists again, pro rata, as there are to-day in British Columbia. In Canada it is reported that more than $100,000,000 is being spent each year on dental treatment provided by general dental practitioners. The average child leaving school in British Columbia has, of his or her twenty-eight permanent teeth, already twelve teeth which are decayed, missing, or filled.

The tragedy is that to-day the vast majority of dental disease, especially dental decay, is so largely preventable.

PREVENTION

The preventive dental services throughout the Province have continued to strive, and it is believed with some measure of success, to decrease the present high incidence of dental disease.

Some details of the clinical aspects of the preventive dental services during the school-year 1958/59 are shown on Table I below.

Table I.—Full-time Preventive Dental Treatment Services in British Columbia, Shown by Local Health Agency, School-years 1953/54 to 1958/59

School-year	Number of School Districts Included	Pre-school Children Dentally Completed	Grade I Pupils					Total of Other Grades Dentally Completed
			School Enrolment	Dentally Completed by School Clinics (1)	Requiring No Treatment when Examined (2)	Attending Family Dentist (3)	Total of Columns (1), (2), and (3)	
1953/54	21	1,641	15,200	5,065	4,013	2,435	11,513	2,303
1954/55	19	1,853	13,506	4,213	3,945	1,749	9,907	(1)
1955/56	15	1,815	13,423	3,878	4,710	3,202	11,790	1,566
1956/57	14	2,022	13,761	3,726	5,106	3,271	12,103	318
1957/58	9	2,213	13,715	3,204	5,587	3,208	11,999	481
1958/59—								
Central Vancouver Island Health Unit	2	229	Pre-school programme					
Greater Vancouver Metropolitan Health Committee	5	2,270	12,097	3,534	4,984	2,734	11,252	165
Greater Victoria	1	39	1,994	83	968	774	1,825	13
Totals	8	2,538	14,091	3,617	5,952	3,508	13,077	178

[1] Information not available.

It will be noted that the number of pre-school children has again increased and now represents 40 per cent of the total number of children benefiting from these services. The percentage of Grade I pupils not requiring dental treatment at the time of examination has steadily risen each year and is now 42 per cent of the total Grade I enrolment of these schools. In the school-year 1953/54, only 26 per cent could be so classified. In the same five-year period the percentage of Grade I pupils attending their family dentist has risen from 16 to 25 per cent. In total, during the school-year 1958/59, 93 per cent of the Grade I enrolment of the schools of the metropolitan areas either did not require dental treatment at the time of examination or subsequently received the necessary treatment by their family dentists or by the school dental clinics.

The educational programmes of these services have continued and expanded in close co-operation with the public health nurses and school-teachers. Chairside dental-health education and counselling of parents has been a prominent feature of these programmes, having been provided to more than 8,000 parents who have attended these clinics with their children during the past school-year.

In addition, it is perhaps not generally known that the Metropolitan Health Committee of Greater Vancouver makes available preventive dental services to the children of "separate" schools of that area, and also to the Jericho Hill School for the Deaf and the Blind. A further clinic is established at the Health Centre for Children at the Vancouver General Hospital. This clinic is administered and staffed by the Metropolitan Health Committee but has been equipped and salaries of staff provided by National health grants. This excellent service provides dental treatment to children referred from the Health Centre which they are attending for some other condition, also to 3- and 4-year-olds attending the Health Centre, to children referred by the Cerebral Palsy Association of Greater Vancouver, and to trainees referred from the G. F. Strong Rehabilitation Centre.

In the rural areas of British Columbia, the services provided by the community preventive dental programmes have continued to expand, as shown in Table II below.

Table II.—Part-time Preventive Dental Treatment Services (Community Preventive Dental Clinics) in British Columbia, School-years 1954/55 to 1958/59

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	Average Grant per Child
1954/55	15	35	55	64	1,553	5,166	2,501	5,777	$7.78
1955/56	14	37	59	74	1,753	7,888	3,260	6,444	7.73
1956/57	16	45	74	96	1,871	8,497	4,115	7,641	8.59
1957/58	17	53	80	114	2,277	11,214	4,999	8,793	9.58
1958/59	17	59	93	126	2,760	12,948	5,981	10,212	10.09

It will be noted that such programmes during the school-year 1958/59 operated in all health unit areas and in fifty-nine of the seventy school districts served by these health units. Preventive dental services were also provided in a further two such school districts by a full-time dental officer.

The ninety-three separately sponsored community preventive dental clinics completed their programmes during the past school-year, in which 126 family dentists provided part-time service. The co-operation of these dentists is appreciated

by the Health Branch, by the sponsoring agency (usually the local School Board), and by the parents of the children receiving their services. Their total services were the equivalent to those of approximately twenty-three full-time dental officers.

The large majority (86 per cent) of these were either of Grade I pupils or pre-school children. In addition to the numbers of children receiving dental treatment through these programmes, it was attempted to ascertain this past school-year the number of Grade I pupils attending their family dentists as private patients. Fifty-six of the ninety-three clinics reported this information. However, even from this incomplete information, we are assured that considerably more than 61 per cent of the Grade I pupils of the schools served by these clinics in the rural and remote areas of this Province received dental treatment during the past school-year.

The preventive dental services made available to the younger children by these programmes is especially, and most warmly, appreciated by communities without a resident dentist. During the past year it was possible to arrange for particularly well qualified younger dentists to meet all requests for these services. Preventive dental programmes were successfully completed in forty communities without a resident dentist. To each dentist making such a visit is provided, on free loan, a set of transportable dental equipment. To meet the increasing demands for such equipment, one further set has been placed in use, and at the close of the year two further sets were under construction. These latest sets include the maximum utilization of duraluminum, which has very considerably reduced the total weight of this equipment, with as yet no apparent loss in strength and durability. In addition, a transportable high-speed air rotor dental unit, complete with high-pressure air compressor, was purchased at the close of the year. Field trials of this item will commence early in 1960, and if successful, additional units will be purchased so that the benefits of this most significant advance in the practice of dentistry may be extended to the children of the outlying villages and settlements of this Province. It is to be recorded with sincere appreciation that the above items have been purchased by moneys made available through the National health grant programme.

To accent the educational aspect of these programmes, and to define how such activities should best be carried out, a dental-health education workshop conference was held early in 1959 in the Fraser Valley. Attending were representatives of the staffs of the health units of the Fraser Valley, a School Inspector, a family dentist, and the Director of Public Health Education. At the 1959 Public Health Institute, which was attended by all directors and public health nurses of the rural health units of the Province, the dental-health educational activities of the community preventive dental programmes were defined.

It also became apparent at the above conference that there was a need for greater encouragement of primary-grade teachers in the teaching of dental health in their classrooms. To this end, in the fall of 1959 a pilot project was initiated by the issue of five classroom dental-health teaching kits for primary grades. Contained in a sturdy wooden case, each kit includes a basic text on dental health supplemented by a teaching outline for junior grades. Also included are large-scale models of a tooth showing early decay, and of a full set of teeth and a large-scale tooth-brush for the demonstration of correct tooth-brushing techniques. In addition, suitable filmstrips, posters, pamphlets (some to be used as readers, others to take home), and adequate supplies of three simply drawn pictures for colouring, each highlighting one of the three major dental-health lessons for this age-group, are provided. These kits have been most enthusiastically received by school-teachers in many areas of the Province. In the coming months it will be decided how many additional dental-health educational kits can be provided for use in the schools, commencing in the fall of 1960.

There is no doubt that the community preventive dental programmes of this Province have most significantly and successfully improved the dental-health status of the children of the rural health unit areas during the past ten years. Nevertheless, it would appear that the time has now been reached when these programmes should be somewhat modified to meet the improved conditions now pertaining. Such changes are not as yet finalized, but it is likely that they will include increased attention to the pre-school child, with Grade I being used as a check point, rather than as the focus of attention as heretofore. It is also hoped that research concerning the topical use of fluoride solutions will soon have demonstrated the soundness of including this dental-caries preventive measure as an optional or routine service to be provided within these programmes.

The efficient administration and effective dental-health educational activities of these programmes are most strongly influenced by the work of the four dental consultants serving with fourteen of the rural health units of this Province. They have available to them direct and personal contact with the officials of the local sponsoring agency of each programme, and with the participating dentists. They also have continuing opportunities for advising and assisting public health personnel in dental-health educational activities at prenatal classes, child health conferences, home visits, and public health nurse-school teacher conferences. Personal contacts are invaluable in directing and influencing any educational programme. In many areas the educational activities of the consultants are increased by the helpful co-operation of the resident dentists, by their graciously accepting invitations to speak at meetings of Parent-Teacher Associations and service clubs. To be of assistance to such dentists, each consultant has been provided with a copy of "A Speaker's Guide," as most excellently prepared by the American Dental Association.

RESEARCH

That the community preventive dental programmes which combine the activities of the family dentists, public health staffs, school-teachers, local sponsoring agencies, and the dental consultants are effective has now been demonstrated by statistically significant results, as follows:—

Comparison of Results of Dental-health Surveys of Children of Four Health Unit Areas of Fraser Valley in Years 1956 and 1959

Criteria	Ages 7 to 15 Combined 1956	1959
A. Treatment level—		
1. No dental defects	2.5%	6.7%
2. No caries defects	7.9%	15.5%
3. One or more lost lower first permanent molars	27.0%	18.8%
B. Oral hygiene—		
Poor oral hygiene	53.8%	37.8%
C. Periodontal disease—		
Abnormal gingival conditions	18.9%	7.6%
D. Malocclusion—		
Abnormal occlusion	78.8%	62.6%
E. Dental-caries experience—		
1. D.M.F. rate	6.4%	6.2%
2. Smooth-surface attack rate	16.8%	13.6%

All differences between the above rates of 1956 and 1959 (except item E1) are valid at the 1-per-cent level of confidence; that is, there is less than one chance in a hundred that a true difference between the rates does not exist. It will be observed also that these very significant improvements occurred in a brief three-year period.

Also, in 1959 a random sample of the children of the three health units of the Kootenays was surveyed for the first time. Before the close of 1959, plans were well advanced for the 1960 survey. Base-line data will then be available for the period 1958–60 describing the dental-health status of statistically representative samples of 98 per cent of the school population of this Province. Similar surveys carried out in future years will, by comparison, reveal the successes or failures of the preventive dental services of British Columbia.

The effectiveness of the topical application of a solution of stannous fluoride to children's teeth in preventing dental decay has been enthusiastically reported upon, but, until 1959, by only one group of research-workers. Therefore, it was decided to make funds available, with the approval of the National health grants programme, to the school dental services of Greater Victoria for a study of this preventive measure, as applied to Grade I pupils. It is planned that this study will be completed and the results published in 1961. Latest research (one study only) claims almost complete protection against dental decay by two applications of an 8-per-cent stannous fluoride solution on two successive days. This technique has been incorporated in the Victoria study. A further study is planned for the fall of 1960, to be carried out in five rural health units to establish whether or not the two applications spaced one week apart are equally effective.

It is not known whether a problem exists among children born in British Columbia with a cleft palate and perhaps a hare lip, and especially whether, in the rural areas, it is practicable for such children to receive the necessary and extensive treatment. During the past year, consultations were held to plan a survey of a random sample of approximately 100 such children born in the period 1952–56, and now resident in this Province. It is hoped that the results of this survey, to be carried out in 1960, will reveal whether or not a dental public health problem of this nature exists.

GENERAL

Again in 1959, the total population of British Columbia grew faster, in proportion, than the number of dentists practising in this Province. As at January, 1959, the ratio of dentists to population was 1:2,459; in 1953 this ratio was 1:2,041. The situation has therefore worsened by more than 20 per cent in six years.

During the past year the Division of Preventive Dentistry has lost two of its consultants. Dr. C. W. B. McPhail has been appointed as Director of Dental Health of the Province of Alberta and Assistant Professor of Public Health and Preventive Dentistry at the University of Alberta. Dr. P. W. Arkle has joined the staff of the Department of Health of the Government of Tasmania. Both vacant appointments have since been filled.

Dr. J. M. Conchie has been appointed as dental consultant to the Department of Social Welfare, a position previously held by Dr. McPhail. Dr. Conchie has also accepted the appointment as dental consultant to the Registry for Handicapped Children of British Columbia.

In summary, during the past school-year, 1958/59, preventive dental services were available to 83 per cent of the total Grade I school population of British Columbia. Furthermore, it is known that considerably more than 65 per cent of all Grade I pupils of the Province either did not require dental treatment when

examined or were subsequently treated by their family dentist or by the preventive dental clinics.

However, the Canadian Dental Association survey of dental practice (1958) reveals that the family dentists of British Columbia are able to provide treatment to less than 35 per cent of the people of this Province.

The public health personnel of this Province, together with the family dentists, will continue their dental-health educational activities to reduce this "heavy National burden—painful, costly, and disfiguring." That this can be done has been proven.

REPORT OF THE OCCUPATIONAL HEALTH DIVISION

J. L. M. WHITBREAD, DIRECTOR

During 1959 an expansion in the services of the Division took place. The major role of the Division is in six spheres of activity—(1) Occupational Health, (2) Welfare Institutions Licensing Board, (3) Civil Defence Health Services, (4) Radiation Services, (5) Motor-vehicle Licensing, and (6) Employees' Health Services.

OCCUPATIONAL HEALTH

The occupational-health survey to determine the existence of occupational-health facilities in various industries throughout British Columbia and to familiarize the health unit staff with these facilities was completed in all the Provincial health units and the metropolitan area of Victoria. This survey showed that approximately 95 per cent of the firms in British Columbia have no occupational-health service employing professional staff, although 37 per cent have adequate first-aid facilities. This survey was of particular value in most areas as a method of informing local health services of the inadequate facilities that at present exist. A preliminary report was given at the Second Annual Occupational Health Conference in March, 1959.

Before any extensive development can be expected, the orientation and education of all public health personnel is necessary. The issue of educational material to health services and firms has continued through the Division of Public Health Education.

Instruments for determining the carbon monoxide content of air in factories, mines, and garages have been obtained, and a pilot study into their use in two health units commenced in December, 1959.

WELFARE INSTITUTIONS LICENSING BOARD

Regular meetings of the Welfare Institutions Licensing Board were held during 1959. Some problem cases were referred to local health unit directors for investigation.

A survey of all private schools was completed in 1959, and the results indicate that 72 per cent of private schools receive health supervision from their local health services. There are in British Columbia 280 private schools. Of these, thirty-eight care for handicapped children.

CIVIL DEFENCE HEALTH SERVICES

Changes have been made in the administration and organization of civil defence services at the Federal level. The "Civil Defence Health Services" has been renamed the "Emergency Health Services." The development and organization of Emergency Health Services continues to be the responsibility of the Provincial Health Branch in conjunction with the Provincial civil defence organization. On a community level the responsibility rests with the local Medical Health Officer. If the services of Government departments are essential for survival, they are expected to develop plans that will enable them to continue functioning in time of emergency. The armed services were made responsible for re-entry into disaster areas and for the collection, treatment, and evacuation of casualties out of the disaster area. The Emergency Health Service must have units to assist the armed forces and to receive and treat casualties in the reception areas. The Emergency

Health Services is responsible for ensuring adequate health coverage in connection with the evacuation and reception of citizens from target areas and for the care of the population in all parts of the Province with regard to treatment and preventive services.

In February, 1959, the Civil Defence Health Services Plan was published and widely distributed to all persons and organizations concerned with emergency health services. The plan was developed with the assistance of the Division of Public Health Education, the Provincial civil defence organization, and the health departments of the metropolitan areas of Vancouver and Victoria. The plan outlines the health services for the Province and stresses the need for participation by all health groups and individuals in developing an active health organization in local areas to deal with all emergencies that may occur in peace and war. The plan outlines procedures and methods, as follows:—

(1) The establishment of local community emergency health services committees, with representatives from professional groups and health organizations.

(2) The development of local emergency health services plans.

(3) The mobilization of health facilities in British Columbia to ensure as far as possible the survival of the people in all communities of this Province.

To encourage the development of local emergency health services, plans, exercises have been held by the Provincial civil defence organization in various communities, including Burns Lake, Vanderhoof, Creston, Castlegar, Vernon, Kamloops, and White Rock. Representatives from the Health Branch attended the nation-wide exercise "Co-operation III," held on April 24th and 25th, 1959.

The Division co-operated with the Provincial civil defence organization in courses on the Provincial level for graduate nurses, sanitary inspectors, and hospital administrators. Of the administrators in major general hospitals, 75 per cent have been orientated in emergency health services. Lectures were given by the Director of this Division at most courses on civil defence. In November, 1959, two representatives from the Health Branch attended an Emergency Health Services National Conference in Ottawa.

RADIATION SERVICES

In order to assist the Radiation Protection Division of the Department of National Health and Welfare in its efforts to improve the use of the monitoring-film service, a detailed list of all users of the monitoring-film badges was issued to local health units to inform them of the mistakes that occur in their area. A summary of the findings showed that, as a result of the efforts of the Medical Health Officers, there was a 50-per-cent improvement in the use of the monitoring-film service during the following six-month period.

A survey of fluoroscopic machines used in shoe-stores indicated that there are now twenty-six machines in British Columbia. Many of these are used only occasionally. This problem has been reduced to a hard core of shoe-store operators who are unable to accept the advice of Medical Health Officers of the dangers to the public of the use of these fluoroscopic machines.

The Director was informed of the presence of X-ray tubes in physics departments of high schools and the possible danger from their misuse. A survey of the schools throughout British Columbia indicated that there were five physics departments using this apparatus. An approach was made by the Medical Health Officers to the schools, and the use of all the X-ray tubes for demonstration purposes has been discontinued.

Equipment for surveying radiation exposure from X-ray machines and radioisotopes was obtained during 1959, and the X-ray departments of some institutions have been investigated. An expansion of this service to all major users of radiation sources, where possible dangers exist, has been planned for the future. Some method of rapid survey that can be used by the health unit staff must be developed in order to concentrate the services of the technical Provincial staff on the institutions and firms where danger of excessive radiation is anticipated.

During 1959 the proposed regulations of the Atomic Energy Commission were reviewed. The control of shipments of radioisotopes within the Province is a problem that may be solved when the proposed new Federal regulations come into effect. Provincial regulations are being drafted to guide health department personnel and control the use of radiation sources throughout British Columbia.

In November the Director visited the Radiation Protection Division of the Department of National Health and Welfare, Ottawa, the Atomic Energy Control Board, and the Atomic Energy of Canada Limited, Chalk River, Ont.

LICENSING OF MOTOR-VEHICLE DRIVERS

In January, 1959, Standards for Licensing of Motor-vehicle Drivers were in use to determine whether or not a driver from a health aspect should be issued a licence. These standards were reviewed by the British Columbia Branch of the Canadian Medical Association and some amendments were made. During 1959 approximately 4,300 reports of medical examinations for drivers were issued to persons (1) over 70 years of age, (2) persons with disabilities, (3) chauffeurs, and (4) some persons involved in accidents.

When an abnormality is reported by a physician, the report is reviewed by the medical referees. Approximately 25 per cent of the medical reports (1,100) were reviewed by the Health Branch medical referees.

EMPLOYEES' HEALTH SERVICE

There has been an increase in the services given to Provincial Government employees by the Employees' Health Services. Early in 1959 a meeting was arranged by the Civil Service Commission with the personnel officers of many of the departments of government. Arrangements were made for referral of difficult personnel problems which might involve health factors to the Employees' Health Service. The solution of many of these problems involved a considerable amount of time on the part of the occupational-health physician and nurse.

Simplification of the forms used and the methods for obtaining chest X-rays has proved satisfactory, in that all employees are requested to have a chest X-ray, and the reports, when other than negative, are reviewed by the Director of the Division of Occupational Health. The reports are interpreted to the Civil Service Commission. In Victoria the Division of Tuberculosis Control clinic is co-operating in tuberculin testing all new employees.

All new employees are completing comprehensive health records, and the information available on these cards has proved of value for follow-up procedures and particularly in cases of emergency.

During 1959 the Canadian Red Cross Society Blood Donors' Service held two clinics—one in June and one in December. Approximately 643 pints of blood were donated by the Provincial Government employees in Victoria at these clinics.

As a result of the increased availability of poliomyelitis vaccine, immunizations given to protect against poliomyelitis were completed in 323 employees. In view

of the number of poliomyelitis cases throughout British Columbia during 1959, steps will be taken in 1960 to persuade all persons to obtain this immunization protection against poliomyelitis.

Information regarding the activities and volume of service of the Occupational Health Unit in the Douglas Building are outlined in the following list.

	1958	1959
Visits to clinic—		
Male	2,246	2,524
Female	1,994	2,117
	4,240	4,641
Immunizations and injections	1,220	1,443
Tuberculosis—diagnostic or treatment	([1])	443
Employees' health records on file	2,102	2,446

[1] Figures not available.

REPORT OF THE SANITARY INSPECTION SERVICE*

C. R. STONEHOUSE, CHIEF SANITARY INSPECTOR

MILK-CONTROL

The tabulation of reports on the bacteriological analyses of milk conducted for the tenth year continued to reflect improvement in milk quality. The current-year improvement in pasteurized milk is indicated by an average plate count of 6,600 colonies per cubic centimeter, compared with 6,900 colonies per cubic centimeter in 1958. Raw-milk plate counts dropped from 12,000 colonies per cubic centimeter in 1958 to 8,100 colonies in 1959.

Two milk vendors were convicted of distributing milk whose plate count exceeded the bacteriological limits of 30,000 colonies per cubic centimeter.

Milk by-law changes were introduced by three municipalities. The Village of Pemberton passed a milk-vendor licensing by-law. The City of Cranbrook amended its milk by-law to overcome a local enforcement problem. The Village of Warfield, because of the incidence of brucellosis which led to undulant fever in persons patronizing a raw-milk vendor, rescinded its by-law, thus prohibiting the sale of non-pasteurized milk.

Apart from the regular milk programme, other milk matters included study and inquiry as to the temperatures of milk samples collected, proposals to require dating of milk containers by milk vendors, and the alleged non-compliance with labelling requirements of milk products.

FOOD-CONTROL

Approximately 15 per cent of the local sanitary inspector's time is devoted to inspection and educational work with the food-catering industry. Routine inspections are made on all retail food outlets, grocery-stores, butcher-shops, bakeries, locker plants, and similar premises.

With minor exceptions, food outlets and public eating-places present few problems. It is fortunate the sanitary aspects of food and beverage production and distribution have been the subject of study by the industry in recent years. A better understanding of health practices and practices in industry has resulted in improved conditions.

Health units are ready and willing at all times to participate and assist in any educational process initiated by an industry or trade organization interested in promoting hygienic food practices. Continued support has been given to the Travel Bureau in the Bureau's educational programme for persons in the tourist industry. The Boundary Health Unit initiated a programme in food-handling techniques for voluntary labour catering to church and community organizations.

The regulations governing the sanitation of eating and drinking places were amended in 1959 to permit " guide dogs " accompanying blind persons entry to restaurants.

SLAUGHTER-HOUSES

Seventy-six inspection approvals were issued in favour of custom slaughter-houses (slaughter-houses preparing food for human consumption). This approval is a requisite before a licence is issued to the operator under the *Stock Brands Act*. As a result of the complete co-operation of the Health Branch with the Department of Agriculture in connection with custom slaughter-houses, the latter Department

* This report concerns the services provided by sanitary inspectors under the jurisdiction of the Provincial Health Branch and does not include the services provided by the metropolitan health departments of Greater Vancouver, Victoria-Esquimalt, and Oak Bay.

has requested the Health Branch to inspect and approve locations where horses are slaughtered for animal-food before issuing a license.

INDUSTRIAL CAMPS

Only a few years ago the environmental surveillance of industrial camps required a considerable portion of the time of the sanitary inspectors. The high standard of accommodation now provided has lessened intensive inspections, mostly to new camps.

A comparatively new innovation by camp operators is to contract camp maintenance to firms supplying this service, and the practice is increasing in the larger camps.

Introduced this year by a logging firm on a trial basis was the conversion of double-occupancy bunk-house sleeping-rooms to single occupancy and fully contained housekeeping rooms for single men.

SUMMER CAMPS

These camps, in the main, are supported by churches, fraternal societies, service clubs, and similar charitable organizations. The sanitary inspector endeavours to supply every assistance and guidance in promoting hygienic practices.

In the 1959 evaluation of reports on seventy camps, 80 per cent were classified as good, compared with 63 per cent in 1958; 13 per cent were classified as fair, compared with 24 per cent in the previous year; 3 per cent were classified as poor, the same as for 1958; and 4 per cent were classified as unsatisfactory, compared with 10 per cent in 1958. The 1959 figures reflect an improvement over the previous year.

TOURIST ACCOMMODATION AND TRAILER COURTS

Responsibility for the sanitary conduct of motel accommodation rests with the health units. With the grading of accommodation by the Travel Bureau, many of the problems associated with motels have been resolved. In trailer courts, the standards prepared for health units as a result of the examination of the growth pattern in 1958 must serve as a guide in lieu of regulations governing this type of housing.

REGULATIONS GOVERNING THE STERILIZATION OF RAGS

A new regulation replacing that passed in 1935 was enacted this year. These new regulations require approval of treatment processes given to second-hand fabrics prior to use as industrial wiping cloths and filling materials for upholstered furniture and mattresses.

GENERAL

Fur-farms situated in rural areas which are becoming semi-urban areas are a source of an increasing number of complaints. The fur-farm regulations administered by the Department of Agriculture were amended to include inspection and approval by the Health Branch as a requirement before a licence to operate is granted by the Department of Agriculture.

Preliminary work was commenced by an interdepartmental committee on the problem of indiscriminate disposal of refuse in unorganized territory. The objective is to determine the possibility and feasibility of establishing local areas for garbage collection and disposal under the *Local Services Act*.

Sanitary inspectors from all health units and the metropolitan areas attended a civil defence course. Also, six sanitary inspectors attended a short course on occupational health at the University of Washington.

REPORT OF THE NUTRITION SERVICE

JOAN GROVES, CONSULTANT

The chief aim of the Health Branch is the promotion of positive health. Good nutrition plays an important role in attaining this ideal state, and the health education programme takes this into consideration. The work contributed to this programme by the nutrition consultant is carried on in the following fields.

CONSULTANT SERVICE TO PUBLIC HEALTH PERSONNEL

The public health nurse is particularly concerned with health education in her various contacts with the public, through prenatal classes, child health conferences, school and home visits. The nutrition consultant has given assistance by correspondence on many occasions, visits to local health units, provision of reference materials, information by Departmental circulars, and the development of teaching aids for prenatal classes.

Rat-feeding demonstrations were encouraged in the schools as a means of showing the students how good eating habits will contribute to their physical development and good health. Co-operation of the animal laboratory of the University of British Columbia has made these demonstrations possible. Thirty-five have been carried out in the last year.

CONSULTANT SERVICE TO HOSPITALS AND INSTITUTIONS

Considerable advice and help have been given to small hospitals and institutions in menu planning and various aspects of food service. Eight hospitals have been visited and others have been assisted by correspondence. A food service institute was organized in co-operation with the Hospital Insurance Service, and held in Prince George from November 16th to 20th, 1959. National health grants enabled this worthwhile project to be undertaken. The Prince George General Hospital kindly provided accommodation for classrooms, housing, and meals for the larger proportion of the class members. Twenty cooks from hospitals not employing a staff dietician and two cooks from Homes for the Aged attended all sessions. Several food-service employees from the Prince George General Hospital and one from the Prince George Gaol attended part time. Assistance was given by the Nutrition Division, Department of National Health and Welfare; the part-time dietary consultant with the Hospital Insurance Service; the home economist of the Department of Fisheries of Canada; the local health unit director and sanitary inspector; and dieticians from Prince George. Lectures, discussions, lecture demonstrations, and films were all used to deal with menu planning, special diets, food purchasing, cost-control, sanitation, food preparation, and tray service.

Hospital kitchen plans have been reviewed on five occasions at the request of the Construction Division of the British Columbia Hospital Insurance Service and recommendations made as to layout, arrangement, and equipment.

OTHER GOVERNMENT DEPARTMENTS AND AGENCIES

The Woodlands School, Prince George Gaol, New Haven Borstal, Dominion-Provincial Vocational Training School, and the British Columbia Cancer Home have all requested and received assistance in the past year. Low-cost budgeting is a problem with which the Victorian Order of Nurses and the Department of Welfare have both requested assistance. Menu plans and advice regarding quantities for catering have been supplied for Girl Guide camps and other young people's camps.

OTHER ACTIVITIES

A lecture was given to a Red Cross home nursing group and a class of student-nurses at the Royal Jubilee Hospital.

Numerous requests for nutrition information have come from private individuals. These are usually channelled to the local health unit for reply unless they are of a technical nature.

The nutrition consultant is a member of the Vancouver nutrition group and has attended meetings. This group works and plans together on common projects.

Work has been done on menus and quantities of food for various-sized groups of Boy Scouts camping under different conditions. The latest films and books on nutrition were reviewed and evaluated.

REPORT OF THE DIVISION OF VITAL STATISTICS

J. H. DOUGHTY, DIRECTOR

Health statistics have assumed a vital role in the administration and control of public health services. 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 the effectiveness of the public health programmes undertaken to meet those problems. It has been a long-term objective of the Health Branch to develop a statistical division capable of compiling and analysing the complex statistical data which are basic to sound public health administration. This development has been taking place over a number of years within the Division of Vital Statistics, and a substantial part of that objective has now been attained. The Division is equipped with modern mechanical tabulation machinery and employs trained bio-statisticians and statistical clerks. It provides a comprehensive statistical service to all divisions of the Health Branch, to the Mental Health Services, and to a number of important Government-sponsored voluntary health agencies. It has thus become a vital and integral part of each of the divisions and agencies served and functions as a fully operational division of health statistics.

The year 1959 was a very satisfactory one with respect to the activities of the Division. Established services to the public and to the numerous health agencies served were maintained, several important new assignments in the field of health statistics were undertaken, and a number of statistical projects previously initiated were brought into full operation. A long standing problem in the field of vital statistics registration appeared to have been overcome by the passing of an amendment to the *Marriage Act* which made possible the registration of marriages which had been performed according to the rites and usages of the Doukhobor faith or creed.

STATISTICAL SERVICES TO HEALTH BRANCH

Within the Health Branch, the Division continued to provide a centralized bio-statistical service, carrying out all the statistical requirements of the other divisions, advising on all matters relating to statistics and record forms, and providing analytical data for administrative use and control. In addition, the Division compiled and published the detailed statistics of births, deaths, stillbirths, marriages, adoptions, and divorces stemming from the vital statistics registrations collected throughout the Province. Extensive use was made of these vital statistics as base-line data in the statistical analyses of health problems and of public health programmes referred to above.

TUBERCULOSIS STATISTICS

There was considerable activity in the field of tuberculosis statistics during the year preparatory to the change-over in 1960 in the method of recording and filing medical history and treatment information respecting individual patients. The proposed modifications have been under careful study for some time by the Divisions of Tuberculosis Control and Vital Statistics, and already have been used in one clinic on a trial basis. They will simplify the recording and filing of medical history and treatment data while at the same time making the information more useful and more accessible to the medical and nursing staff.

For a number of years the Division has been working closely with the research team studying the applied epidemiology of tuberculosis in this Province, and actively participated in the development of an improved system for handling the statistical

summaries of each case which are required for regional case-load control and for centralized statistical analysis. This new system of abstracting the statistical information of each known case and of maintaining visible indexes of active cases on a regional basis will also be placed into operation in 1960. Further standardization and simplification of the record forms to be used were achieved in the designing of this system.

Several years ago the Division of Vital Statistics undertook the task of consolidating the orders for all printed forms used by the various clinics and institutions of the Division of Tuberculosis Control, and of developing a method of inventory control. A system of forms control has now been evolved and put into practice, and, as a result, it was possible during 1959 to turn back to the Division of Tuberculosis Control the responsibility for ordering tuberculosis record forms. However, the Division of Vital Statistics will continue to maintain the registry of all forms used in the Health Branch and to check the content and the format of all forms prior to printing.

With the increased emphasis on tuberculin testing, more statistical information was required concerning the tuberculin tests carried out. Data from all tuberculin testing surveys undertaken during the year were processed on to a newly designed punch-card, and the results were tabulated and analysed for the Division of Tuberculosis Control.

The regular statistical analyses of all new tuberculosis cases reported, of all cases admitted to or dicharged from tuberculosis institutions, of all B.C.G. vaccinations carried out, and of all cases undergoing surgery were continued during 1959.

Reference was made in the report for the year 1958 to a case-finding survey carried out amongst 8,000 persons in Health Unit No. 1 of the Vancouver Metropolitan Health Committee during the latter part of 1958. The Division carried out statistical analyses of the racial and age distributions of positive referrals and new active cases arising from this survey.

Venereal-disease Statistics

The statistical processing of all new cases of venereal disease reported in the Province and of the results of the contact-tracing activities of the Division of Venereal Disease Control was continued during the year. Monthly, quarterly, and annual statistical reports were prepared for the Division of Venereal Disease Control.

Dental-health Statistics

The Division again collaborated with the Division of Public Health Dentistry in its programme of carrying out dental examinations of sample groups of schoolchildren as a means of determining the level of dental health in the school-aged population. During 1959 the Kootenay and the Fraser Valley regions were surveyed. The Division of Vital Statistics carried out the statistical work in selecting the samples and in processing and analysing the findings of the dental examinations. The resultant statistics were published in two special reports of the Division.

Public Health Nursing Statistics

The mechanical processing of all case reports from the several nursing-care programmes in operation throughout the Province was commenced in 1959. The first tabulations were prepared toward the end of the year, and these appeared to yield very satisfactory results. The system provides information on the number of individuals served, the volume of nursing visits made, the diagnoses of the patients

under care, the types of treatment service given by the nurses, and other data of value in the administration of these programmes.

The mechanical processing of data derived from the annual time study of public health nursing activities was also carried out for the first time in 1959. The use of the punch-card technique resulted in a considerable saving of time over the hand-tabulation method previously used. The Division continued to compile the statistics required by the Health Branch respecting the day-to-day services given by the public health nursing field staff.

Public Health Engineering Statistics

During the year the Division of Public Health Engineering completed a detailed study of water, sewage, and garbage-disposal facilities throughout the Province. The data from this study were transferred to punch-cards and the required statistics compiled.

Epidemiological Statistics

The Division continued to handle the notifiable-disease reporting system and to compile the weekly and monthly notifiable-disease reports.

Special up-to-the-minute records were maintained on the incidence of poliomyelitis during the epidemic period, and close contact was maintained with the consultant in epidemiology in planning a detailed analysis of the epidemic.

The Division also operates 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. The Division co-operated with the National Cancer Institute of Canada in obtaining from physicians who reported cases of lung cancer certain additional information required in connection with a national study which that organization has undertaken.

Registry for Handicapped Children

The administration of the Registry for Handicapped Children, which is located in the Provincial Health Building at Vancouver, is the responsibility of the Division of Vital Statistics. In this work the Division is assisted by a medical advisory panel appointed by the British Columbia Division of the Canadian Medical Association. The chairman and deputy chairman of the medical advisory panel act as part-time medical consultants in the day-to-day work of the registry.

The case load of the registry numbered over 14,000 cases at the end of December, 1959. These cases represented about 1.9 per cent of the total poulation under 21 years of age. A special statistical report covering the operation of the registry from its inception up to the end of 1958 was prepared during 1959. This report included detailed statistics on the children registered, classified according to age, disability, diagnosis, and other features.

When the registry was organized in 1952, one of the main objectives was the procurement of needed medical services for handicapped children. In co-operation with local health services and voluntary agencies, procedures were set up to facilitate the use of available medical services for handicapped children. These procedures have now been set forth in manual form for the benefit of any new agency or service that might be developed. The registry has since been examining other problems encountered by handicapped children. One of these related to special vocational training and placement. During the year, several groups of older children on the registry files were selected and their needs examined with respect to specific help in job placement. The rehabilitation service of the Health Branch and the registry staff worked closely together in carrying out these studies. Profitable

results were obtained from this procedure, and it is planned routinely to follow up registered children to ensure that they receive the maximum possible help with respect to vocational training and job placement.

Arrangements were made with the Division of Preventive Dentistry for a study of children suffering from cleft palate or hare-lip. The basic information for this study will be obtained from the registry files, and this will be supplemented by further specific information obtained through the local health services in the area of residence of the case.

STATISTICAL SERVICES TO OTHER HEALTH AGENCIES

As well as providing statistical service to the Health Branch, the Division performs similar duties for the Mental Health Services, the B.C. Government Employees' Medical Services, and a number of associated health agencies which receive Government financial support. The availability of the Division's mechanical tabulation equipment and its bio-statistical staff makes it possible for these agencies to employ statistical methods which would be extremely difficult and costly to obtain otherwise on an individual basis.

Mental-health Statistics

The processing of admission and separation reports for patients treated in institutions of the British Columbia Mental Health Services was continued during the year. Likewise, the statistical records of the adult patients treated at the Mental Health Centre were processed. A number of meetings were held with the children's section of the Mental Health Centre with a view to developing a statistical programme for that section similar to the one already established for the adults' section.

Extensive statistical tabulations were prepared for the survey team of the American Psychiatric Association which is studying mental-health services in this Province. Special tabulations were also carried out for students working in the field of mental health. During the year a manual of procedures in mental-health statistics was prepared for the benefit of the Mental Health Services staff.

Arrangements were finalized during the year for the processing of the Mental Health admission and separation reports for the psychiatric unit of the Vancouver General Hospital.

The Division is also co-operating with the Department of Psychiatry of the University of British Columbia in a research study. Extensive tabulations for this project were prepared for the first time during 1959.

Obstetrical Discharge Statistics

For several years the Division has co-operated with the Department of Obstetrics of the University of British Columbia in compiling the statistics derived from the obstetrical discharge records of the Vancouver General Hospital. During 1959 this project was expanded to include the obstetrical discharge records of Grace Hospital. The purpose of this study is to make available a comprehensive analysis of maternal morbidity as seen in cases coming under the care of the two hospitals named. This is part of a wider study of maternal mortality, maternal morbidity, and fœtal wastage in British Columbia.

Epilepsy Centre Statistics

During the year the Division provided assistance in the developing of record forms and statistical procedures for the newly established Epilepsy Centre. While

it was not anticipated that the case-load of the Epilepsy Centre would be large, there appeared to be definite advantages to using punch-card methods for this programme.

Cytology Statistics

The system which was put into operation in 1958 for handling the large volume of records stemming from the Cytology Laboratory was continued in 1959 with only minor modifications. During the year the results of the 1958 operation of the laboratory were tabulated and the required statistical analyses prepared for that service. This use of punch-card equipment made possible a much more detailed analysis of the large number of cases screened than was formerly possible using manual methods. Over 35,000 individual smears were handled by the laboratory during 1958, and although analysis of the 1959 data is not yet complete, it is clear that the volume will be considerably larger. The statistical data which are accruing from the work of the Cytology Laboratory will be used for purposes of further scientific research and study in addition to providing the basic information which is required annually.

Poison Control Centre Statistics

Arrangements made during 1958 for the statistical processing of reports of accidental poisonings were put into effect in 1959. The statistics derived from this source will be valuable in the study of measures to reduce the hazard of accidental poisoning and in the evaluation of the poison-control programme.

G. F. Strong Rehabilitation Centre Statistics

The first series of data resulting from the processing of the statistical records of the G. F. Strong Rehabilitation Centre were made available during the year. As well as data covering the movement of population for the centre, the information produced included classifications of cases according to age, sex, type of case, nature of disability, extent of involvement, treatment given, evaluation on discharge, and other aspects of the service rendered by the centre.

It was pointed out in last year's report that because very little had been done elsewhere in the field of rehabilitation statistics, the system had to be designed largely on an experimental basis. However, the experience of the first year of operation appears to indicate that the system will fulfil its intended purpose, and only minor changes were made in the procedures for 1959.

B.C. Government Employees' Medical Services

By agreement with the B.C. Government Employees' Medical Services, the Division processes the claims records of the plan and provides certain administrative statistics in return for the privilege of utilizing the morbidity statistics produced. As the membership in the scheme was considerably augmented toward the end of 1958, the morbidity data are now more extensive and therefore of greater value.

British Columbia Cancer Institute Statistics

The Division continued to offer a full statistical service to the British Columbia Cancer Institute, although there were few demands on this service during the year 1959. Due to pressure of other work, the institute was unable to maintain the flow of data to the Division for statistical processing. It is hoped that regular processing may be resumed at an early date.

Other Assignments

As in other years, the Division handled a large number of requests for statistical information, some of which involved the preparation of fairly extensive series of data, and undertook a number of smaller statistical assignments.

Members of the Division also served on the public health nurses' record committee, the committee on sanitation records, and on record committees of the Vancouver Metropolitan Health Committee.

REGISTRATION SERVICES

In addition to the bio-statistical services referred to above, the Division performed a wide range of statutory duties stemming from its administration of the *Vital Statistics Act,* the *Marriage Act,* the *Change of Name Act,* and certain sections of the *Wills Act.* These Acts set forth a wide range of responsibilities, including the registrations of all births, deaths, stillbirths, and marriages that occur in the Province, the registration of all adoptions and divorces ordered by the Supreme Court of British Columbia, the maintenance of a voluntary registry of wills notices, the issuance of burial permits, the licensing of ministers and clergymen for the solemnization of marriage, the issuance of marriage licences, the appointment of civil Marriage Commissioners, the granting of legal changes of name, and the issuance of certificates and certified copies relating to any of the registrations on file.

There was a slight decline, amounting to just over 2 per cent, in the volume of registrations filed during the year. However, there was a 6-per-cent increase in the volume of certificates issued and a 5-per-cent increase in the revenue received by the central office.

Preliminary counts of the more important registration services rendered by the Division in 1959 are as follows:—

Registrations accepted—	
Birth registrations	38,638
Death registrations	14,241
Marriage registrations	12,039
Stillbirth registrations	371
Adoption orders	1,339
Divorce orders	1,700
Delayed registrations of births	416
Wills notices	6,333
Legal changes of name	479
Legitimations of birth	135
Alterations of given name	267
Certificates issued—	
Birth certificates	56,353
Death certificates	7,408
Marriage certificates	4,916
Baptismal certificates	26
Change of name certificates	688
Divorce certificates	220
Photographic copies of registrations	9,556
Revenue searches	36,670
Non-revenue searches	42,769
Revenue received by central office	$68,906

Vital statistics registration facilities are available to the public through ninety-two district offices which serve the seventy-three vital statistical registration districts of the Province. Thus a district office is to be found in most of the cities, towns, and larger villages throughout British Columbia. In each office there is an appointee known as a District Registrar or a Deputy District Registrar of Births, Deaths, and Marriages. He is responsible for collecting registrations of all births, deaths, stillbirths, and marriages which occur in his jurisdiction. The Indian Superintendents of the nineteen Indian Agencies of the Province act as District Registrars for the Indian population within their respective Agencies.

The offices of twenty-three District Registrars and Deputy District Registrars and five Indian Agencies were visited by the Inspector of Vital Statistics as part of a routine inspectional and training programme. The standard of work performed by the District Registrars throughout the Province was found to be very satisfactory.

By an amendment to the *Marriage Act* passed at the 1959 Session of the Legislature, machinery was established whereby Doukhobors who had been married in this Province according to Doukhobor custom could register the event and gain legal recognition of the ceremony. The main feature of the 1959 amendment was the appointment of a Special Marriage Commissioner having the same powers as a Commissioner under the *Public Inquiries Act*. This Commissioner was empowered to hear applications from Doukhobors wishing to have their marriages registered, and to recommend registration of the events. Over 140 such applications had been approved by the end of 1959.

REPORT OF THE DIVISION OF PUBLIC HEALTH EDUCATION

R. H. GOODACRE, DIRECTOR

The Division's major spheres of operation remained unchanged during 1959, although the frequency and extent of service increased, particularly in connection with in-service training, library research, and the use of audio-visual aids. This increased activity was to be expected and was undoubtedly due in part to an encouragingly stable staff situation, coupled with the employment in September, 1958, of a technical-staff member to concentrate on audio-visual aids and written materials.

AUDIO-VISUAL AIDS AND WRITTEN MATERIALS

In addition to the compilation of instructional material for the field staff and the preparation of items for the Canadian Journal of Public Health, the bulletin of the Western Branch, A.P.H.A., and the British Columbia Government News, numerous pamphlets and posters received attention. These pertain largely to dental health, water, sewage, and milk, recruitment of public health nurses, civil defence, and prenatal education. The Civil Defence Health Services Manual, prepared by the Director, Division of Occupational Health, received extensive review and editing prior to publication early in the year. In November, work was begun on a total revision of Education for Expectant Parents, a mimeographed series of notes based on a short course given in 1957 for nurses providing prenatal classes. Throughout the year, assessment of other educational aids continued in an attempt to select and retain only those items having practical application in organized public health programmes.

Of note was the preparation of the dental-health teaching kit for teachers of Grades I, II, and III. Consisting of tooth models, filmstrips, posters, resource information, and work sheets, kits were issued to regional dental consultants for loan within their respective school districts. Reports of their value have been most encouraging, and it is anticipated that additional sets will be provided during 1960.

During the past five years the expansion of the prenatal class programme has resulted in increased demands on both the film library and existing motion-picture equipment issued to health unit headquarters ten years ago under National health grants. It was possible during the year to purchase, under National health grants, an additional twenty-three 16-mm. motion-picture projectors for distribution to branch offices not previously supplied with such equipment. Compared with 1955, film circulation has approximately doubled, with close to 1,800 confirmed bookings recorded for 1959. National health grant funds were also used for the purchase of such film equipment as an electric rewind unit, hot-weld splicer, and film conditioner, which have resulted in a saving of film-maintenance time.

IN-SERVICE TRAINING

Each year this Division 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 Empress Hotel in Victoria and was addressed by the main guest speaker, Dr. J. F. McCreary, Dean of the University of British Columbia's Faculty of Medicine and former pædiatric consultant to the Health Branch. Of particular usefulness to staff was a series of panel discussions outlining the basic philosophies and policies of health unit programmes which served as a useful review for not only senior personnel, but also for the newer and less experienced.

The public health nurse encounters many mental-health problems during the course of her work and yet frequently feels that she is not sufficiently prepared to deal with them. Thus, in October, a five-day institute for senior and supervisory nurses was organized with the assistance of the Provincial Mental Health Services. Basic principles of group education, interviewing, supervision, and counselling were first discussed and then applied to a series of case-histories which directed the nurses' attention to determining the significant underlying factors and the agencies from which further assistance might be obtained. As with similar courses of this nature, it was not possible for all nurses to attend. Consequently, arrangements were made within health unit areas for the participating staff to develop local institutes for the benefit of those who could not be present.

For the second successive year, a large proportion of time was devoted to the preparation and processing of material issued in the policy and records manuals, which are designed for the guidance of local health services personnel. Either new or revised material was issued to the staff virtually every month during the year.

Of particular relevance to the Health Branch was the appointment in November of the Director to act as chairman of an *ad hoc* sub-committee on the training and standards for public health educators. The committee is responsible to the chairman of the Professional Education Committee of the Canadian Public Health Association, who activated a similar committee earlier in the year in connection with training of sanitary inspectors in which the Division participated.

PERSONNEL

Although no public health educators were recruited to the staff of this Division, a trained public health educator, formerly with the Saskatchewan Division of Public Health Education, accepted an appointment with the Metropolitan Health Committee of Greater Vancouver. Thus, at the conclusion of the year, three trained public health educators were employed in the Province, the remaining two being the programme director of the British Columbia Tuberculosis Society and the Director of this Division.

REPORT OF THE DIVISION OF TUBERCULOSIS CONTROL

G. F. KINCADE, DIRECTOR

For over a decade now it has been apparent that changes have been taking place rapidly in the whole concept of tuberculosis-control and the means by which it could be brought about. This reflects the changing problem in tuberculosis to-day and stems from the discovery of drugs that were found to be effective in the treatment of this disease. The use of the anti-tuberculous drugs has resulted in the rapid healing of the disease and has made lung surgery possible for those who could not be treated by medical means alone because they did not respond fully to the drugs. The results of this have been far reaching. The period of sanatorium treatment being considerably lessened, a more rapid turnover of sanatorium beds was possible. Waiting-lists for sanatoria have long since disappeared, and for some years now patients have been admitted to institution as soon as they were able to accept a bed following diagnosis. As a result of this, it has been possible to reduce markedly the number of sanatorium beds in operation, but, even more important from a public health standpoint, it has been possible to take patients out of the community as soon as they were diagnosed and hence reduce the spread of infection. It has also made possible the continuation of treatment of patients with drugs after leaving hospital and to prevent much of the reactivation of disease in healed tuberculous cases which before the advent of drugs was a common occurrence. This has led to a marked reduction of tuberculous infection in the community and is rapidly changing the character of the control programme that is necessary to bring about a satisfactory resolution of the problem.

It used to be an accepted fact that tuberculous infection was inevitable, and that on reaching adult life practically all persons would have been infected. It is now apparent that this is no longer the case.

The majority of people are not now being infected, and it has been demonstrated that even in the older age-groups only about half the people are infected, while in the total population probably about a third are infected. Indications are that this will be further decreased, and this, of course, will have considerable bearing on future control programmes. When it is considered that only those who are infected will eventually develop the disease, the problem is to determine who is infected and to direct our efforts in following these people.

The basic problem of tuberculosis-control, however, remains the same, and our efforts must be directed toward finding the unknown case of tuberculosis so that it may be brought under treatment, and thus prevent the spread of infection to others.

CLINICAL PROGRAMME

The supervision of the known cases of tuberculosis in British Columbia and the searching for the unknown cases in the population through the case-finding programmes are the most important phases of the programme of the Division of Tuberculosis Control, and the responsibility for this work is shared with the local health services throughout the Province.

At the beginning of 1959 there were 17,955 known cases of tuberculosis on the case register of the Division, not including 4,649 Indians, who are the responsibility of the Indian Health Service of the Federal Government. To this must be added about a thousand cases who were discovered during the year. Approximately two-thirds of the total cases on the register are in an inactive state, but supervision and periodic re-examination are essential for this group because tuberculosis tends

to become reactivated, and 145 cases so classified have reactivated during 1959 and had to be placed on treatment again.

Within the Division of Tuberculosis Control it is the stationary and travelling diagnostic clinics that are responsible for the supervision of the known cases, while the tuberculosis survey team is charged with the operation of a case-finding programme.

Stationary Clinics

Three stationary clinics are operated by the Division of Tuberculosis Control where there is sufficient volume of work to justify a continuous daily service. These clinics are in Vancouver, Victoria, and New Westminster.

During this year there was a continued change in the general aspects of tuberculosis with the continued low mortality rate and decreased demand for the number of hospital beds. However, as far as the stationary clinic work is concerned, there appeared to be no slackening off. This is reflected in the sustained level of the morbidity rate of the disease. It is felt that, in the near future at least, there is not likely to be an immediate decrease in the functions of an out-patient department primarily interested in the follow-up of known cases of tuberculosis, discovery, and ambulatory treatment.

The one function of the clinics where there has been a decrease is in the work of the survey X-ray. In this department there has been a reduction in volume of X-rays taken of about one-third. To a large extent this has been contributed to by the unfavourable reports regarding radiation hazard. However, as well as this there have been some changes in policy, particularly in regard to the X-raying of persons under the age of 21 and pregnant women. Persons under the age of 21 do not receive a survey X-ray unless they have a positive skin test, and those under the age of 7 who have a positive skin test have a large plate rather than a miniature X-ray.

Travelling Diagnostic Clinics

The experience of one year's operation of the Coast Travelling Clinic and the Interior Travelling Clinic out of one office in Vancouver has proven to be quite satisfactory. The advantages of the centralization of travelling clinic records and staff in one office anticipated a year ago have been realized, and the work of the travelling clinics operates quite smoothly. The move of the records of the Kootenay Travelling Clinic from Nelson to Vancouver to be incorporated in the already centralized travelling clinic records set-up will, it is anticipated, further consolidate the operation of all of the travelling clinics on the Mainland.

The fact that the medical staff works out of one office adds a good deal from the point of view of interchangeability of staff; that is, medical staff can read films for staff members who are out with the travelling clinic, and as this happens quite frequently the various members become familiar with the cases and work done by other members, which adds a great deal to the ease and efficiency of getting the work done in a reasonable amount of time. In addition, the clinicians have been able to assist with out-patient duties at the Willow Chest Centre, and the X-ray technicians have relieved at the Vancouver tuberculosis institutions and assisted in X-ray surveys. There has also been a reduction of clerical staff because of this centralization.

The travelling diagnostic clinics visit fifty-four centres in British Columbia on a regularly scheduled basis. Over the years, as centres expand and new communities spring up, additional services have been provided by the travelling diagnostic clinics. Kitimat was visited on a regular basis for the first time this year and will be included on future visits to the North.

Work Accomplished in 1959

Type of Film	Interior		Island		Coast		Kootenay		Fraser Valley	
	1958	*1959*	*1958*	*1959*	*1958*	*1959*	*1958*	*1959*	*1958*	*1959*
Clinic films	2,582	2,995	2,093	1,965	1,602	1,305	1,930	2,060	987	1,245
Referred films	4,513	4,465	2,634	2,710	3,281	3,190	534	795	439	570
Hospital miniatures — admission and out-patients	14,348	11,855	3,818	4,435	4,894	5,110	5,095	5,275	15,469	19,040
Hospital large admission films	2,523	2,495	783	555	1,401	5,270	1,414	1,520	.....	295

The above figures show the number of different categories of films read by the different travelling clinics of this Division. In general, no great variation has occurred since 1958, and reviewing earlier figures it is noted that the figures do vary slightly upwards or downwards from year to year with no obvious explanation. There is a fairly significant difference in the hospital admission and out-patient miniature films read by the Interior Travelling Clinic during the year, there being a decrease of about 2,500 films read in this category. This could be the result of the publicity given to the dangers of any form of radiation during the past year and probably can be accounted for by that fact. However, the number of films read in this category in the other four travelling clinics has in each instance shown a slight increase, and in the case of the Fraser Valley group, which includes two fairly large hospitals in the City of New Westminster, the increase is in the neighbourhood of 4,000 films. This would suggest that the decrease in the case of the Interior Clinic is perhaps just a yearly variation which was referred to above.

Considerable work has been done with the various health units in going over their records and weeding out the cases that do not require the attention of the health unit as far as follow-up is concerned. The health units themselves have done a great deal of work in getting people who have not been followed for several years in for a check-up to keep the records up to date. The relationship of the travelling clinics with the various health units has continued to be excellent, and the co-operation received from the staff of the health units is of a high order.

TUBERCULOSIS SURVEY UNIT

The changing nature of the tuberculosis problem that has been previously mentioned calls for changing concepts in the approach to tuberculosis-control. This is nowhere more evident than in the case-finding programme and in particular the community tuberculosis surveys. Such surveys have been conducted for about fifteen years, since the advent of miniature X-rays, and until recently have been based on the concept of a chest X-ray for the total population. It has now become practical to combine tuberculin testing with the chest X-ray as a tuberculosis survey method, and the endeavour is to tuberculin-test the total population. This has led to a lessening of the number of X-rays taken, particularly in the younger age-groups.

As these changes have emerged, a definite organization for this work has been set up, and this is the tuberculosis survey unit. Under the supervision of a tuberculosis physician, this group is composed of personnel and equipment necessary to organize and carry out tuberculin testing and X-ray surveys. The areas for operation of the tuberculosis survey unit are determined by a survey planning group composed of representatives of agencies concerned with case finding, such as the Tuberculosis Division, local health services, epidemiology and survey organization. The purpose of the survey planning group is to determine those areas where the need for surveys is greatest and where the results will be most productive. This determina-

tion is based primarily on a high incidence of tuberculosis as indicated by statistical methods.

In the areas that are selected for tuberculosis surveys, an endeavour is made to have total participation of the community in such a programme through education and publicity, organization of volunteers, and house-to-house canvass.

The combined use of tuberculin testing and X-rays in community surveys was first undertaken in 1959 on a trial basis, and from the results achieved and our experiences during the surveys we are convinced that this is a practical and effective method. The following table summarizes the work done by the tuberculosis survey team during 1959 and the results achieved.

Place	Number of X-rays	Number of Tuberculin Tests	New TB.	New Active TB.	Other[1] Significant Findings
Powell River and District, Sechelt Peninsula, and Howe Sound	6,852	3,529	5	4	94
Osoyoos-Oliver District	2,585	4,710	6	2	92
Steveston	1,470	3,823	5	4	16
South Central Health Unit	5,950	4,749	17	7	122
Vancouver schools	450	3,978	7	5	16
New Westminster schools	21	505	---	---	------
New Westminster industry	1,345	------	---	---	22
Essondale	1,757	------	5	---	58
Central Vancouver Island	2,134	------	4	4	82
Vancouver	9,893	------	32	15	240
Haney Correctional School	648	646	1	1	5
Totals	33,105	21,940	82	42	747

[1] Includes old pleurisy, pulmonary fibrosis, healed primary complex, solitary lung densities.

BED OCCUPANCY

During the past year the Division of Tuberculosis Control has been operating with a reduced bed complement. Following the closure of Tranquille Sanatorium late in 1958, the bed capacity for tuberculosis as represented by Pearson Tuberculosis Hospital and Willow Chest Centre was reduced to 367. During 1959 this was further reduced to 352 beds, but this has been accomplished without the development of a waiting-list for admissions. At the end of the year there were 26 empty beds. During the summer months there were at the peak 60 empty beds, but, as has always been our experience, the demand for beds increased during the fall and winter months. This is attributed to the increase in respiratory illnesses which occurs in the fall and winter and the inability of some patients to live at home during the inclement weather.

The trend to an increase in proportion of older persons in the sanatoria population, which has been apparent for several years and which has been causing some concern, is now reversing itself and this is shown by the following table.

Age Distribution in Sanatoria

Date	50 Years of Age and Over	Total Sanatorium Population	Percentage 50 Years of Age and Over
November, 1952	276	838	32.9
November, 1955	251	615	40.8
November, 1957	217	448	48.4
November, 1958	189	332	56.9
November, 1959	161	331	48.6

From 1952 to 1958 the percentage of older persons in sanatoria increased from 32.3 to 56.9 per cent. In 1959 this has shown a decrease, with only 48.6 per cent of the population in the older age-groups. The total number of persons in sanatoria at the end of November, 1959, was virtually the same as at the end of November, 1958. However, the number of persons 50 years and over was reduced from 189 to 161, a 15-per-cent reduction. At the same time there was an increase of a similar amount in the numbers of persons under 50 years of age. It is interesting to note that the males 50 years of age and over now represent 56.7 per cent of the male population, compared with 65.8 per cent in the previous year. There has also been a reduction in the number of older females in sanatorium, and those 50 years of age and over now represent only 22.8 per cent, compared with 33.3 per cent one year before. The ratio of males to females in the total sanatorium population remains about the same—namely, 24.2 per cent females and 75.8 per cent males. In other words, only a quarter of the sanatoria beds are occupied by females.

TREATMENT SERVICES

From the foregoing table it will be seen that the sanatorium population has decreased from 838 to 331 during the last seven years. This represents a reduction of 60.5 per cent, and this reduction has been greatest in persons under 50, because in the older age-groups the reduction has been only 41.7 per cent. With in-patient care being by far the most costly part of the tuberculosis programme, it will be seen that there has been a great saving in the costs of the Division of Tuberculosis Control. However, treatment standards have been improved as new developments take place and all the most modern forms of treatment are provided.

The present-day treatment of tuberculosis is complicated by the fact that a large proportion of the patients are in the older age-groups and suffer from many of the infirmities of old age, which must be treated along with their tuberculosis. This necessitates increased nursing services for this group of people as well as the provision of additional services, both medical and surgical, to take care of their complicating conditions.

However, in the total picture this has been in part balanced by the fact that modern methods of treatment of tuberculosis have made it possible for patients to get out of bed sooner and have greatly reduced the period when actual nursing care is necessary. As a result, it has been possible to allow more freedom for the patients in our institutions and to allow them to take care of many of their own needs. Theis has a twofold purpose in that the rehabilitation process starts earlier, and on leaving sanatoria patients are accustomed to doing things for themselves which will be necessary when they return to their homes. As a result of less nursing supervision and less nursing care required for this programme, it has been possible to make substantial reductions in staff on the wards where this type of programme has been setup. In Pearson Tuberculosis Hospital almost half of the patients are under this type of care.

COMMITTALS TO SANATORIUM

In previous reports, mention has been made of the policy of committing infectious cases of tuberculosis to sanatorium when they are refusing treatment and are a proven public health menace in the community. This is resorted to only when all forms of persuasion have failed. Up to the end of 1958, forty-two persons had been committed to sanatorium, twenty-six of them being committed in 1957 and 1958. In 1959 these powers were used on only three occasions.

At the end of 1958 eleven of these persons were still in sanatorium; eight of these were released during 1959 and one was transferred to Essondale. Of the

three cases committed in 1959, one has already been released. At the end of 1959 there remain only five patients in hospital under committal orders—three in institutions of the Division of Tuberculosis Control and two in Essondale.

OTHER SERVICES

In the operation of a tuberculosis-control programme such as is necessary for all the people in the widely scattered areas in British Columbia, many other agencies co-operate very closely with the Division of Tuberculosis Control and contribute a great deal in the many phases of the work.

Too much emphasis cannot be placed on the fact that without the local health services the type of programme that is provided would not be possible. An appreciable part of the time of public health nurses in the field is spent on supervision and treatment of patients following discharge from sanatorium, on supervision of contacts, and in the case-finding programme.

The Provincial Laboratories furnishes a bacteriological service for the Division of Tuberculosis Control, which accounts for a large volume of work in the culturing of many thousands of specimens of sputum and stomach washings annually. These tests are essential for the clinical supervision of the tuberculosis case load. It is particularly gratifying that the Division of Laboratories has been able to set up an additional service during the past year for the purpose of sensitivity studies. Through this service it is possible to estimate the effect of the antituberculous drugs in controlling the growth of the tubercle bacillus, and it makes it possible for the clinicians of the Division of Tuberculosis Control to select the most effective drugs for each individual patient. In view of the fact that this varies greatly from patient to patient, it can be seen that a most important service is being provided.

The Indian Health Service of the Federal Government continues to provide a tuberculosis-control service for the native Indian population. This service works very closely with the Division of Tuberculosis Control and is providing a most effective programme for the control and eradication of tuberculosis in that group.

The British Columbia Tuberculosis Society continues to increase its assistance to the official agencies engaged in tuberculosis-control. Besides its basic programme of education, which has always been one of its major undertakings, the society is carrying a large share in the staffing and financing of the case-finding programme through the tuberculosis survey services. In community surveys, tuberculosis survey organizers are provided, as well as personnel and expenses for publicity and education. Personnel are also provided to assist in tuberculin testing and for clerical help during surveys.

MORTALITY AND MORBIDITY*

In 1959 the preliminary mortality rate for the total population from tuberculosis was 3.9 per 100,000 population, representing 61 deaths, and is the lowest ever recorded in this Province. In 1958 there were 70 deaths from tuberculosis, giving a rate of 4.5 per 100,000. In 1950 the rate was 27.5 per 100,000 population.

Among the Indian population, mortality from tuberculosis has also shown a remarkable decline during the last ten years. In 1950 there were 74 deaths from tuberculosis, giving a rate of 255.2 per 100,000 population, while in 1959 the rate had declined to 26.0, representing 10 deaths from this disease.

Among the total population there were only 6 deaths under 25 years of age. The majority of deaths, 77 per cent of the total of 61, occurred amongst persons

* Figures given in this section are preliminary for 1959.

over 50 years of age, emphasizing that tuberculosis has become a problem of the older age-group.

Preliminary figures show that the total number of new cases of tuberculosis amongst non-Indian population diagnosed in 1959 was 1,002, giving an incidence rate of 65.4 per 100,000.

The number of new active tuberculosis cases diagnosed among non-Indians was 590, compared with 585 in 1958 and 555 in 1957.

Slightly more than 54 per cent of the new active cases had been under observation by the clinics or were previously registered as inactive. This confirms that the cases being followed by the clinics because of previous tuberculosis or for other lung conditions are an important source of active tuberculosis.

The number of new cases of tuberculosis diagnosed in 1959 among Indians was 215, of which 103 were new active cases.

REPORT OF THE DIVISION OF VENEREAL DISEASE CONTROL

C. L. HUNT, DIRECTOR

The total number of cases of venereal disease of all types reported during the past year has shown little change.

There has been, however, a disquieting increase in syphilis in the early infectious stages, confined largely to patients who acquired their disease through homosexual practices.

The number of cases of syphilis in the late stages of infection has by contrast shown a gratifying decrease during the year. This was to be expected in a programme where much effort has been devoted to the early detection and treatment of infectious patients and the vigorous investigation of all those displaying a positive blood test, whether due to syphilis or otherwise. Consultative service has been freely requested by physicians throughout the Province, where problems of diagnosis, follow-up, or treatment have existed. The increasing co-operation of private physicians has been a most gratifying feature of this year's programme.

The only major change in clinic services has been the termination of the clinic at Male Oakalla. This clinic was discontinued in 1958 as the few cases discovered there had rendered it uneconomical to operate. It was brought into operation again early in 1959 at the request of the senior medical officer at Oakalla, but after the early problems had been resolved, it again became uneconomical to operate and was terminated in April, 1959.

Other clinics continue to operate as before, but the number of attendances at all Divisional clinics has shown a substantial decrease, from more than 26,000 in 1958 to less than 20,000 in 1959. Correctional institutions have been responsible for approximately 5,000 of these attendances and United States Immigration blood tests for another 2,700.

No changes of major importance have been made in the treatment of venereal disease, although an oral type of penicillin has been introduced for the treatment of those who show mild allergies to the injected material. It was felt that this would be less expensive and probably more effective than changing always to the broad spectrum antibiotics. These latter drugs are still available for those cases in which penicillin in any form would be a major risk.

EPIDEMIOLOGY

Valuable assistance has been given by the public health nurse seconded to this Division by the Vancouver Metropolitan Health Committee. This liaison between the Division and the Metropolitan Health Committee has been invaluable in many ways, frequently enabling rapid action to be taken where facilitation or epidemiological problems demanded it.

The Liquor Control Board, the British Columbia Hotels Association, and the Vancouver City Police Department have also been most helpful in lending assistance where necessary, especially in dealing with those factors most conducive to the spreading of venereal disease.

With the co-operation of the British Columbia Pharmaceutical Society, efforts have been made to acquaint pharmacists on the Lower Mainland with the aims and objects of the Division of Venereal Disease Control. Lists of clinic locations and hours have been distributed to them for the information of their customers.

EDUCATION

A vigorous training programme has been maintained throughout the year for physicians, nurses, and medical students.

Intensive courses in the Vancouver clinic have been held each week for nurses in training at the Vancouver General Hospital, as well as for the public health nursing classes at the University of British Columbia.

Classroom lectures have been given at the Royal Columbian Hospital, St. Paul's Hospital, the Royal Jubilee Hospital in Victoria, and at the Vancouver Vocational Institution (practical nursing classes), as well as to fourth-year medical students at the University of British Columbia. Short orientation periods have also been allotted to public health nurses employed by the Provincial Health Branch and the Metropolitan Health Committee.

Meetings have been held regularly each month for physicians employed at the Vancouver clinic to discuss the latest information available in the treatment and management of venereal disease.

RESEARCH

This Division has conducted or taken part in several research projects during the past year.

Two of these projects have been in relation to the prevention of post spinal headaches. This has always been a major problem, resulting often in the severe incapacitation of approximately one patient in every three following lumbar puncture. The situation has now shown very marked improvement in this respect, the incidence having dropped now to approximately one case of headache in every twenty lumbar punctures performed. A report dealing with this subject has been submitted to all health units and has been published in the British Columbia Medical Journal.

A further project undertaken in this Division was an investigation into the increasing incidence of penicillin sensitivity among patients attending the Vancouver clinic. This study was carried out by a second-year medical student employed by this Division during the summer of 1959 with the aid of National health grants.

The information supplied by this study, besides being highly instructive, has been largely instrumental in the introduction of treatment by oral penicillin and in precipitating the development of a more comprehensive plan for the prevention and treatment of severe allergies to injectable penicillin. A report of this study has also been given to all health unit directors.

A brief survey was also made of the problem of non-specific urethritis in the Vancouver clinic and its trend over the past five years. This study was undertaken in order to supply specific informatio nto the Chief, Epidemiology Division, Department of National Health and Welfare in Ottawa.

Other research projects in which this Division has supplied material and information have included:—

(1) Correlation of positive serological tests for syphilis with the (rheumatism) latex fixation test, carried out by the Canadian Arthritis and Rheumatism Society (British Columbia Division).

(2) Investigation into the possible relationship between pleuro-pneumonia-like organisms (P.P.L.O.) and non-specific urethritis on the one hand and with Reiter's syndrome on the other. This study was conducted by Dr. Denys Ford, with the aid of funds supplied partly by the Canadian Arthritis and Rheumatism Society and partly by National health grants.

(3) The supply of blood samples from selected cases to the Director of Provincial Laboratories for a study conducted by his staff on the R.P.C.F. test for syphilis.

REPORT OF THE DIVISION OF LABORATORIES

E. J. Bowmer, Director

During 1959 further studies of administrative and technical procedures resulted in redistribution of technical and non-technical staff with improvement of service and efficiency. New developments included the institution of special techniques for examination of the tubercle bacillus, an improved method for the reception and distribution of specimens, and a method of circulating professional and technical staff between sections. The method of estimating the work load was reviewed, and revised estimates of the unit value of certain tests will be introduced in 1960. There was an increase in the demand for mycological and parasitological investigations, as well as an increase in requisitions for examination for pathogenic *Escherichia coli*. These are " high value " tests, and their increase during 1959 was offset by a considerable decrease in demand for " low value " standard tests for syphilis, resulting in a small over-all decrease in tests performed and work load in 1959 compared with 1958.

In Table I the total number of tests performed during 1959 is compared with those performed in 1958, and the work load is estimated in Dominion Bureau of Statistics units. The work loads of the Royal Jubilee Hospital branch laboratory and the Nelson branch laboratory for 1959 are recorded in Table II.

TESTS FOR THE DIAGNOSIS AND CONTROL OF VENEREAL DISEASES

A further reduction in the demand for standard tests for syphilis occurred, amounting to approximately 15 per cent. The ninth evaluation survey of standard tests for syphilis was conducted by the Federal Laboratory of Hygiene, and the results obtained by this Division compared favourably with those of the reference laboratory both in specificity and sensitivity. During 1959, 417 exudates from 216 individuals were examined by the darkfield technique. Twenty-eight (13 per cent) of these patients were found positive. In the comparable period in 1958, only eleven positives were obtained.

The Federal Laboratory of Hygiene and the Ontario Division of Laboratories continued to provide facilities for the *Treponema pallidum* immobilization (T.P.I.) test. Two hundred and fifty-eight examinations were performed, of which 43 per cent were positive. In collaboration with the Division of Venereal Disease Control and the Federal Laboratory of Hygiene, a comparison between the results of standard tests for syphilis, Reiter protein complement-fixation (R.P.C.F.) test, and the T.P.I. test was made in over 100 selected sera with the object of assessing the value of the R.P.C.F. test in diagnosis and control of syphilis.

There was a slight decrease in the demand for direct microscopy and culture for the diagnosis of *Neisseria gonorrhœæ* infection.

TESTS RELATING TO THE CONTROL OF TUBERCULOSIS

To reduce the routine work load in the Division's tuberculosis laboratory, direct microscopical examination of smears was discontinued unless specifically requested. In 1958, 25,777 direct smears were examined, while in 1959 the demand fell to 16,347 smears. This saving in technical time made possible the provision of laboratory facilities for testing the sensitivity of organisms to streptomycin, isoniazid, and P.A.S. The Division of Tuberculosis Control screened requests for this expensive and time-consuming work. The bacteriologist in charge of the special

tuberculosis laboratory spent three weeks at the laboratory of Dr. G. Middlebrook in Denver, Colo., studying the techniques used in antibiotic sensitivity testing. This in-service training was provided by National health grants. With minor modifications, Dr. Middlebrook's methods were adopted, and by using field cultures, results were obtainable in three weeks.

Table I.—Statistical Report of Examinations and Work Load in 1958 and 1959, Main Laboratory

	Unit[1] Value	1959		1958	
		Tests Performed	Work-load Units	Tests Performed	Work-load Units
Enteric Laboratory—					
Agglutination tests—					
Widal	2	9,282	18,564	9,148	18,296
Brucella	1	3,677	3,677	4,185	4,185
Paul-Bunnell	2	3,984	7,968	3,585	7,170
Miscellaneous	2	1,117	2,234	497	994
Cultures—					
Salmonella-shigella	7	13,951	97,657	14,574	102,018
Pathogenic *E. coli*	10	2,001	20,010	1,139	11,390
Chemistry Laboratory—					
Water—					
Complete analysis	----	66	6,244	120	3,000
Partial analysis	----	----------	----------	160	640
B.O.D.	----	26	1,600	13	260
Milk and Water Laboratory—					
Milk—					
Standard plate count	4	5,274	21,096	4,998	19,992
Coliform	2	4,827	9,654	4,506	9,012
Phosphatase	3	3,489	10,467	3,263	9,789
Resazurin	1	437	437	410	410
Water—					
Standard plate count	2	1,509	3,018	1,535	3,070
Coliform	5[2]	10,888	54,440	9,943	59,658
Food poisoning examination	5	59	295	73	365
Miscellaneous Laboratory—					
Animal virulence (diphtheria)	6	----------	----------	4	24
Cultures—					
C. diphtheriæ	5	8,390	41,950	9,785	48,925
Hemolytic staph.-strep.	5	6,767	33,835	5,581	27,905
Phage typing	10	357	3,570	840	8,400
Miscellaneous	5	2,857	14,285	3,050	15,250
Fungi	5	1,844	9,220	723	3,615
N. gonorrhœæ	5	8,666	43,330	9,756	48,780
Direct smear—					
N. gonorrhœæ	2	27,084	54,168	28,703	57,406
Vincent's spirillum	2	169	338	181	362
Miscellaneous	2	2,440	4,880	2,528	5,056
Serology Laboratory—					
Blood—					
V.D.R.L. (qual.)	1	134,639	134,639	147,437	147,437
V.D.R.L. (quant.)	2	1,652	3,304	1,714	3,428
Complement fixation	2	8,723	17,446	19,313	38,626
C.S.F.—					
Complement fixation	2	1,923	3,846	2,284	4,568
Complement fixation (quant.)	2	33	66	44	88
Cell count	2	187	374	246	492
Protein	2	201	402	890	1,780
Darkfield—*T. pallidum*	3	417	1,251	381	1,143
Viruses—Complement fixation	4	63	252	51	204
Tuberculosis Laboratory—					
Animal inoculation	10	713	7,130	730	7,300
Cultures—*M. tuberculosis*	6	26,169	157,014	25,777	154,662
Direct smears—*M. tuberculosis*	2	16,347	32,694	25,777	51,554
Intestinal parasites	3	3,930	11,790	3,375	10,125
Unclassified tests	----	----------	----------	652	2,607
Totals	----	314,158	833,145	347,971	889,986

[1] 1 D.B.S. unit=10 minutes of work.
[2] Unit value decreased from 6 to 5 on January 1st, 1959.

Table II.—Statistical Report of Examinations and Work Load during the Year 1959, Branch Laboratories

	Unit[1] Value	Nelson		Victoria	
		Tests Performed	Work-load Units	Tests Performed	Work-load Units
Enteric Laboratory—					
Agglutination tests—					
Widal	2	667	1,334	56	112
Brucella	1	149	149	68	68
Paul-Bunnell	2	.....	.....	214	428
Cultures—Salmonella-shigella	7	357	2,499	505	3,535
Milk and Water Laboratory—					
Milk—					
Standard plate count	4	691	2,764	871	3,484
Coliform	2	428	856	871	1,742
Phosphatase	3	291	873	765	2,295
Resazurin	1	268	268	209	209
Water—					
Standard plate count	2	.....	.....	1,606	3,212
Coliform	5	1,719	8,595	1,606	8,030
Miscellaneous Laboratory—					
Cultures—					
C. diphtheriæ	5	832	4,160	915	4,575
Hemolytic staph.-strep.	5	832	4,160	915	4,575
Miscellaneous	5	768	3,840	.....	.....
Fungi	5	.....	.....	220	1,100
N. gonorrhœæ	5	.....	.....	300	1,500
Direct smear—					
N. gonorrhœæ	2	284	568	459	918
Vincent's spirillum	2	21	42	11	22
Miscellaneous	2	110	220	85	170
Serology Laboratory—					
Blood—					
V.D.R.L. (qual.)	1	3,593	3,593	15,165	15,165
V.D.R.L. (quant.)	2	12	24	159	318
Complement fixation	2	.....	.....	963	1,926
Cerebrospinal fluid—					
Complement fixation	2	.....	.....	336	672
Cell count	2	19	38	340	680
Protein	2	19	38	339	678
Darkfield—*Treponema pallidum*	3	.....	.....	16	48
Tuberculosis Laboratory—					
Animal inoculation	10	.....	.....	12	120
Cultures—*M. tuberculosis*	6	.....	.....	1,325	7,950
Direct smears—*M. tuberculosis*	2	332	664	1,331	2,662
Intestinal parasites	3	135	405	338	1,014
Totals	—	11,527	35,090	30,000	67,208

[1] 1 D.B.S. unit=10 minutes of work.

SALMONELLA, SHIGELLA, AND OTHER ENTERIC PATHOGENS

The total cultural work in connection with the diagnosis of enteric infections again showed a marked increase, in part due to increasing requests for the isolation and identification of pathogenic *Escherichia coli*. When the latter investigation was introduced in 1957, approximately 200 fæces specimens were received for examination. The number of specimens rose from 1,139 in 1958 to 2,001 in 1959. This is one of the "high value" laboratory examinations demanding skill, time, and expensive reagents.

The total number of salmonellæ isolated from new cases showed a marked increase compared with 1958. In 1959 a total of 458 new Salmonella infections were diagnosed, compared with 344 in 1958. (Because a significant number of the cases occurred late in 1959, there was not time for all of them to appear in the table of notifiable diseases in the report of the Bureau of Local Health Services.) Twenty-three different serotypes were isolated in 1959, the most frequent being

Salmonella heidelberg, which displaced *Salmonella typhi-murium* from its usual preeminence as the commonest bacterial agent causing Salmonella food poisoning.

Organism	1959	1958
1. *Salmonella heidelberg*	179	23
2. *Salmonella typhi-murium*	139	180
3. *Salmonella newport*	36	56
4. *Salmonella paratyphi B*	20	16
5. *Salmonella brandenburg*	11	6
6. *Salmonella thompson*	5	8
7. *Salmonella typhi*	5	8
8. Other salmonellæ	63	47
Totals	458	344

Among the 179 patients infected with *Salmonella heidelberg,* six deaths were recorded, three occurring in premature infants and three in males aged 42, 73, and 84 years. *Salmonella heidelberg* was isolated from a total of sixty-two patients in three outbreaks of infection in Hope, Lillooet, and the Chinese section of Vancouver.

Shigella flexneri and *Shigella sonnei* proved the commonest agents in bacillary dysentery, the former causing outbreaks in Bella Bella and in a residential school in New Westminster.

The number of new cases of infection with pathogenic *Escherichia coli* continued to increase. A total of 206 strains belonging to eleven different serotypes were isolated in 1959, compared with 144 strains of eight serotypes in 1958. Small outbreaks occurred in four widely separated hospitals.

Reagents for the identification of enteric organisms were provided by the Federal Laboratory of Hygiene, which also undertook confirmation and final identification of strains submitted to it.

SANITARY BACTERIOLOGY

Examination of Dairy Products

The number of milk samples submitted for examination showed an increase of over 5 per cent compared with 1958. A review of the temperatures at which milk samples reached the laboratory indicated that during the course of one year 663 shipments were received in the main laboratory and the branch laboratory at Nelson, and in only four of these (0.05 per cent) was the temperature on arrival above 10° C. This was a great improvement over the experience in 1956, when about 50 per cent of milk samples reached the laboratories at temperatures in excess of 10° C. This improvement reflects considerable credit on the sanitary inspectors throughout the Province, who are responsible for collection, packing, and shipment of milk samples.

Bacterial Food Poisoning

The demand for bacteriological investigations of food substances suspected of causing food poisoning diminished from seventy-three in 1958 to fifty-nine in 1959. In only two outbreaks were pathogenic organisms isolated. *Bacillus cereus* was isolated from remnants of turkey dressing which had been consumed by approximately 125 people attending a church supper in Sardis. *Staphylococcus aureus* was isolated from potato salad served to 150 personnel at an armed forces mess near Vancouver, all of whom developed diarrhœa.

There is a requirement for more careful investigation of food poisoning outbreaks and for greater care in the collection, refrigeration, and submission to the laboratory of suitable samples of suspected foodstuffs.

OTHER TYPES OF TESTS

Diphtheria

Corynebacterium diphtheriæ was not isolated during 1959, whereas in 1958 one isolate was made. The demand for bacteriological investigation in connection with the diagnosis of diphtheria has declined appreciably.

Parasitic Infections

There was a further increase in the demand for examination of stool specimens for intestinal parasites, amounting to approximately 15 per cent. The following protozoa were identified: *Giardia lamblia* (109), *Entamœba coli* (75), *Entamœba histolytica* (21), *Endolimax nana* (10), and *Iodamœba bütschlii* (3). The following helminths were identified: *Trichuris trichiura* (43), *Clonorchis sinensis* (20), hookworm (15), *Enterobius vermicularis* (18), *Tænia* (8), *Ascaris lumbricoides* (6), and *Strongyloides stercoralis* (4). Using the National Institute of Health swab, eggs of *Enterobius vermicularis* were identified in about 300 specimens.

The demand for skin-test antigens for the diagnosis of hydatid disease and trichinosis increased. These antigens were made available by the consultant parasitologist of the Federal Laboratory of Hygiene.

The bacteriologist in charge of the Parasitology Laboratory attended a special course of instruction at the Institute of Parasitology, Macdonald College, Quebec. This in-service training was supported by a National health grant.

Fungus Infections

The requests for mycological investigations increased from over 700 in 1958 to over 1,800 in 1959. During 1959 the following fungi were isolated and identified: *Microsporum canis* (132), *Trichophyton rubrum* (113), *Trichophyton mentagrophytes* (26), *Trichophyton tonsurans* (2), *Trichophyton discoides* (1), *Epidermophyton floccosum* (6), and *Candida albicans* (89). *Candida* spp., not normally considered as human pathogens, were identified in a further 254 specimens. Out of a total of over 1,844 specimens, fungi were recovered from 626, an isolation rate of approximately 34 per cent. The use of griseofulvin in the treatment of dermatomycoses resulted in clinico-laboratory studies to determine the efficacy of this fungistatic agent. The findings in one such study of the effect of griseofulvin on superficial fungal infections and upon the cultures taken from these infections were reported by a group of Vancouver dermatologists.

Miscellaneous Tests

The study of the spread of staphylococcal infections in hospitals and in the community, which was undertaken in collaboration with the Health Centre for Children, was concluded. The techniques developed during the study will be applied to a further study of staphylococcal infection in the community. New sets of *Staphylococcus aureus* phages and corresponding phage types were provided by the Federal Laboratory of Hygiene. These phages were grown, tested for titre, and introduced into use for phage typing.

Virus Investigations

A total of sixty-three virus complement-fixation tests, involving twenty patients, were performed. Positive findings included one case of mumps and two probable cases of psittacosis, the latter occurring in persons with budgerigars in the home.

During 1959, specimens from 193 patients were submitted to the Virus Laboratories of the Laboratory of Hygiene for viral studies. These included specimens collected at seven autopsies. The following viral agents were isolated: Poliovirus Type I (52), Poliovirus Type III (7), Coxsackie A 9 (5), Coxsackie B 2 (1), Coxsackie B 3 (1), Coxsackie B 5 (4), Coxsackie B 11 (1), ECHO 2 (1), ECHO 9 (1), and "slow-growing enterovirus" (5).

Chemical Analyses

The demand for chemical analysis diminished in 1959, largely due to the too stringent criteria for acceptance of specimens for analysis. These criteria were reduced in stringency in September and the demand for analysis increased.

Branch Laboratories

The Nelson branch laboratory worked for the full year in its new quarters in the Kootenay Lake General Hospital. The bacteriologist in charge resigned, and the duties at this branch laboratory were taken over by the senior technician. The Assistant Director made three visits to the laboratory to ensure good liaison with the hospital laboratory, the staff of the hospital, the health unit director, and the practising physicians.

Close liaison was maintained with the Victoria branch laboratory at the Royal Jubilee Hospital. The new bacteriologist at the hospital underwent orientation in the Division's bacteriological techniques by attending the main laboratory in Vancouver for a period of two weeks. This training was supported by a National health grant. The Director made two visits to the Victoria branch laboratory.

GENERAL COMMENTS

Four courses for the instruction of student technicians in the techniques of serology from the four major hospitals in the Greater Vancouver area were held. Nine members of the staff gave instruction at the University of British Columbia in the Faculty of Medicine and in the Department of Bacteriology. In June the Director attended the annual meeting of the Western Branch of the American Public Health Association, held in San Francisco, and participated in the Laboratory Section meetings. In August the Assistant Director attended the annual meeting of the International Northwest Conference on Diseases in Nature Communicable to Man, held at the State College of Washington, Pullman, Wash. In December the director attended the fifteenth annual meeting of the Technical Advisory Committee on Public Health Laboratory Services in Ottawa and also presented a paper at the annual meeting of the Laboratory Section of the Canadian Public Health Association in Toronto.

All members of the staff of the Division are to be congratulated on a good year and on their efficient performance of duties. The turnover in junior staff resulted in additional training commitments for the senior members of the staff, and these were accepted cheerfully.

REPORT OF THE REHABILITATION CO-ORDINATOR

C. E. BRADBURY

CASEWORK SERVICE

During the year the Rehabilitation Service continued to give major attention to the casework aspect of the service. Disabled persons are referred and the Rehabilitation Service provides following attention through the rehabilitation process, including initial assessment, physical restoration, social adjustment, vocational assessment and counselling, and, where appropriate, vocational training and job placement.

None of the services are provided to the patient directly by the Rehabilitation Service. Existing resources are utilized, and the Rehabilitation Service ensures that the patient's problem receives attention in a logical sequence by carefully following the patient and making the necessary arrangements at the appropriate time. Consultative advice is given to patients and to the various agencies and professional services concerned.

Case Load of the Rehabilitation Service, December 1st, 1958, to December 31st, 1959

Cases active at December 1st, 1958	87
Cases deferred at December 1st, 1958	16
Cases accepted, December 1st, 1958, to December 31st, 1959	108
Total	211
Cases closed, December 1st, 1958, to December 31st, 1959	90
Cases active at December 31st, 1959	121
Cases deferred at December 31st, 1959	4

Ninety cases were closed during the year, which represents a 12 per cent increase in the number of closures over the previous year. Of the 90 cases closed, sixty or 66⅔ per cent were closed because the goal of gainful employment had been achieved. The balance of thirty or 33⅓ per cent were closed with a substantial physical and social improvement, but gainful employment was not achieved.

The percentage of cases closed because gainful employment was achieved was increased slightly (6 per cent) over the previous year, with a corresponding slight decrease in the percentage closed without having achieved gainful employment.

Age-grouping of Accepted Cases

Under 20 years	11
20 to 30 years	40
31 to 40 years	11
41 to 50 years	17
51 to 60 years	11
Over 60 years	—
Total	90

Source of Support at Referral

Public assistance	44
Private assistance	41
Unemployment insurance benefits	5
Self-support	---
Total	90

It is notable that at acceptance nearly 50 per cent of the individuals were in receipt of social allowance and none were capable of self-support.

Source of Support at Closure

Salary or wages (self-support)	60
Public assistance	10
Disabled Person's Allowance	8
Private assistance	12
Total	90

At closure, sixty or 66.6 per cent were self-supporting, 10 or 11.1 per cent remained in receipt of Social Allowance, eight or 8.8 per cent were granted a Disabled Person's Allowance, and twelve or 13.3 per cent continued to be supported by families or other relatives or friends.

Annual Earnings of Cases Closed Employed

$500 to $1,000	1
$1,001 to $2,000	7
Over $2,000	42
Not reported	10
Total	60

Fifty of the sixty cases closed after employment had been obtained reported the amount of salary or wages earned. The total annual amount earned by the group was $122,908, an average of $2,458 per year per patient. This average, if applied to the ten whose annual earnings were not reported, brings the estimated amount earned by the whole group of sixty to nearly $150,000 annually. A total of ninety-eight individuals were affected if thirty-eight dependents are included as beneficiaries of the improved physical, social, and financial status of the group.

VOCATIONAL REHABILITATION

The experience of the Rehabilitation Service to date has demonstrated that one of the prime needs of disabled persons after physical restoration is assistance toward proper preparation for work. Most of the disabled who are referred experience difficulty in obtaining gainful employment even though they may have received excellent physical restoration services. There are many reasons for this fact. Some are required to develop new skills because old skills may be inappropriate when examined in the light of the extent or kind of physical handicap. Some, because of long-term physical handicap, have never developed any work skills or work habits and are not acceptable in the employment market. Some are frankly apprehensive about the long stride to independence. The reasons are legion.

One of the most valuable tools in work preparation is the excellent vocational training programmes which have been developed for all the people of this Province

and which are available to the handicapped. In the last year, of the sixty cases which were closed because gainful employment had been obtained, thirty-eight had received assistance for vocational training. Only two of these are employed in an occupation not related to the training. All of this group received financial assistance under Schedule R of the Canadian *Vocational Training Co-ordination Act.*

Comparative Costs of Vocational Training and Social Assistance

It is notable that twenty of the thirty-eight patients had been in receipt of social assistance at acceptance. The annual total cost of maintaining this group on social assistance was $16,862, and the average annual cost per patient, $843.10. The cost of training this group was $9,300 for maintenance allowances, plus $2,227 for training fees, a total of $11,527. The average length of time required to complete the training was eight months. The average cost of training, including allowances for maintenance during training and training fees, was $576 per patient.

Social assistance frequently is a continuing public expense, particularly when provided to disabled persons. The cost of vocational training is a non-recurring expense. The financial advantage accruing to the community by the provision of vocational training to disabled persons as part of the preparation for work is manifest.

The other eighteen persons who received vocational training under Schedule R and now are in gainful employment had been supported by their families, other relatives, or friends. Vocational training has made gainful employment possible for these patients also, and they have been able, as a result, to assume responsibility for their own support.

The total cost of vocational training for the group of thirty-eight persons was $19,417. The total amount of the annual earnings of the group is $92,307. None were gainfully employed or self-supporting at the time of their acceptance for rehabilitation service.

CO-OPERATION WITH THE UNEMPLOYMENT INSURANCE COMMISSION

Another essential phase of the rehabilitation process is job placement of the handicapped person in selected employment. From the inception of the Rehabilitation Service in 1954, the Unemployment Insurance Commission, through the National Employment Service, has accepted responsibility for job placement of handicapped persons referred by the Rehabilitation Service.

As the case load of the Rehabilitation Service grew, it became apparent that a more formal liaison between the regional and local offices of the National Employment Service and the Rehabilitation Service was required if the job-placement needs of the handicapped were to be served adequately. It was also felt that the Rehabilitation Service could assist the National Employment Service with a detailed rehabilitation study of disabled job applicants who applied directly for work without prior physical restoration or vocational preparation.

Accordingly, in 1958 the Unemployment Insurance Commission in Ottawa was approached with a plan which it was thought would improve placement service to those employable handicapped persons known to the Rehabilitation Service and provide for rehabilitation study for disabled persons known to the National Employment Service. After considerable planning and consultation between personnel of the Rehabilitation Service and senior officials of the Unemployment Insurance Commission both in Ottawa and the Pacific Region office, a formal agreement was made.

The agreement provided that the Unemployment Insurance Commission would second a well-trained senior placement officer to the Rehabilitation Service for an experimental period of six months to act as Special Placements Liaison Officer. The officer was attached to the regional office of the Unemployment Insurance Commission to afford better administrative and functional control of the experimental programme on a Province-wide basis. The joint experimental programme commenced in February, 1959.

The Rehabilitation Service undertook to provide a thorough rehabilitation work-up on each referred individual and to arrange for appropriate physical restoration or other attention necessary prior to job-placement service. The only criteria for acceptance was that the patient was considered employable and that a reasonable prospect of job placement existed. Apart from these limitations, no exclusions were made because of age or severity of disability.

At the end of six months the project was evaluated. A total of forty-one referrals had been made, of which twenty-one had been placed in regular gainful employment. The ages of the persons referred ranged from 17 to 59, and in the whole group a wide range of disability was encountered. The result of the project was sufficiently encouraging that the Unemployment Insurance Commission agreed to the proposal to extend the initial experimental period a further nine months.

At December 31st, 1959, sixty-six disabled persons had been referred, of which thirty-six had been placed in employment. As one of these persons had been placed three times and three others placed twice, a total of forty-one job placements were made.

Six placement referrals have been withdrawn for various reasons, which leaves a total of twenty-four for whom active placement efforts continue.

This project has been important, not only because of the improvement in service to the handicapped, but also because of the very useful information which has been gained about the general problems encountered in placing the handicapped in employment.

REPORT OF THE ACCOUNTING DIVISION

For Period April 1st, 1958, to March 31st, 1959

J. McDiarmid, Departmental Comptroller

As the title shows, this report of the Accounting Division relates to the fiscal year ended March 31st, 1959, rather than the calendar year ended December 31st, 1959, the period covered by the other sections in this volume.

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 year 1958/59 saw a further decrease in the total gross expenditure of the Health Branch to $7,560,064. The decrease from 1956/57 to 1957/58 was 0.4 per cent, and from 1957/58 to 1958/59 was 1.0 per cent. The further centralization of tuberculosis treatment to the Vancouver area and the consequent closing of the Tranquille unit was mainly responsible for this decrease in expenditure.

The table shown at the end of this report gives the breakdown of costs by main services, expressed in dollars and as a percentage of the total, comparing the three years 1956/57 to 1958/59.

The changes in expenditures are apparent from this table. Apart from the Division of Tuberculosis Control, the largest changes appear in Local Health Services, research, training, etc., and the Division of Laboratories, all of which have increased. The combination of these changes has considerably altered the breakdown of expenditure shown as a percentage of the total expenditure.

The Mechanical Superintendent and his assistant made visits throughout the Province checking the mechanical condition of all Health Branch motor-vehicles. There were 153 of these vehicles at March 31st, 1959, and during the year 1958/59 they travelled a total distance of 1,019,575 miles in all types of weather and road conditions. In addition, during the year Health Branch employees operated 121 privately owned vehicles on a mileage basis. They travelled a total of 791,510 miles in the course of their daily duties. The total mileage travelled for the year was 1,811,085. This was a slight increase over the previous year.

Service	Gross Cost			Percentage of Gross Cost		
	1956/57	1957/58	1958/59	1956/57	1957/58	1958/59
Division of Tuberculosis Control	$3,437,921	$3,078,650	$2,555,389	44.9	40.3	33.8
Local Health Services	1,827,067	1,999,027	2,144,454	23.8	26.2	28.4
Cancer, arthritis control, rehabilitation, etc.	775,371	838,423	857,766	10.1	11.0	11.3
Research, training, etc.	205,830	348,299	526,197	2.7	4.6	7.0
Poliomyelitis	451,924	355,990	391,397	5.9	4.6	5.2
General administration and consultative services	355,563	374,199	369,552	4.6	4.9	4.9
Division of Laboratories	253,160	263,623	342,055	3.3	3.5	4.5
Division of Vital Statistics	259,143	274,957	275,523	3.4	3.6	3.6
Division of Venereal Disease Control	100,913	99,588	97,731	1.3	1.3	1.3
Totals	$7,666,892	$7,632,756	$7,560,064	100.0	100.0	100.0

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